

March 13, 2015

PND 102029.10

Shawn Bell
Interim Harbormaster
Haines Borough
P.O. Box 1209
Haines, Alaska 99827

Re: South Portage Cove Harbor Expansion
65% Design Review Submittal

Dear Mr. Bell:

PND has prepared the 65% design review submittal for the South Portage Cove Harbor Expansion project. Enclosed please find 10 sets of review documents for distribution to HB staff and the Port and Harbor Advisory Committee (PHAC). The submittal contains plans, project schedule and an updated cost estimate for the project at approximately 65% design completion.

Scope of Improvements

The scope of improvements under this phase of the project generally includes the following:

- 700 Ft Permeable Wave Barrier
- Entrance, basin expansion and inner harbor dredging along A & B Floats
- Rough graded parking area to allow upland disposal of a portion of the dredge spoils
- Relocation of existing sewer outfall line to allow dredging and wave barrier construction

Scope and Design Issues

PND has updated several design items since the 35% design review submittal. A summary of the most significant items follows.

1. **Dredging:** The dredging limits in the existing harbor basin have been modified to reflect the changes requested by the Borough. Dredging to the west of the existing boat launch ramp has been deleted to allow for continued use of that facility without undermining the toe of the ramp. Dredging below the work floats at the north end of the harbor to -6' MLLW elevation was added. Dredging around the fuel dock, ice chute and inside the transient float has increased. Dredging along the headwalk of the new float system was increased to allow more vessel maneuvering space between the float and shore.
2. **Demolition:** Demolition of the Seaplane Float and partial demolition of the Transient Float were added to the scope of improvements. Please let us know if you wish to salvage these floats for the Borough or whether they are to become the Contractor's responsibilities to dispose. There are some electrical services on the transient float and an electrical demolition plan will need to be developed in the future, but has not been included in the 65% design submittal.
3. **Upland Development:** PND has continued development of the upland parking and staging area. It was determined that significant storm water runoff flows into the existing ditch adjacent to the Memorial Park. We have included additional storm drain features to ensure the future harbor basin is not inundated with freshwater, which can result in surface freezing within the basin. There are four existing outfalls within the upland fill area to be redirected. The northernmost, a 24-inch CMP outfall, originating

at a catch basin on the west side of Front Street has not been located by PND or HB to date - it is possibly buried in the roadway slope. Please take steps to determine the location of this outfall so we may design an extension for it through the new fill area.

The crushed aggregate base course for the upland parking area has been deleted and the parking area surface will now be constructed with 4-inch minus shot rock. This allows the newly placed fill to dewater and settle until such time as the final grading/landscaping commences in a future phase of work.

4. **Memorial Park:** The existing park will be surrounded by the proposed upland parking area. HB has requested PND estimate costs for relocating the park to the southern end of the site. We are currently assessing the impacts and costs of this move and plan to submit a preliminary cost estimate directly.
5. **Wastewater Outfall Pipe:** The wastewater outfall pipe alignment has been located to the south around the dredge basin and wave barrier. After preliminary design of the outfall with an initial alignment through the dredge basin, PND determined that the new route would result in a cost savings as well as less environmental and construction risk to the Borough.

The existing sewer outfall pipe is buried in a shallow trench below the harbor basin. Dredging activity will develop cuts nearly 25' deep in some locations thus interfering with this line. At 35% design, our plan was to dredge a portion of the basin while keeping the exiting line intact. Under this option, once the initial dredging was completed a new sewer outfall line would be constructed, installed and connected to the existing line in the uplands. Upon proceeding with design development, this plan was abandoned due to excessive costs, risk and schedule concerns. The rationale in this decision is as follows:

- a. It was determined that at the transition between the dredged region and the uplands the depth of the trench excavation would need to be 25 feet or more down to elevations around -17 feet MLLW. The extent of the excavation coupled with the tidal inundation of the trench will result in significant cost to install the new outfall through this region. Either significant trench slope layback or sheet pile shoring would be required, both of which added considerable costs.
- b. Under the initial outfall route, dredging would be completed along the outfall alignment prior to outfall construction. As a result trenching from a barge becomes necessary very early in the installation process. While the preferred route is longer, the majority of the additional length can be installed with conventional excavators without the use of a barge and crane for trenching. The segments of the outfall trench that would be excavated from a barge would likely be similar for both the initial and the preferred routes. The trench excavation and subsequent pipe installation from the barge is the most significant cost item under both options.
- c. Under the initial scenario, dredging would have to be partially completed, stopped for the installation of the new outfall and then resumed once the new outfall was installed. This change in construction sequence and required schedule coordination results in added costs, especially considering the barge(s) that are required for both dredging and the outfall installation. These sequencing costs are not incurred under the new route.
- d. Under the initial scenario, pile driving for the wave barrier would have to be coordinated and completed in a prescribed sequence so that the new outfall is not damaged or disturbed. This again, becomes a significant coordination and cost item, one not involved with the preferred route. Additionally, future pile driving for the new floats would have to be closely monitored to prevent damage to the outfall line if it were to remain in the harbor basin.
- e. We considered a temporary outfall to limit the costs incurred for the coordination in dredging and pile driving described above. However, to be cost effective the temporary outfall would need to be installed along the design alignment to allow it to become part of the permanent outfall. After preliminary discussions with the reviewing agencies, PND considers it unlikely that a temporary outfall of this nature would be permitted, as it would result in sewerage discharge fully exposed on the beach at low tides. A temporary outfall reaching depths that may be agreeable to permitting agencies, while avoiding the dredged regions would result in considerable additional costs. PND

dismissed the temporary outfall plan, as it would likely involve significant permit review and resulting schedule impacts.

- f. Finally an outfall pipe routed through the future floats limits the flexibility in the design and layout of future harbor floats.

Project Budget

The attached cost estimate has been updated to reflect the current scope of improvements developed to a 65% design completion level. It incorporates the Borough's review and direction since delivery of the 35% design documents. The total project budget including 8% contingency and all known indirect costs is estimated at \$21.12 million. The 65% estimate is approximately \$0.53 million less than PND's initial 2014 planning level budget prepared prior to the commencement of the design phase.

State and Federal Permit Applications & Compensatory Mitigation Plan

PND's sub consultant, Hart Crowser (HC), is performing regulatory due diligence studies for the project. HC is nearing completion of the Biological Assessment (BA) and an Ecological Functional Assessment (EFA) both of which have been submitted to the Borough for review. The preferred Compensatory Mitigation Plan, suggested by Takshanuk Watershed Council, involves work in the Mud Bay area for beach restoration at the 7 Echoes site. This plan has been further studied by PND resulting in implementation cost concerns and potential property issues. HC is now evaluating a reduction in the scope of the 7 Echoes mitigation project while concurrently investigating other mitigation options including in lieu fees through SEAL Trust. The mitigation development process has resulted in a delay in the submittal of the federal permit application and an adjustment of the schedule has been made accordingly. We request the Borough's input on its preferred compensatory mitigation efforts for this project.

PND has contacted the Alaska Department of Environmental Conservation and the Environmental Protection agency regarding the wastewater outfall relocation. Both agencies require further review of a developed plan. With HB's approval of the new outfall alignment PND will proceed with the required coordination and plan reviews.

Project Schedule

An updated project schedule is enclosed for your review. While the engineering design elements are on tract, the critical path to project completion remains with environmental permitting and associated compensatory mitigation tasks. We have extended the preparation of these study and application documents out to mid-April with anticipated regulatory review and permit authorizations by mid-July as can be seen at lines 10 and 11 of the attached schedule. With permits in hand the project can be advertised for construction bids due late August followed by execution of a construction contract and NTP by mid-September. It remains speculative whether a contractor would actually mobilize to the site in the fall of 2015 when inclement weather typically begins or wait until spring of 2016 to commence work. We have thus scheduled final project completion for June 30, 2017 to align with the grant stipulations.

The delivery and review of PND's 65% design submittal is shown on lines 12 and 13. The design phase remains on schedule with the 95% design review package due on May 29th. To meet that schedule we request your written review comments to this 65% design submittal by March 27th.

Public Meeting

PND is scheduled to present the design at the upcoming Assembly meeting on March 24th. We plan to address the current project scope, design development issues and the permitting and compensatory mitigation process at this meeting. Please let us know if there are other items you would like addressed.

PND looks forward to receiving your comments to this 65% design review submittal and would like to schedule a review work session at your earliest convenience. Please feel free to contact us if you have any immediate questions or concerns regarding the project. We look forward to continued work with the Borough as we proceed with the 95% final design review submittal.

Sincerely,

PND Engineers, Inc. | Juneau Office

A handwritten signature in blue ink, appearing to read "Dick Somerville".

Dick Somerville, P.E.
Vice President

Enclosures



HAINES BOROUGH
SOUTH PORTAGE COVE HARBOR EXPANSION
WAVE BARRIER, DREDGING, GRAVEL PARKING AREA &
SEWER LINE RELOCATION

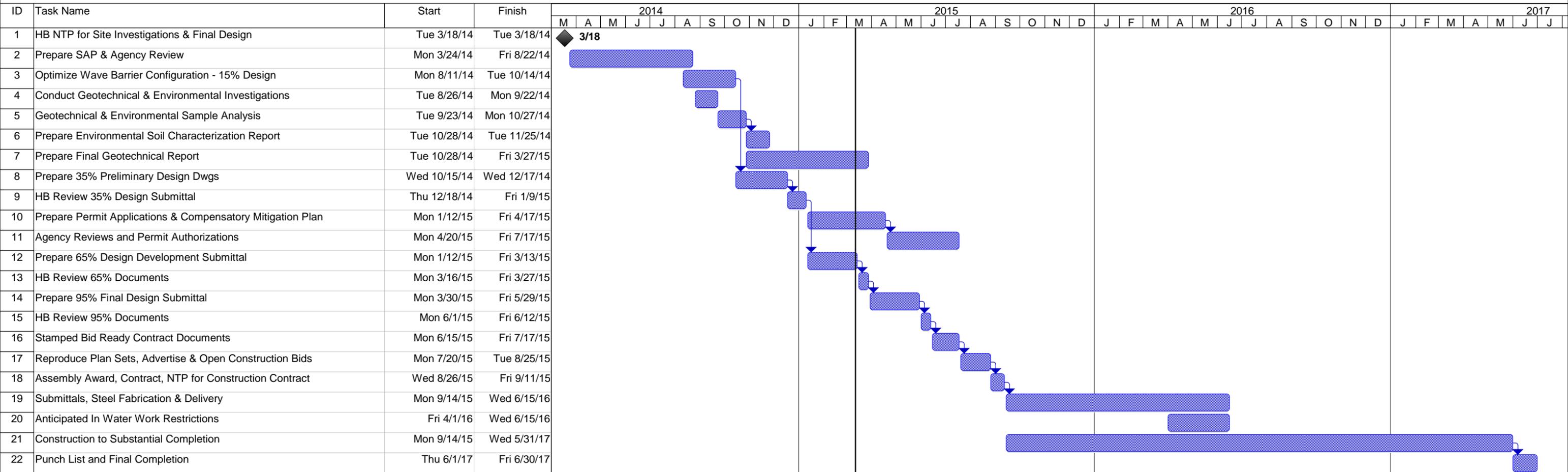


65% DESIGN COMPLETION - COST ESTIMATE
MARCH 13, 2015

Item	Item Description	Units	Quantity	Unit Cost	Amount
1505.1	Mobilization	LS	All Req'd	10%	\$1,428,988
1570.1	Erosion and Sediment Control - Upland Measures and Monitoring	LS	All Req'd	\$25,000	\$25,000
1570.2	Silt Containment Boom with Navigation Lights	LF	1,500	\$30	\$45,000
2060.1	Demolition, Salvage and Disposal	LS	All Req'd	\$150,000	\$150,000
2201.1	Clearing & Grubbing	AC	1.5	\$10,000	\$15,000
2202.1	Useable Excavation	CY	2,500	\$12	\$30,000
2202.2	Class A Shot Rock Borrow	CY	8,000	\$30	\$240,000
2202.3	Class B Shot Rock Borrow	CY	9,000	\$22	\$198,000
2202.4	Re-Grade Existing Parking Area	LS	All Req'd	\$3,000	\$3,000
2205.1	Class II Armor Rock	CY	6,000	\$60	\$360,000
2205.2	Class III Armor Rock	CY	3,000	\$70	\$210,000
2401.1	Furnish 16" Dia. HDPE Wastewater Outfall Pipe	LF	2,500	\$40	\$100,000
2401.2	Install 16" Dia. HDPE Wastewater Outfall Pipe Sta. 1+50 - 6+50	LF	505	\$80	\$40,400
2401.3	Install 16" Dia. HDPE Wastewater Outfall Pipe Sta. 6+50 - 7+75	LF	130	\$110	\$14,300
2401.4	Install 16" Dia. HDPE Wastewater Outfall Pipe Sta. 7+75 - 26+10	LF	1850	\$320	\$592,000
2401.5	Furnish and Install Wastewater Outfall Diffuser	LS	All Req'd	\$15,000	\$15,000
2401.6	Connect to Existing 16" Dia. HDPE Outfall Pipe	LS	All Req'd	\$8,000	\$8,000
2402.1	Furnish and Install Wastewater Outfall Concrete Anchor, Type I	EA	175	\$75	\$13,125
2402.2	Furnish and Install Wastewater Outfall Concrete Anchor, Type II	EA	20	\$100	\$2,000
2501.1	8" CPEP Storm Drain Pipe	LF	165	\$50	\$8,250
2501.2	24" CPEP Storm Drain Pipe	LF	200	\$100	\$20,000
2501.3	36" CPEP Storm Drain Pipe	LF	540	\$130	\$70,200
2501.4	Connect to Existing Storm Drain Pipe	EA	4	\$500	\$2,000
2502.1	Storm Drain Manhole Type I	EA	3	\$10,000	\$30,000
2502.2	Storm Drain Manhole Type II	EA	1	\$5,000	\$5,000
2502.3	Storm Drain Oil-Water Separator	EA	1	\$40,000	\$40,000
2502.4	Storm Drain Outfall Structure	LS	All Req'd	\$40,000	\$40,000
2702.1	Construction Surveying	LS	All Req'd	\$150,000	\$150,000
2714.1	Geotextile Fabric	SY	15,000	\$5	\$75,000
2881.1	Dredging and Offshore Disposal	CY	110,000	\$25	\$2,750,000
2881.2	Dredging and Onshore Placement at Parking Area	CY	25,000	\$35	\$875,000
2896.1	Furnish & Install Wave Barrier Pile, 24 Inch Dia. X 0.500 Inch Thick w/Sheetpile Wing	EA	131	\$30,000	\$3,930,000
2896.2	Furnish Bearing Pile, 30 Inch Dia. X 0.750 Inch Thick	LF	7,920	\$230	\$1,821,600
2896.3	Install Bearing Pile, 30 Inch Dia. X 0.750 Inch Thick	EA	44	\$30,000	\$1,320,000
2896.4	Spin Fin®, 30 Inch Dia. Pile	EA	42	\$5,000	\$210,000
2896.5	Install Salvaged 12 Inch Dia. Steel Pile	EA	4	\$4,000	\$16,000
2901.1	Furnish & Install Barrier Waler	LF	700	\$600	\$420,000
2901.2	Furnish & Install Bearing Caps & Connections	EA	22	\$23,000	\$506,000
2901.3	Wave Barrier Amenities - Fenders, Light, Armor Excavation, Misc.	LS	All Req'd	\$160,000	\$160,000
ESTIMATED CONSTRUCTION BID PRICE					\$15,938,863
CONTINGENCY & COMPENSATORY MITIGATION (8%)					\$1,275,109
PLANNING, ALTERNATIVES ANALYSIS & PUBLIC INVOLVEMENT					\$260,777
ENVIRONMENTAL INVESTIGATIONS, HABITAT STUDIES & PERMITTING					\$417,740
GEOTECHNICAL INVESTIGATIONS					\$878,946
SITE TOPOGRAPHIC & BATHYMETRIC SURVEYS					\$96,893
FINAL ENGINEERING DESIGN & BID READY CONTRACT DOCUMENTS					\$1,139,841
CONTRACT ADMIN & CONSTRUCTION INSPECTION					\$1,115,720
TOTAL RECOMMENDED PROJECT BUDGET					\$21,123,889

NOTE: Costs for the parking area assume a gravel surface. Future paving, sidewalks, curbs, utilities, landscaping, restrooms and lighting improvements are not included in this estimate. Pile anodes are not included in this estimate.

SOUTH PORTAGE COVE HARBOR EXPANSION PROJECT SCHEDULE WAVE BARRIER, DREDGING, SEWER OUTFALL & PARKING AREA ROUGH GRADE



PND No. 102029 March 13, 2015	Task		Rolled Up Split		External Milestone		Duration-only		Progress	
	Split		Rolled Up Milestone		Inactive Task		Manual Summary Rollup		Deadline	
	Milestone		Rolled Up Progress		Inactive Milestone		Manual Summary			
	Summary		External Tasks		Inactive Summary		Start-only			
	Rolled Up Task		Project Summary		Manual Task		Finish-only			