Response to RFP

Fairbanks Economic Development Corporation
RFP# 00002
Call for Pre-Fesibility Studies on Wood-Fired Heating Projects

Due: February 14, 2013
Cover Letter

February 14, 2013

Mr. Jim Dodson
Fairbanks Economic Development Corporation
301 Cushman St. Suite 301
Fairbanks, AK 99705

Re: FEDC RFP# 00002 Call for Pre-Feasibility Studies on Wood-Fired Heating Projects

Dear Mr. Dodson

Coffman Engineers, Inc. (Coffman) is pleased to submit this proposal to provide engineering services for the Pre-Feasibility Studies on Wood-Fired Heating Projects. The Coffman team understands that the purpose of this contract is to ultimately provide economic analysis for the feasibility of biomass heating used at various facilities located in the villages specified in the RFP. We have designed the perfect blend of engineers and project managers that possess the expertise necessary to produce a thorough feasibility study which will outline cost-effective heating alternatives to displace existing heat methods currently utilized.

Coffman’s experience working with villages throughout Alaska has provided us with a first-hand view of the problems that elevated fossil fuel costs present to the residents in each community. Conversely, our experiences working on biomass heating projects for remote villages has given us a perspective of how much inexpensive, local power can positively impact communities. Coffman’s work on wind turbines, hydro and dam infrastructure, heat recovery, and other alternative energy projects in Alaska and the Northwest has provided us with the real life experience necessary to create this feasibility study.

Our proposal demonstrates our total understanding of the requirements and expectations outlined in the solicitation. The methodology and management section demonstrates our step by step approach on how our team will carry out the scope of service. It also introduces the proposed team, their experience with projects similar to scope and nature as this one, and unique qualifications they possess that we feel add to the value of our team. Our project work and cost are included in a separate attached document.

We sincerely look forward to working with the Fairbanks Economic Development Corporation and AWEDTG.

As Vice President and Managing Principal of Coffman’s Anchorage office, I am authorized to bind this offer to its provisions. Please do not hesitate to contact me, should you have any questions at 907.276.6664.

Sincerely,

COFFMAN ENGINEERS, INC.

[Signature]

David Gardner, P.E.
Vice President, Managing Principal

CC: Julie Emslie, Project Manager, Fairbanks Economic Development Corporation
Firm Information

Company Name
Coffman Engineers, Inc.

Company Address:
800 F Street
Anchorage, AK 99501

Contact Phone Number
907.276.6664 p
907.276.5042 f
slatonbarker@coffman.com
Tony SlatonBarker, P.E., LEED® AP
(Project Manager and Point of Contact)

Signature of individual authorized to bind the offeror to the proposal
David Gardner, P.E.
Vice President, Managing Principal

Alaska Business License Number:
2576

Tax Identification Number:
#91-1053429

Proposal Validation Notice
Coffman confirms that this proposal is valid for 30 days from the closing date of February 14, 2013.

Conflict of Interest Statement
Coffman does not anticipate any conflicts of interest resulting from the award of this contract.

Alaska Department of Commerce, Community, and Economic Development
Division of Corporations, Business and Professional Licensing
P.O. Box 110806, Juneau, Alaska 99811-0806

This is to certify that
COFFMAN ENGINEERS, INC
1601 5TH AVE, STE 900 SEATTLE WA 98101
owned by
COFFMAN ENGINEERS, INC.

is licensed by the department to conduct business for the period
December 01, 2011 through December 31, 2013
for the following line of business:
54 - Professional, Scientific and Technical Services

This license shall not be taken as permission to do business in the state without having complied with the other requirements of the laws of the State or of the United States.

This license must be posted in a conspicuous place at the business location. It is not transferable or assignable.

Susan K. Bell
Commissioner
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7.01 - Restatement of Services Required

Coffman Engineers (Coffman) is pleased to offer the Fairbanks Economic Development Corporation (FEDC) a team with a skill set that combines biomass boiler design proficiency with comprehensive experience providing study/audit/building inspection services for projects across Alaska. Our team’s experience with Alaska biomass projects has allowed us to become intimately familiar with the goal to offset diesel heating costs, create local jobs, and to keep critical revenue within a community. Members of our team have significant experience designing biomass heating systems, fuel delivery and storage systems, system integration, permitting and the infrastructure required to make it operate successfully.

Coffman has provided multi-discipline engineering in Alaska for over 32 years with experience in new and existing building design and inspection. Coffman understands that every site, in Alaska, has its own unique set of both regional and local constraints that must be considered in the design of each building and it associated systems. All of our design projects include a site visit to gather applicable data so that an appropriate structure or energy system (wind, solar, biomass) can be constructed to serve the community’s needs, be energy efficient, and fit within the available budgets.

Our total understanding and performance of the proposed scope of work has been demonstrated in real time by the projects that we have completed that are similar in scope, size and geographic location to this solicitation.

The current pre-feasibility inspections requested in this solicitation would encompass the same information we would gather for designing any new facility:

- Existing building construction
- Site access
- Fuel types
- Energy Usage
- Mechanical Systems
- Electrical Systems
- Building usage
- Building purpose
- Local operational expertise
- Local construction companies

The Coffman team understands that the purpose of this contract is to ultimately provide an economic analysis for the feasibility of biomass heating used at various facilities located in the villages specified in the RFP. We have reviewed the scope of work and determined that the following process is sufficient for performing the pre-feasibility of community heating projects for the outlined rural Alaska communities:

- Initial Facility Review
- Preliminary Site Investigation
- Preliminary Cost Estimating
- Economic Analysis
- Final Reporting

“Our total understanding and performance of the proposed scope of work has been demonstrated in real time by the projects that we have completed that are similar in scope, size and geographic location to this solicitation.”
Methodology

After Coffman receives a Notice to Proceed for this contract, the team will meet internally to review existing documentation, finalize site inspection checklist, and contact the local community representative to gather any other available data.

1) Initial Facility Review

In this task, Coffman will conduct an initial review of the facilities that are to be assessed for biomass heating systems. This initial review is essential as it will allow for many details of the facility to be known before a site investigation is completed. Ultimately, this will allow for a successful site visit and comprehensive knowledge of the facility.

Initial facility reviews will include coordinating with local representatives for selecting the most convenient time for the site investigations, as well as verifying current facility schedules. A teleconference with the local representative will be made to understand the facility history, layout, function and heating and ventilation system types. Any system operational or installation issues of the heating systems will be discussed along with any future planned uses of the facility and planned expansions. As-built drawings, available equipment data, and 5 years of electricity and fuel usage will be requested and gathered. Aerial plans of the facility/town will be obtained.

All information will be placed in a data base prior to the site visit. At this stage, the Field Data Sheet will be partially filled out with all the background information gathered. During the site investigation the Field Data Sheet will be fully completed. Additionally, due to the uniqueness of each facility, supplementary checklists may be created in preparation for the site investigation. An informal meeting with available local personnel will also be performed as time and schedule permits.

2) Preliminary Site Investigation

Once on-site, our engineer will have a kick off meeting with local representatives. Access to buildings and mechanical and electrical rooms will be determined. Any other issues associated with limited access will also be discussed. Existing soil conditions will also be evaluated as buried line costs and losses vary with type of soils.

Once the inspector is familiar with the site they will begin the site investigation and completion of the site checklist. Once building inspections are complete a site walk will be performed to determine the most applicable location of a new wood boiler building(s).

In many cases, a central plant can be more efficient, but if the facilities are spread apart, heating losses and pumping losses may be greater than the cost of separate facilities. Ideally, placing the system in an existing facility will be cheaper than building a new building, so this option will be evaluated.

Wind patterns, vehicle access, site elevations, drainage, fuel delivery, storage areas, existing partially developed areas, and other issues will be evaluated for proposed Biomass building site. Stack height will also be evaluated to limit impacts to the community. We are aware of this issue due to design restraints of our Delta Greely biomass design, which required a 65 ft tall exhaust stack.

Estimated tie in points in each boiler room or heating space will be evaluated, as well as additional piping systems required to be installed if the building does not have a hydronic heating system. The control system and other integration requirements will be evaluated. Ideally the option of integrating into the return side of the existing heating system would be used so that only limited new control systems would be required.

Fuel availability and cost will be evaluated (drift wood, seasonal river wash down, and local harvesting). The estimated biomass fuel usage will be based on current heating system and conventional fuel usage data.

Coffman will have a local community meeting to discuss biomass operations and opportunities in their community.

Since this inspection will be very similar to the ASHRAE Level 1 energy audits that we perform, we will provide recommended upgrades that could significantly reduce the overall heating requirements of the facility. This would potentially reduce fuel consumption before a biomass system is installed.
Technical Proposal

Once building size, boiler size and fuel usage is known, we will calculate required wood usage. We will evaluate pellets, chips, and cord wood options when locally available. If wood bricks are available, that could be evaluated as well. Initial construction, operations and replacement costs will be incorporated.

Coffman will propose options for funding such as loans, grants, and other alternative funding resources from entities such as AES, ESDA, and the AHFC. PPAs (power purchase agreements) are beginning to be addressed in Alaska for wind and biomass alternatives. This may be an option in some of the areas. In this case, a third party will provide all up-front costs and the village would be responsible for paying for monthly energy usage on a 20 year contract (all construction and operations costs are borne by the independent power producer (IPP).

For facilities that have oversized heating systems or where fuel usage records do not appear appropriate for the facility, we will use one of three methods to verify the building systems and the estimate building energy needs:

1. Perform heat lost calculations for the building based on the building construction
2. Utilize AKWarm to calculate system requirements,
3. Perform an eQuest evaluation of the building

Evaluations will include the energy losses and costs associated with drying wood, electrical pumping costs, building and piping heat loss, building maintenance, and foundation costs (if permafrost is present can be significant). No special equipment will be required for the site inspections.

"Coffman’s pricing objective is to produce a conservative cost estimate that shows the estimated budget which will support the construction of a realistic, cost effective biomass project for the facility it will service."

3) Preliminary Cost Estimating
Coffman’s pricing objective is to produce a conservative cost estimate that shows the estimated budget which will support the construction of a realistic, cost effective biomass project for the facility it will service.

The preliminary cost estimates will be based on Coffman’s experience of recent project costs, equipment, the material manufacturers provided costs, and data from RS Means. Cost estimates will also include both a contingency and an allowance for the high construction costs in remote areas of Alaska.

As the design and construction of the biomass project is not immediate, there will most likely be an increased construction costs in the future due to the current construction climate. These cost increases must be considered if the estimate is used for future grants. Coffman will provide both a 2 year and 5 year cost estimate so that communities can properly budget for a future project.

The cost estimate will include values for the following items:

a. Design and engineering
b. Fees and permitting
c. Mechanical integration to existing or new HVAC system
d. Biomass energy unit (boiler or furnace package)
e. Structure to house biomass energy unit, conveyance and fuel storage (as needed)
f. Emission controls (if required)
g. Other equipment, materials, and construction costs.
h. Contingency allowance

Where applicable Coffman will include costs associated with new utilities (sewer, water, electricity, communication), civil site work, importing of fill, thermosiphons, trenching, and corrosion control.

Margin of error: The preliminary cost estimates will provide adequate information for preparing an economic analysis from which the FEDC can recommend moving forward with specific projects. Coffman will provide conservative estimates as we will consider system variables and assign a dollar value to account for a worst-case total construction cost. As these estimates will be very high level, they will not have a specific margin of error but will remain within a plus or minus 30% range.
Technical Proposal

4) Economic Analysis
Our 20 year economic analysis will incorporate all of the necessary data to produce a Benefit/Cost Ratio analysis using the net-present value method. Local knowledge and national forecasts will be used to determine energy costs, operation and maintenance costs and price escalation. The estimated volume of wood consumed and diesel fuel displaced will be provided, as well as the BTU output of the wood type and moisture content of the wood for each area. Delivery costs and the construction of storage facilities, as required, will be incorporated. Current local costs and expected volume of existing biomass as well as current local heating fuel costs will be baseline with the annual energy usage of the facility.

All of the inputs and assumptions used to create the economic analysis will be provided in the report to allow for easy comparisons across communities. For public schools, the life cycle cost analysis documentation will meet the applicable level required by Department of Education requirements.

O&M costs will be based on a percentage of equipment costs and past experience. Values will be modified based on size and type of equipment as applicable.

Coffman will use the energy price annual projections provided by the U.S. Energy Information Administration to estimate future fossil fuel and electricity prices and escalation rates. The discount rate, or minimum attractive rate of return, for the net present value analysis will be based on the preferences of the communities or FEDC/AWEDTG. If a discount rate is not provided, it will be estimated at 3% which is typical for an economic analysis such as this. The annual escalation rate for O&M costs will be estimated at 2%, which is a conservative estimate based on the 2012 Consumer Price Index published by the U.S. Bureau of Labor Statistics.

The economic report will document the projected savings, cash flow analysis, simple payback, and B/C ratio of using the biomass heating system. The life cycle cost spreadsheet will be completed to document this information.

5) Deliverables - Final Report Creation
The final report will be separated into two sections. The first section will cover site specific analysis including technical, economic, and fuel availability/forest conditions. The second section will consist of general biomass educational information.

Coffman will prepare a final report documenting our findings. Coffman is well experienced with report writing and typically all our projects include site visit reports, design analysis reports, feasibility reports, or similar reporting of the engineering findings and evaluations. We will provide a detailed report that is easy to follow and extract information from. This will make it easier for future users, that may be interested in both the financial and technical aspects of the project, to understand. We will include a clear referenced appendices that will support the findings within our report.

At a minimum the report will include:
- Executive summary
- Site features, including positive and negative aspects
- Available technology and installation options evaluated
- Overall perspective of the assessment and project viability, as well as recommended path forward
- Financial analyses of options in table form and detailed spreadsheet in appendices
- Fuel resource availability
- Findings summarized per RFP requirements “summary file”
- General biomass technology information
- Forest stewardship plans and other fuel use agreements if available

6) Final Report Submittal
Coffman will submit the final report(s) and make a final presentation to the Facility staff and FEDC/AWEDTG as required. Coffman is well qualified to provide concise and understandable presentations of our findings as we have done this on many occasions with other projects and reports and this is also typical in facility design meetings where current design packages are communicated.
Management Plan

Coffman has assembled a team that includes engineers involved in the design of biomass systems as well as the same professionals that have been involved with the recent building energy inspections, reporting and studies. Our advantage is that members of our team have both the practical knowledge of how biomass systems work as well as the experience of completing multi-location studies and audits across rural Alaska.

Jeff Gries, P.E. will act as the Contract Manager for this project. Jeff will review and sign all contracts and will serve as a direct contact for the FEDC on all contractual matters and is available to answer any contractual questions that may arise.

The overall project manager and Point-of-Contact for this contract will be Tony SlatonBarker, P.E. Tony is Coffman’s program manager for Alternative Energy and Sustainability. He was born and raised in Alaska and is committed to promoting alternative energy, energy efficiency, and green building designs throughout Alaska. Tony is a licensed structural engineer and has served as project manager on several biomass boiler study and design projects.

As project manager, Tony will be the main point of contact for FEDC / AWEDTG for all work associated with this contract. He will be responsible for keeping the project on schedule and budget by overseeing the surveys and compilation of data into the final report.

Supporting Tony will be Ezra Gutschow, P.E., LEED AP, CxA, QCP, CEA; Eliot Jordan, P.E., LEED AP; Walter Heins, P.E., CxA, CCP®, CEA, David Nicolai, P.E., CEA; and Lee Bolling, E.I.T., CEA.

Tony and Eliot have worked on multiple projects together and Walter, David, Lee and Ezra have worked very closely coordinating all aspects of the over 35 Energy Audit inspections and reports Coffman Engineers completed in 2012.

Current / Future Firm Commitments

Because we are a multidiscipline engineering firm with 6 offices, Coffman Engineers has experience managing multiple projects concurrently. Our capability to execute and complete projects on time is based on a range of tools we use in-house. It is important to note that because we manage multiple projects that we always look to approach our projects, from a holistic viewpoint; and in terms of scope, the majority of our projects require that Coffman is a full participant and sees a project from start to finish.

Coffman’s current staff utilization is about 60% and our target utilization is 80%. Our workload projections indicate our utilization will increase to about 68% by the middle of 2013, leaving plenty of room for us to take on additional projects. The key members of our team are not currently committed to large projects that will prohibit them from participating in the projects awarded as part of this contract.
Technical Proposal

7.03 - Proposed Staff, Qualifications, and Experience

**Jeff Gries, P.E., NACE, API**
Principal-in-Charge, Contract Manager
Mechanical Engineering
Alaska; Licensed Mechanical Engineer; #ME 1094; 2003
Jeff Gries, P.E., NACE, API has 19 years of mechanical process systems experience in the project management, design, construction, installation, commissioning, and inspection of pipelines, oil and gas process facilities, bulk product storage facilities, aircraft refueling facilities, and product loading and off-loading systems for various clients.

Jeff is currently the manager and principal-in-charge of Coffman’s mechanical engineering department. He is in charge of dedicating resources to projects and provides technical oversight of all industrial work. Additionally, Jeff specializes in pipeline cleaning, inspection, and integrity management. Jeff has consulted on pipeline integrity assessments throughout the lower 48 states, Alaska, and Hawaii.

**Eliot Jordan, P.E., LEED AP**
Senior Mechanical Engineer
Alaska: Licensed Mechanical Engineer; #13074
Eliot Jordan P.E., LEED® AP has 12 years of professional experience in design of commercial and institutional HVAC systems. He has worked on projects in a number of geographical locations such as Washington, Oregon and here in Alaska. Eliot’s portfolio includes vast variety of sectors such as higher education academic facilities, higher education science and laboratory facilities, secondary education facilities, healthcare, high and low rise residential, parking garages, hotels, restaurants, Federal Reserve Bank facility, retail and office. He has a strong background in sustainable design and LEED projects which include LEED New Construction Platinum and Gold certified projects, LEED Commercial Interiors Platinum certified project.

Eliot’s sustainable design concepts include active and passive chilled beams, dedicated outdoor air ventilation with CO2 demand control, radiant floors for cooling and heating and variable refrigerant flow heat pump systems. He has participated in projects utilizing solar hot water, photovoltaic panels and a commercial high rise with wind turbines. For this contract Eliot will be the lead mechanical engineer for the projects. The Mechanical design evaluation would include choosing proposed pumps, piping (above and below grade), tanks, insulation, etc. Eliot will draw on his many years of mechanical design experience. It is important to realize that many aspects of the biomass systems are identical to conventional heating systems, thus the user does not need to learn to maintain all new types of piping and components.

**Tony SlatonBarker, P.E., LEED® AP**
Project Manager, Point-of-Contact
Alaska, Licensed Civil Engineer; #CE 10259
Tony SlatonBarker, P.E., LEED® AP has over 20 years experience in the engineering and construction industry in Alaska. Tony has experience with projects of all types and sizes ranging from schools, to maintenance facilities, to oil platforms, to the Anchorage Airport “C” concourse facility (5 year project). Tony has many multi facility inspection and reporting projects over his career including for School districts, FAA, USPS, and large Industrial clients.

Tony is well suited to manage projects in remote Alaska as he has worked from Thorne Bay to Deadhorse to Dutch Harbor. His experience includes all aspects of inspection, design and construction for new and existing facilities.

Tony has been project manager and engineer for many biomass projects including Fort Greely preliminary chip fired boiler design (including new building to house the system components), Thorn Bay Garn unit installations and integration with existing building heating systems, Tanacross Garn central plant or individual unit evaluations. He also has performed feasibility studies for biomass and other alternative energy options for other facilities.
Technical Proposal

**Ezra Gutschow, P.E., LEED® AP, CxA, QCP, CEA**
Senior Mechanical Engineer
Alaska; Licensed Mechanical Engineer; #ME11769

Ezra Gutschow, P.E., LEED® AP, CxA, QCP, CEA has performed HVAC and plumbing designs for a diverse range of buildings and facilities across the state of Alaska. His past work includes both completely new designs and remodels of bush schools, remote federal facilities, commercial buildings, and youth detention facilities, and district heating systems. In addition to design work, Ezra’s recent work at Coffman has included a strong focus on third party commissioning, providing the service across a variety of facilities for both public and private sector clients. He has performed commissioning design reviews, written Owner's Project Requirements, developed the Commissioning forms and performed the actual commissioning testing. Much of the commissioning work has been performed as part of the LEED process, successfully helping the client meet the prerequisite for the LEED Certification.

Recently, Ezra attended intensive training for the eQuest energy modeling software, and has begun to use this software to aid in both his own designs, and to support other engineering projects that require energy modeling.

**David Nicolai, P.E., CEA**
Mechanical Engineer
Alaska, Licensed Mechanical Engineer #ME 13663

David Nicolai was born and raised in Anchorage and is of Yup’ik, Athabascan, and French Canadian heritage. He is a shareholder of the Kuskokwim Corporation through later issuances of stock. His professional background includes design work experience in government facilities such as dormitories, aircraft maintenance hangars, maintenance shop buildings, and office buildings. These projects included work with HVAC systems, domestic water systems and associated plumbing, and piping for hydronic heating and snow melt systems. David has worked on both renovations and new construction.

**Walter Heins P.E., CxA, CCP®, CEA**
Mechanical Engineer / QA/QC
Alaska; Licensed Mechanical Engineer; #ME9706

Having performed mechanical engineering since 1985, Walter Heins P.E., CxA, CCP®, CEA is experienced in the design and code requirements of plumbing, heating and air conditioning for commercial, institutional and industrial facilities. He has been responsible for management of project design resources, programming of the project scope, determination of the design concept, calculation of the design requirements, preparation of plans and specifications, review of contractor submittals, observation of construction activities, and commissioning and acceptance of completed projects. Walter has led seminars on plumbing and commissioning. His commissioning philosophy leads him to innovative and effective approaches to quality assurance based on each project’s unique requirements. Mr. Heins recently authored a comprehensive commissioning training program for the Alaska Housing Financing Corporation. His extensive design and field experience uniquely qualifies him to understand and promote quality assurance on complex projects.

**Lee Bolling, EIT, CEA**
Mechanical Engineering, Alternative Energy Specialist

Lee Bolling, EIT, CEA, has performed energy audits and alternative energy feasibility studies, as well as completing designs for energy conservation measures and alternative energy systems in Alaska. He has performed investment grade energy audits of over 1.5 million SF of large commercial and public buildings across the state of Alaska. Lee has completed many alternative energy feasibility studies, investigating the cost-effectiveness of wind, hydroelectric, biomass, solar thermal, solar PV and heat pump systems. His past work includes the design of an innovative sea water heat pump system for a large aquarium in Seward, Alaska and designing one of the first solar thermal systems in Anchorage, Alaska. Lee has also performed energy modeling for private clients, architects, and LEED Certified projects to predict energy savings of various designs and for LEED Energy and Atmosphere credits. As mechanical engineer and Alternative Energy Specialist, Lee will be part of the site visit team, perform energy benchmarking, identify cost-effective energy conservation measures, and develop the final energy audit report.
Jeff L. Gries, P.E., NACE, API  
Principal, Mechanical Engineering

Jeff Gries, P.E., NACE, API has 19 years of mechanical process systems experience in the project management, design, construction, installation, commissioning, and inspection of pipelines, oil and gas process facilities, bulk product storage facilities, aircraft refueling facilities, and product loading and offloading systems for various clients. Jeff is currently the manager and principal-in-charge of Coffman’s mechanical engineering department. He is in charge of dedicating resources to projects and provides technical oversight of all industrial work. Additionally, Jeff specializes in pipeline cleaning, inspection, and integrity management. Jeff has consulted on pipeline integrity assessments throughout the lower 48 states, Alaska, and Hawaii.

Jeff Gries, P.E. will act as the Contract Manager for this project. Jeff will review and sign all contracts and will serve as a direct contact for the FEDC on all contractual matters and is available to answer any contractual questions that may arise.

Project Experience:

BP EOA Camps Fuel Gas Distribution Replacement project  
North Slope, Alaska
Principal Mechanical Engineer for the electrical, structural, civil and corrosion control engineering services performed to evaluate the existing distribution system for the EOA Camps Fuel Gas Distribution Replacement project in Prudhoe Bay, Alaska. Evaluations included the COTU to each of the destination buildings in order to identify requirements for the new system. Coffman propose a replacement plan, participated in the design reviews with BP, and completed a basis of design.

Alaska Village Electric Cooperative (AVEC) Fuel Storage and Power Upgrades  
Nightmute, Alaska
Mechanical engineer for engineering design and construction assistance services for upgrading the bulk fuel storage facilities in Nightmute, Alaska. Work under this contract included the mechanical, electrical, civil, structural, and corrosion control engineering required to provide a new tank farm and dispensing facilities for the City of Nightmute and a new tank farm and intermediate tank for the Lower Kuskokwim School District. In addition, Coffman provided structural engineering for the AVEC standby Generator module. Coffman prepared a Conceptual Design Report, attended community meetings and site visits, prepared a site survey of the project area, geotechnical investigation of subsurface soils, applied for and obtained all permitting and National Environmental Policy Act (NEPA) documentation required, and the Alaska State Fire Marshal permit. Coffman provided construction assistance for AVEC to include submittal review, site inspections, and closeout documentation. In the execution of the work, Coffman subcontracted the site surveying to Del Norte Surveying, Inc. who provided site control and plat recording support. In addition, Coffman subcontracted Golder Associates to complete the geotechnical investigation and foundation design support, and subcontracted Jim Berry & Associates to provide the regulatory plans for the organizations with tank farms.

Fuel and Power Upgrades  
Toksook Bay, Alaska
Mechanical engineer for recommendations for a proposed bulk fuel site, power plant, and waste heat system. Subsequently engineered and provided construction administration services for this power generation facility that utilizes a waste heat system, wind generators and bulk fuel for this remote rural Alaska community.
Tony SlatonBarker, P.E., LEED® AP
Program Manager, Alternative Energy and Sustainability

Tony has over 20 years experience in the Engineering and Construction Industry in Alaska. He has worked on projects of all types and sizes from schools, to maintenance facilities, to oil platforms, to the Anchorage Airport “C” concourse facility (5 year project). Tony is intimately involved with sustainable design and alternative energy projects in Alaska, and he is currently the manager of Coffman’s Alternative Energy and Sustainability Program. Tony has worked on many alternative energy projects that have required integration with conventional heating systems, including wind, solar and other systems. Tony’s project management experience includes design and construction of school renovations, additions, wind, solar, biomass projects, feasibility studies for alternative energy options and engineering peer reviews for all types of facilities. Tony has been involved with projects in remote locations such as Kake, Angoon, and other smaller villages throughout Alaska. He has also worked on projects in both Juneau and Sitka.

Project Experience:

Projet Manager and Inspector
Various Projects

Tony was project manager and inspector for the following multi-facility projects:
- USPS Facility Assessments, Central and South Central, AK
- FAA Facility Inspections, State of Alaska
- Anchorage School District Pool Building Condition Assessments, Anchorage, AK
- Multi-Facility Condition Assessments, North Slope, AK

All of the projects included detailed site inspections and findings reports.

Southeast Island School District Thorne Bay Wood Fired Boiler
Thorne Bay, Alaska

Project manager and structural engineer for the design and integration of a “Garn-in-a-Box” wood fired boiler into the Thorne Bay School. Work included project management, mechanical, electrical, and civil/structural engineering services as well as construction administration. The scope of work included a feasibility study, design documents, fire marshal permitting, and construction administration.

Lower Yukon School District Alakanuk Replacement School
Alakanuk, Alaska

Lead engineer for wind and solar work, and alternative energy project manager for the design of replacement school in rural Alaska. The school was outfitted with 4 rows of fixed, roof mounted solar panels, totaling 14kW of capacity that were grid intertied. Additionally, an on site 10 kw wind turbine on a monopole tower was connected to the local power grid via the school’s electrical system. Tony prepared an alternative energy feasibility study for the possible installation of a biomass boiler or ground source heat pumps, but neither proved feasible.

Tanacross Wood Fired Central Plant
Tanacross, Alaska

Project Manager of the design of a Wood Fired Boiler central plant for the City of Tanacross. The plant will provide hot water source to the water plant, Multi-purpose building, Fire Station, Community hall, and lift station building, typically for heating purposes. The building and delivery system will be constructed in phases, and Phase 1 will be building the facility (40’ x 50’) and installation of the Garn cord wood boilers, back up oil fired boiler, and installation of the piping to the Multi-purpose building currently under construction.
Eliot L. Jordan, P.E., LEED AP
Senior Engineer, Mechanical Engineering

Eliot Jordan has 12 years of professional experience in design of commercial and institutional HVAC systems. He has worked on projects in a number of geographical locations such as Washington, Oregon and here in Alaska. Eliot’s portfolio includes vast variety of sectors such as higher education academic facilities, higher education science and laboratory facilities, secondary education facilities, healthcare, high and low rise residential, parking garages, hotels, restaurants, Federal Reserve Bank facility, retail and office. He has a strong background in sustainable design and LEED projects which include LEED New Construction Platinum and Gold certified projects, LEED Commercial Interiors Platinum certified project. Eliot’s sustainable design concepts include active and passive chilled beams, dedicated outdoor air ventilation with CO2 demand control, radiant floors for cooling and heating and variable refrigerant flow heat pump systems. He has participated in projects utilizing solar hot water, photovoltaic panels and a commercial high rise with wind turbines.

Project Experience:

Tanacross Central Wood Fired Boiler Plant
Tanacross, Alaska
Mechanical engineer for the design of a Wood Fired Boiler central plant for the City of Tanacross. The plant will provide hot water source to the water plant, Multi-purpose building, Fire Station, Community hall, and lift station building, typically for heating purposes. The building and delivery system will be constructed in phases, and Phase 1 will be building the facility (40’ x 50’) and installation of the Garn cord wood boilers, back up oil fired boiler, and installation of the piping to the Multi-purpose building currently under construction.

USACE Joint Base Elmendorf-Richardson (FTR271B) Tactical Vehicle Maintenance Facility
Anchorage (JBER), Alaska
Mechanical engineer for a Tactical Vehicle Maintenance Facility (TEMF), 75,00 sf building similar to a commercial heavy equipment vehicle repair garage. A design goal certification of LEED Silver with a minimum of 40% energy reduction below ASHRAE 90.1. 18 acre site with 10 acre concrete pavement is desired. The site design will include stormwater control and parking for 504 spaces.

Anchorage School District Central Middle School Remodel
Anchorage, Alaska
Mechanical design engineer for remodel of existing wood shop, addition of new computer classroom and addition of health technology classroom to existing middle school. Responsibilities included design of new dust collection ductwork to re-commission abandoned system, design of new cooling system utilizing split AC units for new computer classroom and design of new plumbing and ventilation system for remodeled health technology room.

Fort Wainwright (FTW369B) Company Operations Facility
Fort Wainwright, Alaska
Mechanical engineer for the design of a Company Operations Facility (COF) 11,500 sf building similar to a commercial office with a warehouse. This project had a design goal of achieving LEED Silver with a minimum of 40% energy reduction below ASHRAE 90.1. The seven acre site design include stormwater control and parking for 153 spaces.
Walter K. Heins, P.E., CxA, CCP®, CEA
Senior Engineer, Mechanical Engineering, Certified Commissioning Professional

Having performed mechanical engineering since 1985, Walter Heins is experienced in the design and code requirements of plumbing, heating and air conditioning for commercial, institutional and industrial facilities. He has been responsible for management of project design resources, programming of the project scope, determination of the design concept, calculation of the design requirements, preparation of plans and specifications, review of contractor submittals, observation of construction activities, and commissioning and acceptance of completed projects. Walter has led seminars on plumbing and commissioning. His commissioning philosophy leads him to innovative and effective approaches to quality assurance based on each project’s unique requirements. Mr. Heins recently authored a comprehensive commissioning training program for the Alaska Housing Financing Corporation. His extensive design and field experience uniquely qualifies him to understand and promote quality assurance on complex projects.

Project Experience:

Lower Yukon School District Alakanuk Replacement School
Alakanuk, Alaska
Commissioning agent for the Lower Yukon School District Alakanuk Replacement School. Structural, mechanical and electrical engineering for the design of a replacement school in Alakanuk, Alaska. Due to the arctic environment, there were some constraints to the design; however, many sustainable alternatives were able to be used. The school was outfitted with 4 rows of fixed, roof mounted solar panels, totaling 14kW of capacity that were grid intertied. A 10 kw wind turbine connected to resistance heaters in the ventilation system is being used for internal and space heating. The lighting was designed to be efficient and conserve energy. An alternative energy feasibility study was done for the possible installation of a biomass boiler or ground source heat pumps. The overall design of the school was made to have a low impact on the environment.

Alaska Housing Finance Corporation Alaska REALS Energy Audits
Anchorage, Alaska
Commissioning agent for energy engineering services to complete ASHRAE Level II investment grade energy audits (IGAs) on 31 Alaska school district buildings totaling 1.9 million square feet. Administration, support, and school buildings, including K-12, elementary, middle, and high schools, were included. Under a program advanced by the Alaska Housing Finance Corporation (AHFC), our IGAs identified energy conservation measures and evaluated their cost-effectiveness with computer modeling and construction cost estimates. We investigated plumbing, heating, cooling and ventilation systems, electrical lighting and power systems, building control systems, and the shell/envelope construction. Coffman’s capabilities as a multi-discipline engineering firm brought mechanical, electrical, and structural engineering expertise to bear. The school districts included Anchorage, Mat-Su Borough, Kenai Peninsula Borough, and Southwest Region.

National Park Service Term IDIQ Contract for Commissioning
Various Locations, Alaska
Commissioning authority on new National Park facilities including the Front Country- and Eielson Visitor Centers in Denali National Park, and the Northwest Arctic Heritage Center in the Arctic village of Kotzebue. Commissioning included planning, design, and construction stage services, Owner’s Project Requirements, original Cx specifications for Total Building Commissioning, LEED® certification, a Cx Plan, documented examinations, witnessed functional testing on mechanical, electrical, and alternative energy systems. Construction value: various
Ezra Gutschow, P.E., LEED® AP, CxA, QCP, CEA

Project Manager / Senior Mechanical Engineering

Ezra Gutschow has performed HVAC and plumbing designs for a diverse range of buildings and facilities across the state of Alaska. His past work includes both completely new designs and remodels of bush schools, remote federal facilities, commercial buildings, and youth detention facilities, and district heating systems. In addition to design work, Mr. Gutschow’s recent work at Coffman has included a strong focus on third party commissioning, providing the service across a variety of facilities for both public and private sector clients. He has performed commissioning design reviews, written Owner’s Project Requirements, developed the Commissioning forms and performed the actual commissioning testing. Much of the commissioning work has been performed as part of the LEED process, successfully helping the client meet the prerequisite for the LEED Certification. Recently, Ezra attended intensive training for the eQuest energy modeling software, and has begun to use this software to aid in both his own designs, and to support other engineering projects that require energy modeling.

Project Experience:

1400 Benson Office Building Energy Audit
Anchorage, Alaska

Mechanical engineering for an energy audit of this aging office building in midtown Anchorage. Coffman provided a level 1 energy audit for the successful identification of approximately 10 energy conservation measures that could be taken to reduce the building’s overall energy usage. The five story office building is 25 years old and many of the building’s systems are in need of retrofitting and or replacement. The owner’s goal was to update the building’s systems while simultaneously increasing overall energy efficiency. The audit identified areas for improvement including equipment scheduling, lighting replacement and scheduling, and mechanical equipment that could be replaced with newer, more efficient technology. Where possible, calculations were provided to the client to provide an estimate of potential savings. Also an analysis of the buildings overall energy use was performed, and compared to similar local buildings.

CIRI Office Building Energy Audit
Anchorage, Alaska

Mechanical engineering for an energy audit of a 5 story office building in midtown Anchorage. Coffman participated in a comprehensive energy audit as part of an architect led team, acting as the local consultants most familiar with Alaska conditions and good practices. Engineers worked closely with a construction estimating firm to develop pricing for energy conservation implementation. The owner’s goals were to modernize existing infrastructure to continue to provide the tenants a Class A office facility. The audit included an Eco-Charrette to best capture the owner’s goals for upgrades and to also identify the available possibilities for LEED certification.

AHFC Alaska REALS Energy Audits
Anchorage, Alaska

Coffman performed project management and inspection services for investment grade energy audits for the Alaska Housing Finance Corporation (AHFC). The comprehensive audits included providing energy efficient recommendations for the buildings’ mechanical systems, lighting systems, and building envelope. Audits were performed on schools and school district support facilities for the Anchorage School District Building Facilities, Mat-Su School District, Kenai Peninsula School District, and the Southwest Region School District.
David Nicolai, P.E., CEA  
Mechanical Engineering

David Nicolai was born and raised in Anchorage and is of Yup’ik, Athabascan, and French Canadian heritage. He is a shareholder of The Kuskokwim Corporation through later issuances of stock. His professional background includes design work experience in government facilities such as dormitories, aircraft maintenance hangars, maintenance shop buildings, and office buildings. These projects included work with HVAC systems, domestic water systems and associated plumbing, and piping for hydronic heating and snowmelt systems. David has worked on both renovations and new construction.

Project Experience:

AHFC Alaska REALS Energy Audits  
Anchorage, Alaska
Coffman performed project management and inspection services for investment grade energy audits for the Alaska Housing Finance Corporation (AHFC). The comprehensive audits included providing energy efficient recommendations for the buildings’ mechanical systems, lighting systems, and building envelope. Audits were performed on schools and school district support facilities for the Anchorage School District Building Facilities, Mat-Su School District, Kenai Peninsula School District, and the Southwest Region School District.

Northwest Arctic Borough School District Kobuk K-12 School Design  
Kobuk, Alaska
Structural, mechanical and electrical engineering for the design of a renovation of 5,500 sf of existing school and 11,500 SF of new school to include new boiler and fire building modules. A total of (6) fuel oil boilers where supplied to allow for system turndown and reliability. The boilers were selected for N+1 capacity and can be freighted to the site if required for future maintenance. A primary secondary system was installed to ensure flow through the boilers and maintain return water temperatures to reduce boiler shock. The school spaces included classrooms, administrative areas, kitchen, and gymnasium. (2) 8,000 gallon double containment fuel oil tanks were provided along with 13,000 gallons of fire water storage for the facility. The school ventilation systems were split by building occupancy and the classroom spaces were served with variable air volume units with reheat for thermal comfort.

CIRI Office Building Energy Audit and Upgrades  
Anchorage, Alaska
Mechanical and electrical engineering for an energy audit of a 5 story office building in midtown Anchorage. Coffman participated in a comprehensive energy audit as part of an architect led team, acting as the local consultants most familiar with Alaska conditions and good practices. Engineers worked closely with a construction estimating firm to develop pricing for energy conservation implementation. The owner’s goals were to modernize existing infrastructure to continue to provide the tenants a Class A office facility. The audit included an Eco-Charrette to best capture the owner’s goals for upgrades and to also identify the available possibilities for LEED certification. Subsequent to the energy audit, Coffman has been involved with the design of several energy conservation measures. The upgrades include the design of a night lighting plan; light control modification; the addition of occupancy sensors; exterior parking lot lighting additions; chiller replacement; circulator pump control upgrade; night heating setback; and a new boiler air intake.
Lee Bolling, EIT, CEA
Mechanical Engineering / Alternative Energy Specialist

Lee Bolling has performed energy audits and alternative energy feasibility studies, as well as completing designs for energy conservation measures and alternative energy systems in Alaska. He has performed investment grade energy audits of over 1.5 million SF of large commercial and public buildings across the state of Alaska. Lee has completed many alternative energy feasibility studies, investigating the cost-effectiveness of wind, hydroelectric, biomass, solar thermal, solar PV and heat pump systems. His past work includes the design of an innovative sea water heat pump system for a large aquarium in Seward, Alaska and designing one of the first solar thermal systems in Anchorage, Alaska. Lee has also performed energy modeling for private clients, architects, and LEED Certified projects to predict energy savings of various designs and for LEED Energy and Atmosphere credits.

Project Experience:

AHFC Alaska REALS Energy Audits
Anchorage, Alaska
Mechanical engineering support for performed energy engineering services to complete ASHRAE Level II investment grade energy audits (IGAs) on 31 Alaska school district buildings totaling 1.9 million SF. Administration, support, and school buildings, including K-12, elementary, middle, and high schools, were included. Under a program advanced by the Alaska Housing Finance Corporation (AHFC), our IGAs identified energy conservation measures and evaluated their cost-effectiveness with computer modeling and construction cost estimates. Coffman investigated plumbing, heating, cooling and ventilation systems, electrical lighting and power systems, building control systems, and the shell/envelope construction. Coffman’s capabilities as a multi-discipline engineering firm brought mechanical, electrical, and structural engineering expertise to bear. The school districts included Anchorage, Mat-Su Borough, Kenai Peninsula Borough, and Southwest Region.

Southeast Island School District Thorne Bay Wood Fired Boiler
Thorne Bay, Alaska
Mechanical engineering support for the design and integration of a "Garn-in-a-Box" wood fired boiler installed at the Thorne Bay School. Work included project management, mechanical, electrical, and civil/structural engineering services as well as construction administration. Feasibility study, design documents, fire marshal permitting, and CA.

USACE Joint Base Elmendorf-Richardson (FTR271B) Tactical Vehicle Maintenance Facility
Anchorage (JBER), Alaska
Mechanical engineering support for a Tactical Vehicle Maintenance Facility (TEMF), 75,000 sf building similar to a commercial heavy equipment vehicle repair garage. The design goal with energy reduction below ASHRAE 90.1 18 acre site with 10 acre concrete pavement is desired. The site design will include storm water control and parking for 504 spaces. Lee provided LEED Energy Modeling services for this facility, documenting 60% in energy savings due to innovative energy efficient design strategies. Engineers and energy modelers worked closely together to develop cost effective energy conservation measures through the design process.
Technical Proposal

7.04 – Qualifications and Experience of Firm

Delta Greely School District Biomass Heating System
Delta Junction, Alaska
Coffman provided civil, structural, mechanical, and electrical design for a 5 million BTU Biomass (wood chip) boiler heating system to provide additional heat to the Delta Greely High School at Delta Junction, Alaska. As prime consultant, Coffman provided all engineering for this new heating system for the school. The wood chip boiler plant is located in a separate building with underground utilities that run to and from the high school. The new biomass boiler will become the primary heat, while the existing oil fired boilers are back up and additional heat during extreme cold weather. The biomass plant was approximately 4,200 sf of simple, yet efficient, heated building. This included 1,900 sf of warm chip-trailer storage, 680 sf chip storage bin, and 1,560 sf of biomass boiler equipment space. Due to the extreme weather conditions at Delta Junction, the 1,900 sf of warm chip-trailer storage was necessary for improving the quality of wood chips and for smooth operation of the wood chip boiler.

PROJECT RELEVANCE:
- Team Member Involvement
- Biomass Heating System
- Remote location
- Facility condition assessment

Southeast Island School District Thorne Bay Wood Fired Boiler
Thorne Bay, Alaska
Coffman designed a “Garn-in-a-Box” wood fired boiler system for Southeast Island School District in Thorne Bay. The scope of work included project management, mechanical, electrical, civil, and structural engineering services as well as cost estimating and construction administration. The project includes the integration of two Garn-in-a-box units with a heating systems for the two main school buildings. Each Garn-in-a-Box is a truckable heated module with a 2,100 gallon cord wood fired boiler unit and associated electrical, heat exchanger, and piping for the production of heated supply water. The design also includes a wood storage building adjacent to Garn buildings. As a space saving measure, the Owner combined the two units under a single roof structure. The units were connected to the two boiler rooms via underground insulated piping. The new boilers will act as the school’s primary heat source, while the existing oil fired boilers will remain in place for back up and additional heat during extreme cold weather. Each biomass module is approximately 250 SF. Additional project features include approximately 500 LF of buried arctic piping, controls, and new underground electrical services. No sewer or water service were provided to the building, but the site was cleared and regraded for proper drainage and site access.

PROJECT RELEVANCE:
- Team Member Involvement
- Biomass Heating System
- Remote location
Technical Proposal

Tanacross Central Wood Fired Boiler Plant
Tanacross, Alaska
Coffman is currently in the process of designing a Wood Fired Boiler central plant for the City of Tanacross. The plant will provide hot water source to the water plant, Multi-purpose building, Fire Station, Community hall, and lift station building, typically for heating purposes. The building and delivery system will be constructed in phases, and Phase 1 will be building the facility (40’ x 50’) and installation of the Garn cord wood boilers, back up oil fired boiler, and installation of the piping to the Multi-purpose building currently under construction. The heating supply lines will integrate into the existing facilities heating systems (and they will remain as backup). Deliverables will include design documents for fire marshal permitting and construction. The final project includes integration of additional Garn units and additional space was provided for a possible future smaller wood chip boiler system. Design also will include site layout for underground piping systems. The new boilers will be the buildings primary heat source, while the oil fired heating systems will be for back up and additional heat during extreme cold weather. Work will eventually include approximately 3000 LF of buried arctic piping, controls and new underground electrical services. Sewer or water service will also be provided to the building.

PROJECT RELEVANCE:

- Team Member Involvement
- Biomass Heating System
- Remote location
- Facility or Site Condition Assessment performed

Fort Greely Biomass
Fort Greely, Alaska
Coffman performed the preliminary design for a biomass system (currently pending construction funding approval) as the primary source of steam for the Fort Greely Air field district heating loop. An oil fired boiler back-up system, summing to an equivalent size, will be installed for redundancy. Design included a complete new building including an office, restroom, and work areas. Facility is proposed to be approximately 100 feet by 40 feet, 1 story. We performed mechanical, electrical, civil, and structural design. Work will also include integration with the existing electrical, communications, sewer and water systems via insulated buried lines. The wood chip system would include a wood chip fired boiler, chip storage, and automated chip feeding mechanisms.

PROJECT RELEVANCE:

- Team Member Involvement
- Biomass Heating System
- Remote location
- Facility or Site Condition Assessment performed

AHFC Alaska REALS Energy Audits
Various Locations, Alaska
Coffman performed energy engineering services to complete ASHRAE Level II investment grade energy audits (IGAs) on 31 Alaska school district buildings totaling 1.9 million square feet. Administration, support, and school buildings, including K-12, elementary, middle, and high schools, were included. Under a program advanced by the Alaska Housing Finance Corporation (AHFC), our IGAs identified energy conservation measures and evaluated their cost-effectiveness with computer modeling and construction cost estimates. We investigated plumbing, heating, cooling and ventilation systems, electrical lighting and power systems, building control systems, and the shell/envelope construction. Coffman’s capabilities as a multi-discipline engineering firm brought mechanical, electrical, and structural engineering expertise to bear. The school districts included Anchorage, Mat-Su Borough, Kenai Peninsula Borough, and Southwest Region.

PROJECT RELEVANCE:

- Team Member Involvement
- Alternative energy option discussion
- Facility Condition Assessment performed

Troubleshoot School Heating System
Noorvik, Alaska
Coffman Engineers performed mechanical engineering for troubleshooting and redesigning this malfunctioning heating system. After systematically examining the entire building and shutting off every other circulation loop, it was determined that the 4” pipe riser to the fan room was obstructed. Once the problem was isolated, system adjustments were made to address the issue. This school’s location in the Arctic Circle made it critical for the heating system to be fully operational.

PROJECT RELEVANCE:

- Team Member Involvement
- Alternative energy options
- Facility or Site Condition Assessment performed
Technical Proposal

**AVEC Bulk Fuel Systems Upgrades**  
Toksook Bay, Alaska

Coffman Engineers provided civil, structural, mechanical and electrical engineering design and related professional services for bulk fuel facilities for and other community entities in Upper and Lower Kalskag, Nightmute, Mekoryuk, and Toksook Bay. Facilities include a combination of fuel transportation systems, bulk fuel storage, fuel dispensing, power plant foundations, wind turbine foundations, and recovered heat system. Engineering services provided by Coffman Engineers included conceptual design for all facilities, final design for all facilities, construction assistance, permitting assistance, and recovered heat system commissioning.

**Lower Yukon School District**  
Alakanuk Replacement School  
Alakanuk, Alaska

Coffman Engineers performed structural, mechanical and electrical engineering for the design of a 55,000 sf replacement school in Alakanuk, Alaska. Due to the arctic environment, there were some constraints to the design; however, many sustainable alternatives were able to be used. The school was outfitted with 4 rows of fixed, roof mounted solar panels, totaling 14kW of capacity that were grid intertied. A 10 kw wind turbine at the edge of the property was connected to school and was grid tied. The lighting was designed to be efficient and conserve energy. An alternative energy feasibility study was done for the possible installation of a biomass boiler or ground source heat pumps.

**Facility & Site Condition Assessments**

Coffman has extensive experience evaluating building systems in existing structures such as hospitals, office buildings, educational buildings, and other types of buildings in need of remodel. This experience includes on-site evaluation of equipment condition, system layout, control sequences, field-modifications to the original design, future capacity evaluations, and discussions with facilities personnel.

When necessary, Coffman also performs preliminary site surveys to identify and locate existing utilities, buildings, general topography and existing drainage patterns, existing site features such as manholes, parking spaces, sidewalks, curb and gutter, edge of pavement along with other site features. This information is used as the basis of the site assessment and allows an overall view of the site on which existing conditions and future improvements can be clearly seen.

We also have experience with building systems commissioning. This gives us the knowledge to evaluate existing mechanical systems to determine the feasibility of maintaining these systems to serve the new spaces or removing the existing systems and replacing them. If it is feasible, certain building systems can be kept in operation and incorporated into the new design, saving substantial construction costs on projects. Our findings are presented in reports and diagrams that clearly highlight major issues and can be utilized as a future resource by facilities personnel.

Below is a short list of projects where we have performed existing facility and or site condition assessments.

- United States Coast Guard Building 25 Evaluation | Kodiak ISC, AK
- National Park Service Butter Building Structural-Phase 2 Denali National Park | Denali, AK
- Municipality of Anchorage Fairview Recreation Center Renovation Study | Anchorage, AK
- United States Coast Guard Bachelor Officer’s Quarters and Dining Facility Evaluation | Kodiak ISC, AK
- Northwest Arctic Borough School District Kiana K-12 School Addition and Renovation | Kiana, AK
- University of Alaska, Fairbanks Utility Study | Fairbanks, AK
- Fuel Pier Alternatives Study | Adak NAS, AK
- Alaska Court System - Border Crossing Feasibility Study | Poker Creek, AK
- Mat-Su Ferry System Study & Design | Port MacKenzie to Anchorage, AK
- Tesoro Marine Pipeline In-Line Inspection Feasibility Study | Oahu, HI
- Alaska Village Electrical Cooperative (AVEC) Vestas Wind Tower Feasibility | Various Rural Alaska Locations

Fairbanks Economic Development Corporation RFP# 00002 Call for Pre-Feasibility Studies on Wood-Fired Heating Projects | 2/14/2013 | 17
Technical Proposal

7.05 - Special Qualifications

Coffman Engineers

About Coffman

Coffman Engineers is a multidiscipline engineering firm that brings creativity to our designs, proven results in practical engineering solutions, and all of this is reflected in the lasting relationships we have with our clients.

Mission:

We believe our success depends on our clients’ success.

Vision:

To be the premier multidiscipline consulting engineering firm in our respective markets, providing integrated solutions where our success is measured by our clients’ success.

Although our company is more than 30 years old, our leadership and professional staff members are a blend of experienced engineers and those that are relatively young. Coffman Engineers nurtures a progressive corporate culture, encouraging new ideas from staff members, and inviting participation from clients and owners. We are a good neighbor and support our community’s endeavors. While we work hard, we also try to maintain a sense of humor, understanding that camaraderie and mutual respect are essential for developing strong relationships.

Additional Certifications

As Coffman has many engineers that are LEED® Accredited, Commissioning Agents, Certified Energy Auditors and other certifications above and beyond standard engineering, we will have a much better insight into the construction, operation and maintenance requirements of the existing systems and future systems.

Coffman’s engineers have the following additional Certifications:

- **46 LEED AP’s** – Leadership in Energy and Environmental Design – Accredited Professionals poses the technical knowledge, experience and credibility in stainability and green building. This designation proves that the professional is a leader in the field and actively participates in sustainable and green building practices. This includes construction, interior design, operations and maintenance, homes (private residence), and neighborhood development.

- **2 CxA’s** – Certified Commissioning Agents. The CxA’s leads, plans, schedules, and coordinates the commissioning team to implement the commissioning process on behalf of the owner. These individuals have a complete understanding of the commissioning process and poses the skills necessary to lead and coordinate efforts that result in keeping the building and owners commissioning intent achievable.

- **6 CEA’s** – Certified Energy Auditors. CEA’s poses knowledge of the most current energy auditing practices.

- **2 CMVP’s** – Certified Measurement and Verification Professional: CMVP is the accreditation awarded to those who have the requisite knowledge and experience in applying IPMVP measurement and verification methods, project development and administration, especially as it relates to energy consumption.
Rural Area Project Experience

Our commitment to getting the job done for our clients, no matter where it needs to be done, has taken us to some interesting places. From the development of tank farms and dispensing in Toksook bay, Alaska to providing military housing in Misawa, Japan, our clients and experience spans the globe.

Since the Alaska office of Coffman Engineers, Inc. was founded in 1980, we have accumulated an extensive list of projects in both arctic and sub-arctic areas throughout Alaska. Previous projects have ranged from the wet, marine areas of the Southeast to the cold and dry regions above the Arctic Circle. We have substantive experience in the remote regions of arctic Alaska and the logistical requirements that must be considered in a successful design and construction project. Our project planning and design experience in these areas has generally been multidisciplinary in nature and primarily has been with building and infrastructure design and facility systems design such as heating, electricity, water, and sewer systems.

Most of our experience has revealed that the primary concern to be dealt with in remote design is accessibility. Designs can be achieved for most environmental conditions and extreme temperatures. The problems arise when systems require service and the part is not available and weather conditions prevent access. Our experience has shown us that the key to successful remote design is to keep things as simple and easy as possible.

Our project experience in the remote arctic areas of the state has resulted in unique engineering solutions to constraints associated with logistics, scheduling, energy, and utilization of local labor for construction and operation. Our professional, yet practical, approach to extreme arctic engineering projects has enabled us to anticipate and understand thoroughly our client’s problems of finance, construction, and scheduling. Each of our engineering disciplines are acutely aware of the unique problems associated with design in cold regions including permafrost stabilization, snow loading, frost heave, humidity control, energy efficiency, vapor condensation within structures, and the importance of thermal breaks. This approach has resulted in an established record of successful performance on all our arctic projects.

We have recent experience in the Barrow area with projects for the FAA Barrow Flight Center, a new Community Center in Wainwright and numerous office building remodels and facility projects with Conoco Phillips at Kaparuk. Our educational projects span school districts such the Lower Yukon School District, Yupiit School District, Northwest Arctic Borough School District and the Lower Kuskokwin School District.

Below is a glimpse of some of Coffman’s rural area projects.

- Brevig to Teller Tieline, Brevig Mission and Teller, AK
- Power Plant Conversion, Brevig Mission, AK
- Bulk Fuel System, Toksook Bay, AK
- Bulk Fuel System - Wind Turbine Tower Foundations, Toksook Bay, AK
- Toksook Bay Wind Tower, Toksook Bay, AK
- Bulk Fuel Systems Upgrades, Upper and Lower Kalskag, AK
- Fuel Upgrades Construction Administration, Upper and Lower Kalskag, AK
- Vestas Wind Tower Feasibility, Various Location, AK
- Fuel and Power Upgrades, Toksook Bay, AK
- Tank Farm, New Stuyahok, AK
- Northstar Cathodic Protection Review, North Slope, AK
- Well Head Shelters, North Slope, AK
Technical Proposal

- North Slope Cathodic Protection Surveys, North Slope, AK
- GC3 Tank B512, North Slope, AK
- Fuel Dispensing and TTTLA MCC, North Slope, AK
- CIC Tank Venting Program, North Slope, AK
- KIC Building Upgrades, North Slope, AK
- Corrosion Engineering, North Slope, AK
- Alaska Terminal Deadhorse, Dead Horse, AK
- Bethel HS Deferred Maintenance, Bethel, AK
- Eek K-12 School, Eek, AK
- Galena High School Addition, Galena, AK
- Ignatius Beans Improvements, Mountain Village, AK
- Napaskiak School Foundation, Napaskiak, AK
- Alakanuk Replacement School - Alakanuk, AK
- Akiak Replacement School - Akiak, AK
- Boiler Modules - Alakanuk, AK
- Kotlik School Investigation, Kotlik
- Marshall Replacement School, Marshall, AK
- Russian Mission School, Russian Mission, AK
- Brooks Camp Infrastructure, King Salmon, AK
- Floating Bridge Brooks Camp, King Salmon, AK
- Brooks Camp Wye Camp Utility, King Salmon, AK
- Study Relocation of Village, Kivalina, AK
- Heritage Center Commissioning, Kotzebue, AK
- New Amblor K-12 School, Amblor, AK
- Deering K-12 School Condition Survey, Deering, AK
- Deering Elementary School Renovation, Deering, AK
- Deering Boiler Replacement, Deering, AK
- Kiana K-12 School Addition and Renovation, Kiana, AK
- Kivalina Elementary School Renovation, Kivalina, AK
- Kobuk K-12 School Boiler Upgrades, Kobuk, AK
- Kobuk K-12 School Condition Survey, Kobuk, AK
- Kobuk K-12 School Design, Kobuk, AK
- Kotlik Investigation, Kotlik, AK
- Kotlik School HVAC Upgrades, Kotlik, AK
- Kotzebe K-12 School Condition Survey, Kotzebue, AK
- Noatak K-12 Condition Survey, Noatak, AK
- Troubleshoot Noorvik School Heating System, Noorvik, AK
- Noorvik K-12 School Addition and Remodel, Noorvik, AK
- Four School Additions, Noorvik, Amblor, Kiana, Shungnak, AK
- Four School Upgrades, Noorvik, Amblor, Kiana, Shungnak, AK
- Shungnak & Deering Data Design, Shungnak, Deering, AK
- Shungnak School Upgrade, Shungnak, AK
- Shungnak School Re-package, Shungnak, AK
- Tuluksak Schools Study, Tuluksak, AK
- Akiachak Schools Study, Akiachak, AK
- Akiak Schools Study, Akiak, AK
- New Tuluksak K-12 School, Tuluksak, AK
- New School Conceptual Design, Tuluksak, AK
- Williams Engineer & Design Services, North Pole, AK
- Flint Hills Cathodic Protection Surveys, North Pole, AK
- USFWS Wind Turbines, Cold Bay & King Salmon, AK
- Fuel Pipeline Facilities Assessment, Cold Bay, AK
- FAA Cold Bay, Cold Bay, AK
- FAA King Salmon, King Salmon, AK
- Goodnews Bay School Condition Survey, Goodnews Bay, AK
- USACE - POL System Upgrade, Indian Mountain LRRS, AK
- King Cove Water Storage Tanks Cathodic Protection Upgrades, King Cove, AK
- USACE Chugach Support Services Cathodic Protection Support, King Salmon & Galena, AK
- Kotzebue Water Tank Corrosion Evaluation and Design Services, Kotzebue, AK
- Kotzebue K-12 School Expansion and Reno, Kotzebue, AK
- Port Alsworth Electrical Distribution System, Lake Clark National Park & Preserve, AK
- City of Marshall Community Center, Marshall, AK
- GVEA North Pole Power Plant Expansion, North Pole, AK
- Flare Propane Pilot system, North Pole, AK
- 2011 Flint Corrosion Services, North Pole, AK
- Nabors Rig 33E Engineering Support, North Slope, AK
- Alaska Department of Environmental Conservation Corrosion Monitoring, North Slope, AK
- Pioneer 2012 Facility Engineering, North Slope, AK
- West Sak Equipment Evaluation, North Slope, AK
- Pioneer Warm Storage, North Slope, AK
- Fire Stations in Seven Villages, Point Hope, Point Lay, Wainwright, Anaktuvuk Pass, Nuiqsut, Atqasuk and Kaktovik, AK
- Digital Globe WorldView Satellite System Remote Ground Terminal, Prudhoe Bay, AK
- Southeast Island School District Thorne Bay Wood Fired Boiler, Thorne Bay, AK
- Unocal Trading Bay Misc. FCR, Trading Bay, AK
- Yukon Fuel Company Corrosion Survey, Various Locations, AK
- Wainwright Community Center, Wainwright, AK
Technical Proposal

7.07 - Alaskan Offeror’s Preference

Coffman Engineers, Inc. certifies that we meet the requirements outlined in the solicitation in section 2.09 and meet all of the requirements listed. Therefore, Coffman is eligible to receive the Alaska’s Bidder Preference.