



Craig City School District

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November 27, 2023

Katie Conway, Program Manager
Denali Commission
550 W. 7th Ave, Suite 1230
Anchorage, AK 99501

Re: Biomass Gap Funding Application for the Craig High School Biomass Project

A. Application Narrative

1. Statement of Expected Project Completion Date

The Craig High School (CHS) Biomass Project is expected to be completed by January of 2025. Craig City School District (CCSD) has been developing this project since fall of 2018. The current CHS wood shop has been determined as the best location for the installation and construction of the CHS biomass system.

2. Contact Information, Acknowledgements, and Signature/Date Authorized

- Craig City School District
- UEI – EVAZRLJLB7K8
- Project Representative – Chris Reitan, CCSD Superintendent, creitan@craigschools.com, (907) 360-5229 ext. 4003
- Authorized Representative – Chris Reitan, CCSD Superintendent
- Financial Contact – Melinda Bass, CCSD Business Manager
- Acknowledgements and Signature

I acknowledge that I am duly authorized to represent my organization
I certify that my organization is in good standing with the Internal Revenue Service

Chris Reitan

Signature

Date

3. Project Description

a. Project Background

Craig City School District is requesting up to **\$200,000** to meet gap funding needs for the Craig High School Biomass Project. Possible impacts of not completing the project include the uncertainty of budget stability due to volatile heating oil costs; lost opportunity to continue building on existing wood markets and wood chip production and milling infrastructure, and lost opportunity to add redundant capacity to critically important central heating systems for Craig High School. Craig High School is designated as a community emergency assembly/housing space for use during natural

disasters, provides assembly space for local groups and events, and is the primary venue for the community's performing arts.

CCSD has been developing the CHS Biomass project since the fall of 2018. CCSD was awarded a \$60,000 USDA Forest Service grant for biomass engineering design and estimation and went out for proposals during the fall of 2018. On October 24, 2018 the CCSD Board approved the biomass engineering design and estimation proposal submitted by R&M Engineering – Ketchikan, Inc. for \$63,640. The biomass engineering design and estimation proposal submitted by R&M Engineering – Ketchikan, Inc. included the following engineering and design tasks:

- Specifications for:
 - Woodchip-fired boiler system that is well ventilated
 - Boilerhouse and wood-chip storage buildings
 - Wood-chip handling system
 - Boiler room equipment configuration
 - Tie-ins to school building
 - Integration with existing hydronic heating and domestic hot water distribution and controls systems
 - Proper operations and maintenance requirements
- Construction cost breakdown associated with project
- Bid ready construction drawings and submittal specifications
- Estimated cost of the project and economic analysis of expected annual energy savings
- Identification and submittal of fire marshal review

- Deliverables
 - Wood-chip boiler/wood chip storage building design
 - Specifications for integration with existing school building
 - Engineer-signed drawings
 - Construction-ready documents
 - Total cost breakdown
 - Executive summary report: a document developed to summarize the scope, approach, findings, and recommendations

The original design estimations for the CHS Biomass Project were estimated at \$833,913. CCSD submitted a Biomass Heating Design and Construction Grant request to the Denali Commission in August of 2020 and ultimately secured grant funds from the Denali Commission for \$490,233 with matching funds of \$355,000 provided by CCSD for total funding for the project at \$845,233. CCSD went out for bid on January 22, 2021 for the alteration of an existing prefabricated metal building, for the installation of a new biomass boiler system and wood chip storage bunker, and an 840 SF addition for classroom wood shop space. CCSD ultimately received one bid for a total bid of \$1,531,078.00. CCSD's available funding for the project was not sufficient to award the project.

During the summer of 2022, CCSD applied to the U.S. Department of Agriculture's (USDA) Southeast Alaska Sustainability (SASS) Grant fund seeking additional funding for the CHS Biomass Project. On January 24, 2023 CCSD secured additional grant monies of \$750,000 through a subaward agreement that Southeast Conference secured through the U.S. Department of Agriculture (USDA) Southeast Alaska Sustainability (SASS) grant bringing the total cash amount available for the Craig High School Biomass Project to \$1,595,233. During the spring of 2023, CCSD went out for bid again for the Craig High School Biomass Project and ultimately received one bid for a total bid amount of \$2,429,317 resulting in a \$834,084 shortfall in available funding for the project. CCSD's available funding for the project was not sufficient to award the project.

During the summer of 2023 CCSD contacted representatives from the Denali Commission and Southeast Conference and received written permission to manage the CHS Biomass Project through a forced accounting management process. CCSD also submitted a statement of interest to the Denali Commission for biomass gap funding up to \$200,000 and was one of five organizations that were approved to submit a formal application by December 1, 2023.

The Craig High School Biomass Project design is complete and ready for construction. The design includes a wood chip fuel delivery system, biomass boiler and heat exchangers integrated into the existing hydronic heating system. The

installed boiler would heat the 53,319 square foot high school using a combination of green and dried wood chips generated by operations at a local lumber mill. Feedstock for the mill and the resulting wood chips comes from timber logged from the nearby Tongass National Forest, Southeast Alaska State Forest, and private lands on Prince of Wales Island. The project is similar in scope to the Craig Wood Fired Boiler Project, a successful biomass heating project now entering its 12th year of operation. The capacity of a wood boiler for Craig High School is designed at 1.0 to 1.25 million BTUs/hour.

Wood is an abundant, renewable, and inexpensive resource on Prince of Wales Island. Heating oil is neither abundant, renewable, and its cost is volatile. Moves to substitute wood energy for fossil fuel, where practicable, demonstrate an unmet need on the island. As noted above, this project builds on existing infrastructure: the City of Craig already purchases high quality wood fuel from a local source for its own wood-fired boiler. The local source (a sawmill) has the capacity to supply wood fuel volumes to the proposed high school project as well as the existing city wood boiler project.

Other benefits include:

- The project promotes economic and environmental health of communities by lowering operational costs at the Craig High School, allowing the school district to reduce overall expenditures or redirect that spending toward classroom instruction. The project also eliminates the production of sulfur range emissions from its oil boilers by substituting clean-burning woody biomass for oil.
- The project eliminates the combustion of nearly 360,000 gallons of heating fuel over the next twenty years of operations at the high school.
- The project creates additional demand for manufactured wood chips as a heating source on Prince of Wales Island, and in Southeast Alaska. One wood boiler fired by chips is already in operation in Craig. Adding a second at the high school begins to create a cluster of wood energy projects in the area.
- The local mill that produces the wood chips also produces, using the same wood drying equipment, biobricks from sawdust. The biobricks provide a second wood heating resource for use in both domestic and commercial wood boilers on Prince of Wales Island.
- The wood chip supply is a byproduct of the sawmilling process.

b. Project Scope of Work and Schedule and Organization, Capacity, and Delivery Method

- Task 1 - Civil work and fire marshal permitting to include the layout of the new CHS woodshop
 - Project Timeline - Fall/Winter 2023-2024
 - Secure Fire Marshal permits for the Craig High School Biomass Project and complete all pad development and foundation development for the new CHS wood shop
 - Deliverables
 - Fire Marshal submittals and approval – This task will be completed by R&M Engineering – Ketchikan
 - Dirt work related to developing the building pad for the new CHS woodshop – The applicant will hire a contractor to complete this task
 - Concrete work to include the foundation for the new CHS woodshop – The applicant will hire a contractor to complete this task
- Task 2 - Construction of the new CHS wood shop
 - Project Timeline - Spring 2024
 - Construction of new CHS wood shop to include the installation of a new HVAC and dust collector systems, installation of electrical systems to manage the building energy loads, installation of bay doors, and installation of all tools, equipment, and furniture for the new CHS woodshop.
 - Deliverables
 - Construction of a new CHS woodshop – The applicant will hire a contractor to complete this task
 - Installation of a new HVAC and dust collector system – The applicant will hire a contractor to complete this task
 - Installation of electrical systems to manage building energy loads – The applicant will hire a contractor to complete this task

- Installation of bay doors – The applicant will hire a contractor to complete this task
 - Installation of all tools and equipment associated with the new CHS woodshop – The applicant will carry out this task with in-house staff
 - Substantial completion/Final completion of new CHS woodshop
- Task 3 - Development of the new road to facilitate the delivery of woody biomass chips
 - Project Timeline - Summer 2024
 - Development of the new road to facilitate the delivery of woody biomass chips to include the expansion of the current trail, construction of a retaining wall between the new road and new CHS woodshop, and construction of a gravel pad for the delivery of the woody biomass chips.
 - Deliverables
 - Rock work associated with the expansion of the gravel trail behind the CHS woodshop to a road able to handle dump trucks delivering woody biomass chip material – The applicant will hire a contractor to complete this task
 - Rock work associated with the development of a retaining wall associated with the development of a road – The applicant will hire a contractor to complete this task
 - Rock work associated with the development of a pad for delivery for woody biomass chip material – The applicant will hire a contractor to complete this task
- Task 4 - Installation and remodel of the current CHS woodshop to house the biomass boiler
 - Project Timeline – Fall/Winter 2024-2025
 - Reconstruct the “old” CHS wood shop to house the biomass boiler, construct a wood chip hopper to feed the biomass boiler, and provide the tie-ins into the CHS mechanical room heat exchanger.
 - Deliverables
 - Reconstruction of the “old” CHS wood shop to house a Twin Heat Biomass Boiler – The applicant will hire a contractor to complete this task
 - Construction of a wood chip storage building – The applicant will hire a contractor to complete this task
 - Installation of all mechanical and electrical components associated with the installation of a Twin Heat Biomass Boiler – The applicant will hire a contractor to complete this task with support from Biomass Supply Systems
 - Trenching from the “old” CHS wood shop to the CHS mechanical room with tie-ins to the CHS mechanical room – The applicant will hire a contractor to complete this task with support from Biomass Systems Supply
 - Substantial completion/Final completion of project
- Task 5 – Construction administration and 10% contingency
 - Project Timeline – Spring 2024-January 2025
 - Provide construction administration support from engineers and architects and include a 10% contingency to address increase in costs due to inflation
 - Deliverables
 - Support from CHS Biomass Project partners to include R&M Engineering – Ketchikan, Cushing Terrell Architecture, Engineering and Design, and Biomass Supply Systems
 - 10% Project Contingency

CCSD is a subunit of the City of Craig. The City of Craig has successfully operated a biomass wood chip boiler for over 12 years that has provided supplemental heat to the Craig Aquatic Center, Craig Elementary School, and Craig Middle School. The City of Craig also secured a wood chip dryer system that has been leased to Viking Lumber Company as part of the City of Craig’s biomass project.

CCSD superintendent, Chris Reitan, has substantial experience integrating woody biomass systems into school infrastructure. During his tenure as the superintendent with Galena City School District in Galena, AK the City of

Galena, Galena City School District, Louden Tribal Council and Gana-A'Yoo Limited collaborated and successfully installed a wood chip biomass heat system to provide heat to all Galena City School District buildings located on the old Galena Air Force Base. This collaboration resulted in developing six local jobs related to harvesting, drying, chipping, and managing the wood chip biomass boiler and resulted in offsetting approximately 250,000 gallons of heating fuel annually. Furthermore, CCSD maintenance director, Daniel Nelson, has substantial experience operating and conducting preventative and general maintenance on the City of Craig wood biomass system. CCSD also employs two maintenance assistant positions that can provide additional maintenance support if necessary.

CCSD superintendent, Chris Reitan, also has significant experience managing state and federal grants. During his 13 years of experience as a school superintendent Chris Reitan has secured and managed state and federal grants ranging from \$5.4 million to \$15,000 mini grants. Chris Reitan has experience managing general operating budgets ranging from \$8 million to \$33 million.

CCSD is well positioned to provide the financial, maintenance, and operational support for the Craig High School Biomass Project. CCSD will collaborate with R&M Engineering - Ketchikan; Cushing Terrel - Architecture, Engineer, and Design; and Biomass Systems Supply on all aspects related to the CHS Biomass Project.

c. Place(s) of Performance Statement

The place of performance is Craig, Alaska, a small, rural community located on Prince of Wales Island. Craig, Alaska has a population of 992 people of who 15.43% identify as Alaska Native or American Indian, according to the State of Alaska, Division of Regional Affairs, Community Database Online dated 13 November 2023.

The City of Craig is:

- Not identified as a distressed community in the Commission's 2023 Distressed Communities Report
- Not identified as an Environmentally Threatened Community in the Commission's 2019 Statewide Threat Assessment
- Not identified as disadvantaged per the Council on Environmental Quality's Climate and Economic Justice Screening Tool

d. Budget and Funding Narrative

In December 2022 R&M Engineering – Ketchikan developed project estimations for the Craig High School Biomass Project. R&M Engineering – Ketchikan has experience designing and constructing wood biomass heat systems in Southeast Alaska. The estimations developed by R&M Engineering - Ketchikan divides the project into 7 construction/management categories that include the following areas:

- Miscellaneous – Includes building permit fees and bonding/insurance
- Site Work – Includes all rock work, asphalt, concrete, retaining wall and underground trenching and piping for the construction of the new CHS wood shop, remodel of the old CHS wood shop to prepare for the installation of the Twin Heat Biomass Boiler, expansion of the existing road system to facilitate wood chip delivery by Viking Lumber Company, and tie-ins to the CHS mechanical room.
- Demolition and Removal – Includes the demolition of existing building components
- Construction – Includes the construction of a new CHS wood shop building, installation of Twin Heat Biomass Boiler and fuel handling systems, all mechanical and electrical work, wood chip storage bin, and thermal storage tank
- Equipment – Includes mobilization for construction and all construction equipment rentals.
- Project Inspection Fees – Fees associated with inspection and certification of all systems.
- 10% Contingency Funding – Includes 10% contingency monies to address inflationary costs associated with the CHS Biomass Project.

In collaboration with R&M Engineering – Ketchikan, CCSD developed five tasks associated with the CHS Biomass Project. The tasks have been organized based on the estimated start date for the project and the most practical timelines given the geography of the project being located on Prince of Wales Island.

- Task 1 – Civil Work and Fire Marshall Permitting – Includes securing permit fees, bonding, site preparation for the new CHS wood shop project, and cast in-place concrete work.
- Task 2 – Construction of the new CHS wood shop building – Includes the purchase of all materials associated with the new CHS woodshop, construction of the new CHS woodshop, and roof installation.
- Task 3 – Development of the new road for chip delivery – Includes all rock work associated with the project, to facilitate the delivery of the wood chip biomass material and construction of a stacked block retaining wall.
- Task 4 – Installation and remodel of the “old” CHS wood shop to house biomass boiler – Includes the purchase and shipping of the Twin Heat Biomass Boiler, installation of the Twin Heat Biomass Boiler, construction of the fuel handling systems, installation of a new heat stack, and all mechanical and electrical work.
- Task 5 – Construction administration and 10% contingency – Includes monies for all construction administration and oversight, and 10% contingency funds to respond to increases to the project due to inflation.

CCSD has secured the following funding for the Craig High School Biomass Project.

- \$355,000 appropriated by the CCSD School Board as matching support for the CHS Biomass Project
- \$490,233 appropriated by Denali Commission Biomass Heating Design and Construction Funding Grant
- \$750,000 appropriated by USDA’s Southeast Alaska Sustainability Grant through a subaward to Southeast Conference
- Total monies secured to date \$1,595,233
- Application to Denali Commission for \$200,000 in gap funding for the CHS Biomass Project resulting in total project funding of \$1,795,233

e. **Response to Biomass Evaluation Criteria**

The City of Craig has successfully operated a biomass wood chip boiler for over 12 years that has provided supplemental heat to the Craig Aquatic Center, Craig Elementary School, and Craig Middle School. The City of Craig also secured a wood chip dryer system that has been leased to Viking Lumber Company as part of the City of Craig’s biomass project. Feedstock for the mill and the resulting wood chips comes from timber logged by Viking Lumber Company from the nearby Tongass National Forest, Southeast Alaska State Forest, and private lands on Prince of Wales Island. The project is similar in scope to the Craig Wood Fired Boiler Project, a successful biomass heating project now entering its 12th year of operation. Included with CCSD’s grant application are three letters of support for the CHS Biomass Project demonstrating local support for the project.

- Letter of Support from Brian Templin, City of Craig Administrator
- Letter of Support from Ed Douville, President Shaan-Seet Incorporated
- Letter of Support from Justna Cook, Tribal Administrator Craig Tribal Association

The CHS Biomass Project is estimated to replace 85% of CHS’s annual heat load with the remaining 15% being supplemented by the current oil-fired boilers. When the project was originally designed, CCSD was paying \$2.80/gallon and is now paying \$4.17/gallon making this project a significantly viable project.

CCSD’s administrative staff has substantial experience managing and operating wood-chip biomass boilers. As noted previously in this application, CCSD superintendent, Chris Reitan, worked with local agencies and tribal organizations in Galena, AK to develop a wood-chip biomass boiler that was installed on the old Galena Air Force Base that is now housing the Galena Interior Learning Academy, Galena City School District’s high school boarding school. This project resulted in offsetting approximately 250,000 gallons of heating fuel annually. Furthermore, CCSD maintenance director, Daniel Nelson, has substantial experience operating and conducting preventative and general maintenance on the City of Craig’s wood biomass system. Prior to his employment with CCSD, Daniel Nelson worked for the City of Craig performing maintenance on City of Craig facilities. He has the background, experience, and mechanical abilities to operate and maintain wood-chip biomass boilers. CCSD plans to utilize the annual savings from the CHS Biomass

Project to support the annual operations for the boiler and to also provide additional funding to the district's general fund ensuring some of the savings are diverted back to the district's instructional programs.

During the spring of 2019, CCSD contracted with CTA Architects and Engineering to conduct an Assessment for the Integration of Biomass Energy Systems at Craig High School. CTA Architects and Engineers noted in their report, "The City of Craig currently purchases wood chips from Viking Lumber for the wood boiler plant that serves the City Pool, Middle School, and Elementary school in Craig. This chipped fuel would be the same type of ground wood fuel used for the high school. The chips are currently delivered to existing wood boiler plant for \$65/ton. There are sufficient wood resources in the region to serve both plants."

The main risk to the project is Viking Lumber Company ceasing operations. At the current time there is no other timber harvesting company on the island that operates at the same capacity that Viking Lumber Company currently operates. CCSD with other regional partners that includes the City of Craig and Southeast Conference have been engaged in conversations related to this concern. There are other small timber mill operations on the island that have the capacity for growth who could potentially take on this capacity in the event Viking Lumber Company ceases operations. At this time CCSD does not anticipate any environmental risks associated with the project. The USFS is currently developing a timber harvest area on the north side of the island near Wale Pass, AK that could potentially provide additional timber resources to Viking Lumber Company.

Craig High School utilizes approximately 17,000 gallons of fuel oil annually. The Craig High School Biomass Project would displace approximately 14,450 gallons annually at the Craig High School. One ton of woodchips has the energy equivalent of approximately 60 gallons of heating fuel. With the cost of today's fuel oil this project would result in an annual savings of \$44,656 in annual heating costs associated with the CHS Biomass Project.

CCSD has already secured the following monies targeted towards this project:

- \$355,000 appropriated by the CCSD School Board as matching support for the CHS Biomass Project
- \$490,233 appropriated by Denali Commission Biomass Heating Design and Construction Funding Grant
- \$750,000 appropriated by USDA's Southeast Alaska Sustainability Grant through a subaward to Southeast Conference
- Total monies secured to date \$1,595,233
- Application to Denali Commission for \$200,000 in gap funding for the CHS Biomass Project resulting in total project funding of \$1,795,233