RFP Response To
Good River Bridge Repair
Civil Engineering Evaluation and Recommendations

Respectfully Submitted By:
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P N D
ENGINEERS, INC.

October 14, 2021 PND 21J108

Tom Williams, PhD, City Administrator
City of Gustavus
Gustavus City Hall
PO Box 1
Gustavus, Alaska 99826

Re: Good River Bridge Repair

Dear Mr. Williams and Selection Committee Members:

PND Engineers, Inc. (PND) is pleased to submit our qualifications for Civil Engineering and Recommendations services on the Good River Bridge Repair project. PND has assembled a teamed that is perfectly suited for this needed bridge repair project, having successfully completed many similar projects throughout Alaska. PND has a long history working on various bridge projects, including work on many AKDOT bridges. PND specializes in civil, structural and geotechnical engineering, with 41 years of experience providing similar, professional services throughout Alaska based out of our local offices. Our Team consists of innovative, motivated, and experienced professional engineers local to Southeast Alaska, with the availability to complete the work on a tight schedule. Our Team will make this a priority project and have the capacity to do the work.

We understand that cost control is critical due to funding limitations for the bridge repair project. Our small, cohesive Team will be innovative through value engineering (balancing costs vs. various embankment stabilization methods and evaluating project impacts to minimize construction costs) and our past experience working on similar timber style bridge structures will allow us to deliver all services in a cost-effective manner. We will put a focus on using cost effective local materials and construction techniques that can be installed by local contractors. Our Team will be fee conscience by building off the existing AKDOT inspection report and recommendations and a single site visit with the actual design engineers. Our Team knows how to develop concise, clear and biddable construction documents and have done so many times in the past for many local Southeast communities including the City of Gustavus. We strongly believe in working closely with our clients to understand the issues at hand, to develop cost effective solutions and to provide the desired end result.

Located in Juneau, our Team can travel to Gustavus on short notice and with minimal travel costs to address project issues and engage the community and project stakeholders. Our direct experience will translate into well-conceived and highly developed repair recommendations that can be used to develop into a concise set of construction documents and tailored specifically to meet the needs of the project.

PND welcomes the opportunity to serve you on this important bridge repair project. Mark Sams, P.E., S.E. is a principal located in PND's Southeast office in Juneau with full corporate and contract authority to bind the firm. PND has all insurances, registrations and licenses to perform all required services under this project. Thank you for reviewing our qualifications and please feel free to contact me if you have any questions regarding our proposal.

Sincerely,
PND Engineers, Inc. | Juneau Office

Mark Sams, P.E., S.E.
Principal

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COMPANY OVERVIEW

PND ENGINEERS, INC. (PND) is a dynamic Alaska civil engineering firm founded as a Type C corporation in 1979. PND is headquartered in Anchorage with branch offices located in Juneau, Palmer, Seattle, Houston, Portland and Vancouver, British Columbia. PND currently ranks among *Engineering News-Record's* Top 500 Design Firms nationwide list for 2020.

PND is a full-service firm, providing: general civil, structural, transportation, geotechnical, waterfront, marine and coastal engineering; surveying; hydrology; value engineering; environmental permitting; contract administration; construction inspection; fabrication inspection; right-of-way acquisition; demolition expertise; and in-house research.

With 41 years of experience, PND offers unique flexibility to provide a diverse package of services. PND maintains a sufficiently large workforce – over 100 full-time employees, just more than half of whom are licensed engineers or surveyors – allowing us to easily complete projects on time and within budget. PND's Juneau office will lead the project, managing the team, schedule and performance of all services. Our Juneau office employs 15 local Southeast residents, including 8 registered professional engineers and we provide service to clients throughout Southeast and Coastal Alaska. PND is committed to providing the necessary resources to perform and complete the project in a timely manner and each PND office provides support to the others depending on the specific professional and scheduling needs for a project.

PND's clients range from private individuals to Fortune 500 corporations and various governments, encompassing a wide range of groups in between. Many of PND's design solutions have received national awards and worldwide press attention. We pride ourselves in developing cost-effective solutions and well-detailed plans and specifications that provide contractors with clear direction so that owners can obtain accurate and competitive bids without excessive risk and result in minimal construction claims. PND is keenly aware of the need for maintaining project cost control in the current fiscal environment.

All necessary business, corporate and professional occupational licenses are currently held by PND to perform the professional engineering and surveying services of this project. Engineers and surveyors licensed in the State of Alaska shall stamp all work requiring registration.

Mark Sams, P.E., S.E. is a Principal, is authorized to make representation for PND and will be the primary contact person. Sean Sjostedt, P.E. will serve as the project manager and the lead geotechnical engineer for the PND Team.

GENERAL OVERVIEW & PROJECT UNDERSTANDING

PND understands that the City of Gustavus is seeking civil engineering evaluation and recommendation services for the repair of the Good River Bridge based on a number of recommendations from a recent AKDOT bridge inspection which included existing bank stabilization at one abutment and replacement of a number of guardrail posts on the bridge and the approaches. It is understood that the preliminary part of this project is to conduct a site visit to evaluate AKDOT's recommendations, and develop recommendations for existing embankment erosion at the abutments. PND understands this project is being conducted by the City of Gustavus and will not include AKDOT and the funding for the work will be provided by the City for both design and construction phases.

Project will improve:

- Pedestrian safety
- Pedestrian connectivity
- Accessibility
- Signage
- Off-road Parking

This project will provide detailed recommendations for railing post replacement outlined in the AKDOT observations and as observed during a site visit. The project will also look at the geotechnical options for stabilizing the existing soil embankments and particularly the northwest side of the west embankment. The current bridge structure is functioning, but the railing system is failing due to timber decay and will need some of the posts replaced to maintain safe access across the bridge. This project will address these observations from the AKDOT inspection report and will also provide geotechnical recommendations to prevent soil erosion along the soil embankments. Additionally, any structural items that are observed on the bridge during the site visit will be addressed in a report with recommendations.

DESIGN TEAM

PND Engineers has a long-standing history with timber bridge structures as well as soil embankment stability projects in Southeast Alaska Our team of engineers has significant condition inspection, design, permitting, and construction inspection experience. The team also has significant experience developing construction documents for a number of southeast communities. Are engineers of worked many times of the years in Gustavus with both public and private clients. Example projects in and around Gustavus include the Gustavus Medical Clinic, Gustavus City Hall Addition, Gustavus School, Gustavus Library and Gustavus Recycle Building. This past work has included condition assessments, conceptual design and layout and final construction documents. Our Team is well-known to the many communities in Southeast AK and we have provided many successful projects to the community.

Our Team has worked in Gustavus for the past four decades and we understand the needs of the community and the city staff. Our innovative design approach coupled with strong contracting skills have delivered all of our past projects on time and within budget.

We are excited to bring our engineering team's bridge design and construction experience to Gustavus for the development repairs to the good River Bridge. Our past bridge and related designs are found statewide but as Southeast Alaska based firm, a majority of our work is found within the Tongass National Forest and its communities. PND is part of a team that holds the second successive three-year IDIQ (indefinite delivery/ indefinite quantity) or term contract with the Forest Service for both National Forests (Tongass and Chugach) for landscape architectural services that focus primarily on the development of USFS facilities including bridges. PND has been and continues to be a key team member to the IDIQ team providing survey, civil, structural and geotechnical engineering support for these USFS facility projects. PND has also work on a number of AKDOT bridge projects in Juneau including the Basin Road Trestle project which is a very similar timber bridge. PND also provided structural, civil and hydrology/hydraulic design services for the Falls Creek timber bridge replacement project in Petersburg for the USFS. This existing bridge had significant erosion issues at one of the abutment and PND provided a replacement design that worked with the existing site and reduce the erosion issues on the new bridge abutments. PND also provides bi-annual services to both HGCMC and Kensington mines to conduct condition inspections of their existing bridges along their road system. PND has provided repair and replacement design construction documents to both mine facilities over the many years of inspection services.

MARK SAMS, PE, SE | Senior Engineer/Principal

Project Role: Principal in Charge

Mark Sams has 12 years of field and office professional civil and structural engineering experience throughout Alaska. His experience includes project management, geotechnical investigations, condition assessments, structural and civil design projects. Mark has worked on many structural/civil projects throughout Southeast Alaska including projects consisting of concrete/ACP paving, site civil design, stormwater collection and utility services. Structural design experience includes light framed timber and steel frame structural systems for both large and small building. Mr. Sams also provides construction administration and inspection services for both civil and structural projects. Mr. Sams has worked on permitting projects for both state and federal agencies.

EDUCATION

B.S. Civil Engineering, University of Alaska Fairbanks, 2009

REGISTRATIONS

Civil Engineer: Alaska #14051, 2013
Structural Engineer: Alaska #126427, 2018

CERTIFICATIONS

Western Alliance for Quality Transportation Construction (**WAQTC**) Qualification, Alaska #1194

AWS D1.1 Certified Weld Inspector, #12040130

ACI Concrete Field Testing Technician-Grade 1, #1247529

REFERENCES

Erich Schaal, P.E., Port Engineer, CBJ Docks and Harbors, 907.586.0397

Matthew McGuan, P.E. Civil Engineer, USCG CEU Juneau 907.463.2430

Karl Hagerman, Petersburg Borough Utility Director, 907.772.4430

SELECTED RELEVANT PROJECT EXPERIENCE

Falls Creek Bridge, Petersburg, Alaska. Project Manager/Structural/Civil Engineer. Mark provided project management for a USFS bridge over Falls Creek outside of Petersburg, AK. The project included a geotechnical analysis of the bridge abutments, a hydrological analysis of the stream flow, civil site plan and structural design. Mark was able to coordinate the various disciplines to provide a constructible bridge for the USFS within the project schedule and budget.

HGMC Falls Creek Bridge Replacement, Hawk Inlet, Alaska. Project Manager/Structural and Civil Engineer. Mark provided project management services to design a bridge replacement project for Hecla Greens Creek Mine. The project included conducting a geotechnical investigation to verify bedrock materials and rock anchor tension capacities. The geotechnical report was used to design a new concrete retaining wall/geo-grid fill embankment over a new 6' diameter culvert pipe. The project included providing site grading plans and site layout for existing utilities. Mr. Sams worked with the Owner to address USFS review comments during the design work.

Rasmus Enge Memorial Bridge, Petersburgh, AK. Structural Condition Inspection. Mr. Sams provided structural inspections for a 400' long timber trestle bridge. Inspections included visual observations, probing and using a micro second timer to map timber decay. Mr. Sams was able to provide a list of repair recommendations to the Owner and estimate the remaining life of the structure.

Basin Road Trestle, Juneau, AK. Condition Assessment and Design. Mr. Sams conducted a condition inspection of an existing 400' long timber trestle bridge. NDT inspection methods were used to map decay in structural members. Mr. Sams was then able to provide a comprehensive list of recommended repairs and an Alaska DOT load rating for the bridge after the repairs were completed.

Thomas Basin Harbor Improvements, Ketchikan, AK. Structural Design. Mr. Sams provided structural design services for vehicle accessible timber and steel thru way along Thomas Basin Harbor. Mr. Sams used modeling software to design timber spans and decking. Mr. Sams also design guardrails and guardrail connections to the structure.

Mr. Sjostedt has 10 years of engineering experience in Alaska, specializing in geotechnical and civil engineering. His geotechnical experience includes planning and implementing both onshore and offshore geotechnical investigations of varying magnitudes, deep and shallow foundation design, road and trail structural section design, seismic analyses, and slope stability and settlement analysis. Sean's geotechnical services have supported a wide range of projects of varying scopes and scales for both public and private clients. Such projects include buildings, site development, parking lots, roads, bridges, trails, offshore and waterfront infrastructure, utilities, and remote facilities for many sectors. His civil design experience includes site/civil planning and layout, surface drainage, storm water system design, and grading plans.

EDUCATION
B.S. Civil Engineering, University of Idaho

REGISTRATION
Professional Civil Engineer:
Alaska #102428

CERTIFICATION
American Concrete Institute Certified Field Technician

REFERENCES
Karl Hagerman, Utility Director, Petersburg Borough, 907.772.542

Greg McIntyre, SEARHC Facilities Consultant, 907.966.2411

Pete Schneider, USFS Natural Resource Specialist, 907.789.6639

Falls Creek Bridge Replacement

SELECTED RELEVANT PROJECT EXPERIENCE

Falls Creek Bridge Replacement, Petersburg, AK. Lead Geotechnical Engineer. Mr. Sjostedt planned and implemented the geotechnical field investigation and conducted subsequent geotechnical analyses for the Falls Creek Bridge Replacement project on Mitkof Island, Alaska for the U.S. Forest Service. The investigation consisted of two test pits at the proposed location of each new bridge abutment. Geotechnical analyses were performed in accordance with current AASHTO bridge design standards.

Chilkoot Indian Trail Bridge, Haines, AK. Lead Geotechnical Engineer. Mr. Sjostedt conducted a limited geotechnical investigation consisting of hand-excavated test pits in support of the bridge abutment foundation design of a 30-foot, single-span, trail bridge to support pedestrian and light maintenance vehicle loads. The bridge is on a recreational trail near a housing subdivision built by the Chilkoot Indian Association.

Mendenhall Glacier Recreational Area, Juneau, AK. Geotechnical Investigation Manager. Mendenhall Glacier Recreational Area is in the midst of a significant improvements and modernization project including new trails, expanded parking areas, large pedestrian bridge, and Welcome Center. Mr. Sjostedt planned and oversaw the field geotechnical drilling investigation which was complicated by numerous stakeholders, extensive underground utilities, limited and difficult access, disturbance minimization requirements, challenging subsurface conditions, and maintaining visitor access.

Sitka SEARHC Hospital Site Analysis. Lead Geotechnical Engineer. The Southeast Alaska Regional Health Consortium is planning to construct a new medical campus in Sitka to replace the existing aging campus. Sean organized and managed the geotechnical investigation to support the civil and structural design elements of the project. The investigation consisted of drilling boreholes in areas of difficult access, thick vegetation, and wetlands that could not be disturbed. The investigation was completed in 2018.

Maier Drive Force Main Replacement, Juneau, AK. Lead Geotechnical Engineer. Mr. Sjostedt organized and conducted a drilling investigation supporting the design of a sanitary sewer force main to be installed by horizontal direction drilling techniques. The investigation consisted of drilling three difficult-access boreholes in wetland and intertidal areas on the banks of the Mendenhall River.

FALL CREEK BRIDGE (USFS) PETERSBURG, AK. The US Forest Service had noted in their routine bridge inspections that the bridge across Falls Creek on Mitkof Island was deteriorating. Glued laminated timber girders and timber abutment backwall members had fungus blooms and the timber was soft and could be torn apart by a bare hand. After a design-build procurement process they retained a design-build team that included civil engineers from PND Engineers, Inc (PND).

PND retained a local surveyor to perform a topographic survey of the bridge site with adequate upstream and downstream topography to use as part of the hydrologic and hydraulic analysis. A PND geotechnical engineer performed a test pit investigation at both abutments and developed design recommendations for abutments. A PND hydrologist performed a field investigation to calibrate a desktop analysis to determine design stream flows, high water levels at the site, and erosion protection recommendations. PND's civil engineers designed the back protection and grading at the abutments for the new bridge structure designed by others.

BASIN ROAD TRESTLE, JUNEAU, AK. Basin Road provides access to Juneau's historic mining district, a tourist attraction, as well as access to Juneau's drinking water supply well field. The Basin Road Trestle is a 400 foot long, timber-framed, single lane bridge was originally constructed in 1933 and renovated in 1979 and then also in 1989 when a rock slide demolished approximately 50 feet of the trestle. The trestle does not span over a waterway but provides the road bed along a portion of the road with steep side slopes and cliffs.

The Basin Road Trestle deck and railings were deteriorating and the bridge had load restrictions on it, lower than what the City and Borough of Juneau water department trucks weighed. The State of Alaska retained PND to design the replacement of the deck and railing, design necessary repairs and improve the load rating.

PND performed a detailed inspection and developed plans for the necessary repairs and improvements. During the environmental document and preliminary engineering phase it was determined that the bridge was considered historic and improvements needed to maintain its historic integrity. PND designed a rail system that maintained the heavy timber rail originally on the bridge and that was crash-tested per national standards.

RASSMUSEN ENG MEMORIAL BRIDGE, PETERSBURG, AK. The historic Rasmussen Enge Memorial Bridge in Petersburg Alaska was in poor condition and had load restrictions imposed on it by the State of Alaska Bridge Design Section of the Alaska Department of Transportation and Public Facilities. Timber piles showed significant deterioration at mudline, some stringers were broken and had been repaired by questionable methods.

The Petersburg Borough retained PND Engineers to perform a detailed inspection and condition assessment of the bridge. It was recommended that the bridge should be replaced in total. The bridge is historic and the Borough then asked PND to determine what could be done to maintain the historical nature of the bridge while replacing it. PND developed conceptual plans that include new creosote treated timber piles, treated glued laminated timber pile caps and treated glued laminated timber stringers, a timber deck and timber rails. PND researched permitting requirements and determined that if the number of piles were limited then the bridge replacement could be done under a nationwide permit, eliminating significant work in permitting.

The Borough then retained PND to perform geotechnical investigations and surveys of the site so that final replacement designs could be done once project funding became available.

OTHER PROJECT EXPERIENCE — BRIDGE PROJECTS


HGCMC B-Rd. Bridge Inspection


Kensington Mine Bridge Inspection


Jordon Creek Bridge, Juneau


Trout Street Bridge, Juneau


Pelican Boardwalk


Kake Road Bridge Inspection/Design

SCOPE OF SERVICES

The Good River Bridge is a an important access route for a number of local residence to access their property on the far side of the Good River. We understand that the existing bridge has a number of issues with the bridge guardrail and the approach guard rails that require repair to maintain safe use of the structure. The Good River Bridge Civil Evaluation and Recommendations will address these repairs as well as evaluate the existing abutment slopes for erosion and subsidence. The evaluation will look at a number of possible remediation options to strength the embankments particularly on the Northwest side of the bridge.

Task 1. Site Visit and Evaluation Report

Upon notice to proceed, PND will plan and coordinate a site visit with the City of Gustavus to evaluate the structure and the embankment issues identified in the provided AKDOT inspection report. The site visit will be conducted under the guidance of PND's Geotechnical Engineer to evaluate the embankment slopes as well as a structural engineer to evaluate the conditions of the guard rails and develop a plan to repair the embankment and guard rails. While onsite PND will observe the structure for any other issues that have been identified or may be identified during the site visit. PND plans on utilizing a small unmanned aircraft system to take detailed photos of the structure, weather permitting, during the site visit that can help view difficult to reach location along the bridge and provide a detailed overview of the embankments.

The second component to this task will be to develop a report that can be provided to the City of Gustavus to review findings from the site visit. This report will be in a letter format with photo documentation of items identified in the report for repair or replacement. This report will also provide a rough order of magnitude costs for the proposed repairs that the City of Gustavus can used to develop a construction budget. This construction budget will also provide an estimated engineering cost to develop the Construction Documents that the City of Gustavus will need to bid a construction project.

Task 2. Final Design and Construction Documents

Once a list of bridge and embankment repairs have been prioritized by the City of Gustavus based on the site visit report in Task #1, PND can begin developing a set of Construction Documents that can be used to bid the construction work. PND anticipates the development of these documents can be completed with a series of design review submittals at 65%, 95% and 100%, which can help reduce the engineering and construction costs. PND will work closely with City of Gustavus throughout the project to address issues important to the community, guide the design, select options and minimize costs.

Beyond the Repair Design (Optional Services)

The PND Team can provide a range of services beyond the final construction document submittal. These items were not addressed in the RFP, but PND can continue to provide services through the bid phase and the construction phase of the project if desired by the City.

PND can provide services during the bid phase such as answering bidder questions, conducting the pre-bid conference and preparing any required addenda. We can provide any design clarifications found necessary during this period and can be proactive in our assistance to properly inform the bidders of the design intent and bidding requirements. With proper engineering attention and interaction during the bidding phase, contractors will be well informed of the contract requirements. Bidders will reduce bid costs when their questions are adequately addressed, when construction related risks are minimized and when design intent is clearly conveyed by the contract documents. Ultimately, PND can review all bids received for conformance to the public bidding requirements and make an award recommendation for the lowest responsive bidder.

PND also can provide construction phase inspection and administration services. This project may not have a significant requirement for on-site inspections, but PND can provide periodic inspection during construction to verify the contractor is performing the work according to the contract documents. PND also can provide submittal review, RFI, RFP, run progress meetings and review pay request assistance during construction.

CITY OF GUSTAVUS

Tom Williams, PhD, Administrator

PRIME CONSULTANT – PND ENGINEERS, INC.

Project Management; Civil Engineering; Geotechnical; Structural; Cost Estimating; Scheduling

Mark Sams, P.E., S.E. — PIC

Sean Sjostedt, P.E. — Geotechnical Engineer

PND will lead the project from our Juneau office. Mr. Sjostedt , P.E. will be the project manager and will serve as the primary contact for the PND Team.

Availability

The PND Team has significant staff availability to meet the scheduling demands of this project. We are adequately staffed and prepared to handle all aspects of this project. We will start immediately and are fully available through project completion. As Project Manager, Mr. Sjostedt has adequate available time to be responsive to all contract needs and client expectations. All other team members maintain very open schedules and this project will be a top priority for PND. We have estimated the percentage of time that key personnel will be available and committed to the City of Gustavus for the anticipated performance period.

Key Staff	Current and Upcoming Project Commitments	% Available	Hourly Rate
Mark Sams, P.E., S.E.	USCG Southeast Inspections	50%	$195
Sean Sjostedt, P.E.	SEARHC Hospital	60%	$155

Budget

The PND Team proposes the following budget for Task 1 of this project. This budget is proposed as a T&M budget that can be optimized as needed based on the complexity of the geotechnical aspects of the project. The budget below includes a day trip for the engineering team to conduct a site visit. The budget includes a design narrative, geotechnical report and recommendations for the City of Gustavus to review. A ROM cost estimate will be provided as part of the report which will include the proposed geotechnical options and the recommended structural repairs. The cost estimate can be used to develop a construction project budget.

This budget does not include the Task 2 items which include final construction documents. Since there is a number of unknown geotechnical questions, the Task 2 budget can be more accurately estimated after a site visit is conducted and the City of Gustavus has decided on a direction for the geotechnical improvements. The following is an estimate of our fee for Task 1. The estimate includes all anticipated costs including labor, expenses, travel, overhead and benefits.

Task 1 - Fee Estimate		
Firm	Role	Estimated Fee
PND Engineers	Site Visit, Geotechnical and Structural Repair Report	$ 15,500.00
	Total	$ 15,500.00

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ENGINEERS, INC.

PND Engineers, Inc. thank you for reviewing our proposal. We look forward to the opportunity to work with you on the Good River Bridge project.