

KODIAK CITY COUNCIL

WORK SESSION AGENDA

Tuesday, June 11, 2013

Kodiak Island Borough Conference Room

7:30 p.m.

Work sessions are informal meetings of the City Council where Councilmembers review the upcoming regular meeting agenda packet and seek or receive information from staff. Although additional items not listed on the work session agenda are sometimes discussed when introduced by the Mayor, Council, or staff, no formal action is taken at work sessions and items that require formal Council action are placed on a regular Council meeting agenda. Public comments at work sessions are NOT considered part of the official record. Public comments intended for the "official record" should be made at a regular City Council meeting.

Discussion Items


1. Public Comments (limited to 3 minutes)
2. Presentation on Pier III Report on Geotechnical Findings and Preliminary Design Recommendation
 - a. Alternatives Analysis.....1
 - b. PND Design Proposal Letter10
 - c. ARCADIS Status Memo20
 - d. ARCADIS Budget Template.....22
 - e. Discussion Schedule23
 - f. ARCADIS Memo re PND Amendment 3, Full Design Services Award Rec. .24
3. Parks & Recreation Advisory Board Recommendations on Baranof Park Project Priorities.....(PowerPoint at work session)
4. June 13, 2013, Agenda Packet Review



Alternatives Analysis

Pier 3 Replacement

Prepared for:
City of Kodiak
710 Mill Bay Road
Kodiak, AK 99615

Prepared by:

ENGINEERS, INC.
1506 W. 36th Avenue
Anchorage, AK 99503

June 4, 2013



Executive Summary

This report outlines work completed on the Kodiak Pier 3 Replacement Project since the issue of the September 2011 Design Study Report (DSR) and discusses the impacts that this additional work has made on the initial recommendations presented therein. Following this discussion the report describes some of the more promising alternatives that were evaluated based on the newly collected field data to determine the recommended course of action moving forward with the project. Other alternatives not discussed in this document, pin piles, additional alternative dock layouts, etc. were also evaluated however were quickly ruled out due to cost, permitting, constructability or other issues.

It was determined that a pile supported structure will need to be constructed at the site based on the newly gathered data. The base concept design for a pile supported structure presented in the 2011 Design Study Report was required to be modified based on the site conditions observed. At the current stage of design of the structure these modifications increased the cost estimates above the available budget. Detail design will work to refine the design and cut the additional costs to bring the project within budget. In the event that detail design is not able to sufficiently cut costs, engineering and project stakeholders have identified that shortening currently proposed dock by approximately 50 feet will bring costs to within the currently established budget and still provides a serviceable facility capable of meeting the project needs.

1.0 Introduction

This report, prepared for the City of Kodiak (the City), by PND Engineers, Inc. (PND) is an update to the design recommendations made in the September 2011 Design Study Report (DSR) for Pier 3. Since the issue of the DSR additional upland survey, bathymetry and geotechnical work on the project has been completed. The gathered geotechnical information, particularly soil strength and depth to bedrock, differed enough from assumptions used when preparing the DSR to justify review of alternatives presented in the report. The following report summarizes the completed survey and geotechnical work and outlines the changes to the assumptions made in the DSR. Finally, the report re-evaluates and expands on the structure type recommendation given in the DSR based on the gathered site data.

More detailed information on the background of the project including design criteria, existing site conditions, and the purpose and need for the facility can be found in the DSR.

2.0 Summary of Survey and Geotechnical Work

Uplands survey and bathymetry data was collected at the existing and proposed dock site in March of 2013 by PND. The newly collected data did not vary significantly from the data utilized in developing the recommendation presented in the DSR. Since the March 2013 survey and bathymetry data did not vary significantly from the assumptions made in the DSR, this new data does not affect the recommendations given concerning the structure type or construction placement option.

Geotechnical data was collected in March and April of 2013 by PND and Geotek Alaska, Inc. (GAI). Soil samples were taken at each of the eight (8) completed boreholes and rock cores of the underlying bedrock were taken at three (3) boreholes. A geotechnical data report, "Geotechnical Report – Kodiak Pier 3 Replacement", outlining all of the findings of the site investigation was prepared and submitted to the City of Kodiak (the City) in May of 2013.

3.0 DSR Assumption Impacts

The geotechnical data collected during the March to April 2013 geotechnical program varied in three significant ways from the assumptions made for the DSR. Initially, based on other nearby geotechnical information the depth and slope of the bedrock was assumed as shown in Figure 4 from the DSR (attached). This bedrock profile was found to be accurate for the areas directly adjacent to the existing pier structure. New boreholes showed that the profile of the bedrock drops off steadily toward the northeast. Secondly, the soil strength properties for the material above the bedrock layer were found to be of lower strength than anticipated. Thirdly, lab tests of site materials indicate that the soil is prone to substantial settlement as fill material is placed in the structure over existing soils.

4.0 Alternatives Review

4.1 2011 DSR Recommendation

The DSR recommended the installation of the new dock directly adjacent to the existing structure and evaluated both a pile supported and OPEN CELL® structure. Based on the design assumptions made for soil conditions at the site, the OPEN CELL was found to be the most cost effective solution at the time of the DSR. If the site conditions were found to be inadequate for the OPEN CELL, then the next most cost effective option was determined to be a pile supported dock at approximately \$7.9 million in additional cost.

4.2 OPEN CELL® Structure

The OPEN CELL was re-evaluated with the new data to ensure that the site conditions were adequate to support the structure. The OPEN CELL requires sufficient soil strengths at the site to satisfy global stability requirements during construction, under normal operating conditions and under seismic loading. The structure was reevaluated with the updated soil parameters to assess both this global stability of the structure as well as settlement. From this analysis inadequate factors of safety and large settlements were estimated to occur during the first few years following installation.

Considering the large cost differential of the OPEN CELL dock alternative to the pile supported dock, options to improve the soils were examined to determine if the OPEN CELL could remain technically feasible. Several options for soil improvement were evaluated for both cost and technical acceptability in order to determine if site conditions could be adequately improved to still provide a less expensive sheet pile alternative as compared to pile-supported structures. The ground improvement options evaluated for use at the site to increase soil strength to levels acceptable for installation of the OPEN CELL included: surcharging with or without wick drains, stone columns and jet grout\soil mixing. These options are discussed in detail below.

4.2.1 Surcharging and Wick Drains:

Surcharging, or loading an area with structural fill, can be used to consolidate the loose soils by encouraging excess water in the pores or voids of the soil to dissipate and gain strength as well as eliminate settlement issues. This method can be combined with wick drains to allow for additional drainage paths and reduce the time required for settlement and the ground improvement.

While the degree of soil improvement for both strength and settlement utilizing this method would be adequate to install the OPEN CELL structure there are several drawbacks to this method that relate to the project. Drainage and consolidation take time. Preliminary calculations indicate that with surcharging and the use of wick drains approximately 12-18 months would be required to sufficiently improve the soil for the installation of an OPEN CELL structure. This would necessarily push back the current installation schedule of the dock. Additionally, the sloped face of surcharge material would have to be initially placed further out than the footprint of the proposed dock structure (see Figure 1 –

Surcharge Extents, Attached). The placement of the surcharge may interfere with current dock operations and may also be required to be temporarily protected with rip rap, mats or other means during the improvement period. After improvement, slope protection and fill outside of the OPEN CELL footprint would be required to be removed in order to install the dock and maintain adequate water depths at the face. In this scenario, some uplands features such as asphalt and utilities may require delayed installation to accommodate the final stages of settlement. This approach would likely increase permitting complexity due to the additional fill and dredge required. As this solution did not meet the schedule and since it would interfere with the current dock operations a cost for this ground improvement technique was not further developed.

4.2.2 Stone Columns:

Stone columns are drilled shafts filled with large stones intended to reinforce the soil mass and provide strength as well as reduce settlement issues. Stone column techniques were evaluated, however this option was ruled out quickly because the degree of improvement to the soil was found to be insufficient for the required structural stability.

4.2.3 Jet Grouting or Soil Mixing:

Jet grouting is a soil reinforcement technique where the soil to be reinforced is injected with columns of grout. A hole is drilled to the desired depth of the reinforced soil column where a high velocity air, water and grout mixture erodes away the surrounding soil and fills the void with grout. As the drilling auger and injection head is slowly lifted, a reinforced soil column is created. This process is repeated until the desired area to be reinforced is covered.

Soil mixing is a similar technique to jet grouting, however instead of displacing the soil with pressurized air and replacing with grout, a drill and paddle system is spun in from the top down while grout or dry cement is mixed in with the soil column. This technique creates a reinforced column that is a mixture of soil and grout. Though not as strong as a jet grout column it still serves to reinforce the area with grout in a similar manner.

In order to adequately address both the strength and settlement issues associated with the site conditions a large area of the soil mass would be required to be improved in order to make the OPEN CELL a technically feasible alternative at this location. This type of ground improvement is typically done from the shore off of a dike or bulkhead. At this site the columns would be required to be completed from a barge since the soil strengths are insufficient for the construction of the bulkhead structure or dike to be utilized as a working platform without initially being reinforced. Aside from making the installation of either the soil mixed or jet grout columns technically infeasible, barge installation would create other schedule, cost and permitting impacts to this method of soil improvement that rule it out as a possible ground improvement scenario for this site.

Of the alternatives considered for ground improvement only the surcharge and wick drains meet the technical requirements for installation of the OPEN CELL structure. Surcharging however both delays the

installation of the facility and would interfere with the usage of the existing dock for a period of time. The next most cost effective alternative, a pile supported dock, is re-evaluated in Section 4.3.

4.3 Pile Supported Dock

The pile supported dock option outlined in the DSR is still a technically feasible option for construction at the site though the geotechnical data gathered warranted some changes to the concept design originally presented in order to maintain the same operational characteristics. The combination of the weak soil strength properties and the additional soil above bedrock to the northeast required that an additional twenty feet of pile length be added to the initial concept design. The weak soil strength will also require that rock anchors be utilized in some areas to accommodate large tensile loadings during seismic events. Additionally, more detailed seismic modeling of the proposed structure was conducted following the geotechnical program that identified the need for several additional batter pile members as well increased sizes for several members not originally identified.

All of the changes described above will necessarily increase the cost for the structure if all of the same criteria from the DSR are to be met. An updated ROM cost estimate including these additions is attached to this document as Appendix 1 and indicates an additional cost above the DSR estimate of approximately \$3.5 million. It is important to understand that the design at this point is in the very early stages and has only been evaluated as a steel structure supported on vertical and batter piles. In the early stages of the detail design, other options such as drilled shafts, concrete caissons, vertical support only and others will be evaluated and may be found to be lower cost alternatives.

5.0 Design Recommendation

After review of the recently collected geotechnical, survey and bathymetry data it is recommended that the proposed new Pier 3 be constructed as a pile supported structure.

PND understands that the project funding for the Pier 3 replacement has been approved based on the DSR ROM cost estimate for the pile supported dock constructed adjacent to the existing structure. It is likely that additional funding is not available to cover the additional costs of the updated ROM estimate. If design refinements cannot be made during the detail portion of the design then it will be necessary to alter the proposed layout of the structure to fit within the currently approved budget. Several alternatives to fit within the approved budget were evaluated between engineering and project stakeholders. A brief discussion and recommendation of the best cost cutting alternative, if design refinement is inadequate to stay within budget, is given in section 6.0 below.

6.0 Construction Budget

Project stakeholders and engineering re-evaluated several options originally discussed in the DSR or City master plan such as alternative dock locations or retrofit of the existing dock. Alternative dock locations in the area are not available or offer significant disadvantages to the proposed location. Retrofitting of the existing structure is still anticipated to be a costly alternative since it will require nearly complete removal and replacement of the existing structure in addition to the high maintenance costs of

maintaining the sections of the structure re-used in construction. With these two options eliminated the project looked to cost cutting alternative layouts to bring cost down.

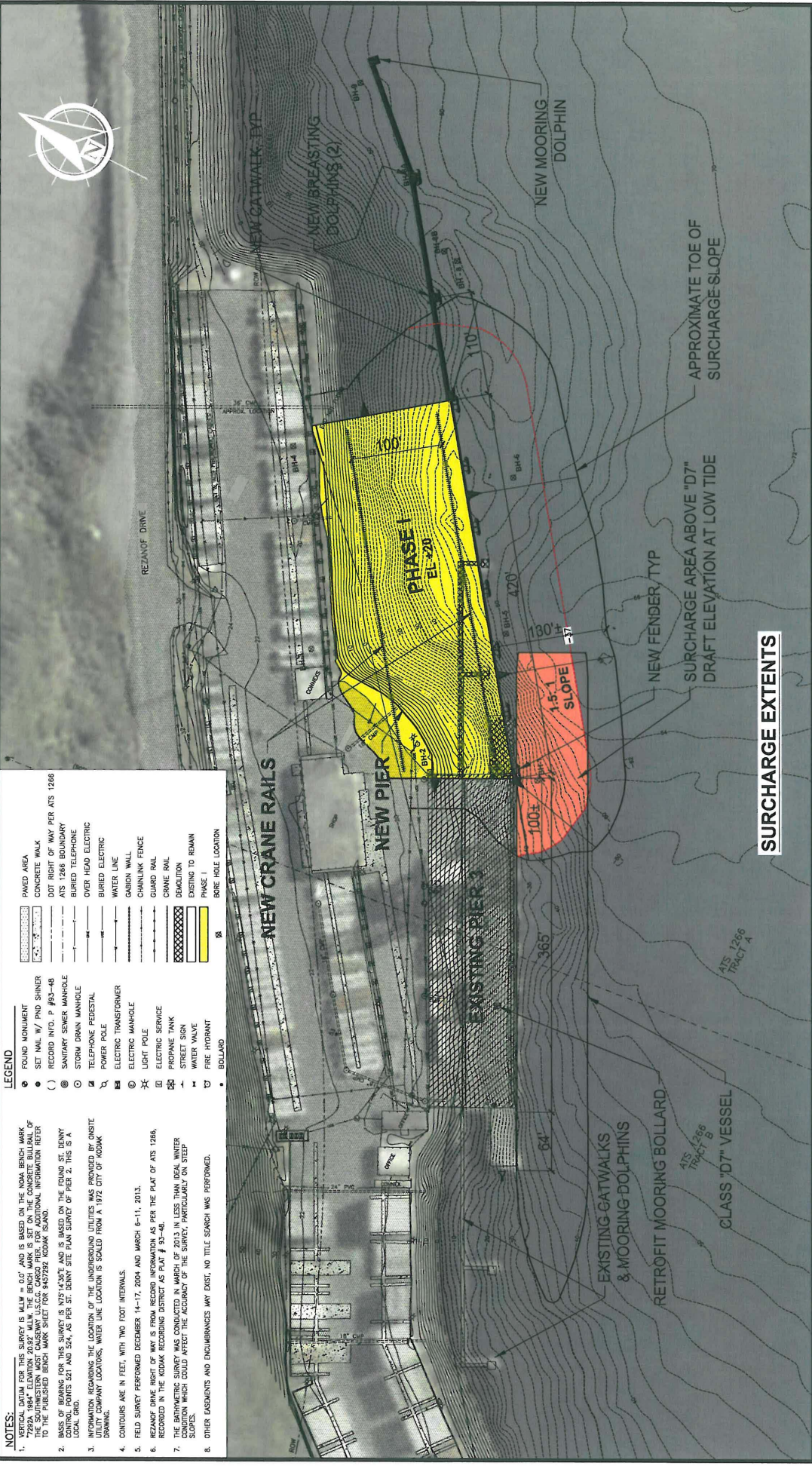
Several dock alternative layouts were discussed between engineering and project stakeholders including shortening of the dock width or length, staged construction, finger trestles and others. Each option to cut costs would limit the usability of the dock compared to the baseline concept developed in the DSR, however each would provide a serviceable dock with greater flexibility than exists at the current facility and fits within the currently approved budget. The most attractive cost cutting option to all stakeholders was to shorten eastern end of the dock by 50 feet +/- . This provides a total dock length of approximately 370 feet, similar to the existing structure. This option provides the least impact to the functionality of the new structure and cuts enough cost from the estimates to fit within the funding source available. As discussed in section 5.0 above, if refinement during detailed design is not sufficient to bring costs within the budget then the dock will likely be shortened.

CITY OF KODIAK
Pier 3 Replacement
 ROM CONSTRUCTION COST ESTIMATE
OPTION 1 - Pile-Supported Dock

6/04/2013
 PND Proj. #111012

Description	Unit	Quantity	Unit Price	Amount
1 SITE MOBILIZATION AND DEMOBILIZATION				
Mob & Demob	L.S.	All Req'd	\$ 2,000,000	\$ 2,000,000
			SITE MOBILIZATION AND DEMOBILIZATION SUBTOTAL =	\$ 2,000,000
2 DEMOLITION				
Demo and Dispose Eastern wing of Existing Pier	LS	All Req'd	\$ 250,000	\$ 250,000
			DEMOLITION SUBTOTAL =	\$ 250,000
3 PILE SUPPORTED DOCK ~ 420' x100' = 42,000 SF				
Furnish & Install 30"Øx1"t Steel Pipe Piles (120' avg length, partial galv)	EA	50	\$70,100	\$ 3,505,000
Furnish & Install 36"Øx1"t Steel Pipe Piles (120' avg length, partial galv)	EA	22	\$ 81,000	\$ 1,782,000
Furnish & Install 30"Øx1"t Steel Pipe Batter Piles (140' avg length, parial galv)	EA	38	\$ 77,800	\$ 2,956,400
Furnish & Install 36"Øx1"t Steel Pipe Batter Piles (140' avg length, parial galv)	EA	12	\$ 90,400	\$ 1,084,800
Install Rock Anchors for Tension Piles	EA	35	\$ 35,000	\$ 1,225,000
Steel Built-up Box Girders Pile Caps(530 lb/ft, 52' avg length, full galv)	LF	2500	\$ 1,350	\$ 3,375,000
Steel Struts (200lb/ft, 25' avg length, full galv)	LF	1100	\$ 500	\$ 550,000
Precast/prestressed Concrete Panels (installed) - (18" thick)	SF	42000	\$ 100	\$ 4,200,000
Crane Rail Beam (175 lbs/yd)	LF	800	\$ 125	\$ 100,000
Fender Unit (Piles/Berthing Panels/ Energy Absorption system) (60' O.C. Spacing)	EA	8	\$ 200,000	\$ 1,600,000
Asphalt (2-inch thick layer)	SF	23500	\$ 8.5	\$ 199,750
Misc. (Cleats, Bullrails, Ladders, Signage, etc.)	LS		\$ 265,000	\$ 265,000
Upgrade Superstructure for Ro-Ro Ramp support	LS	1	\$ 550,000	\$ 550,000
			PLATFORM DOCK SUBTOTAL =	\$ 21,392,950
4 DOLPHINS ~ (2 Breasting Dolphins, 1 Mooring Dolphin, 1 Retrofit Bollard)				
Furnish & Install 30"x1"t Steel Pipe Pile (145' avg length, partial galv)	EA	9	\$ 79,800	\$ 718,200
Install Rock Anchors for Tension Piles	EA	6	\$ 35,000	\$ 210,000
Steel Dolphin Cap	EA	3	\$ 52,000	\$ 156,000
Fender Unit for Berthing Dolphin (Piles/Panels/Energy Absorption System)	EA	2	\$ 200,000	\$ 400,000
5' Wide Catwalk - (Appx. 6-60' Lengths)	LF	360	\$ 1,200	\$ 432,000
Furnish & Install 30"x1"t Steel Pipe Pile for Catwalk Support (110' avg length, partial galv)	EA	3	\$ 66,200	\$ 198,600
Upgrades to Existing Mooring Bollard at Existing Pier 3	LS	1	\$ 100,000	\$ 100,000
			DOLPHIN SUBTOTAL =	\$ 2,214,800
5 EARTHWORK				
Remove / Rework Existing Armor Slope	CY	10,000	\$ 25	\$ 250,000
Concrete Retaining wall (12" thick, 5-0" tall)	LF	420	\$ 330	\$ 138,600
Structural Fill (from Near Island Quarry)	CY	22,000	\$ 25	\$ 550,000
New Armor Rock	CY	3,400	\$ 70	\$ 238,000
Dredging at Face of Dock (East of existing pier)	CY	750	\$ 25	\$ 18,750
Supply and Place Surfacing Material	CY	2,600	\$ 50	\$ 130,000
			EARTHWORK SUBTOTAL =	\$ 1,325,350
6 ELECTRICAL UPGRADES				
Lighting and associated distribution equipment	LS	All Req'd	\$ 360,000	\$ 360,000
Cable Trench Heat Trace	LS	All Req'd	\$ 90,000	\$ 90,000
Crane Power (1200kW)	LS	All Req'd	\$ 750,000	\$ 750,000
			ELECTRICAL UPGRADES SUBTOTAL =	\$ 1,200,000
7 MISCELLANEOUS				
Extend Potable Water Supply	LF	420	\$ 200	\$ 84,000
Stormdrain System	LS	1	\$ 75,000	\$ 75,000
Construction Phase Mooring Dolphin (Near existing pier)	LS	1	\$ 600,000	\$ 600,000
			MISCELLANEOUS SUBTOTAL =	\$ 759,000
ROM CONCEPT 1 CONSTRUCTION COST =				\$ 29,142,100
8 CONTINGENCY For items 1 through 6				
			15%	\$ 4,371,000
			CONSTRUCTION CONTINGENCY SUBTOTAL =	\$ 4,371,000
9 PLANNING, PERMITTING, DESIGN AND IMPLEMENTATION COSTS				
Engineering Design (approx. 4% Construction Cost) (Includes Wave Modelling)	LS	All Req'd	\$	1,165,684
Surveying (Topographic/Bathymetric & Land Survey)	LS	All Req'd	\$	31,000
Geotechnical Investigation (deep water boring, test pile program, sampling, etc.)	LS	All Req'd	\$	348,000
Permitting/ Mitigation (Time and Materials based estimate)	LS	All Req'd	\$	125,000
Construction Admin and On-site Observation (approx. 5% Const. Cost)	LS	All Req'd	\$	1,457,105
			PLANNING, PERMITTING, DESIGN, AND IMPLEMENTATION SUBTOTAL =	\$ 3,126,789
ROM OPTION 1 PROJECT COST =				\$ 36,639,889





- NOTES:**
1. VERTICAL DATUM FOR THIS SURVEY IS MLLW = 0.0' AND IS BASED ON THE NOAA BENCH MARK AT THE ELEVATION POINT MARKED BEAUMARE 5. SET ON THE CONCRETE BOLLARD OF THE 22' WIDE WALKWAY ALONG THE BEACH. THE BENCH MARK IS SET ON THE CONCRETE BOLLARD TO THE PUBLISHED BENCH MARK SHEET FOR 942792, KODIAK ISLAND.
 2. BASIS OF BEARING FOR THIS SURVEY IS N75°14'38"E AND IS BASED ON THE FOUND ST. BENNY CONTROL POINTS 521 AND 524, AS PER ST. DENNY SITE PLAN SURVEY OF PER 2. THIS IS A LOCAL GRID.
 3. INFORMATION REGARDING THE LOCATION OF THE UNDERGROUND UTILITIES WAS PROVIDED BY ONSITE UTILITY LOCATIONS. WATER LINE LOCATION IS SCALED FROM A 1972 CITY OF KODIAK DRAWING.
 4. CONTOURS ARE IN FEET, WITH TWO FOOT INTERVALS.
 5. FIELD SURVEY PERFORMED DECEMBER 14-17, 2004 AND MARCH 6-11, 2013.
 6. REZANOZ DRIVE RIGHT OF WAY IS FROM RECORD INFORMATION AS PER THE PLAT OF A/S 1266, RECORDED IN THE KODIAK RECORDING DISTRICT AS PLAT # 93-46.
 7. THE BATHYMETRIC SURVEY WAS CONDUCTED IN MARCH OF 2013 IN LESS THAN IDEAL WINTER SLOPES, WHICH COULD AFFECT THE ACCURACY OF THE SURVEY, PARTICULARLY ON STEEP SLOPES.
 8. OTHER OBSTRUCTIONS AND ENCUMBRANCES MAY EXIST. NO TITLE SEARCH WAS PERFORMED.
- LEGEND**
- FOUND MONUMENT
 - SET NAIL W/ PND SHINER
 - () RECORD INFO. P 893-46
 - SANITARY SOWER MANHOLE
 - STORM DRAIN MANHOLE
 - TELEPHONE PEDestal
 - POWER POLE
 - ELECTRIC TRANSFORMER
 - ELECTRIC MANHOLE
 - LIGHT POLE
 - ELECTRIC SERVICE
 - PROPANE TANK
 - STREET SIGN
 - WATER VALVE
 - FIRE HYDRANT
 - BOLLARD
 - ▭ PAVED AREA
 - ▭ CONCRETE WALK
 - ▭ DOT RIGHT OF WAY PER A/S 1266
 - ▭ A/S 1266 BOUNDARY
 - ▭ BURIED TELEPHONE
 - ▭ OVER HEAD ELECTRIC
 - ▭ BURIED ELECTRIC
 - ▭ WATER LINE
 - ▭ GABION WALL
 - ▭ CHAINLINK FENCE
 - ▭ GUARD RAIL
 - ▭ CRANE RAIL
 - ▭ DEMOLITION
 - ▭ EXISTING TO REMAIN
 - ▭ PHASE 1
 - BORE HOLE LOCATION

CONCEPT
5-13-11-13

SCALE IN FEET

50 0 50 100 150

SURCHARGE EXTENTS

KODIAK PIER 3 REPLACEMENT

FIGURE 1

SURCHARGE EXTENTS

DESIGNED BY: B4 DATE: 5/07/13
CHECKED BY: B4B PROJECT NO: 111012

DATE: _____

REV | DATE | DESCRIPTION

1 OF 1

P N D
ENGINEERS, INC.

1506 West 36th Avenue
Anchorage, Alaska 99503
Phone: 907.561.1011
Fax: 907.568.4220
www.pndengineers.com

PND Engineers, Inc. is not responsible for safety programs, methods or procedure of operation, or the specifications set forth in this drawing. Where specifications are given or not called out, the specifications shall conform to standards of industry practice. The drawings are not to be used for any other purpose intended for means without written approval from PND. Drawings are the property of PND and shall remain the property of PND.



June 4, 2013

111012

Ms. Aimee Kniazowski
 City Manager
 City of Kodiak
 710 Mill Bay Road
 Kodiak, Alaska 99615

Subject: Kodiak Pier 3 Design Proposal

Dear Ms. Kniazowski:

The City of Kodiak (the City) desires to replace the aging and deteriorating Pier 3. PND Engineers, Inc. (PND) proposes to provide engineering services for design and permitting for this project. The anticipated scope of work and schedule are outlined below. Planning, surveying and geotechnical work have been performed previously under a separate scope of work. Associated costs for the remaining effort are summarized below. Due to uncertainty, it is proposed that permitting be performed under a Time and Materials basis (10% markup on expenses), not to exceed the budgets below without prior authorization. The design work will be performed under a Fixed Price basis.

Design Fixed Price Scope:

• Design Pier 3 (Task B Items 1 to 7 and 12 to 16)	\$ 544,305
• Assist the City through Bidding Process (Task B Items 8, 9 and 10)	\$ 48,820
• Design Sewer Tie-In and Lift Station (Task B Item 11)	<u>\$ 40,700</u>
Total Fixed Price Scope	\$ 633,825

Permitting Time and Materials Scope:

• Permitting Pier 3 Facility	<u>\$ 108,450</u>
Total Permitting Time and Materials Scope	\$ 108,450

Construction Administration (CA) has not been included in this scope of work. The scope and schedule for construction activities has not yet been defined. Therefore, the CA estimate will be provided at a later date as the construction activities are better known.

The permitting estimate does not include fees associated with the permit application or any mitigation costs that the City may be required to pay. PND will work with the City throughout the process to manage and advise on these necessary fees.

Task A: Permitting

PND will provide permit drawings and completed documentation for the full build of the new Pier 3 facility acceptable for submittal to the United States Army Corps of Engineers (USACE) as well as the Coast Guard for applicable Navigable Water Permits. Estimates of the number of piles to be driven, impacted surface area, extent of work and other items as necessary will be accomplished in order to allow permit applications complete with drawings to be submitted to the necessary agencies.

PND will stay involved during the review of the submitted permit and act as the City's agent throughout the process. PND will also assist the City in mitigation requirements associated with the project.

Please keep in mind that permit support efforts and schedule are very difficult to estimate as they can be affected by the particular reviewer and the current agency backlog. Agency requirements and requests during the review process are typically outside of PND's control. PND will make every effort to maintain the established budget during the process and will keep the City informed as to the progress of the progress of the permitting effort as the project moves forward.

PND proposes to provide the permit drawings and completed documentation associated with permitting by August 7. This schedule will provide time sufficient to advance the design to a 35% level prior to permit application.

Task B: Design Package

Following the submittal of the USACE permit, it will likely require 90 days or more for agency approval. In order to meet the tight timeline associated with the design of this project PND will need to continue to progress the design work during the permit approval process.

PND will provide the following deliverables in the design package in support of the Kodiak Pier 3 replacement project (Dates in () assume a NTP issued on or before July 1, 2013);

- Design drawings for a pile supported Pier 3 facility including structural and electrical details issued in the following increments;
 - 35% Design Drawings (August 2nd – 5 Weeks from NTP)
 - Assumes that design will move forward under the currently established T&M engineering budget until NTP is issued.
 - 65% Design Drawings (September 27th – 8 Weeks from 35% Submittal)
 - 95% Drawings (November 22nd – 8 Weeks from 65% Submittal)
 - Issued for Construction (IFC) Drawings (December 20th – 4 Weeks from 95% Submittal)
- Bid Documents (Delivered with IFC Package)
 - Assumes the “Boiler Plate” contract terms and conditions will be the same as were utilized on the Boat Lift Facility or that the City will provide the documents for inclusion into the package.

The pile supported dock will be designed to accommodate vehicular live loads as determined during the 35% design with stakeholder input.

Additionally, the pile supported dock and associated dolphins will be designed to accommodate a D-7 class cargo vessel as a minimum and will also consider larger vessels that may berth at the facility in the foreseeable future as determined during the 35% design period with stakeholder input. One section of the dock will be designed to support Roll-On\Roll-Off (RORO) operations. Container live loading and crane loading at the facility will be also be determined during the 35% design period with stakeholder input. Additional design considerations such as design life, mooring requirements, seismic criteria and others may be found in the September 2011 Design Study Report.

PND will provide design for extension of the potable water supply and a storm drain system for the facility.

Power and lighting design will be subcontracted to RSA Engineering, Inc. (RSA). RSA's proposed cost for the power and lighting portion of the design work is attached to this proposal and has been incorporated into the fixed price design fee given above.

In addition to the above deliverables PND will attend meetings in Kodiak as requested\requested (Pre-Bid Meeting, Coordination Meetings, etc.) during the project as well as provide bid review and a recommendation for the selection of bidder.

PND has also included in this proposal a separate line item cost for design of a sewer line to service the existing facility as requested. This cost includes the design for tie in of one sewer line into the existing Kodiak sewage system, design of lift station on site and one trip to Kodiak for site observations. PND will work with the City to ensure that components utilized in the design meet current city piping standards and manufacturer type.

Design Fee Exclusions

- This proposal does not include any additional survey work that may be required to develop plan and profile alignments for the sewer tie-in line. PND assumes that the City has available survey data sufficient to develop the design from the site to the tie in point.
- This proposal assumes that the current traffic system for access and egress at the site is adequate and does not include design of upgrades to improve traffic flow onto and off of the site.
- This proposal does not include review of submittals, shop drawings, RFT's etc. or construction administration during the construction effort. PND will provide a proposal for support in these areas following refinement of the construction schedule.

We appreciate this opportunity to continue moving this project forward and look forward to working further with the City.

Sincerely,
PND Engineers, Inc. | Anchorage Office



Kenton W. Braun, P.E.
Vice President



Bryan Hudson, P.E.
Senior Engineer

Attachment: Permitting and Design Phase Cost Breakdown
Subcontractor Proposal (RSA – Power and Lighting)
Standard Rate Schedule

PROJECT TITLE: **Kodiak Pier 3 Replacement**
CLIENT: City of Kodiak

BUDGET SUMMARY:

FIXED FEE BUDGET

Design Package - Total Labor	\$561,390.00
Design Package - Subcontractors	\$65,065.00
Design Package - Expenses	\$7,370.00
TOTAL (Fixed Fee Estimate) - Design	\$633,825.00

TIME AND MATERIALS BUDGET

Permitting Support	\$108,450.00
TOTAL (Time and Materials Estimate) - Permitting and CA	\$108,450.00

PROJECT TITLE:
Kodiak Pier 3 Replacement
CLIENT:
 City of Kodiak

PHASE:
 Permitting (Time and Materials)

LABOR: Task A - Permitting Support (Time and Materials)

No.	Task (Scope of Services)	Senior Eng. VII	Senior Eng. III	Staff Eng III	Environ. Scientist	Cad Des. V	Tech V	Total Hours	Labor Cost
1	Prepare Permit Drawings	180.00	165	40	40	95.00	105.00	305	\$36,250.00
2	Prepare Permit Documentation	20	40	40	80			180	\$19,800.00
3	Prepare Biological Assessment	20	80		120		40	260	\$29,000.00
4	Respond to Agency Questions/Comments	20	40	40	120			220	\$23,400.00
	Labor Subtotal	80	325	120	360	40	40	965	\$108,450.00

Total (Time and Materials Estimate) - Kodiak Pier 3 Design Package **\$108,450.00**

Kodiak Pier 3 Replacement
City of Kodiak

PROJECT TITLE:
CLIENT:

PHASE: Design Package - Fixed Fee

LABOR: Task B - Design Package (Fixed Fee)

No.	Task (Scope of Services)	Senior Eng. VII	Senior Eng. VI	Senior Eng. III	Staff Eng. III	Cad Des. V	Tech V	Total Hours	Labor Cost
1	Management and Reporting	50	50	24	40		50	124	\$17,370.00
2	Meetings and Coordination	100		100				340	\$47,050.00
3	City Presentations/Meetings	40	120	240	300	150	40	890	\$105,150.00
4	Prepare 35% Design	40	120	240	300	120	40	860	\$102,300.00
5	Prepare 65% Design	40	120	240	300	120	40	860	\$102,300.00
6	Prepare 95% Design	20	120	200	80	80	20	520	\$66,700.00
7	Prepare JFC Design	20	8	40	40		20	128	\$16,020.00
8	Update Cost Estimates								
9	Bid Document Preparation	10		80	40		40	180	\$22,000.00
10	Bid Process and Selection Assistance	40	50	70	100	70		330	\$10,800.00
11	Design Sewer Tie-in Line and On-Site Lift Station	390	538	1404	1140	470	250	4192	\$407,700.00
	Total Labor								\$561,390.00

SUBCONTRACTORS

No.	Subcontractor	Total
12	RSA Engineering - Electrical Design	\$59,150.00
13	Subcontractor Coordination (10% Markup)	\$5,915.00
	Total Subcontractors	\$65,065.00

EXPENSES

No.	Reimbursible	Unit	Quantity	Rate	Total
14	Anchorage to Kodiak Airfare (Assumes 2 people per trip)	Ea.	10	\$400.00	\$4,000.00
15	Room and Board in Kodiak (Assumes 2 people per trip)	Ea.	10	\$230.00	\$2,300.00
16	Vehicle Rental in Kodiak	Ea.	5	\$80.00	\$400.00
	Total Expenses (10% Markup)				\$7,370.00

Total Labor \$561,390.00
 Total Subcontractors \$65,065.00
 Total Expenses \$7,370.00
Total (Fixed Fee Estimate) - Kodiak Pier 3 Design Package \$633,825.00



May 28, 2013
Revised May 29, 2013

PND Engineers Inc.
1506 West 36th Avenue
Anchorage, AK 99503

ATTENTION: Kenton Braun

Dear Kenton,

**REFERENCE: Kodiak Pier 3 Upgrades
Electrical Fee Proposal**

RSA Engineering is pleased to offer a fee proposal for electrical engineering services for the referenced project. We have based our scope of work on the Kodiak Pier 3 Design Study Report from 2011, along with the following assumptions:

- RSA Engineering will provide personnel for a site visit to as-built existing electrical systems at Pier 3.
- RSA will coordinate with Kodiak Electrical Association (KEA) to upgrade the electrical service to the facility.
- RSA will work with the City of Kodiak and Pier 3 stakeholders to determine the most favorable lighting solution for the facility. RSA will design lighting upgrades based on the lighting system(s) selected.
- RSA will provide design assistance for upgrades to the existing power distribution system to accommodate the replacement of the existing diesel crane with an electric crane. It is our understanding that the electrical upgrades for this work will be designed by the lessee's as part of the crane replacement and that RSA's work will include coordinating this work with the expansion of the electrical systems to meet other facility needs. In addition it is our understanding that the crane replacement work will include the following tasks:
 - A new line extension by KEA to a new KEA provided distribution voltage switch.
 - A new crane distribution substation including a 12.47kV main breaker, a new isolation transformer, and new 12.47kV distribution switchgear.
 - Medium voltage distribution cabling.
 - An energy storage system or other alternative to dissipate/reuse crane regenerative power.
- RSA will design heat trace systems keep crane rail and dock drainage systems free of ice during cold weather.
- RSA will design connections to capstains, winches, and other dock equipment for the expanded facilities.
- RSA will design new electrical systems for the relocation of equipment as necessary for the new dock expansion.

- RSA will provide bid phase services including: answering bidder questions, preparation of addenda material and attendance at a prebid meeting in Kodiak.

Exclusions

- It is our understanding that there has been some discussion on whether Kodiak Electric Association will provide power to the replacement crane. This proposal assumes that KEA will provide power for the crane equipment as noted above. If this assumption changes in the future the scope and fees for the project will need to be re-evaluated.
- Weather delays are not included in our fee for site visits outside of Anchorage (neither during the design or construction Phase). Weather delays will be billed up to 8 hours per day of actual time including reimbursable expenses incurred.
- We will provide one electronic copy of design documents at each milestone submittal to allow your office to produce the required number of copies necessary for distribution to affected parties.

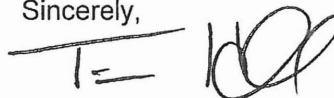
RSA proposes the following lump sum fixed fee for this project:

	<u>Electrical</u>
Design Site Visit	\$ 4,300.00
35% Design	\$10,720.00
65% Design	\$15,280.00
95% Design	\$16,300.00
Bid Documents	\$ 6,900.00
Bid Phase (In House)	\$ 1,550.00
Prebid Site Meeting	\$ 1,800.00
IFC Documents	<u>\$ 2,300.00</u>
GRAND TOTAL	\$59,150.00

We will provide one copy of design documents at each milestone submittal to allow our client to produce the required number of copies necessary for distribution to affected parties.

Please review and advise if this proposal is acceptable by signing below and returning a copy to our office as our notice to proceed. We have attached a copy of our Standard Terms and Conditions to provide guidelines for contractual issues in the absence of a formal contract for this project. We look forward to working with you on this project.

Sincerely,



Timothy E. Hall, P.E.
Vice President

teh/hhm
13-0375/P13-180
Attachment

Accepted for PND Engineers Inc.

RSA Engineering, Inc. – Standard Terms and Conditions

This document is intended to provide guidelines for contractual issues in the absence of a contract supplied by our client.

Performance:

RSA Engineering, Inc., herein known as RSA and its employees will exercise the degree of skill and care expected by customarily accepted practices and procedures. No warranties, expressed or implied, are made with respect to RSA's performance, unless agreed in writing. RSA is not a guarantor of the project to which its services are directed, and responsibility is limited to work performed for the client. RSA is not responsible for acts and omissions of the client, nor for third parties not under its direct control. RSA shall not be liable for any reason for any special, indirect or consequential damages including loss of use and/or loss of profit. RSA may rely upon information supplied by the client engaging RSA and its contractors or its consultants without independent verifications.

Ownership of Documents:

Documents prepared under this agreement are Instruments of Service for the sole use and benefit of the Owner. RSA retains a property interest in the work products including rights to copy and reuse. RSA grants the Owner a perpetual and non-transferrable license to reproduce the Instruments of Service for their intended use, including the right to reproduce for construction, upkeep, operation and maintenance. RSA will incur no liability from the unauthorized use or modification of the Instruments of Service for other than their original purpose without RSA's written permission. RSA's signatures, professional seals and dates shall be removed from the Instruments of Service when these documents are used for other than their intended purposes.

Governing Law:

This contract shall be governed by the laws of the State of Alaska, and any lawsuits brought thereon shall be filed at the Judicial District Court in Anchorage, Alaska.

Insurance:

RSA maintains errors and omission insurance (claims made basis), commercial general liability insurance, automobile liability insurance and workers compensation and employer's liability insurance for employees performing work under this contract.

Indemnity:

RSA shall indemnify, defend and hold the client, agents and employees harmless from and against any and all claims, demands, suits, liability of any nature under this agreement resulting from negligent acts, errors or omissions of RSA, RSA's officers, agents, and subconsultants who are directly responsible to RSA. RSA is not required to indemnify, defend or hold harmless the client for a claim of, or liability for, independent negligent acts, errors, or omissions of the client. If there is a claim of, or liability for, a joint negligent act, error or omission of RSA and the Client, the indemnification, defense and hold harmless obligation of this agreement shall be apportioned on a comparative fault basis.

Dispute Resolution:

Prior to initiating court action, RSA and the client shall in good faith seek to settle or resolve the controversy by submitting the matter to mediation in Anchorage, Alaska. Such notice shall be within the statutory time limit for commencing a legal action involving the controversy. The independent third party Mediator will be selected by mutual consent of both Parties from a list of available members of the American Arbitration Association.

Arbitration:

At the election of either party, any dispute arising between the parties herein relating to the subject matter of this agreement shall be resolved by arbitration. The results of said arbitration shall be conclusive, final and binding upon all parties and may be entered into any initial Court of Records as a final judgment. Arbitration proceedings shall be conducted pursuant to the administrative procedural rules promulgated by the American Arbitration Association. Any final arbitration award shall include an award for all-reasonable costs and reasonable attorney fees.

Proposals:

Proposals expire 90 days after submission to a client unless a different expiration limit is included in the proposal. RSA may withdraw or modify a proposal at any time prior to acceptance by the client.

Payments:

Payments for RSA Services shall be made after client's approval of RSA submission and invoice. Client shall review and approve each submission and invoice and shall pay the invoice amount within 30 days (or other agreed upon timetable) of approval. If the owner does not approve a submission it shall be returned to RSA for revision.

Invoicing:

RSA will invoice on a monthly basis. All invoices shall be due and payable upon receipt. Interest charges of 1.5% per month may be assessed for unpaid balances beyond 120 days past due unless other arrangements are made. In the event billing is on a pay when paid basis, RSA and the client agree to six months past due prior to assessing interest charges unless other arrangements are made. It is agreed that in the event of failure of the client to make payments in compliance with this agreement, RSA, at its option, may terminate all services in connection with this agreement.

Termination:

This contract may be terminated by either party upon 30 days written notice, should the other party fail to substantially perform in accordance with the terms and conditions herein. In the event of termination the consultant shall be paid compensation for services actually performed and for reimbursable expenses actually incurred. RSA reserves the right to complete analysis and records as are necessary to put files in order, and were considered by us necessary to protect our professional reputation.



**PND ENGINEERS, INC
STANDARD RATE SCHEDULE
EFFECTIVE MAY 2013**

<u>Professional:</u>	Senior Engineer VII	\$180.00
	Senior Engineer VI	\$165.00
	Senior Engineer V	\$150.00
	Senior Engineer IV	\$140.00
	Senior Engineer III	\$130.00
	Senior Engineer II	\$120.00
	Senior Engineer I	\$110.00
	Staff Engineer V	\$105.00
	Staff Engineer IV	\$100.00
	Staff Engineer III	\$95.00
	Staff Engineer II	\$90.00
	Staff Engineer I	\$85.00
	Senior Scientist	\$110.00
	Senior Environmental Scientist	\$105.00
	Environmental Scientist	\$90.00
	GIS Specialist	\$90.00
	<u>Surveyors:</u>	Senior Land Surveyor
Land Surveyor I		\$95.00
<u>Technicians:</u>	Technician VI	\$125.00
	Technician V	\$105.00
	Technician IV	\$90.00
	Technician III	\$80.00
	Technician II	\$70.00
	Technician I	\$45.00
	CAD Designer V	\$95.00
	CAD Designer IV	\$85.00
	CAD Designer III	\$70.00



Memorandum

TO: Aimee Kniaziowski
FROM: Roe Sturgulewski
DATE: June 4, 2013
RE: Kodiak Pier III
Status Update

This provides a Pier III project status update.

As discussed in more detail in the accompanying memo recommending award of the pier design amendment, the unexpected geotechnical conditions led to a reevaluation of the design concepts presented in the Design Study Report. This evaluation has resulted in the project engineer changing their recommendation from an open cell sheet pile to a pile supported structure.

PND submitted their draft geotechnical report in mid May. The report included both field and laboratory data and was reviewed by DOWL HKM Engineers. Comments were received and incorporated in the final geotechnical report. PND used the geotechnical data in their Design Study Update Alternatives Analysis dated June 4, 2013. PND will be issuing an Engineering and Geotechnical Analysis Report on about 6/10/13 which will also be reviewed by DOWL HKM Engineers. As another level of due diligence, Horizon Lines has arranged for a high level third party engineering review of the PND analysis and decision to switch to a pile supported structure. While no major exceptions are expected from the additional analysis, the project team supports this additional review as it provides additional validation of the findings and approach.

Weekly coordination meetings have been held with Horizon Lines and City Port staff. Discussions have occurred on operations, crane related interfaces and uplands layout. Recent coordination has focused on evaluating alternatives to the sheet pile structure, alternative dock layout concepts, and ways to align scope and budget.

Additional discussions have occurred with Horizon related to their anticipated crane loads. Horizon has refined their crane loading criteria by defining capacity constraints in the event one of their three "Anchorage" cranes is used. While it would be preferable to conclusively define the actual crane parameters at the start of design the existing criteria is viewed as moderately conservative and adequate to start design. It is anticipated that any likely changes will be able to be accommodated during the initial design phases without major revised work or added cost. Horizon is still considering different options for cranes with the decision tied to a number of factors.

Engineering staff are proceeding with additional analysis of the Pillar Mountain slopes. The most recent study performed by Golden & Associates found limited changed conditions from earlier studies. While the proposed Pier 3 structure is on the edge of the previous scope failure, the project team supports further evaluations of the adjoining conditions.

Coordination has continued with KEA regarding the crane electrical power supply. Additional information was given to KEA to use in their system analysis. KEA engineering consultants recently completed their initial review. KEA has received the draft study and has posed additional questions to both their engineers and Horizon consultants. While full findings have not been issued to the project team, initial discussions are encouraging.

A Budget Template showing obligations through June 4, 2013 and expenses through May 8, 2013 is attached. The remaining budget information will be provided after finalizing the dock structure decision. \$33.1M in State FY13 appropriations has been allocated towards the project including \$18.1M in general funds and \$15M in GO Bonds. Initial state reimbursements have been received.

An updated schedule is attached. While the geotech and structure decision activities have extended slightly the design completion dates and construction schedules have not changed. This has been achieved by performing preliminary design activities prior to making the structure decision. The tentative crane decisions by Horizon have slipped to the August timeframe. The KEA power evaluation timeline has been extended slightly.

Discussion with Horizon Lines on the Preferential Use Agreement negotiations has not started.

Please contact me at (907) 343-3013 if you have any questions.



Kodiak Pier III Budget Template 6/4/13

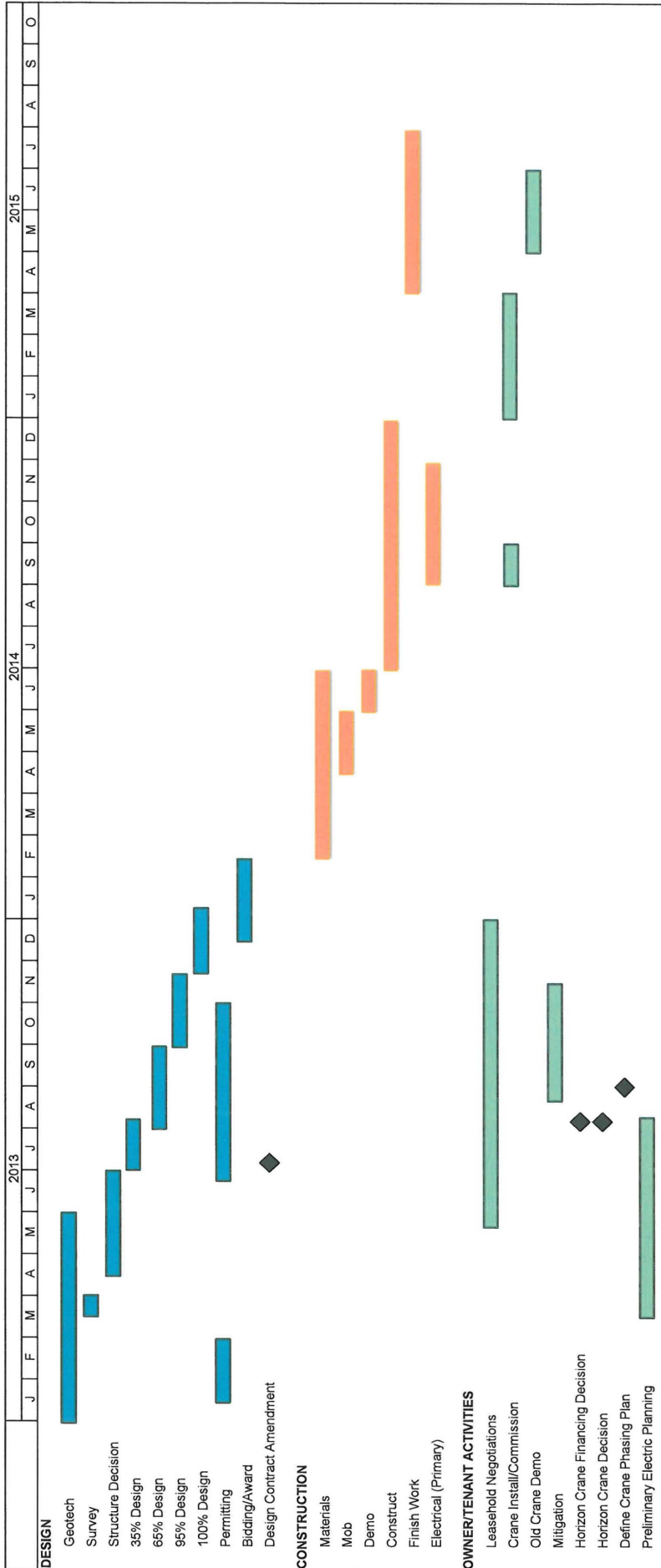


	Draft Budget	Revised Budget	EAC	Obligations	Spent
DESIGN					
Wave Modeling				\$ 63,348	\$ 63,348
Geotech				\$ 347,683	\$ 4,675
Survey				\$ 30,090	\$ 1,028
Design				\$ 58,600	\$ 2,513
Permitting					
CA					
Subtotal Design	\$ -	\$ -	\$ -	\$ 499,721	\$ 71,564
ADMINISTRATION					
City				\$ 2,671	\$ 2,671
Professional Services				\$ 167,660	\$ 26,353
Legal					
Subtotal Administration	\$ -	\$ -	\$ -	\$ 170,331	\$ 29,024
CONSTRUCTION					
Dock					
Electric (Primary)					
Mitigation					
Subtotal Construction	\$ -	\$ -	\$ -	\$ -	\$ -
CONTINGENCY					
	\$ 33,100,000	\$ 33,100,000	\$ -	\$ 670,052	\$ 100,588

Spent Data is Through 5/8/13



**KODIAK PIER III
Discussion Schedule
6/4/13**





Memorandum

TO: Aimee Kniaziowski
FROM: Roe Sturgulewski
DATE: June 4, 2013
RE: Kodiak Pier III
 PND Engineers Amendment 3 Full Design Services Recommendation for Award

This memo is to recommend award of Amendment #3 to PND Engineers, Inc. for the Pier III Replacement project design contract in the amount of \$742,275. This is comprised of two components; completion of design and bidding services in the lump sum amount of \$633,825 and permitting assistance in the time and materials, not to exceed amount of \$108,450. The proposal is based upon design of a pile supported structure.

The City Council authorized award to perform the initial geotechnical investigation on 12/13/12. An amendment to add surveying and preliminary engineering services was added on 1/24/13. Amendment #2 in the amount of \$121,336 to add additional geotechnical and preliminary engineering services was approved on 5/23/13.

The shift to a pile supported structure reflects a major change from the September 2011 Design Study Report that had recommended a sheet pile structure. That initial study considered pipe pile and sheet pile structures, and alternate configurations. The sheet pile structure was considered to be less expensive than pipe pile and potentially capable of supporting higher live loads. A subsequent wave study found no significant differences between the two structure types. As has been previously noted, the geotechnical investigation performed earlier this spring encountered substantially different soil conditions than had been envisioned when developing the Design Study Report. PND had made initial assumptions regarding the depth of the bedrock and qualities of the overburden material based on previous work around Pier III. While the onshore soils types generally matched expectations much of the offshore material was substantially different. The water side investigation primarily encountered fine grained soils including silts and clays with some organics which were not expected.

PND reevaluated the concept designs included in the DSR based on the new data. The factors of safety for a sheet pile structure were found to be inadequate from a global seismic perspective. The weight of the structure also resulted in unacceptable amounts of settlement in the fine grained soils. A number of other techniques were evaluated to determine if the sheet pile structure could be made viable, including surcharging and soil enhancement. Other alternatives were also considered including phased in-place replacement, alternate configurations and alternate locations. Significant costs, risks and/or impediments were noted in all of these options, resulting in the pile supported dock becoming the preferred option.

The project budget that formed the basis of the legislative funding request was based on the pile supported structure presented in the Design Study Report. The geotechnical findings increased the costs of the pier substructure over what was contemplated at that time. In addition to deeper, larger and thicker piles, the soft soils necessitated the use of rock anchors to resist uplift. While further analysis may potentially find cost savings, an exercise was performed to align scope and budget with a pipe pile

structure. Different pile supported configurations were discussed at the concept level to determine the most preferable option from an operations perspective. The preferred alternative, from both the user and port staff perspectives, was to slightly reduce the dock face. Reduction of the dock face from 420 feet to a nominal 370 feet brought the project within budget based on the current assumptions. While there are still refinements that will be evaluated later in the design phase that could lower costs and allow a full 420 foot buildout, the project team believes this pile supported structure concept provides a good framework to carry forward into design. Additional detail on the evaluation and decision to recommend an alternate structure type is included in the PND Alternatives Analysis, dated June 4, 2013.

PND's proposal equates to approximately 2% of the total project and appears reasonable. The proposal is based upon the assumption that the crane electrical service will be designed by others. Services during construction are not included in the proposal and will be added by a subsequent amendment.

Please contact me at (907) 343-3013 if you have any questions.