Saint Paul Harbor
Improvements and Expansion Feasibility Study

PREPARED FOR:

City of Saint Paul

November 6, 2020

McDowell GROUP

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Firm and Project Team Introduction

We are pleased to submit a proposal to develop a Feasibility Study and Business Plan that can optimize the economic contributions of the Saint Paul Harbor. Our team is uniquely qualified to conduct this study, bringing unmatched experience in marine infrastructure development and a deep understanding of the industries that use the Saint Paul Harbor facilities.

Founded in 1972, McDowell Group is Alaska's most experienced multidisciplinary research and consulting firm. We have an extensive resume of feasibility studies for public and private infrastructure, economic impact and cost/benefit analyses, market research and public opinion surveys, needs assessments, and program evaluations. We are very proud of our nearly 50-year legacy of helping communities and organizations maximize their economic development potential.

McDowell Group's work is often critical in helping an organization determine whether to proceed with an investment or implement significant organizational change. Our commitment to communication, teamwork, professionalism, and objectivity are critical elements of our longstanding client relationships and project success.

We have exceptional depth in the seafood, tourism, and mining industries. Our firm developed economic development strategies for Pribilof Island communities shortly after federal conveyance. In recent years, we developed seafood and tourism development strategies for the Aleutian Pribilof Island Association, completed an analysis of the economic significance of the Community Development Quota program, and worked with the Aleut Community of Saint Paul Island Tribal Government on social and health program initiatives. We have 21 employees and offices in Anchorage and Juneau.

We have teamed with PND Engineers, Inc. (PND), a firm with a long history in the Pribilof Islands and many successful harbor and marine infrastructure projects conducted in partnership with McDowell Group. When Saint Paul Island was conveyed by the federal government in 1983, PND was responsible for examining the existing transportation system, including the harbor, and providing capital improvement recommendations. PND has 120 employees and offices in Anchorage, Palmer, Juneau, and Seattle.

Our firms are currently working on several projects together including assisting the City of Whittier secure federal funding to replace its Delong Dock and helping the City and Borough of Juneau to upgrade its small cruise ship docks and upland infrastructure to address market needs and increase economic benefits to the community. Working together, we recently completed a waterfront strategic plan for the City of Dillingham as well as an analysis of the market, infrastructure needs, and economics of remote boat access at the Mendenhall Glacier in Juneau.

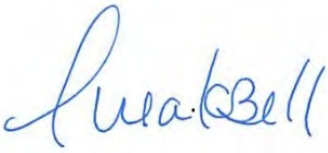
Our primary project contact will be McDowell Group CEO Susan Bell. Originally from Nome, Susan brings to this project a deep understanding of coastal communities and a long history of economic and community

development. She joined McDowell Group in 2001 after two decades of Alaska business operations and marketing. Susan has also served as Commissioner of the Alaska Department of Commerce, Community, and Economic Development; as Vice President of Goldbelt (Alaska Native Claims Settlement Act corporation for Juneau); and as a senior-level executive for several tourism and transportation companies.

We recently shared the news with City Manager Phillip Zavadil that our firm is in the process of changing our name to McKinley Research Group, reflecting the acquisition of our firm by McKinley Capital Management in early 2020. McDowell Group remains a separate corporation with the ability to enter contracts and non-disclosure agreements. While our brand is transitioning, we have submitted this proposal as McDowell Group to align with our current legal status, including our State of Alaska corporate filing, Alaska business license number, and federal EIN.

Please don't hesitate to contact us with any questions about our proposal or qualifications. We look forward to working with you on this important project.

Sincerely,



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McDowell Group Experience

McDowell Group serves a broad range of private and public sector clients located in Alaska and elsewhere in North America. Over the past 48 years, the firm has conducted approximately 2,000 research and consulting assignments for more than 400 private and public sector clients. Among McDowell Group's clients are most State of Alaska departments and public corporations, federal agencies operating in Alaska, and numerous local governments. The firm serves tribal governments and Alaska Native Corporations across the state. In the private sector, McDowell Group clients include businesses and organizations in oil and gas, mining, the tourism industry, commercial fishing and seafood processing, mining, forest products, and the transportation sector, among a variety of others.

We have selected an assortment of project examples to showcase McDowell Group's marine infrastructure and port planning projects throughout Alaska. PND provided engineering, site analysis, and capital cost estimates for several of the projects described below.

We have also provided a brief overview of our expertise in seafood, tourism, and community development. We are happy to provide additional project examples in all these areas if desired.

Dock and Harbor Development

Icy Strait Point Development Feasibility Studies

Alaska Industry Development and Export Authority (AIDEA) recently commissioned a feasibility study for the second cruise ship dock at Icy Strait Point (Hoonah). Owned by Huna Totem Corporation, the cruise ship destination began operations in 2004. The corporation completed extensive site development in 2016, including construction of the first dock (Adventure Landing), a new adventure center, and the Duck Point Smokehouse Restaurant. The second dock (Wilderness Landing) was developed in partnership with Norwegian Cruise Line. The study analyzed potential net cash flow generated by ISP operations with the additional of the second dock. The project team analyzed operations and financial data for 2014-2018, projections for 2019-2020, and cruise market forecasts for Alaska, North America, and globally. The study also included analysis of the destination's capacity to handle the additional passenger volume as well as infrastructure needs and support from the City of Hoonah. McDowell Group also conducted the feasibility studies for initial project development and the initial cruise ship dock.

Analysis of Ward Cove Cruise Dock Impacts on the City of Ketchikan

The City of Ketchikan contracted with McDowell Group to analyze impacts of the Ward Cove development on municipal docks, visitor spending, and taxes. The private development includes a two-berth dock, a transit facility, and welcome center. The project team analyzed market data from *Alaska Visitor Statistics Program* and *Ketchikan Summer Visitor Profile* (both conducted by McDowell Group) and data gathered from Cruise Industry News 2020 Annual Report, Cruise Line Agencies of Alaska, and City of Ketchikan and Ketchikan Gateway Borough documents concerning port operations, municipal budgets, and sales tax collections. More than 20 interviews were conducted with municipal and tourism industry representatives. McDowell Group team

members developed models to estimate future passenger volume, port fees, passenger spending, and implications on sales and property tax collection resulting from Ward Cove Development.

DILLINGHAM WATERFRONT STRATEGIC PLAN

The City of Dillingham contracted with McDowell Group to develop a strategic plan to enhance the waterfront in the downtown core, including the City-owned boat harbor, port, and adjacent lands. As the largest community in the Bristol Bay region, Dillingham serves as a critical transportation and service hub. Project components included a site visit, interviews with waterfront property owners and stakeholders, review of prior planning documents, analysis of data concerning commercial fishing, waterfront usage data, and the regional economy. The draft plan was reviewed in several public meetings, as well with city staff, stakeholders, and the Port pf Dillingham Advisory Committee. PND provided technical assistance, including design and capital cost estimates, throughout the project.

PORT OF NOME STRATEGIC DEVELOPMENT PLAN

The Port of Nome contracted with McDowell Group to update the Strategic Development Plan, reflecting near-term needs and the port's strategic position in Arctic development. The port serves as a key transshipment hub for many Western Alaska communities and provides critical infrastructure for regional economic drivers including seafood, mining, tourism, oil and gas support, and the U.S. Coast Guard. A catalyst for the update was the selection of Nome by the Army Corps of Engineers to serve as the Arctic Deep Draft Port site. McDowell Group analyzed the development landscape for industries that use the port; discussed the port's competitive position; and identified short-term, mid-term, and long-term capital projects. Project deliverables included the updated Strategic Development Plan, a presentation for use by port and community officials, and a brochure highlighting the port's role and strategic position.

PORT OF VALDEZ COMPETITIVE MARKET ANALYSIS AND LONG-RANGE PLAN

The City of Valdez contracted with McDowell Group to conduct a competitive analysis and plan to enhance commercial use and revenue. The port was compared to other Southcentral marine facilities on several measures including infrastructure, transshipment opportunities, cost of shipments, and time in transit. Extensive interviews with conducted with industry leaders and transportation providers. Following the analysis, the research team identified opportunities where the port had a comparative advantage and developed an action plan. In addition to this strategic outlook, a descriptive analysis of historical port volume, key drivers of port activity, and development projects in Alaska which may impact the Port of Valdez were included.

DOWNTOWN JUNEAU WATERFRONT DEVELOPMENT ASSESSMENT

AJT Mining Properties contracted with McDowell Group to analyze Juneau's visitor markets and waterfront development opportunities in downtown Juneau. Project tasks included analysis of Juneau's visitor market segments, review of recent downtown development plans, analysis of public and private waterfront infrastructure, and high-level assessment of anticipated community needs and near-term development options. High-level proformas were developed for several development concepts, including a small marina. PND contributed to the analysis, including a dock condition assessment.

GOLD CREEK MARINA MARKET ASSESSMENT

The market assessment was part of a larger *Gold Creek Marina Planning Study*, commissioned from PND by the City and Borough of Juneau. The proposed marina was intended primarily for yachts, with some usage by commercial vessels. McDowell Group developed estimates of local and regional demand using historical data

and interviews with regional harbormasters. The study team also conducted interviews and compiled secondary research to understand conditions and trends in the yachting industry. The study concluded with a ten-year pro forma financial analysis.

MENDENHALL GLACIER BOAT AND REMOTE ACCESS DEMAND STUDY

McDowell Group conducted a study to help inform recreational and interpretive facilities design for the Mendenhall Glacier Recreation Area. The primary focus of the study was developing demand and revenue estimates for boat access to the north side of Mendenhall Lake. The study team also gathered input on other proposed developments, including upgraded trailheads, parking, and visitor facilities. Project methodology included interviews with tour operators and other stakeholders, case studies of comparable sites, and development of use and revenue projections. Architecture and planning firm ECI led the overall project effort on behalf of the U.S. Forest Service; PND developed dock design and capital cost estimates.

Additional examples of McDowell Group's recent work in Alaska's port and maritime industries include:

- *Port of Alaska: The Logistical and Economic Advantages of Alaska's Primary Port*
- *Skagway Marine Freight Forecast*
- *Port of Anchorage Freight Cost Differential Analysis*
- *Downtown Juneau Waterfront Development Assessment*
- *Port MacKenzie Rail Freight Market Analysis*
- *Southcentral Alaska Ports Freight and Fuel Analysis*
- *Trends and Opportunities in the Alaska Maritime Industrial Support Sector*

Seafood and Tourism Sector Experience

Our firm has in-depth research and analytical strengths in the commercial fishing, seafood processing, and tourism industries. We have provided a brief overview of our experience in each sector and included a project description for recent work that spanned both sectors conducted for the Aleutian Pribilof Islands Association.

Under contract to the Alaska Seafood Marketing Institute, McDowell Group has served as the State of Alaska's seafood industry research contractor for 19 years, studying all aspects of international and domestic market supply and demand for a broad range of seafood products. Our seafood industry experience also includes over 300 projects for local, state, and federal government agencies, Alaska Native corporate and tribal organizations, commercial fishing associations, seafood processing companies, and other for-profit businesses. Market analyses, business planning, and economic analyses of the state's seafood industry comprise the bulk of our seafood-related work.

McDowell Group has a long history of studying Alaska's tourism sector, including numerous tourism community and business development plans and over a dozen studies of the economic impact of the visitor industry. We have also conducted several economic impact studies specific to Alaska's cruise sector, as well as reports on the economic impacts of visitors in various communities/regions, including Southeast Alaska, Kenai Peninsula, Juneau, Ketchikan, Sitka, Hoonah, Haines, and the Matanuska-Susitna Borough, among others.

ALEUTIAN PRIBILOF ISLANDS REGIONAL PROFILE AND OPPORTUNITY ASSESSMENTS: SEAFOOD AND TOURISM SECTORS

McDowell Group developed Regional Profiles and Opportunity Assessments for the seafood and tourism sectors in the Aleutian Pribilof region. The project was sponsored by the Aleutian Pribilof Islands Association to help strengthen and diversify the regional economy. Project tasks included data compilation and analysis, review of relevant reports, and executive interview research. McDowell Group developed an Assessment for each sector that outlined industry trends, opportunities, development strategies, potential partners, and additional resources. The information was also used by the University of Alaska Center for Economic Development to develop a regional Comprehensive Economic Development Strategy.

Community Development and Planning

McDowell Group also brings to this project extensive experience in community development and planning. Our recent work includes the *Haines Economic Development Plan* and a comprehensive economic development planning effort for the City and Borough of Juneau. McDowell Group also produced the *Valdez Community Market/Gap Analysis* and has conducted similar analysis in Northwest Arctic Borough, Petersburg, Yakutat, and Kake. We also have a long history of conducting feasibility studies for public and private developments.

HAINES ECONOMIC DEVELOPMENT PLAN

Haines Economic Development Corporation contracted with McDowell Group to conduct a multifaceted project that culminated in a *Haines Five-Year Economic Development Plan*. The plan was built on extensive economic analysis and public input. McDowell Group developed an *Economic Baseline Report*, including socioeconomic data and analysis of Haines major economic sectors. Public outreach included a statistically representative household telephone survey, an online survey, more than 60 interviews, public meetings at key project milestones, and discussion groups. The project team also reviewed Haines planning documents and community development plans from other communities.

NORTHWEST ARCTIC BOROUGH COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

On behalf of the Northwest Arctic Borough's Economic Development Commission of Northwest Arctic (EDC), McDowell Group prepared a five-year Comprehensive Economic Development Strategy (CEDS). The CEDS includes a summary background on the region's economy, a vision statement, a regional Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, three overarching goals, nine priority objectives, and an action plan, including priority actions, timeline, responsibility, expected costs, and potential funding sources. Development of the CEDs included review of borough plans, a socioeconomic data analysis, executive interview research, site visits, and multiple work sessions with the EDC.

WALTER SOBOLEFF CENTER FEASIBILITY STUDY

Sealaska Heritage Institute (SHI) contracted with McDowell Group to determine the feasibility of a multi-use facility to house operations, collections, archival activities, exhibits, retail, and rental space in downtown Juneau. Phase I identified potential revenue sources for the Center: admission fees, art and retail sales, coffee/snack bar, and space and facility rental. Phase II involved an in-depth assessment of building expenses and the development of a 5-year pro forma cash flow analysis. The study allowed SHI to make key decisions regarding development of the facility and sustainability. The final report included strategic business planning information such as potential funding sources, factors that could affect facility feasibility, working capital requirements, and marketing recommendations. Additional work for SHI includes a feasibility study for a new Sealaska Heritage Arts Campus, economic impact analyses, customer feedback, and program evaluations.

PND Engineers, Inc. Experience

PND has continuously provided design services across Alaska for more than 40 years. Based in Anchorage, the corporation has a reputation for capability, ingenuity, reliability, and cost-effective engineering solutions, as well as sharing our understanding of logistics and constructability. PND specializes in planning, design, fabrication, and construction inspection for in-water structures, upland accommodations and marine facilities, and has completed dock/harbor/float projects at more than 50 Alaska urban and rural locations. PND has broad experience developing tailored designs to suit client-specific needs, unique marine environments, and tidal fluctuations.

Pribilof Island Experience

A longer list of PND projects conducted for clients on Saint Paul Island and Saint George Island is included in the appendix.

SAINT PAUL MARINE FACILITIES EVALUATION

When the federal government relinquished control of all physical facilities on St. Paul Island in September 1983, the City of Saint Paul acquired the properties. A team of consultants formed to provide the city with complete facility evaluations, and PND was responsible for examining the existing transportation system including the airport, harbor, and all roads. Capital improvement recommendations and associated cost estimates were provided, with specific recommendations furnished for airport flight control, safety devices, terminal structures, and runway/taxiway upgrades.

SAINT PAUL DOCK AND BOAT RAMP UPGRADE

PND evaluated two existing docks and a boat haulout ramp to ascertain repairs or upgrades which would enable the structures to support Saint Paul's developing fisheries industry. PND also performed preliminary design for an additional boat ramp and renovating two buildings for conversion to marine repair and storage facilities. An evaluation and preliminary technical report were prepared as part of an Economic Development Grant application. After the application was approved, PND proceeded with final design, procurement, and on-site construction management assistance. Local labor was used extensively, and the community functioned as the contractor. The docks and boat ramps were of special interest, as they are subjected to direct wave attack during the extreme storm events prevalent in the Bering Sea region.

ST. GEORGE HARBOR MASTER PLAN

Following the incorporation of the City of St. George in 1984, PND was selected to be its first "City Engineer" and prepared the city's harbor master plan. The goal for the improvements identified in the master plan were to encourage development of a commercial fishing industry in order to relieve the people of Saint George from their dependence on the federal government and the declining sealing industry. The harbor was planned to provide moorage and safe refuge for both a distant and a home-based fishing fleet. The harbor master plan was comprehensive in nature and included: boat ramps, new roads, a relocated airport, a new tank, new freshwater wells for both the harbor and the village, redesign of the village's health center building, two sewer outfalls, and a plan for development of a helicopter base to support offshore oil exploration.

Additional Dock and Harbor Project Examples

JUNEAU SMALL CRUISE SHIP INFRASTRUCTURE MASTER PLAN

The City and Borough of Juneau Docks and Harbors department contracted with PND to assess the infrastructure needs to foster growth in the small cruise market. Special attention was paid to the needs of cruise lines whose passengers embark and disembark in Juneau, as this activity generates revenue for area accommodations, air carriers, tour operators, and other community services. The multiphased project included: identifying small cruise ship forecast and market trends, evaluating opportunities for infrastructure investment, developing cost estimates and infrastructure options through concept design, and producing a master plan document to guide development for the next decade. McDowell Group was responsible for market analysis and economic impact projections.

SAND POINT REPLACEMENT DOCK

This project provided a new steel, pile-supported, concrete-decked platform dock adjacent to the original dock built in 1981. PND was responsible for preliminary engineering reports, incidental harassment authorizations processes, U.S. Army Corps of Engineers 408 permit processes, topographic/bathymetric survey, metocean study, geotechnical analysis, detailed dock design and specifications, nonlinear seismic analysis, prestressed concrete design, steel and concrete seismic detailing, bid support, and construction administration. PND had previously prepared an Alternatives Analysis Report for dock replacement and recommended a similarly configured steel, pile-supported, concrete platform dock directly adjacent to the existing one. This allowed the existing dock to remain operational during construction, eliminated demolition costs, and provided additional dock space in cases where the new dock was occupied. PND subsequently was selected to further develop the selected design concept, which was used by the city while seeking state and federal funding. The completed ferry and general-purpose dock is a 222-foot by 69-foot pile-supported concrete platform dock. Completed in 2019, the dock sustained a near-design level earthquake M7.8 in July 2020 without structural damage.

CORDOVA SMALL BOAT HARBOR

The existing Cordova Small Boat Harbor ("Old Harbor" side) had become dilapidated and in need of replacement. The City of Cordova needed new floats to safely berth vessels. PND assisted with design and construction administration for the layout of a replacement float system, as well as a single-lane concrete combination boat/float plane launch ramp and timber courtesy float. The boat ramp required design of a custom anchor system to provide access for float planes. The new float layout is very similar to the previous layout, but with sizes of individual vessel slips adjusted to more closely accommodate the existing vessel size distribution. Design work included project management, project scoping, fieldwork (survey and geotechnical investigations), presentation of concepts and public meetings, permitting, preliminary design, final design, bidding, preconstruction support, construction inspection support, and post-construction support.

CHIGNIK SMALL BOAT HARBOR

PND completed two key infrastructure projects within the Chignik Small Boat Harbor, situated in remote Alaska and supporting a commercial fishing fleet. The first project (Phase 1) consisted of a new float system that was procured through a design-build project delivery system. PND provided project permitting, development of design criteria, bidding support, design review, and construction administration. The design-build approach allowed for timely delivery of a usable facility that was tailored to fit within the available project budget. Phase 2 included expansion of the timber float system, a new steel transient float system, an inner harbor OPEN CELL

SHEET PILE™ dock, and a boat lift with adjacent vessel wash system. This project used a traditional design-bid-build delivery system. The new float units were designed as prefabricated modules. The module connections were developed to allow for displacement and energy absorption where necessary.

Key Project Team Members and Roles

Brief resumes are provided below for key project team members. Detailed resumes for PND team members Dempsey Thieman and Chip Courtright are included in the appendix. As needed, the project team will also draw on staff expertise throughout McDowell Group and PND.

- **Susan Bell** will serve as Project Manager, primary client contact, and principal author.
- **Jim Calvin** will serve as senior economist.
- **Bob Koenitzer** will have a lead role in the financial feasibility analysis and business plan.
- **Erin Harrington** will have a lead role in stakeholder and industry outreach, with emphasis on commercial fishing and seafood contacts.
- **Heather Haugland** will provide insights on statewide, regional, and community visitor industry trends and market needs.
- **Dempsey Thieman, PE, SE** will provide quality assurance for PND's project activities and deliverables.
- **Chip Courtright, PE, SE** will lead PND's day-to-day analysis and project contributions.

Susan Bell, Project Manager (McDowell Group)

Experienced in feasibility studies, business plans, and market analyses—Susan brings extensive resume of community development to this project. She managed many of the projects described earlier in this proposal including the Dillingham waterfront strategic plan, the strategic plan for the Port of Nome, the market analysis and long-range plan for the Port of Valdez, the downtown Juneau waterfront development assessment, and a study concerning remote boat access at Mendenhall Glacier. She also managed the *Aleutian Pribilof Opportunity Assessments* and had a lead role in the baseline data and development strategies in *Haines Economic Development Plan*. Susan returned to McDowell Group in 2015 after serving as Alaska Department of Commerce, Community, and Economic Development Commissioner. In that role, she served on numerous public corporation boards engaged with Alaskan communities and the private sector including AIDEA, Alaska Railroad Corporation, and Denali Commission. Prior to joining McDowell Group, Susan had 20 years of senior management experience in Alaska tourism and transportation.

Jim Calvin, Senior Economist (McDowell Group)

Jim Calvin has more than 30 years of experience conducting feasibility studies, public infrastructure benefit/cost analyses, and economic impact studies. A sample of the marine services related projects Jim has managed or supervised includes *Port MacKenzie Rail Freight Market Analysis*, *West Douglas Deepwater Dock Demand Study*, *Feasibility and Resource Analysis for Relocating the Home Port of the CDQ Fishing Fleet*, *Logistical and Economic Advantages of the Port of Alaska*, and *Economic Impacts of the Ketchikan Shipyard*. Jim has also conducted feasibility studies

for a variety of for-profit and non-profit ventures, including residential and commercial space developments, hotels, industrial parks, visitor attractions, and a range of other projects.

Bob Koenitzer, Senior Consultant (McDowell Group)

Bob Koenitzer has a lead role in most of McDowell Group's feasibility studies, including numerous dock and harbor studies. He has examined the financial feasibility of a small boat harbor and marina in downtown Juneau, conducted initially as a PND-led study, and then updated recently with McDowell Group leading the analysis. He also led the firm's analysis of the financial and operational feasibility of the initial and second cruise ship docks in Icy Strait Point (Hoonah), a dock and small harbor for Gustavus, and analysis of the financial impacts of private cruise ship docks on the City of Ketchikan (including docks and harbors, passenger spending, and municipal tax collections).

Erin Harrington, Consultant (McDowell Group)

Erin Harrington specializes in projects concerning renewable resource and community development. She brings to this project two decades of experience researching and leading policy and development projects related to coastal and fishery-based economies and cultures. She has led and participated in research projects in fishery policy and access, rural infrastructure feasibility, and regional economic and socioeconomic assessments. Erin also served as senior staff in the Alaska State Legislature where she worked with communities to assess and respond to local infrastructure needs.

Heather Haugland, Consultant (McDowell Group)

Heather Haugland is Alaska's leading authority on tourism markets and visitation. She uses this information when analyzing current and potential markets, economic impacts, and development plans. Heather managed the *Alaska Visitor Statistics Program* for the State of Alaska and Alaska Travel Industry Association. The statewide exit survey captures extensive information from respondents, including trip purpose, activities, destinations, length of stay, expenditures, trip planning, and demographic characteristics. Heather also develops biannual *Visitor Volume Estimates*. She has helped numerous clients enhance their marketing and economic performance, including large and small cruise lines, Alaska Railroad, Alaska Marine Highway, convention and visitor bureaus, and several Alaska Native Corporations.

Dempsey Thieman, Senior Engineer (PND)

Dempsey Thieman is PND's senior vice president and a principal marine structural engineer. He has more than 25 years of Alaska experience in design and management of marine projects. He has broad experience in waterfront design and master planning and a solid track record of providing innovative and practical design solutions to repair, maintain, and renovate older existing structures on schedule and under budget. He has successfully completed numerous dock projects and understands all aspects of marine design and requirements that are essential for project success. Dempsey will ensure that PND's analysis and deliverables are timely and well-coordinated with McDowell Group analysis, meeting our firms' high standards.

Chip Courtright, Project Engineer (PND)

Chip Courtright is a lifelong Alaskan and principal marine structural engineer at PND with nearly 15 years of experience in planning and design, inspection, estimation, and construction administration for docks, bridges, marinas, roads, and other site civil-related projects. He is experienced in design in harsh environmental conditions and has a history of innovative and practical design solutions to complete complex projects on schedule and under budget. Chip will lead PND's day-to-day activities and be the main point of contact for the McDowell Group team and the City of Saint Paul.

References

We have provided several client references who can speak to our team and firm's ability to engage in productive client-contractor relationships, provide meaningful analysis and recommendations, and successfully execute our professional assignments.

Name/Title: Russell Dick, CEO
Organization: Huna Totem Corporation
Phone: (907) 789-8501 **Email:** russell.dick@hunatotem.com
Project: *Icy Straight Point Feasibility Studies (several projects, including dock developments)*

Name/Title: Cynthia Rogers, Planning Director
Organization: City of Dillingham
Phone: (907) 842-3785 **Email:** planner@dillinghamak.us
Project: *Dillingham Waterfront Strategic Plan*

Name/Title: Joy Baker, Port Director
Organization: City of Nome
Phone: (907) 304-1905 **Email:** jbaker@nomealaska.org
Project: *Port of Nome Strategic Development Plan*

Name/Title: Bob Newell, Finance Director
Organization: City of Ketchikan
Phone: (907) 225-3111 **Email:** BobN@city.ketchikan.ak.us
Project: *Analysis of Ward Cove Cruise Dock Impacts*

Name/Title: Lee Kadinger, COO
Organization: Sealaska Heritage Institute
Phone: (907) 586-9266 **Email:** Lee.Kadinger@sealaska.com
Project: *Walter Soboleff Center Feasibility Study* and *Arts Plaza Feasibility Study*

We have provided an overview of our proposed approach to conducting the study below. We anticipate refining the approach in coordination with the City of Saint Paul project team.

Project Approach

Project Kick-Off Meeting

Upon Notice to Proceed, our team will coordinate a kickoff meeting to review the project objectives, goals, and schedule. We want to begin the project with a clear understanding of the scope, roles and responsibilities, and defined lines of communication. A detailed schedule of the proposed project tasks will be presented at the kick-off meeting and updated throughout the project as needed.

Data Compilation and Analysis

CITY DOCK AND HARBOR

Our team will request and review City of Saint Paul dock and harbor information, including maps and diagrams, recent dock and harbor utilization (by vessel size and industry sector as available), annual revenues and operating expenses, current condition reports, and other relevant information (including the 2013 dredge and upgrade, and any operating partnerships and agreements).

INDUSTRY SECTOR DATA

Our team will also compile and analyze data for industry sectors that represent current and potential harbor users, including commercial fishing and seafood processing, small and large cruise ships, vessels supporting Arctic development, mining, and search and rescue. Data sources will include: Commercial Fishing Entry Commission (CFEC) permit and vessel databases, Cruise Line Agencies of Alaska, *Alaska Visitor Statistics Program* (conducted by McDowell Group), Alaska Department of Labor and Workforce Development, Alaska Taxable Database, and other sources.

PLANNING DOCUMENTS

The team will also review municipal and private planning documents for insights, including the *Saint Paul Island 2017-2022 Comprehensive Economic Development Strategy*, the City's *Strategic Plan and Capital Improvement Plan*, and relevant planning documents prepared by/for key strategic development partners including Tanadgusix Corporation (TDX), Aleut Community of Saint Paul Island, and the Central Bering Sea Fishermen's Association.

PHYSICAL AND TECHNICAL CONSTRAINTS

PND team members will conduct a technical analysis of dock and harbor infrastructure, drawing on their extensive project experience in the region, technical documents and plans, and understanding of the marine

environment. The team will consider the physical environment, technical needs of various user groups, and anticipated developments of adjacent property owners.

Site Visit, Stakeholder Interviews, & Gap and Opportunity Analysis

SITE VISIT

Two members of the project team will travel to Saint Paul Island to meet with city staff, inspect dock and harbor facilities, meet with the Harbor Improvements Planning Team, and other key stakeholders. We anticipate two days in Saint Paul. With McDowell Group and PND offices located in Anchorage, we can adjust our travel schedule to accommodate weather and other travel interruptions.

COVID Alternative: If local travel restrictions remain in place, the site visit will be conducted virtually. McDowell Group will arrange and facilitate a discussion using teleconference or video conference. We will work with city staff to gather information needed for the study.

STAKEHOLDER INTERVIEWS

The project team will reach out to key stakeholders and commercial dock and harbor users. We welcome input from the City and Harbor Improvements Planning Team on specific contacts. We anticipate communicating with approximately 25 individuals, including:

- Municipal leaders, including the City Manager, Harbormaster, and Public Works Director
- Dock and harbor users, including commercial fishermen, seafood processers, cruise industry, freight and fuel shippers, Arctic research vessels, resource developers, and the U.S. Coast Guard
- We anticipate meeting with members of the following entities: Aleut Community of Saint Paul Island, Central Bering Sea Fishermen's Association, and TDX.
- We will also communicate with potential funding resources, including Economic Development Administration, Alaska Department of Transportation & Public Works, AIDEA, and Denali Commission.

GAP AND OPPORTUNITY ANALYSIS MEMO

The project team will synthesize research and analysis conducted for this study into a Gap and Opportunity Analysis memo that helps to screen and prioritize harbor expansion and improvements. We will review the memo with the city manager before developing the feasibility study to help ensure proposed improvements reflect community needs, industry priorities, and physical and technical constraints.

Feasibility Study

ANALYSIS AND DRAFT FEASIBILITY STUDY

The Feasibility Study will assess four main areas of proposed investments as outlined below. We will prioritize improvements that can stimulate economic activity, employment, and municipal revenue, including:

- Dock expansion for fishing vessels
- Harbor expansion for large vessels
- New harbormaster office
- Harbor amenities

The study will include a market analysis, estimated capital costs, and a five-year financial pro forma showing estimated changes to municipal operating costs and revenues. The study will also address community and economic development considerations, including potential for job creation, enhanced economic activity in Saint Paul, and changes to municipal tax collections.

We will review the draft Feasibility Study with the Harbor Improvements Planning Team. The presentation will include a review of the range of alternatives considered, retained, and eliminated. We anticipate one team member traveling to present the findings, with other team members participating by teleconference or video conference. *COVID Alternative:* If local travel restrictions remain in place, the site visit will be conducted virtually.

Business Plan

The project will conclude with development of a business plan that articulates recommended development goals, strategies, timeframe, and lead entities. The project team will also identify potential strategic partners and funding sources. We will also recommend business and management models that will promote a successful outcome in terms of infrastructure development, community services, and generation of new economic activity and jobs.

We will review the Business Plan with the Harbor Improvements Planning Team and incorporate feedback and comments before finalizing the document.

Project Management Plan

McDowell Group employs a project management model designed to ensure that:

- Project goals and timelines are clearly understood by both the client and the consulting team.
- Communications are always open between the client and the consulting team.
- The client is kept informed of project progress, and findings are discussed with the client in advance of written deliverables.
- The final product always meets or exceeds client expectations.

The McDowell Group management model includes the following provisions:

- Every project has an experienced project manager who is responsible for all phases of the work, as well as budget performance. The project manager is the primary point of contact for clients and subcontractors for the project.
- A senior manager provides quality control for every project and is always available to the client for questions, concerns and feedback about the project.
- A senior manager and a technical editor review all reports prior to release.
- Firm workload is reviewed weekly and staff allocated as necessary among McDowell Group's multi-disciplinary workforce to bring the necessary expertise to bear and to meet deadlines and quality standards.
- Work plans for all major projects include a final presentation/discussion with the client or another key stakeholder group of the client's choice.

- McDowell Group maintains high standards regarding protection of confidentiality of client and other data. Our offices are secure, and our computers, servers, and sensitive files are password-protected.

During the project kick-off meeting, we will refine and finalize the scope of services, timeline, and project budget.

Proposed Work Schedule and Timeline

The project schedule below provides an overview of project tasks and workflow between December 2020 and June 2021. The schedule will be refined in coordination with the City of Saint Paul based on the final scope of work and project funding.

Proposed Schedule by Major Task

Tasks	Dec 2020	Jan-Feb 2021	Mar-May 2021	June 2021
Project kick-off meeting				
Site visit and stakeholder interviews				
Gap and opportunity analysis memo				
Draft Feasibility Study				
Review: Harbor Improvements Planning Team				
Draft Business Plan				
Review: Harbor Improvements Planning Team				
Finalize and submit project documents				

Estimated Cost

We have estimated a professional services budget of $78,000, which includes an allowance of up to $25,000 for engineering and consulting services from our subcontractor (PND). The engineering budget anticipates participation in the initial site visit, technical reviews, development of site diagrams, estimate of operating and capital costs, and technical consulting throughout the project.

The estimated budget does not include travel for the initial site visit (two team members) and review of the draft Feasibility Study (one team member). Any travel will be approved in advance and will be billed at cost. *COVID Alternative:* If travel restrictions preclude travel during the project period, we will make alternative arrangements for video or teleconference meetings. We are happy to provide more budget details upon request.

Insurance Coverage

McDowell Group maintains Workers Compensation insurance in accordance with State of Alaska law; Commercial General Liability insurance with a per occurrence limit of $1 million and an aggregate limit of $2 million; Automobile Liability insurance of $1 million per occurrence; Excess Liability insurance of $10 million per occurrence and in aggregate; and Professional Liability insurance of $1 million per occurrence and in aggregate. A certificate of insurance can be provided upon request.

PND maintains liability insurance in accordance with State of Alaska law – Commercial General Liability insurance with a per occurrence limit of $1 million and an aggregate limit of $2 million; Automobile Liability insurance of $1 million per occurrence; Umbrella Liability insurance of $9 million per occurrence and in aggregate; and Workers Compensation and Employers' Liability insurance of $1 million per occurrence and in aggregate. A certificate of insurance can be provided upon request.

Additional PND Engineers Pribilof Island Experience

Below is a longer listing of PND project experience in the Pribilof Islands to illustrate the firm's knowledge of the unique environment and challenges associated with infrastructure development.

Saint Paul Island, Alaska

- St. Paul Marine Facilities Evaluation
    - When the federal government relinquished control of all physical facilities on St. Paul Island in September 1983, the City of St. Paul acquired the properties. A team of consultants formed to provide the City with complete facility evaluations, and PND was responsible for examining the existing transportation system including the airport, harbor, and all roads. Capital improvement recommendations and associated cost estimates were provided, with specific recommendations furnished for airport flight control, safety devices, terminal structures, and runway/taxiway upgrades.
- St. Paul Marine Facilities Evaluation and Boat Ramp
    - Evaluation of two existing docks and a boat haulout ramp was undertaken to ascertain repairs or upgrades which would enable the structures to support St. Paul's developing fisheries industry. Furthermore, preliminary design for an additional boat ramp and for renovating two buildings for conversion to marine repair and storage facilities was performed. An evaluation and preliminary technical report was prepared as part of an Economic Development Grant application. After the application was approved, PND proceeded with final design, procurement, and on-site construction management assistance. Local labor was used extensively, and the community functioned as the contractor. The docks and boat ramps were of special interest, as they are subjected to direct wave attack during the extreme storm events prevalent in the Bering Sea region.
- USCG Land Conveyance Survey
    - As the engineering and survey lead firm on an larger contract, PND performed a survey to support the transfer of land at former LORAN Station St. Paul to the local Alaska Native village corporation. USCG CEU Juneau sought assistance with the transfer of a portion of the land on St. Paul Island to Tanadgusix Corporation (TDX), the Alaska native village corporation representing the Aleut people of St. Paul. Land survey support services included review of record documents, fieldwork, and plat preparation.
- Pribilof Boundary and Utility Survey
    - PND provided survey services for the Pribilof boundary and utility survey, performed under an IDIQ term contract with NOAA and Livingston Slone Architects. PND's surveyors created a Record of Survey and developed utility easements and access to the various NOAA parcels/tracts near the St. Paul harbor. PND also conducted a partial design survey to locate all utilities and to ensure they were within the created easements.
- St. Paul Observation Platforms
    - St. Paul Island has 12 northern fur seal rookeries – most containing approximately 2 miles of aging elevated observation walkways and towers. The walkways and towers comprise the basic research and monitoring infrastructure by NOAA fur seal research scientists and resource managers for access into dense aggregations of breeding and resting northern fur seals. PND, under contract to Livingston Slone, initially conducted a site visit to observe the

existing catwalk system, discuss the system and its needs firsthand with the users, and investigate the physical and environmental conditions that would influence the choice of conceptual options. PND also conducted interviews with those knowledgeable of local conditions and developed general concepts into specific conceptual designs. These concepts developed a conceptual layout and design to a preliminary level to allow a reasonable cost estimate to be made. PND designed modern walkways using low-maintenance fiberglass structural shapes and treated wood members. Rock crib foundations were used to eliminate the use of heavy equipment at the sensitive rookery sites. Project challenges included the necessity for difficult winter construction (the only time the fur seals don't occupy the beach) and the complication of virtually no vehicular access to the sites. This project won the prestigious AGC Aon Award for Federal & Heavy Renovation.

- St. Paul Health Clinic
    - PND provided civil design engineering for the St. Paul Health Clinic. In addition to the health center, the $5 million project includes the development of two sites for staff quarters. PND's work tasks included existing utility relocations and easement work, sewer main extension, water main extension, and a road extension to one of the sites. In completing the civil portion of the design, PND had to consider available soil materials at the site in addition to the logistical constraints of working in a remote site such as the Pribilof Islands.
- St. Paul Marine Facility Upgrade
- St. Paul Island Satellite Earth Station
- St. Paul Facility Repairs
- St. Paul Corps Permitting
- St. Paul Catholic Church Structural Engineering

St. George Island, Alaska

- St. George Harbor Master Plan
    - Following the incorporation of the City of St. George in 1984, PND was selected to be its first "City Engineer" and prepared the city's harbor master plan. The goal for the improvements identified in the master plan were to encourage development of a commercial fishing industry in order to relieve the people of St. George from their dependence on the federal government and the declining sealing industry. The harbor was planned to provide moorage and safe refuge for both a distant and a home-based fishing fleet. The harbor master plan was comprehensive in nature and included: boat ramps, new roads, a relocated airport, a new tank, new freshwater wells for both the harbor and the village, redesign of the village's health center building, two sewer outfalls, and a plan for development of a helicopter base to support offshore oil exploration. In addition to city staff, PND worked closely with the Alaska Department of Transportation & Public Facilities, the St. George Tanaq Corporation, the IRA Village Council, the U.S. Army Corps of Engineers, and various related state planning agencies. In addition, the planning benefited from the input of the Southwest Alaska Pilots Association and others involved in fishing and shipping in Western Alaska. Improvements detailed in the plan have been constructed since 1990. The processing industry has established several plants at the harbor. The harbor itself has been deepened and expanded based on the original plan. In addition, the airport has been relocated to the harbor side of the island. Fuel, water, and sewer infrastructure have been established, as well, and the road completely rebuilt in the vicinity of the harbor.

- St. George Zapadni Bay Harbor Design
    - PND was retained to design a new harbor for the village of St. George at Zapadni Bay. The area was poorly charted and had no local tidal datum. The hydrographers mapped the proposed harbor site with single beam technology and used tidal predictions with observations to create a temporary datum. Side scan sonar was also utilized in the project area to define shallow obstructions and rock outcrops. Due to an extreme need for accurate tide information, Terry Irwin, PLS, was retained to set up and operate a short-term tide station at Zapadni Bay. Station Number 946-3885 was constructed with very limited funds and resources but was operational long enough to obtain a good comparison to a distant primary station. Two Metercraft Model 7602 "Bubblers" were placed in a warehouse in Zapadni Bay. The Metercraft gages were positioned side- by-side and operated simultaneously. Additionally, two staff gages were set on an existing concrete dock nearby; each staff had an attached orifice that was connected to the tubing running underground to the gage house. The staff zero and orifice were leveled to and tied into a network of station marks set according to NOAA standards. After completion of the project, final levels were re-run to the orifice and all marks from the benchmark tablet network. Terry published a station report complete with descriptions of benchmarks.
- St. George Harbor Construction
    - Designed by PND for the State of Alaska and the City of St. George, the St. George Harbor Project consisted of design and construction of a rubble-mound, berm-type breakwater. The breakwater provided moorage and safe refuge for a future home-based fishing fleet. The intent was to encourage development of a commercial fishing industry in order to relieve the people of St. George from their dependence on the federal government and the declining sealing industry. Physical conditions at St. George are extremely harsh, with waves in the seas surrounding the island reaching up to 42 feet in height, and those at the harbor site on the southwest side of the island, in Zapadni Bay, ranging to 25 feet in height. Furthermore, heavy icing has occasionally pushed the Bering Sea ice pack into the area. The severity of the design environment, coupled with the importance of the project to the future of the islanders, necessitated a broad range of reconnaissance and preliminary design engineering. Fieldwork performed by PND and subconsultants encompassed drilling and coring for materials sites; jet probing of the undersea materials; onshore and offshore surveying, including setting controls for aerial photography; environmental assessment involving marine mammals, shorebirds, fisheries, and wetlands inventories; and drilling and testing water wells. PND also assisted in providing construction engineering services for the City of St. George.
- St. George Dock Repairs
    - At the request of the City of St. George and the Alaska Department of Transportation & Public Facilities, Garth Howlett (PND) and Mike Swalling (Swalling Construction) inspected three of the city's platform docks for erosion at their approaches and a water tank upland from the marine facilities.
- St. George Breakwater Restoration
    - This project involved concept development, as well as design through construction of dredging and breakwater restoration after a large fall 2004 storm caused damage after nearly 20 years of service. The project included: concept design, cost estimating, final design, site uplands and hydrographic survey, harbor basin sediment sampling, review of in-house historical project information, breakwater cross-section comparisons and historic performance, weather data, evaluation of rock quarries, constructability, scheduling, logistics, bidding, contract negotiation, construction inspection, closeout, and

as-built drawings. The logistically challenging project was completed successfully, within budget and schedule constraints. It has performed well in the seven years since completion after being subject to typical severe storms with wave heights up to 41 feet (per NDBC buoy data).

- St. George Human & Fish Outfall Corp Permit
    - PND provided design and construction management for an 8-inch-diameter outfall line serving the newly created St. George Harbor uplands. The line is situated outside of the berm breakwater arms protecting the harbor, and it discharges into a water depth of -10 feet. Proximity to an adjacent seal rookery made acquisition of special permits essential prior to commencing underwater construction, and PND worked with various review agencies to obtain the required approvals. Effluent discharge had never before occurred at this location, and it was therefore unfamiliar territory for the EPA. To facilitate EPA review, PND implemented a field program to collect water temperature, salinity, and current data at several sites in the proposed discharge area. Based on this data, a model was developed to quantify allowable discharge volume. Refinements of the model continued concurrent with availability of new current data obtained during construction of the St. George Harbor. Installation was completed in September 1988 for a construction cost of $204,000.
- St. George FEMA Funding Request
- St. George Clinic Renovation
- St. George Water & Road Studies
- St. George School Energy Audit
- St. George Breakwater Survey
- St. George Tank Farm Topo
- St. George Inner Arm Barge Mooring
- St. George Planning & Platting
- St. George & St. Paul Utility Surveys
- St. George Dredging Value Engineering

Detailed Resumes for Project Leadership

Detailed resumes for PND team members Dempsey Thieman and Chip Courtright follow on the next pages.

DEMPSEY THIEMAN, PE, SE | Senior Vice President

PND ENGINEERS, INC.

Dempsey Thieman has managed marine and civil engineering projects statewide for more than 25 years, ranging greatly in size for both public and private clients and often on accelerated schedules with stringent budgets. He has broad experience in waterfront design and master planning for marine projects, with a long track record of providing innovative and practical design solutions to repair, maintain, and renovate older existing structures on schedule and under budget. Dempsey has served as a field and design engineer, construction manager, and project manager. He has successfully completed numerous community dock projects and understands performance needs and environmental requirements that are critical components to successful projects.

EDUCATION

B.S., Civil Engineering, 1994, California Polytechnic State University

REGISTRATION

Civil Engineer, Alaska, #9974, 1999

Structural Engineer, Alaska, #14220

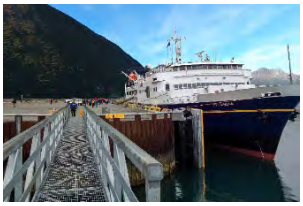
REFERENCES

Paul Cyr, Director, Alaska Department of Sportfish, 907.267.2264

Scott Korbe, Public Works Director, City of Whittier, 907.472.2327

Peggy McLaughlin, Ports Director, City of Unalaska, 907.581.1254

Homer Small Boat Harbor



Chignik Public Dock

Sand Point Dock Replacement

SELECTED RELEVANT PROJECT EXPERIENCE

DeLong Dock Inspections, Whittier, AK. Principal-in-Charge. Dempsey managed a series of inspections and condition assessments of this essential barge dock, which reached the end of its useful life and needed to be replaced. The dock is assembled from two barges totaling more than 600 feet in length on 6-foot-diameter pile. In 2018, an inspection was performed to assess damage after a vessel collided with the dock, damaging approximately 85 feet of the fender system. PND developed repair drawings and specifications to restore the fender system to pre-collision condition. Dempsey also managed a subsequent condition assessment of the dock, which utilized ultrasonic measurements and cathodic potential readings to gauge deterioration and remaining service life. A condition report was prepared with recommendations, cost estimates, and concept repair drawings. Most recently, Dempsey managed an emergency damage inspection and assessment of the dock after a fire on a fishing vessel spread to the dock. Initial damage assessments were developed to temporarily allow fishing operations to resume, with safety concerns identified and load limit restrictions in place as warranted. A final damage report detailed damage, recommended repairs, and estimated costs.

Sand Point Dock Replacement, Sand Point, AK. Principal-in-Charge. This project provided a new steel, pile-supported, concrete deck platform adjacent to the original dock built in 1981. The 200-foot-long, 60-foot-wide dock was designed for receipt of shipment of conventional and containerized cargo, as well as a landing for Alaska Marine Highway System ferry passengers and vehicles. As part of the planning effort for the project, PND prepared an alternatives analysis report and subsequently further developed the selected design concept, which was then used by the city in seeking state and federal funding for construction. Construction was completed in 2019. The dock sustained a near-design level earthquake in July 2020 with no structural damage.

Seward South Harbor Launch Ramp Renovation, Seward, AK. Principal-in-Charge. Dempsey managed engineering design of a replacement for this ramp, which had reached the end of its useful service life. The facility consisted of a four-lane ramp and three floating mooring docks which were beyond repair. The project replaced the concrete boat launch and boarding floats with new concrete-plank ramps and Americans with Disabilities Act-compliant boarding floats serviceable for at least 20 years.

Homer Small Boat Harbor Float Replacement, Homer, AK. Project Manager. Dempsey provided engineering design to replace a portion of the aging floats within the harbor. The project replaced head walk float A and float strings J, R, and S with timber floats. PND developed innovative float design details utilizing polyethylene tub flotation and cost-effective construction. Cost was significantly under budget, which allowed the project scope to be substantially increased with the planned funding.

Chignik Small Boat Harbor, Chignik, AK. **Principal-in-Charge.** Dempsey managed engineering design of two projects for this remote harbor. The first procured a new float system through a design-build delivery system. PND was responsible for permitting, design criteria and performance specifications, bidding support, design review, and construction administration. The second expanded the timber float system and added a transient float, inner harbor OPEN CELL SHEET PILE™ dock, and boat lift with wash-down system. Float units were designed as prefabricated modules, and special connections allow for displacement and energy absorption as necessary. On-float utilities include water, fire water, and electrical service.

Cordova Launch Ramp Float, Cordova, AK. **Principal-in-Charge.** Dempsey managed engineering design for this 140-foot removable float system and launch ramp. The project included the float system, replacement of an aging concrete ramp, and incorporated a floating strut system that offset the floats from the support piles. The location of the ramp and float system is exposed to heavy winter storm wave environment. Unique design details were developed to allow the system to be easily removed and reinstalled seasonally by harbor staff.

Togiak Multipurpose Dock, Togiak, AK. **Principal-in-Charge.** This project designed a multipurpose dock and ramp facility. The robust, high-capacity, low-maintenance facility was designed for harsh environmental and ice conditions and includes a 30-foot-high sheet pile dock, fender piles and bull rail, two pedestal cranes with foundations, improvements to the access road, and a concrete boat ramp. The ramp was designed as a boat launch ramp and for landing craft use.

Spit Dock Renovation, Dutch Harbor, AK. **Project Manager/Lead Designer.** This project was a complete structural renovation of a 25-year-old pile-supported and adjacent heavy-duty floating dock structure. Renovations included complete deck replacement, steel coating replacement, crane installation, seismic analysis, floating dock pontoon replacement, water and electrical utility upgrades. The total project cost was $4 million and was completed with minimal changes. Dempsey performed permitting activities, complete design effort, bid phase, contract negotiation, construction management, and management of full-time on-site inspection activities.

Unalaska Marine Center Dock Expansion, Unalaska, AK. **Principal-in-Charge.** Dempsey was responsible for the master planning, survey, bathymetry, permitting, design, and public involvement for replacing the existing Unalaska Marine Center docks at Positions III and IV with a new facility featuring expanded container crane capabilities. PND also performed construction administration and inspections. The project provided 610 feet of new dock face with a minimum water depth of approximately 45 feet. It replaced two aging pile-supported structures with a high-capacity OPEN CELL SHEET PILE™ bulkhead dock.

Dillingham Small Boat Harbor Float Design, Dillingham, AK. **Principal-in-Charge.** Dempsey managed a contract to provide plans, specifications, and cost estimates and permitting for float replacement and harbor upgrades for the City of Dillingham. New heavy-duty steel floating docks were designed within permanent piles that are designed for anticipated ice loads and frost-jacking. The floats are designed for seasonal removal with gated pile hoops, fork-lift pockets and ultra-high modulus white-stock landing skids for storage. Approach gangways with lift frames were designed to allow lifting and storage of the gangways during removal of the floats. The project included on-float potable water service and a fire water system designed to allow detachment during removal.

CHIP COURTRIGHT, PE, SE | Principal Engineer

PND ENGINEERS, INC.

Chip Courtright, a lifelong Alaskan and University of Alaska Anchorage alumnus, is a principal engineer at PND with nearly 15 years of experience, primarily in the areas of civil/structural design, inspection, estimation, and construction administration. Prior to PND, Chip worked for five years as a heavy-civil construction laborer on marine projects within Alaska; this experience gave him a pragmatic vision on how to approach projects. Chip has extensive experience in marine design and has completed many dock, harbor, float, and other marine structural projects across Alaska. He also has experience managing every stage of project processes, from concept design and permitting through construction administration. He is experienced in design in harsh environmental conditions and has a history of innovative and practical design solutions to complete complex projects on schedule and under budget.

EDUCATION

B.S., Civil Engineering, 2006, University of Alaska Anchorage

REGISTRATION

Civil Engineer, Alaska, #12820, 2010

Structural Engineer, Alaska, #126438, 2017

CERTIFICATON

American Welding Society Certified Welding Inspector

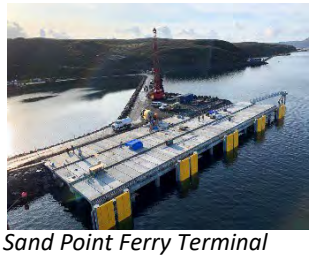
REFERENCES

Nathan Duval, Assistant/Capital Facilities Director, City of Valdez, 907.835.5478

Nathan Hill, Lake and Peninsula Borough Manager, 907.246.2421

Scott Korbe, Public Works Director, City of Whittier, 907.472.2327

Seward South Harbor Boat Launch



Sand Point Ferry Terminal

SELECTED RELEVANT PROJECT EXPERIENCE

Sand Point Ferry Terminal, Sand Point, AK. Project Manager. Chip led engineering design for this pile-supported concrete platform dock facility to service multiple users, including Alaska Marine Highway System ferry passengers and shippers of conventional and containerized cargo. The design featured high-capacity mooring dolphins, heavy duty fenders, modern dock appurtenances, and new armor rock revetment, which included in-depth coordination with the U.S. Army Corps of Engineers (USACE) to obtain Section 408 approvals for the replacement revetment.

Seward South Harbor Launch Ramp, Seward, AK. Project Manager. Chip led engineering design for replacement of a four-lane concrete launch ramp and timber boarding floats. The new launch ramp surface is constructed of high-strength precast concrete ramp planks with chevron v-groove surfacing. The new timber float units include fiberglass-reinforced traction plate surfacing with a non-slip surface and high-density polyethylene (HDPE) flotation tubs.

Chignik Small Boat Harbor, Chignik, AK. Project Manager. Chip led and managed two harbor projects: the first procured a new float system through design-build project delivery; the second included an expansion of the timber float system, new transient float, inner harbor OPEN CELL SHEET PILE™ dock, and boat lift with vessel wash system using the traditional design-bid-build delivery.

Chignik Public Dock, Chignik, Alaska. Project Manager/Lead Design Engineer. Chip managed and led engineering design for the 300-foot multipurpose dock that serves as the ferry terminal and regional public dock. The project scope included a high-capacity sheet pile bulkhead, heavy duty fender system, and mooring dolphin system. His responsibilities included concept through final design, permitting, and construction administration. Construction was funded by the Alaska Department of Transportation & Public Facilities, which required modifications in the design and project specifications to meet Federal Highway Administration standards. This project earned the Engineering News-Record Northwest Best Highway/Bridge Award in 2017.

Valdez Container Terminal and Small Boat Harbor Repairs and Load Ratings, Valdez, AK. Project Manager. Chip served as project manager and lead design engineer for repair of the Valdez Container Terminal (VCT), the floating container dock, and underwater repairs of the city's small boat harbor. He also led structural evaluation and load ratings for the Kelsey Dock and VCT. The design for the repairs and load evaluation were performed with limited background information, requiring supplemental inspections to fill data gaps. Chip interfaced closely with city personnel to ensure both the repair and load rating projects met the city's needs within the available budgets.

Crowley Kotzebue Dock Replacement, Kotzebue, AK. Project Manager. Chip served as project manager for design of Crowley Fuels Alaska's dock rehabilitation and replacement project. The design consisted of a new bulkhead system that encapsulates the existing, failed sheet pile bulkhead. PND provided inspection and construction administration services for this recently completed project.

Dillingham Boat Harbor Float Replacement, Dillingham, AK. Project Manager. Chip served as project manager for design of this float replacement and harbor upgrades project for the City of Dillingham. The new heavy-duty steel floating docks were designed for seasonal removal with permanent in-water piles designed for anticipated ice loads and frost-jacking. The project included on-float potable water service and fire water system.

Valdez Comprehensive Waterfront Master Plan, Valdez, AK. Project Manager. Chip performed concept layout of marine facilities for the Valdez Comprehensive Waterfront Master Plan. He worked with all team members to ensure all concepts were feasible from an engineering and permitting standpoint and provided construction costs for individual elements of the design alternatives. The master plan will be an essential planning and implementation tool. The planning efforts were conducted to gain the support and input of various city departments, residents, local businesses, and other stakeholders, while remaining compatible with the community character and environmental conditions. The plan focuses on the existing small boat harbor uplands; Sea Otter Park; new harbor pplands; Old Town; the VCT area; and the economic feasibility for a marine industrial trade park and marine dry stacking facility.

Circle Erosion Protection Repairs, Circle, AK. Project Manager/Lead Design Engineer. PND prepared preliminary through final design and construction administration for repairs to the Circle community's bank stabilization bulkhead/sheet pile wall on the Yukon River. Services included development and evaluation of repair alternatives, design of the selected alternative, permitting, bid support and construction administration services during construction of the repairs. The project was performed for the Alaska Division of Homeland Security and Emergency Management on behalf of the Circle Tribal Council.

Togiak Multipurpose Dock, Togiak, AK. Project Manager/Lead Design Engineer. Chip led engineering design of this project for the Togiak Traditional Council. The project included a sheet pile dock, improvements to the existing access road, and a concrete boat ramp. Armor rock was designed around all exposed edges to provide robust erosion protection in the exposed marine environment (up to 4-foot seas).

Homer Small Boat Harbor Launch Ramp, Homer, AK. Project Manager. Chip led engineering design for replacing the existing five-lane concrete launch ramp and timber boarding floats. The new launch ramp surface is constructed of high-strength precast concrete ramp planks with chevron v-groove surfacing. The new timber float units include fiberglass-reinforced traction plate surfacing with a non-slip surface and HDPE flotation tubs.

Homer Small Boat Harbor Float Replacement, Homer, AK. Design Engineer. Chip served as lead design engineer for replacing a portion of the aging floats within the small boat harbor. The project included replacing head walk float A and float strings J, R, and S with modern timber floats.

Snake River Float and Boat Lift, Nome, AK. Design Engineer. Chip assisted with design plans to install revetment on the west side of the basin. Dredging the basin would have left the westernmost properties more exposed to ice and erosion; the revetment provided necessary protection to the properties.

Cordova Launch Ramp Float, Cordova, AK. Project Manager/Lead Design Engineer. Chip led engineering design for this 140-foot removable float system and launch ramp. The project included the float system, replacement of an aging concrete ramp, and incorporated a floating strut system that offset the floats from the support piles.

Whittier Small Boat Harbor Improvements, Whittier, AK. Design Engineer. Chip provided design engineering for the reconstruction and upgrade of the Whittier Small Boat Harbor. The project included a 1,000-foot bulkhead, replacement float system, and uplands civil design. His responsibilities included design, material takeoffs, cost estimates, scheduling, reporting, and bid assistance.

Naknek Marine Dock Expansion, Naknek, AK. Design Engineer. Chip provided concept through final design of the Port of Bristol Bay Expansion. His responsibilities included calculations, cost estimates, scheduling, geotechnical investigation and reporting, USACE permit application, Coastal Management Program consistency evaluation, and alternatives analysis. PND provided design through bid phase services for expansion of the Naknek cargo dock and fisherman's float.

Iliamna Barge Ramp, Iliamna, AK. Lead Design Engineer. Chip was lead design engineer for this concrete barge ramp in Iliamna Lake. The project consisted of a new concrete barge ramp that was designed to utilize locally fabricated concrete units for the ramp surfacing.

Bethel City Dock Repair and Waterfront Improvements Projects, Bethel, AK. Design Engineer. Chip led engineering design of an emergency repair for the Bethel City Dock, including replacement of a failing soldier pile wing wall with a new sheet pile wall. The project ultimately was expanded to include a more thorough inspection of the city's marine facilities with a report documenting existing problem areas and recommended improvements.