CBJ DOCKS & HARBORS BOARD
CIP / PLANNING COMMITTEE MEETING AGENDA
For Thursday, March 24, 2011

I. **Call to Order** (5:00 pm in **ASSEMBLY CHAMBERS**).

II. **Roll Call** (Michael Williams, Kevin Jardell, Eric Kueffner, Jim Preston, Bob Wostmann, Tom Donek).

III. **Approval of Agenda.**

MOTION: TO APPROVE THE AGENDA AS PRESENTED OR AMENDED.

IV. **Public Participation on Non-Agenda Items.**
(Not to exceed five minutes per person or twenty minutes total time).

V. **Approval of February 17, 2011 CIP/Planning Meetings Minutes.**

VI. **Items for Action.**

1. Selection of Layout for Dehart's Marina Replacement Floats at Statter Harbor.
   Presentation by Port Director

   Committee Questions

   Public Testimony

   Committee Deliberation/Action

MOTION: TO RECOMMEND THE BOARD APPROVE THE DEHART'S MARINA REPLACEMENT FLOAT LAYOUT CONCEPT PRESENTED BY THE PORT DIRECTOR.

2. Cruise Dock Improvements – Selection of Final Design.
   Presentation by Port Director

   Committee Questions

   Public Testimony

   Committee Deliberation/Action

MOTION: TO RECOMMEND THE BOARD APPROVE THE FINAL DESIGN AND ASK THE ASSEMBLY TO APPROVE THE FINAL DESIGN FOR CRUISE SHIP DOCK IMPROVEMENTS.

CBJ DOCKS & HARBORS BOARD
CIP / PLANNING COMMITTEE MEETING AGENDA
For Thursday, March 24, 2011

VI. Items for Action(continued)

3. Contract Amendment with PND Engineers, Inc., for the Final Design of the Cruise Ship Dock Improvement.

   Committee Questions

   Public Discussion

   Committee Discussion/Action

   MOTION: TO RECOMMEND THE BOARD APPROVE A CONTRACT AMENDMENT WITH PND ENGINEERS INC., TO PREPARE FINAL DESIGN AND BID DOCUMENTS FOR THE CRUISE SHIP DOCK IMPROVEMENTS AND TO RECOMMEND THE ASSEMBLY APPROVE THE CONTRACT AMENDMENT IN THE LUMP SUM AMOUNT OF $2,247,500.00 FOR DESIGN SERVICES AND TIME AND MATERIALS NOT TO EXCEED $100,000 FOR PERMITTING SERVICES.

4. Utilidor Design Fee Proposal – PND Engineers
   Presentation by Port Engineer

   Committee Questions

   Public Discussion

   Committee Discussion/Action

   MOTION: TO RECOMMEND THE BOARD APPROVE A CONTRACT AMENDMENT WITH PND ENGINEERS, INC. TO DESIGN THE ELECTRICAL UTILIDOR TO THE NEW CRUISE SHIP BERTHS IN THE AMOUNT OF $87,390.00

5. Account Close Out – Amalga Harbor Launch Ramp Upgrade.
   Presentation by Port Engineer

   Committee Questions

   Public Discussion

   Committee Discussion/Action

   MOTION: TO RECOMMEND THE BOARD APPROVE A TRANSFER OF APPROXIMATELY $28,000.00 FROM THE HARBORS FUND BALANCE TO CIP #H354-79 AND ASK THE ASSEMBLY TO APPROVE THE TRANSFER OF FUNDS

AND A DE-APPROPRIATION ORDINANCE TO CLOSE OUT THE AMALGA HARBOR LAUNCH RAMP UPGRADE PROJECT.

CBJ DOCKS & HARBORS BOARD

CIP / PLANNING COMMITTEE MEETING AGENDA

For Thursday, March 24, 2011

VII. Items for Information/Discussion.

1. Direct Market Sales Facility Report
   Presentation by Port Engineer

VIII. Member & Staff Reports.

IX. Committee Administrative Matters.

Next Meeting: April 21, 2011

X. Adjournment.

CBJ DOCKS & HARBORS BOARD
CIP/PLANNING COMMITTEE MEETING MINUTES
For Thursday, February 17, 2011

I. Call to Order.

Committee member Mr. Williams called the meeting to order at 5:00 p.m.

II. Roll.

The following members were present: Mr. Williams, Mr. Donek, Mr. Kueffner, Mr. Jardell, and Mr. Preston.

The Following member was absent: Mr. Wostmann.

Also in attendance was: Mr. Stone – Port Director, and Mr. Gillette – Port Engineer.

III. Approval of Agenda.

Mr. Preston asked that we move item #1 information/discussion before we go to items for action.

Mr. Gillette also added #2 under items for action the CBJ Engineering –Docks and Harbors Memorandum of Agreement.

MOTION by Mr. Preston: ASK UNANIMOUS CONSENT TO APROVE THE AGENDA AS AMENDED. The motion passed without objection.

IV. Public Participation.

There was none at this time.

V. Approval of Previous Meeting Minutes.

MOTION by Mr. Kueffner: ASK UNANIMOUS CONSENT TO APPROVE THE PREVIOUS MINUTES OF January 20, 2011. The motion passed without objection.

VII. Items for Information/Discussion.

1. Fisherman's Memorial.

Mr. Gillette stated that the Assembly approved resolution 25.41 in October 2010 as authorizing construction of the new floating birth concept known as 16B. There was an amendment added that the Harbor Board work with the Commercial Fisherman's Memorial regarding relocation. The Harbor Board sent a letter to the fisherman's memorial stating that the department would assist in the planning of blessing of the fleet ceremony when the floating birth project was complete and if it were determined that a respectable and meaningful ceremony could not be accommodated utilizing the reconfiguration that we would work with them to move to an alternative sight.

Mr. Gillette spoke of the four alternative sights that were presented to the fisherman's memorial folks.

Mr. Weyhrauch stated that the memorial would be affected by 16B and it would be relocated to a location along the shore south of the Intermediate Vessel Float (See attached). He went on to explain the reasons for moving the memorial to the new location.

Further discussion among the committee members and Mr. Weyhrauch took place at this time.

Mr. Stone stated that the next step in the process would be to present this to the Assembly at the same time they present the designing of the dock improvements and also the financing plan and it would be logical to do this at that time.

VI. Items for Action.

1. Marine Service Building Programming.

Mr. Gillette stated that he asking that the committee members approve a contract with NorthWind Architects, LLC, who are currently under contract for the downtown harbor area and the area north of the bridge. He stated what this would do is set up a small contract of $7,900.00 for them to do a building programming study.

He said that he has talked to Mr. Watt at the Engineering Department and they felt that is better to do this under term contract with architect that we have on board and just get the programming done. He explained the process and explained to the committee what they would do is come up with a concept for a building.

Public Comments:

Mr. Thoma stated that he would like to see the building in the second drawing be built (See attached) and leave as much green space open as possible.

Further discussion among the committee members and Mr. Thoma took place at this time.

MOTION by Mr. Donek: ASK UNANIMOUS CONSENT TO REQUEST THE BOARD APPROVE A CONTRACT AMMENDMENT FOR NORTHWIND ARCHITECTS TO PERFORM KPROGRAMMING FOR THE PROPOSED MARINE SERVICES CENTER IN THE AMOUNT OF $7,900.0. The motion passed without objection.

2. Memorandum of Agreement between CBJ Engineering Department and Docks and Harbors.

Mr. Gillette stated that this is a result of a meeting that we had with staff. He presented a document that appears to be supported by all those involved and just wanted to bring it to the members for final review and approval.

Public Participation:

There was none at this time.

Further discussion among the committee members and Mr. Gillette took place at this time.

Ms. Danner stated that this is a much better document than the one that was earlier presented.

MOTION by Mr. Preston: ASK UNANIMOUS CONSENT TO RECOMMEND THAT THE COMMITTEE APPROVE THE MEMORANDUM OF AGREEMENT BETWEEN DOCKS AND HARBORS AND THE CBJ ENGINEERING DEPARTMENT FOR COORDINATION OF CAPITAL IMPROVEMENT PROJECTS ALONG THE DOWNTOWN WATERFRONT AND ASK THAT THE PORT DIRECTOR SIGN OFF ON BEHALF OF DOCKS AND HARBORS. The motion passed without objection.

VII. Items for Information/Discussion.

2. Direct Market Fish Sales Study Updates.

Mr. Gillette stated that tonight they want to update the committee on the direct market fish sales study. This study was funded by a small grant from the Alaska Fisheries Development Foundation and our schedule is fairly tight on it. A draft needs to be in by the middle of March and final at the end of March. He stated they have brought in staff from the Fisheries Development Council and JEDC to attend the presentation that is going to be done by NorthWind Engineering this evening.

At this time the consultants went over their presentation with the committee members. They went over the finding of a survey that they are doing, as well some of the criteria for what it would take for a location of a facility. They went over the pros and cons of the different sights that they looked at.

The three areas that were looked at were the north of the bridge, the area just below the Harbormasters office, and Norway Point.

After the completion of the presentation further discussion among the committee members and the staff from NorthWind Engineering took place.

Ms. Danner commented on the locations and stated she is more leaning towards the old floatplane dock which is located just north of the bridge. She stated that whatever we do the goal should be to connect supply with demand.

Mr. Preston asked the staff of NorthWind Engineering to come back with a preliminary report at the next CIP meeting and then the following week do a presentation to the Full Board.

VIII. Member & Staff Reports.

Mr. Gillette let the committee members know that in their packets is his monthly project status report and also included in there is the CIP account summary.

There was some discussion regarding the second phase of the ABLF. Construction should start in March.

Mr. Stone address the letter that he passed out that was from the Alaska Cruise Association.

IX. Committee Administrative Matters.

The next meeting is scheduled for March 24, 2011 at 5:00 pm in the City Chambers.

X. Adjournment.

MOTION by Mr. Donek: THE MEETING ADJOURNED BY UNANIMOUS CONSENT. The motion passed without objection.

The meeting was adjourned at 6:31 p.m.

City & Borough of Juneau • Docks & Harbors
155 S. Seward Street • Juneau, AK 99801
(907) 586-0292 Phone • (907) 586-0295 Fax

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

Port of Juneau

To: Docks and Harbors CIP/Planning Committee
CC:
From: John M. Stone, P.E. Port Director
Date: March 15, 2011
Re: Statter Harbor Moorage Rehabilitation – Future Float Layout

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We are putting together bid documents for Phase I of the moorage rehabilitation project at Statter Harbor. As part of this work, we plan to replace the gangway landing float and a portion of the head float. Phase II of the project calls for installing new moorage slips off the new head float to replace the moorage lost when Dehart's Marina is removed. The Board needs to select slip sizes so the head float details can be finalized.

Attached to this memo are four concepts for future slip layouts. Concept 1 is the current preferred alternative and strikes a balance between accommodating the current fleet from DeHart's Marina and providing the best moorage capability over the 50 year design life. Options 2, 3, and 4 include 24' slips and do a better job of matching the current fleet from DeHart's Marina. However, 24' slips are probably not the best way to go over the design life since boats of this size are trailerable and tend to be used on a seasonal basis.

Concept 1 is our recommendation if the Board wants to accommodate the current fleet from DeHart's Marina.

Another alternative is to go with all larger slips, such as 38' and 42' slips. The Board could look at setting rates to pay for the operating and construction cost of the new slips. The Harbormaster has some creative ideas on how we could reduce our operating cost and provide a more private marina atmosphere while covering the capital costs. The downside of this alternative is that moorage would be more expensive. The upside is that we could pursue a revenue bond and get construction underway in short order.

Please call me at 586-0294 if you have questions.

Attachments

STATTER HARBOR MOORAGE IMPROVEMENTS PHASE 2
MAINWALK FLOATS 1, 2 & FUEL FLOAT - PRELIMINARY BUDGET

Prepared By: PND ENGINEERS, INC.

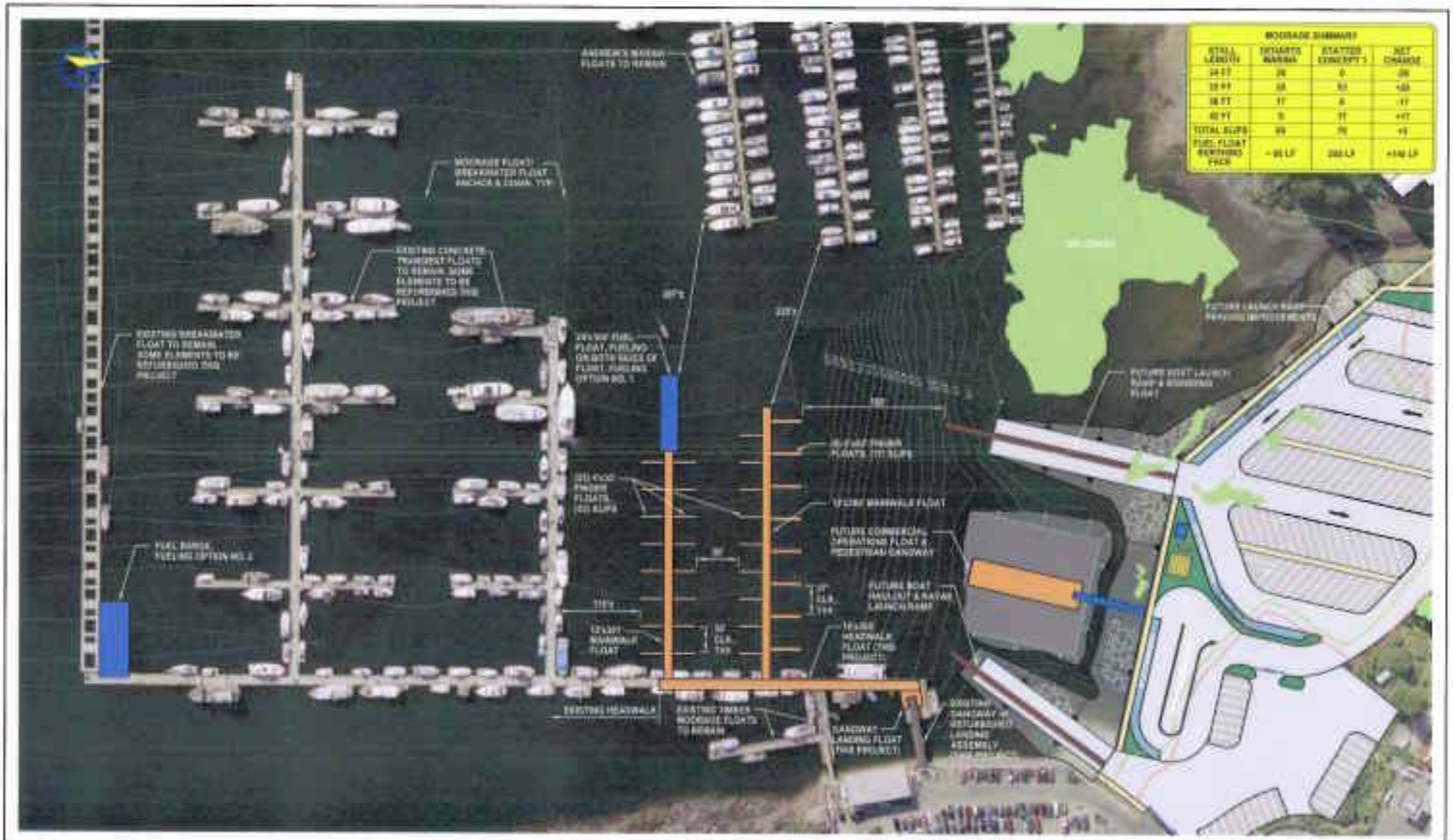
March 9th, 2011

MOORAGE FLOATS

Item	Item Description	Units	Quantity	Unit Cost	Amount
1	Mobilization	LS	All Reqd	10%	$347,164
2	Mainwalk Float 1, 12' x 360' w/(8) 6'x42' Finger Floats & (9) 4'x32' Finger Floats	SF	7488	$180	$1,347,840
3	Mainwalk Float 2, 12' x 30' w/(16) 4'x32' Finger Floats	SF	3600	$180	$1,018,800
4	Mainwalk Float Anchorage System	LS	All Reqd	$600,000	$600,000
5	Electrical System including new lighting & power	LS	All Reqd	$375,000	$375,000
6	Domestic Water System (Summer Use)	LS	All Reqd	$90,000	$90,000
7	Life Ring & Fire Extinguishers	LS	All Reqd	$15,000	$15,000
8	Construction Surveying	LS	All Reqd	$25,000	$25,000
	ESTIMATED CONSTRUCTION BID PRICE				**$3,818,804**
	SCOPE & CONSTRUCTION CONTINGENCY (15%)				**$572,821**
	FINAL DESIGN, PERMITTING, CITY ADMINISTRATION, CONTRACT ADMINISTRATION, INSPECTION & OTHER INDIRECT COSTS (18%)				**$687,385**
	TOTAL RECOMMENDED PROJECT BUDGET				**$5,079,009**

FUEL FLOAT & PIPING

Item	Item Description	Units	Quantity	Unit Cost	Amount
1	Mobilization	LS	All Reqd	10%	$118,000
2	Fuel Float, 24' x 100'	SF	2400	$250	$600,000
3	Fuel Float Service Shed	LS	All Reqd	$50,000	$50,000
4	Fuel Float Anchorage System	LS	All Reqd	$100,000	$100,000
5	Fuel Piping on floats and upland lines to existing	LS	All Reqd	$400,000	$400,000
6	Electrical System including new lighting & power in shed	LS	All Reqd	$25,000	$25,000
7	Construction Surveying	LS	All Reqd	$5,000	$5,000
	ESTIMATED CONSTRUCTION BID PRICE				**$1,298,000**
	SCOPE & CONSTRUCTION CONTINGENCY (15%)				**$194,700**
	FINAL DESIGN, PERMITTING, CITY ADMINISTRATION, CONTRACT ADMINISTRATION, INSPECTION & OTHER INDIRECT COSTS (18%)				**$233,640**
	TOTAL RECOMMENDED PROJECT BUDGET				**$1,726,340**



CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DOCKS & HARBORS DEPARTMENT

REVISIONS

REV.	DATE	DESCRIPTION	DWN	CKD	APP

PND ENGINEERS, INC.

STATTER HARBOR MOORAGE IMPROVEMENTS

CONCEPT NO. 1

1

STALL LENGTH	[illegible] MARINA	STATTER CONCEPT 2	NET CHANGE
24 FT	[illegible]	[illegible]	-5
32 FT	[illegible]	[illegible]	+11
[illegible] FT	[illegible]	[illegible]	-17
42 FT	[illegible]	[illegible]	[illegible]
TOTAL SLIPS	[illegible]	[illegible]	[illegible]
FUEL FLOAT BERTHING FACE	[illegible] LF	[illegible] LF	+[illegible] LF

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DOCKS & HARBORS DEPARTMENT

REVISIONS

PND ENGINEERS, INC.

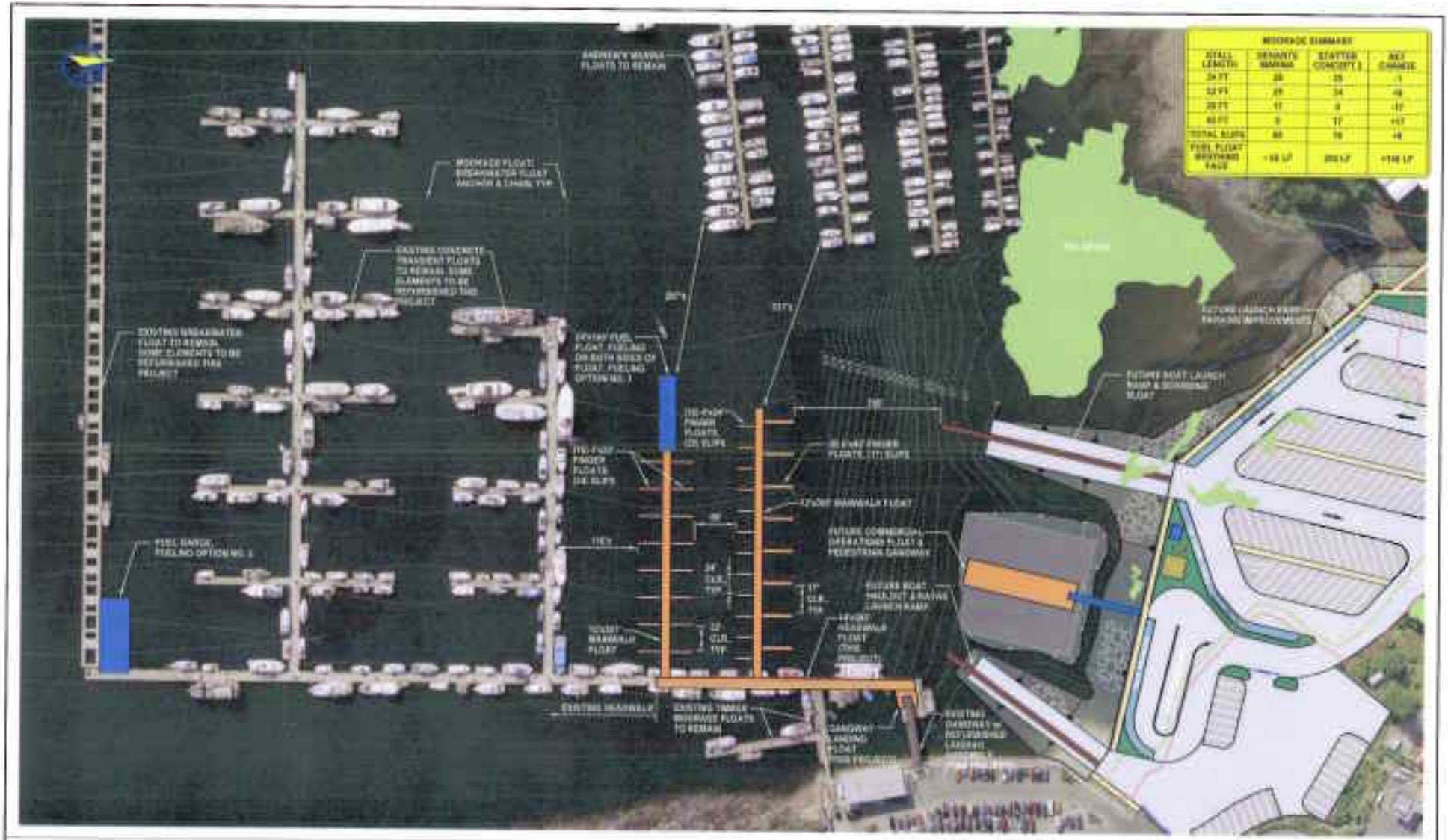
SCALE IN FEET

STATTER HARBOR MOORAGE IMPROVEMENTS

CONCEPT NO. 2

2

2 of 4



CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DOCKS & HARBORS DEPARTMENT

REVISIONS

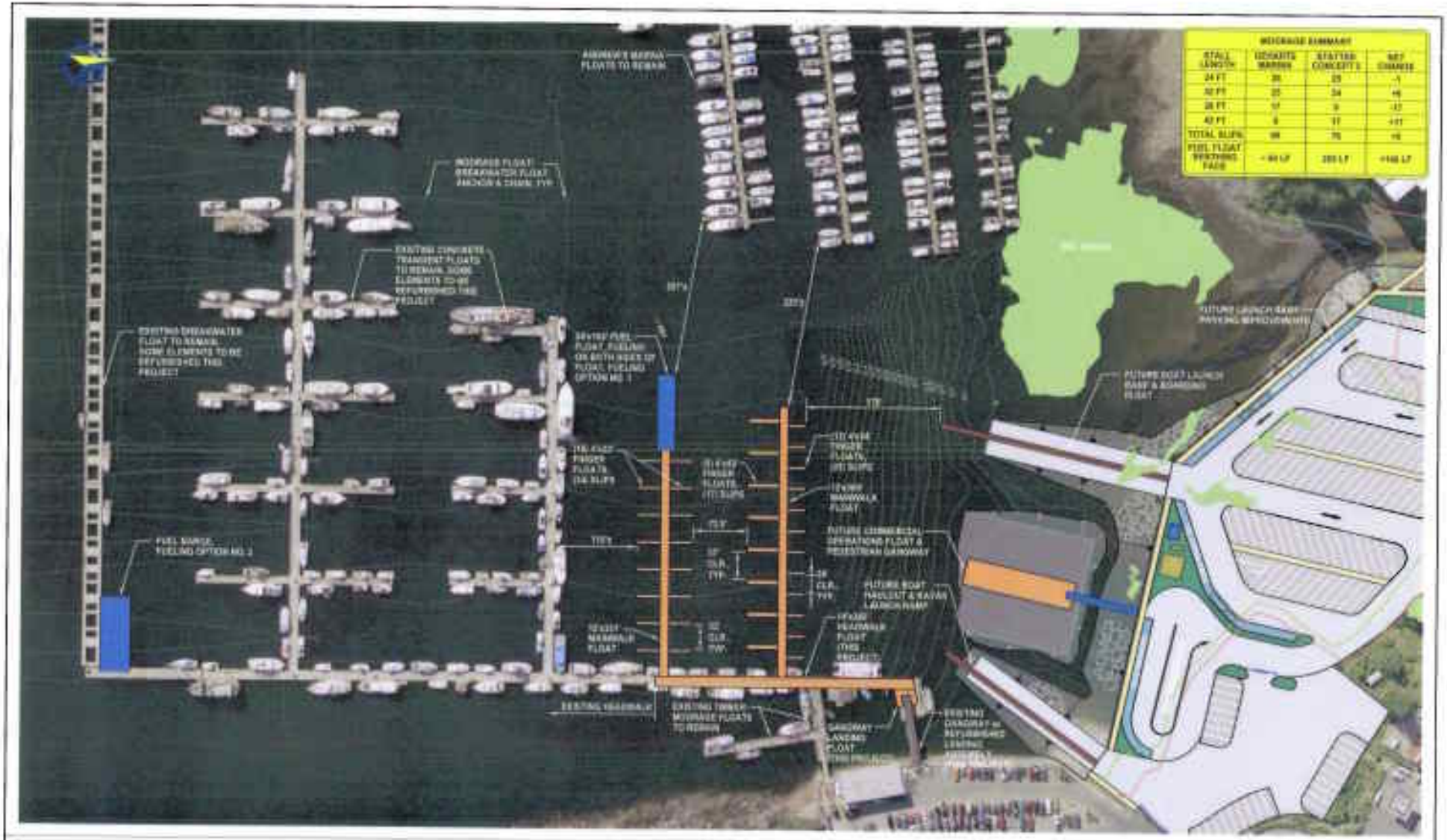
NO.	DATE	DESCRIPTION	DRN	CKD	APP

PND ENGINEERS, INC.

STATTER HARBOR MOORAGE IMPROVEMENTS

CONCEPT NO. 2

3



CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY
DOCKS & HARBORS DEPARTMENT

REVISIONS

REV.	DATE	DESCRIPTION	DRN	CHK	APP

PND ENGINEERS, INC.

SCALE IN FEET
0 60 120 FT

DATE 2/17/2011

STATTER HARBOR MOORAGE IMPROVEMENTS

CONCEPT NO. 4

4

City & Borough of Juneau • Docks & Harbors
155 S. Seward Street • Juneau, AK 99801
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CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

Port of Juneau

To: Docks and Harbors CIP/Planning Committee
CC:
From: John M. Stone, P.E. Port Director
Date: March 17, 2011
Re: Cruise Ship Dock Improvements

We are ready to undertake final design work and compile the construction bid documents for the cruise ship dock project. In order to move forward, the Board needs to approve a final design concept and approve a contract with PND so they can complete the design and compile the bid documents. Both of these items will go to the Assembly for final approval after the Board action.

The recommended final design concept and cost estimate is attached. This concept was developed with significant input from port stakeholders and incorporates findings from the preliminary engineering work that we conducted over the past several months. The cost estimate includes the uplands staging area work previously approved by the Board that has been under development for the past few years. We are proposing to break the project into two construction contracts. On-site construction will take place during three winter construction seasons staring with the 2012/2013 off-season.

The first construction contract will incorporate the work shown as Phase I. This work is estimated to cost of a total of $11.6 million. We anticipate bidding Phase I this fall. Construction will take place during the 2012/2013 off-season with work being completed by the start of the 2013 cruise ship season.

The second construction contract will include the work shown as Phase II and III. Work is estimated to cost a total of $50 million. We anticipate bidding this work next winter. Work will take place in two phases. Phase II includes installation of the new Cruise Ship Terminal Berth and will occur during the 2013/2014 offseason coming online at the start of the 2014 cruise ship season. Phase III includes installation of the new Steamship Berth and will occur during the 2014/2015 offseason coming online at the start of the 2015 cruise ship season.

We opted to phase the project for several reasons. First and foremost, it reduces the possibility that we may not complete a phase by the start of the ensuing cruise ship season. Two, it spreads out the construction costs. Three, it gives contractors more time to do the work which should result in a better bid price. Four, it pulls out a smaller project (Phase I) that should garner a lot of interest from local bidders.

The CBJ Finance Director, Craig Duncan, is working on a plan to finance the improvements. The project will be entirely funded with fees assessed to cruise ships and their passengers. The finance plan will likely include a revenue bond since the cash flow requirement of the project exceeds cruise ship revenues generated over the same time period. However, I expect the term of the bond to be modest.

We currently have about $20 million in-hand which will allow us to move forward with the final design and bid documents for all phases and construction of the Phase I project. We will need to have the revenue bond in place to bid the Phase II and III project.

The cost estimate for the final design concept is greater than the estimate we provided to the Assembly in September, 2010. Some of the major reasons for the increase follow:

1. We added the uplands staging area reconfiguration project into this work. This project was budgeted separately from the earlier cost estimates but is now included since we are combining it with a portion of the dock work.

2. We are including hook-ups for sanitary sewer and are installing enabling infrastructure for shorepower in the event it can be provided in the future. Reports detailing our analysis for providing these services are attached.

3. We increased the size of the floating berths and provided drive-down capability at the Steamship Berth. This was done at industry's suggestion so we can fully accommodate as many different types of ships as possible over the 50 year service life of the project.

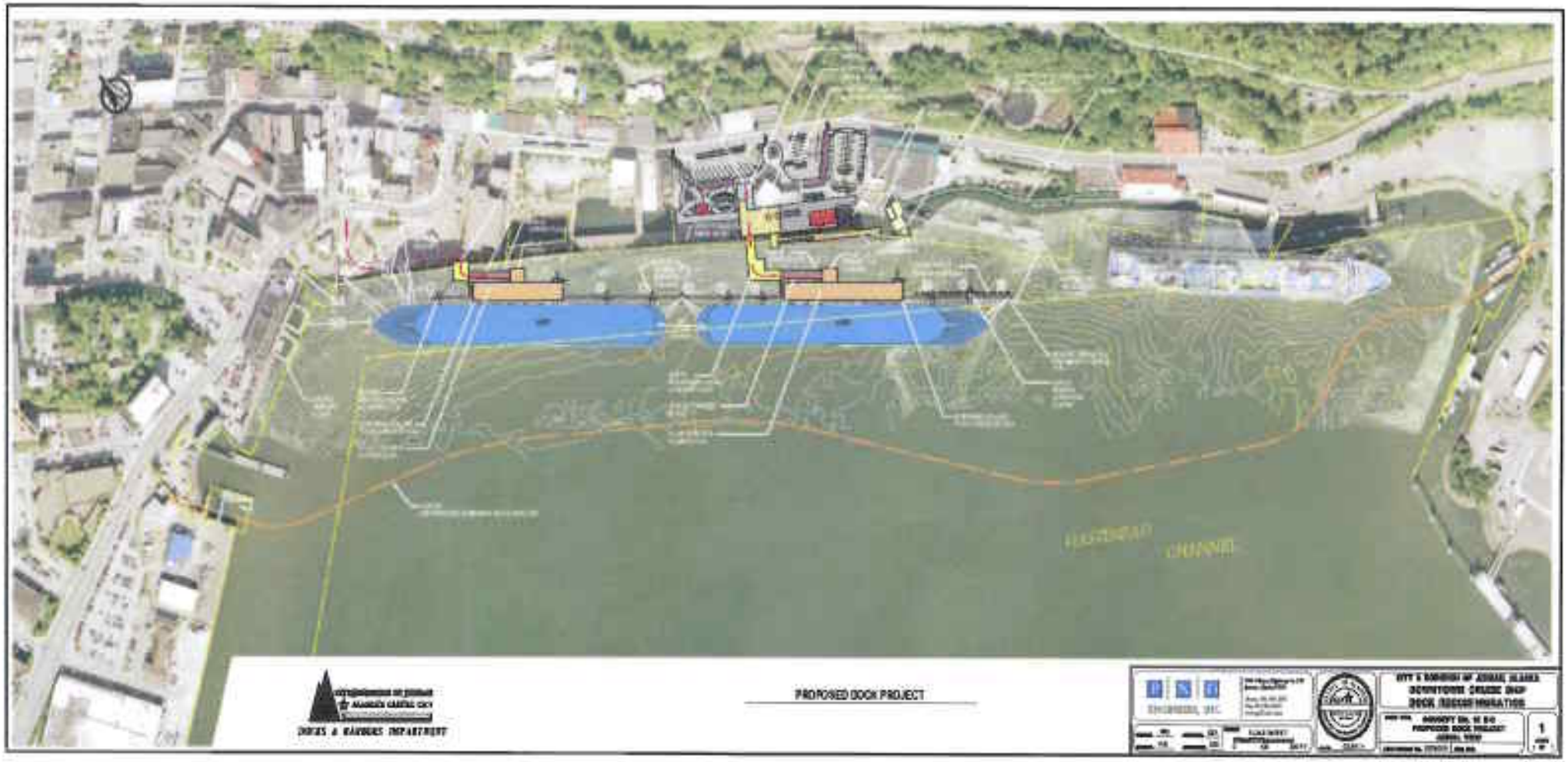
4. Based on input from the cruise industry and the stevedores, we added dolphins, tie-up structures, and catwalks to increase safety and flexibility for mooring a variety of vessel sizes and types into the future.

5. We decided to go with concrete floating berths instead of steel. The upfront cost is more but we believe the life cycle cost is less. A report detailing our recommendation is attached.

I recommend the Board approve the final design concept as presented, the contract with PND for the final design and bid documents, and forward both of these items to the Assembly for action.

Please call me at 586-0294 if you have questions.

Attachments


PROPOSED DOCK PROJECT

CBJ DOWNTOWN CRUISE SHIP DOCK RECONFIGURATION
CONCEPT 16B-3
SCHEMATIC DESIGN BUDGET - MARINE FACILITIES
14-Mar-11
Prepared by: PND Engineers, Inc.

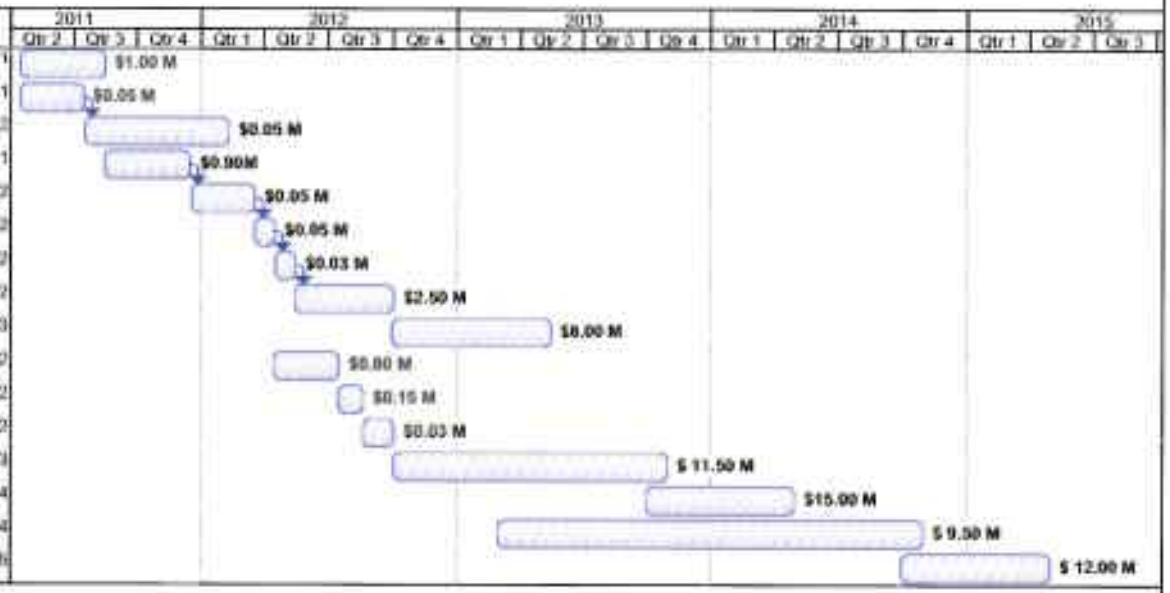
Item	Item Description	Units	Quantity	Unit Cost	Item Cost	Phase 1 Uplands/Docks	Phase 2 South Berth	Phase 3 North Berth	Check
	Base Bid								
1.01	Mobilization	LS	All Reqd	10%	$4,349,200	$582,500	$2,082,450	$1,684,250	
1.02	Demolition	LS	All Reqd	$750,000	$750,000	$750,000		$50,000	
1.03	South Berth Retaining Walls, Earthwork and Concrete Paving	LS	All Reqd	$950,000	$950,000	$950,000			
1.04	North Berth Pile Supported Approach Docks	SF	2,500	$265	$625,000			$625,000	
1.05	South Berth Pile Supported Approach Docks	SF	17,000	$250	$4,250,000	$3,075,000	$1,275,000		
1.06	North Berth Floating Concrete Pontoon 80'x300'	SF	15,000	$290	$4,350,000			$4,350,000	
1.07	South Berth Floating Concrete Pontoon 80'x400'	SF	20,000	$290	$5,800,000		$5,800,000		
1.08	Floating Dock Pile Restraints	EA	4	$1,200,000	$4,800,000		$2,400,000	$2,400,000	
1.09	Floating Dock Marine Fenders	LF	700	$1,000	$700,000		$400,000	$300,000	
1.10	Vehicle Transfer Bridge & Pile Supported Abutment	EA	2	$1,350,000	$2,700,000		$1,350,000	$1,350,000	
1.11	Transfer Bridge Support Piles	EA	2	$200,000	$400,000		$200,000	$200,000	
1.12	Transfer Bridge Landing Float	EA	2	$580,000	$1,160,000		$580,000	$580,000	
1.13	Transfer Bridge End Support Structure	EA	2	$250,000	$500,000		$250,000	$250,000	
1.14	Breasting & Mooring Dolphins	EA	9	$1,000,000	$9,000,000		$6,000,000	$3,000,000	
1.15	Upgrade Existing Mooring Dolphins	EA	2	$250,000	$500,000			$500,000	
1.16	Catwalks	LF	900	$550	$495,000		$247,500	$247,500	
1.17	Catwalk Access Gangways	EA	4	$120,000	$480,000		$240,000	$240,000	
1.18	Water Service (Seasonal Use)	EA	2	$300,000	$600,000	$100,000	$250,000	$250,000	
1.19	Electrical & Lighting	EA	2	$750,000	$1,500,000	$100,000	$500,000	$300,000	
1.20	Port Security Gates & Cameras	LS	All Reqd	$300,000	$300,000		$100,000	$200,000	
1.21	Safety Railings Along Wharf & Visual Enhancements	LS	All Reqd	$1,000,000	$1,000,000			$1,000,000	
1.22	Pile Anodes	EA	400	$2,000	$800,000		$400,000	$400,000	
1.23	10' x 250' Small Vessel Moorage Float	SF	6,000	$150	$600,000		$600,000		
1.24	Moorage Float Piles	EA	11	$12,000	$132,000		$132,000		
1.25	New Pedestrian Gangway & Dock at Moorage Float	EA	1	$250,000	$250,000		$250,000		
1.26	Moorage Float Power & Lighting	EA	1	$150,000	$150,000		$150,000		
1.27	Sewer Service Discharge Piping & Utility Connection	EA	2	$400,000	$800,000			$800,000	
1.28	Shore Tie Power Cubicle to Dock	EA	1	$1,000,000	$1,000,000	$1,000,000			
	Estimated Construction Costs				**$47,041,200**	**$6,507,500**	**$22,906,950**	**$18,526,750**	**$47,041,200**
	Contingency (10%)				$4,704,120	$640,750	$2,290,695	$1,852,675	**$4,784,120**
	Local, State and Federal Permits & Lease Applications				$100,000	$100,000			**$100,000**
	Final Design - P, S & E, Contract Documents				$2,693,000	$486,919	$1,219,649	$986,432	**$2,693,000**
	Contract Administration & Construction Inspection				$2,693,000	$486,919	$1,219,649	$986,432	**$2,693,000**
	2011 Project Budget				**$58,111,320**	**$8,132,088**	**$27,636,944**	**$22,352,288**	**$58,111,320**
	Additive Alternatives								
	Tahu Fisheries Dock Expansion	LS	All Reqd	$546,425	$546,425	$546,425			
	Estimated Construction Costs				**$546,425**	**$546,425**			**$546,425**
	Contingency (10%)				$54,643	$54,643			**$54,643**
	Final Design - P, S & E, Contract Documents				$54,643	$54,643			**$54,643**
	Contract Administration & Construction Inspection				$54,643	$54,643			**$54,643**
	2011 Project Budget				**$730,353**	**$730,353**			**$730,353**
	Uplands Staging Area								
	Estimated Construction Costs (see separate cost breakdown)				**$2,096,600**	**$2,096,600**			**$2,096,600**
	Contingency (10%)				$209,660	$209,660			**$209,660**
	Local, State and Federal Permits & Lease Applications				$15,000	$15,000			**$15,000**
	Site Investigations - Survey & Geotechnical				$40,000	$40,000			**$40,000**
	Final Design - P, S & E, Contract Documents				$188,694	$188,694			**$188,694**
	Contract Administration & Construction Inspection				$188,694	$188,694			**$188,694**
	2011 Project Budget				**$2,738,648**	**$2,738,648**			**$2,738,648**
				Total	**$61,560,321**				

Notes: Final scope of improvements under Base Bid, Add, Alts and Phasing Sequences subject to change based on CBJ direction. Cost of thruster dissipator structure and Marine Park Seawalk not included in this budget. Cost of Uplands Staging Area project added to budget. Inflationary costs not included.

Total Project Budget	$11,371,889	$27,636,944	$22,352,288	$61,360,321
Phase	Ph 1	Ph 2	Ph 3	Total
Scope of Work	Uplands/Docks	South Berth	North Berth	All
Completion Date	May-13	May-14	May-15	May-15

DOWNTOWN CRUISESHIP DOCKS CONCEPT 16B-3
3 SEASON - UPLANDS AND MARINE FACILITIES
PROJECT SCHEDULE & CASH FLOW PROJECTION

ID	Task Name	Start	Finish
1	Preliminary Design Ph 1, 2 & 3 - 35%	Fri 4/15/11	Mon 8/15/11
2	Prepare Permit Applications / Agency Mtgs	Fri 4/15/11	Fri 7/15/11
3	Environmental Review & Permit Authorizations	Mon 7/18/11	Fri 2/10/12
4	Design Development Ph 1, 2 & 3 - 65%	Mon 8/15/11	Fri 12/16/11
5	Final Design Ph 1 - 95%	Mon 12/19/11	Mon 3/19/12
6	Stamped Bid Ready Contract Docs - Ph 1	Tue 3/20/12	Mon 4/16/12
7	Advertise & Award Construction Contract - Ph 1	Wed 4/18/12	Tue 5/15/12
8	Submittals, Material Fabrication & Delivery Ph 1	Wed 5/16/12	Tue 10/2/12
9	On Site Construction - Ph 1 Uplands & Docks	Mon 10/1/12	Wed 5/15/13
10	Final Design Ph 2 & 3 - 95%	Mon 4/16/12	Mon 7/16/12
11	Stamped Bid Ready Contract Docs - Ph 2 & 3	Tue 7/17/12	Mon 8/20/12
12	Advertise & Award Construction Contract - Ph 2 & 3	Tue 8/21/12	Tue 10/2/12
13	Submittals, Material Fabrication & Delivery Ph 2	Wed 10/3/12	Thu 10/31/13
14	On Site Construction - Ph 2 South Berth	Tue 10/1/13	Thu 5/1/14
15	Submittals, Material Fabrication & Delivery Ph 3	Fri 3/1/13	Fri 10/31/14
16	On Site Construction - Ph 3 North Berth	Wed 10/1/14	Fri 5/1/15



Project: PND No. 10205.01
March 18, 2011

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline

Technical Memorandum

Carson Dorn, Inc.

712 West 12th Street
Juneau, AK 99801

Tel: 907-586-4447
Fax: 907-586-5917

Date: March 1, 2011

To: Dick Somerville P.E.

From: Jim Dorn P.E.

Reference:

Subject: Cruise Ship Wastewater Discharges

Introduction

The purpose of this memorandum is to consider the capability of Juneau's wastewater collection and treatment system to accept wastewater discharges from the proposed new cruise ship docking facilities at the Alaska Steamship Dock and the Cruise Ship Terminal. Additionally a conceptual design of wastewater facilities to serve the cruise ship docks will be developed that would allow wastewater from the cruise ships to be accepted by Juneau.

The Juneau Douglas Wastewater Treatment Plant located at the Rock Dump south of Juneau has some capacity to handle higher flows (hydraulic capacity) but there is concern about the impact increased organic loading from additional cruise ship wastewater discharges will have on the wastewater treatment plant operation.

Discharge of wastewater from cruise ships in Southeast Alaska has been a concern to Alaskans and regulatory agencies as the number of cruise ship visits increase each year. In the past decade, the size and number of cruise ships frequenting Alaska's coastal waters has increased dramatically. It is reported that in 2011season there will be approximately 460 cruise ship visits to Juneau.

Historically there have been reports of high concentrations of fecal coliform bacteria in wastewater discharges from cruise ships and the concentration of biological oxygen demand (BOD) which is a measure of the organic material in wastewater and total suspended solids (TSS) in the effluent exceed what would have been expected from most municipal secondary treatment plants.

The cruise ship industry is aware of these problems and is actively employing new technologies, primarily on-board wastewater treatment plants, to address the issues of fecal coliform, BOD and TSS in their wastewater discharges.

Existing Wastewater Facilities/Operation at the South Franklin Street Dock

Facilities were constructed in 2004 at the Princess Cruise Lines South Franklin Street Dock to allow vessels using the dock to pump wastewater into the City and Borough of Juneau wastewater collection system for treatment and disposal.

Flexible hoses are lowered to the vessels and each vessel connects these hoses to its on-board pumps to discharge wastewater to Juneau's wastewater collection system. The shore based facilities include piping form the dock to Juneau's wastewater collection system near the Rock Dump tank farms, a magnetic flow meter to record the total volume discharged, a composite sampler to collect samples of the wastewater every 30 minutes for analysis and valves to control the flow rate and to prevent backflow of sewage to the vessels.

Vessels are charged for these services based on the volume of wastewater discharged and on the BOD and TSS concentration in the wastewater. Experience with the South Franklin Street Dock has shown that the BOD concentration is typically higher than the TSS concentration and usually determines the charge rate per 1000. The following table shows the 2010 charge rates per 1000 gallons for increasing concentrations of BOD and TSS. Normal influent concentrations to the Juneau wastewater treatment plant are 300 mg/l BOD and 350 mg/l TSS.

City and Borough of Juneau
Cruise Ship 2010 Wastewater Charge Rates

BOD Conc.mg/l <	TSS Conc. mg/l <	Rate/1000 gal
300	350	$7.45
600	700	$14.90
900	1,050	$22.35
1,200	1,400	$29.80
1,500	1,750	$37.25
1,800	2,100	$44.70
2,100	2,450	$52.15
2,400	2,800	$59.60
2,700	3,150	$67.05
3,000	3,500	$74.50
3,300	3,850	$81.95
3,600	4,200	$89.40
3,900	4,550	$96.85
4,200	4,900	$104.30
4,500	5,250	$111.75

Wastewater discharge volumes are recorded at the end of each discharge event and a Discharge Receipt is prepared to document the volume of wastewater discharged for billing purposes and for reporting to the US Coast Guard. Wastewater samples collected during the discharge are taken to a local lab to be analyzed for BOD and TSS. At the end of each month a summary of the volume, BOD concentration, TSS concentration and the City and Borough of Juneau charges are prepared for each vessel.

Historic Wastewater Discharge Data from the South Franklin Street Dock

Princess Cruise Lines has been discharging wastewater to the City and Borough of Juneau wastewater collection system since 2004. Appendix A contains graphs showing the volume, BOD concentration and total pounds of BOD discharged during each event during for the two most recent years of operation (2009 and 2010). These graphs illustrate the variations in discharge volumes and concentrations between individual events and the number of discharge events that occur each year.

Projected Cruise Ship Discharge Volume

In 2009 there were a total of 7 discharge events from cruise ships at the South Franklin Street Dock with discharge volumes ranging from 8,788 to 52,261 gallons and in 2010 there were a total of 53 discharge events with discharge volumes ranging from 6,454 to 115,454 gallons.

A review of the records since 2004 indicate there were a few discharge events with total discharges of approximately 150,000 gallons.

If it is assumed that maximum discharge volume from a cruise ship will be on the order of 150,000 gallons and that they occur at the South Franklin Street Dock, Alaska Steamship Dock and the Cruise Ship Terminal simultaneously, the total peak flow would be about 450,000 gallons per day.

While it is not included in this evaluation, there has been some discussion about connecting the AJ Dock to the CBJ wastewater collection and treatment system too, so peak daily flows of 600,000 gallons per day from the cruise ships should be considered in the event that discharges are taking place at 4 docks.

Projected Cruise Ship Biological Oxygen Demand (BOD) Loading

In 2009 there were a total of 7 discharge events from cruise ships at the South Franklin Street Dock with BOD loadings ranging from 36 to 415 pounds and in 2010 there were a total of 53 discharge events with loadings ranging from 29 to 2,465 pounds.

A review of the records since 2004 indicate there were a few discharge events with total BOD loadings in excess of 4,000 pounds.

If it is assumed that maximum BOD loading from a cruise ship will be on the order of 4,000 pounds and that they occur at the South Franklin Street Dock, Alaska Steamship Dock and the Cruise Ship Terminal simultaneously, the total BOD loading from the cruise ships would be about 12,000 pounds per day.

If additional BOD loading occurs from the AJ Dock, the total BOD loading to the wastewater collection and treatment system from cruise ships of 16,000 pounds per day from the cruise ships should be considered in the evaluation of capacity of the Juneau Douglas Wastewater Treatment Plant to handle increase flows from the cruise ships.

Juneau Wastewater Collection and Treatment System Evaluation

The hydraulic capacities of the gravity sewer pipes in the collection system were reviewed to determine if they have sufficient capacity to handle wastewater from the cruise ships. The capacity of the sewers was determined using the Manning formula for calculating flow in gravity sewers. Invert elevations and the distances between manholes were collected from as-built drawings and were used to determine the pipe slope. The sewer lines near Marine Park have a capacity of 886 gallons per minute when flowing full. Figure 1 shows the sewer lines and their capacity.

The Outer Drive Pump Station is the pump station that pumps sewage from the downtown Juneau and Douglas area to the Juneau Douglas wastewater treatment plant. The pump station has three pumps, a constant speed pump with a capacity of 2,100 gpm and two variable speed pumps one with a capacity of 2,700 gpm and the other with a capacity of 2,100 gpm. The total capacity of the Outer Drive Pump Station is therefore approximately 6,900 gallons per minute.

The South Franklin Street Dock and the AJ Dock pump directly to the gravity sewer line leading the Juneau Douglas Wastewater Treatment plant and so would not use the collection system piping around Marine Park or the Outer Drive Pump Station. As a result the projected loading on the collection system in this area would be about 300,000 gallons per day. If this flow occurs over a 12 hour period, the flow rate would be about 417 gallons per minute. Both the gravity collection system near Marine Park and the Outer Drive Pumps Station appear to have sufficient capacity to handle increased wastewater flows from vessels docked at the Alaska Steamship Dock and the Cruise Ship Terminal.

Juneau Douglas Wastewater Treatment Plant

The original design criteria for flows and BOD loadings at the Juneau Douglas Wastewater Treatment Plant are as follows:

Avg. Flow	2.76 MGD
Peak Flow	7.23 MGD

CITY AND BOROUGH OF JUNEAU

SEWER SYSTEM
CRUISE SHIP WASTEWATER
EVALUATION

Carson Dorn Inc.

MAXIMUM FLOW IN
MARINE WAY
GRAVITY SEWERS

Total (Avg. Day) BOD lbs/day	3,290 lbs/day
Total (Max. Day) BOD lbs/day	5,980 lbs/day

Measured flow and organic loading records for the 2009 and 2010 summer season at Juneau Douglas Wastewater Treatment Plant are contained in Appendix B.

Flows

Juneau has made a concerted effort to separate its storm drain systems from its sewer system in the downtown core area over the last few years. This effort has dramatically reduced the flow loading on the Juneau Douglas Wastewater Treatment Plant and has resulted in the hydraulic loading on the plant being consistently below the average design flow. Following is a summary of the flow records at the treatment plant for the 2009 and 2010 cruise ship season.

Juneau Douglas Wastewater Treatment Plant Flow Summary
2009-2010 Cruise Ship Season

Month	Average Daily Flow (MGD)	Peak Daily Flow (MGD)	Peak Flow Rainfall Event (Inches)
May 2009	0.8555	1.273	0.76
Jun 2009	0.8076	1.357	0.56
Jul 2009	0.9195	1.841	0.80
Aug 2009	1.3363	3.542	1.40
Sep 2009	1.3035	2.428	0.80
May 2010	0.7917	1.127	0.00
Jun 2010	1.1419	2.615	1.52
Jul 2010	1.0475	1.861	0.95
Aug 2010	0.9986	1.331	0.34
Sep 2010	0.9728	1.654	0.69

It was previously projected that the wastewater flow rate from 4 cruise ships would be about 600,000 gallons per day. If this occurs over a 12 hour period it is equivalent to a flow rate of rate of 1.2 MGD. From a flow standpoint it appears that under most circumstances that occur during the summer months, the Juneau Douglas treatment plant will be able to handle the additional flow from the cruise ships in combination with the historic flows when compared to the average design flow of 2.76 MGD and peak design flow of 7.23 MGD.

BOD Loadings

The Juneau Douglas Wastewater Treatment plant is required by its discharge permit to measure influent and effluent BOD levels once per month. The BOD test takes approximately 5 days to conduct and so does not immediately provide feedback with regards to loading or performance of

the plant. Following is a summary of the BOD loading measurements for the 2009 and 2010 cruise ship season:

Juneau Douglas Wastewater Treatment Plant BOD Loading Summary
2009-2010 Cruise Ship Season

Month	Average Daily BOD Loading (pounds)	Peak Daily BOD Loading (pounds)
May 2009	1516	1516
Jun 2009	1187	1187
Jul 2009	1679	1679
Aug 2009	1883	1883
Sep 2009	1990	2
May 2010	1471	1815
Jun 2010	1397	2086
Jul 2010	1632	1632
Aug 2010	2589	2589
Sep 2010	2676	2676

It was previously projected that the peak wastewater BOD loadings from 4 cruise ships could be as high as 16,000 pounds per day. This is nearly 5 times the average daily design capacity of the Juneau Douglas Wastewater Treatment. There are days where the single discharge from cruise ships at South Franklin Street Dock exceeded the average daily design capacity of the plant. From an organic loading standpoint it appears that the Juneau Douglas treatment plant would not be able to handle the additional flow from more than one cruise ship at a time.

Adding additional "full strength" wastewater with high BOD concentrations from the cruise ships to the Juneau Douglas plant will result in the plant being organically overloaded and will most likely result in unsatisfactory effluent quality and violations of the plant's wastewater discharge permit.

After discussing this concern with the cruise line agencies that would be using the Alaska Steamship Dock and the Cruise Ship Terminal is was determined that vessels using those facilities only need to have the ability to discharge treated effluent from their on-board wastewater treatment plants and not untreated wastewater as occurs at the South Franklin Street Dock. Apparently there are times that they need to recertify their on-board wastewater treatment plants and so are unable to discharge from them while in port.

Effluent from their wastewater treatment plants is expected to have BOD concentrations below 30 mg/l as opposed to untreated wastewater from the cruise ships which has had measured BOD concentrations as high as 8,800 mg/l.

If CBJ can be assured that the wastewater discharged from the cruise ships is treated effluent, it can be assumed that the pounds of BOD that would discharged each event would be about 37 pounds instead of the 4,000 pounds per event previously estimated. If treated wastewater is discharged from the vessels using the new facilities, the Juneau Douglas Treatment Plant has sufficient capacity to treat the existing "full strength" discharges from the South Franklin Street Dock as well as the treated effluent discharges from the Alaska Steamship, Cruise Ship Terminal and AJ docks.

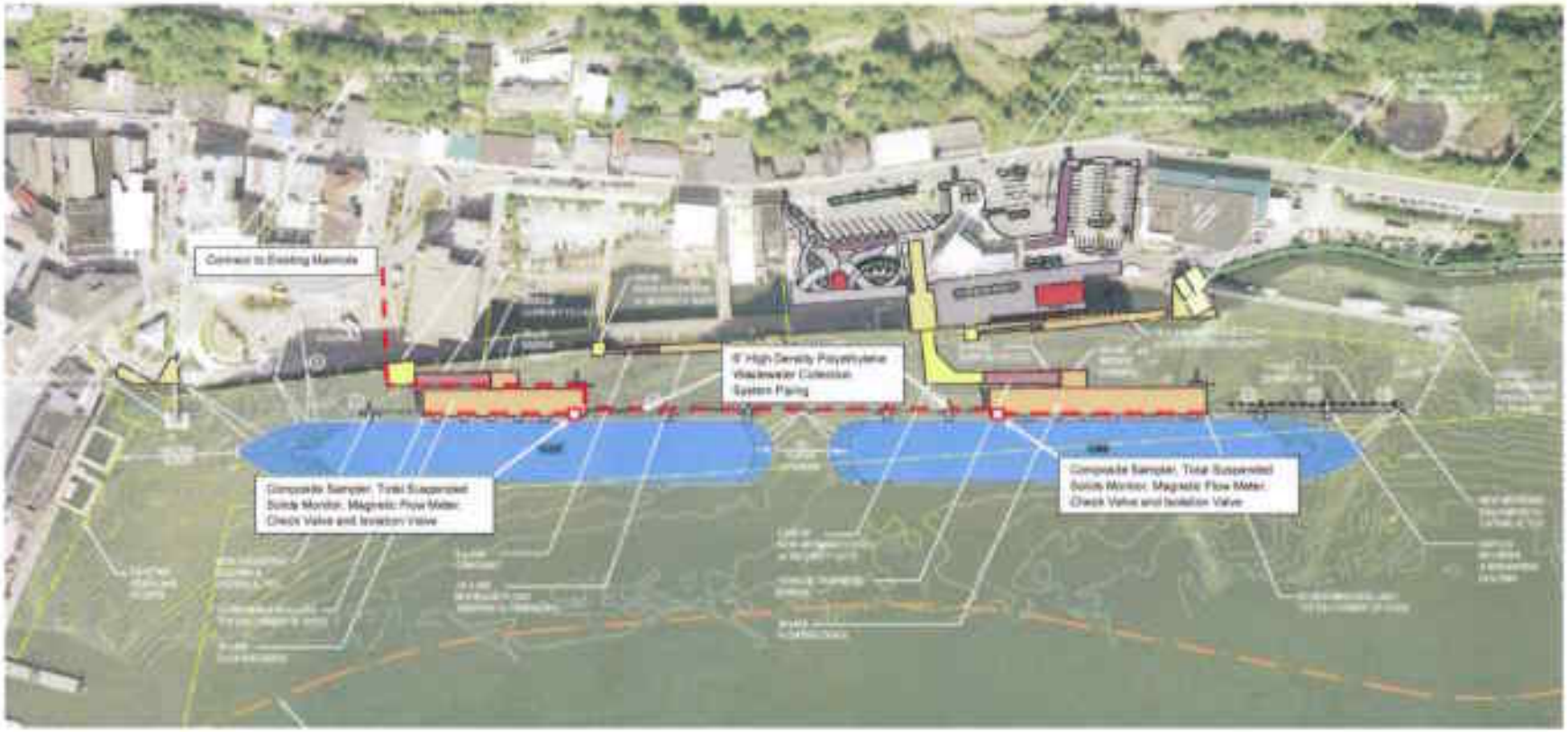
Conceptual Design Recommended Facilities

In order to receive wastewater from the cruise ships at the Alaska Steamship Dock and Cruise Ship Terminal and to monitor and control the discharges, the following facilities need to be provided at each location.

- Piping from the cruise ship floats to the CBJ wastewater collection system
- Magnetic flow meter to measure flow of liquids with high levels of solids
- Composite sampler with the capability to take periodic/representative samples of the discharge in order to determine effluent quality for billing purposes
- Continuous total suspended solids analyzer to measure the concentration of total suspended solids in the discharge. This is an indicator of the quality of the effluent and will be used to immediately determine if there is potential for organically overloading the treatment plant.
- Eccentric plug valve to isolate the connection for each float and to throttle flows in the event flow rates begin to exceed that capacity of the wastewater collection system.
- Check valves to prevent backflow to the cruise ships

The following Site Plan for the Proposed Cruise Ship Wastewater Collection System shows a conceptual layout and location of these facilities.

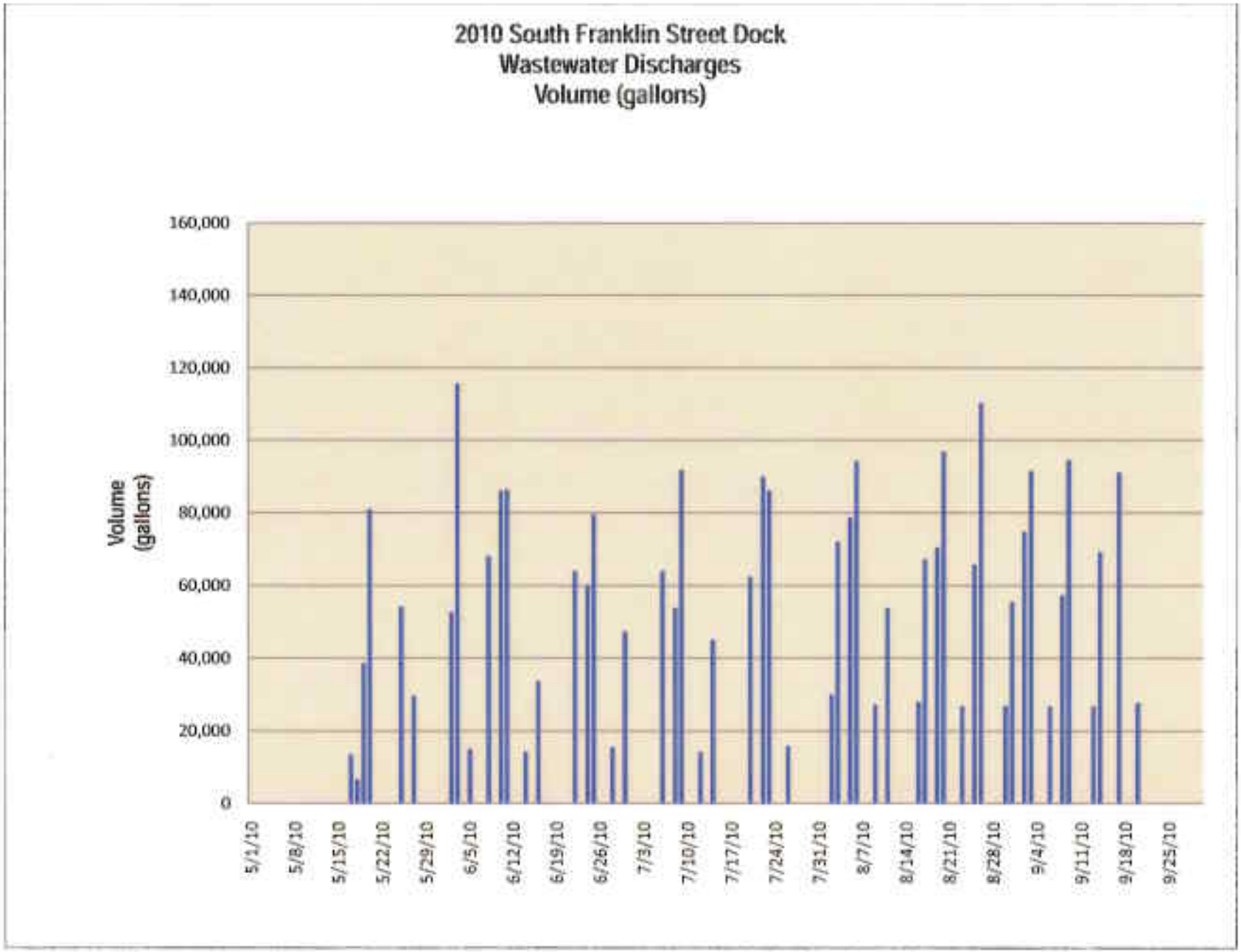
Estimated construction costs of these wastewater collection facilities for the two docks is $600,000.



SITE PLAN

PROPOSED CRUISE SHIP WASTEWATER COLLECTION SYSTEM

APPENDIX A


2010 South Franklin Street Dock
Wastewater Discharges
Volume (gallons)
Volume (gallons)
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
5/1/10
5/8/10
5/15/10
5/22/10
5/29/10
6/5/10
6/12/10
6/19/10
6/26/10
7/3/10
7/10/10
7/17/10
7/24/10
7/31/10
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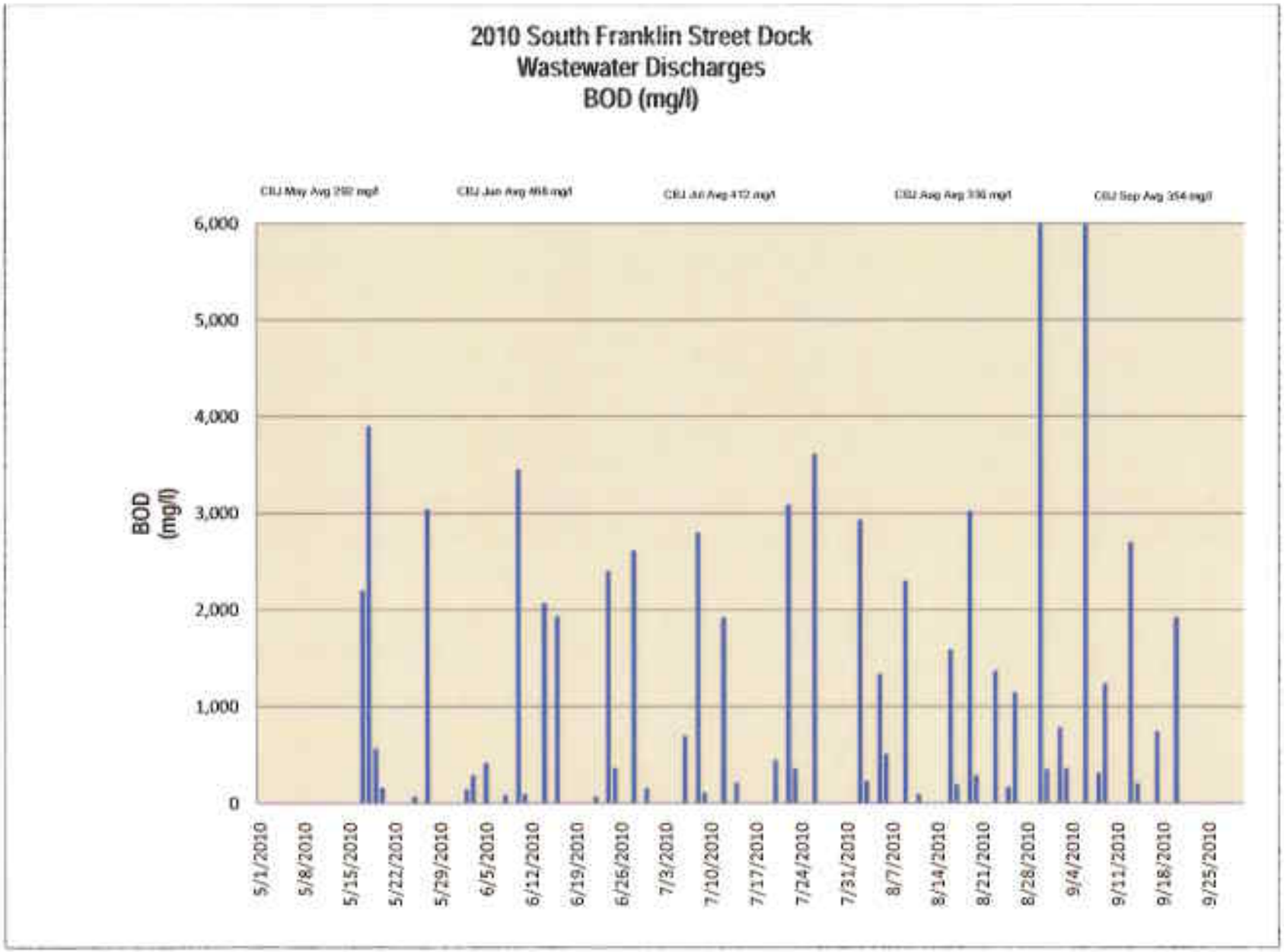
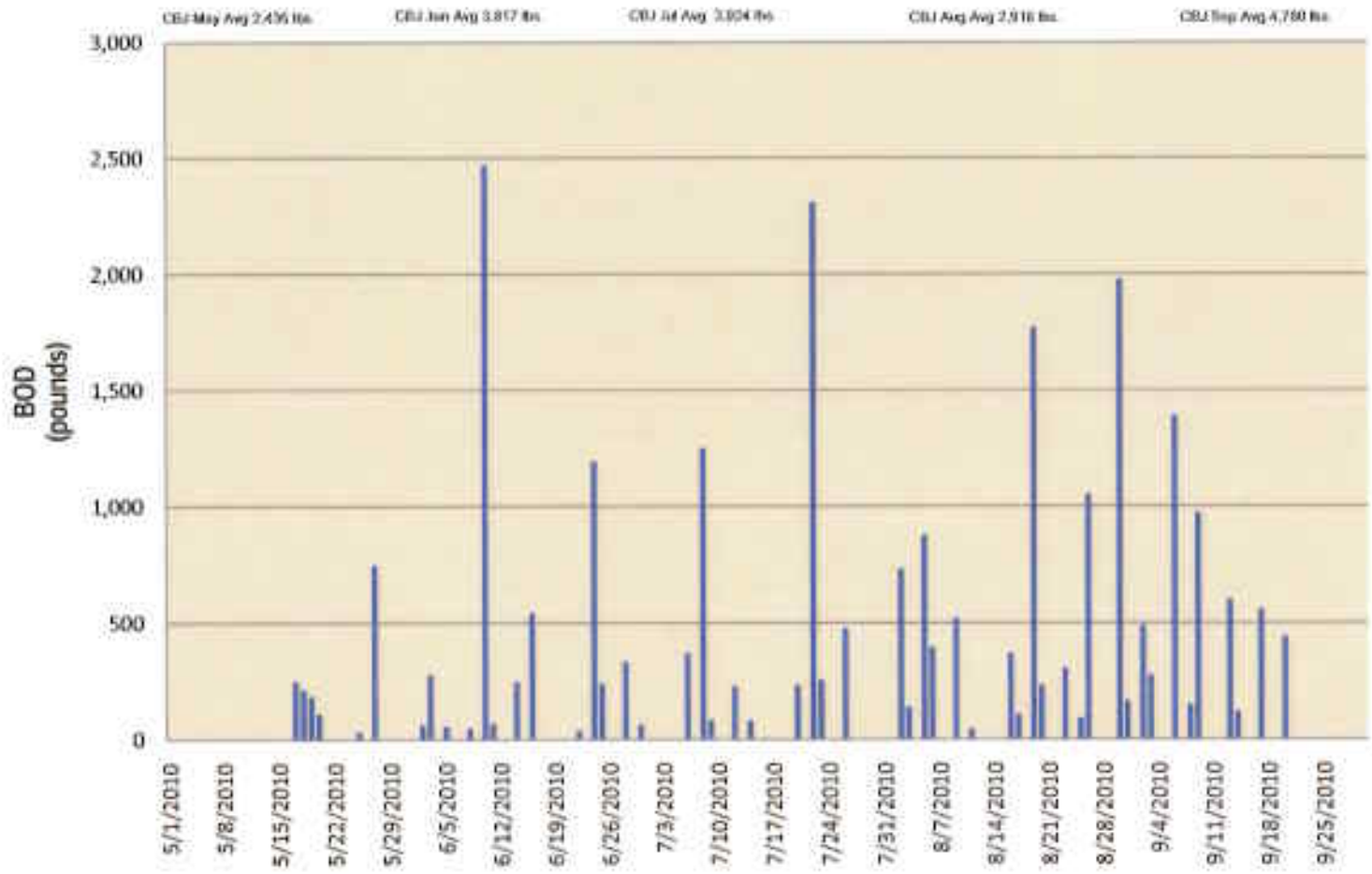
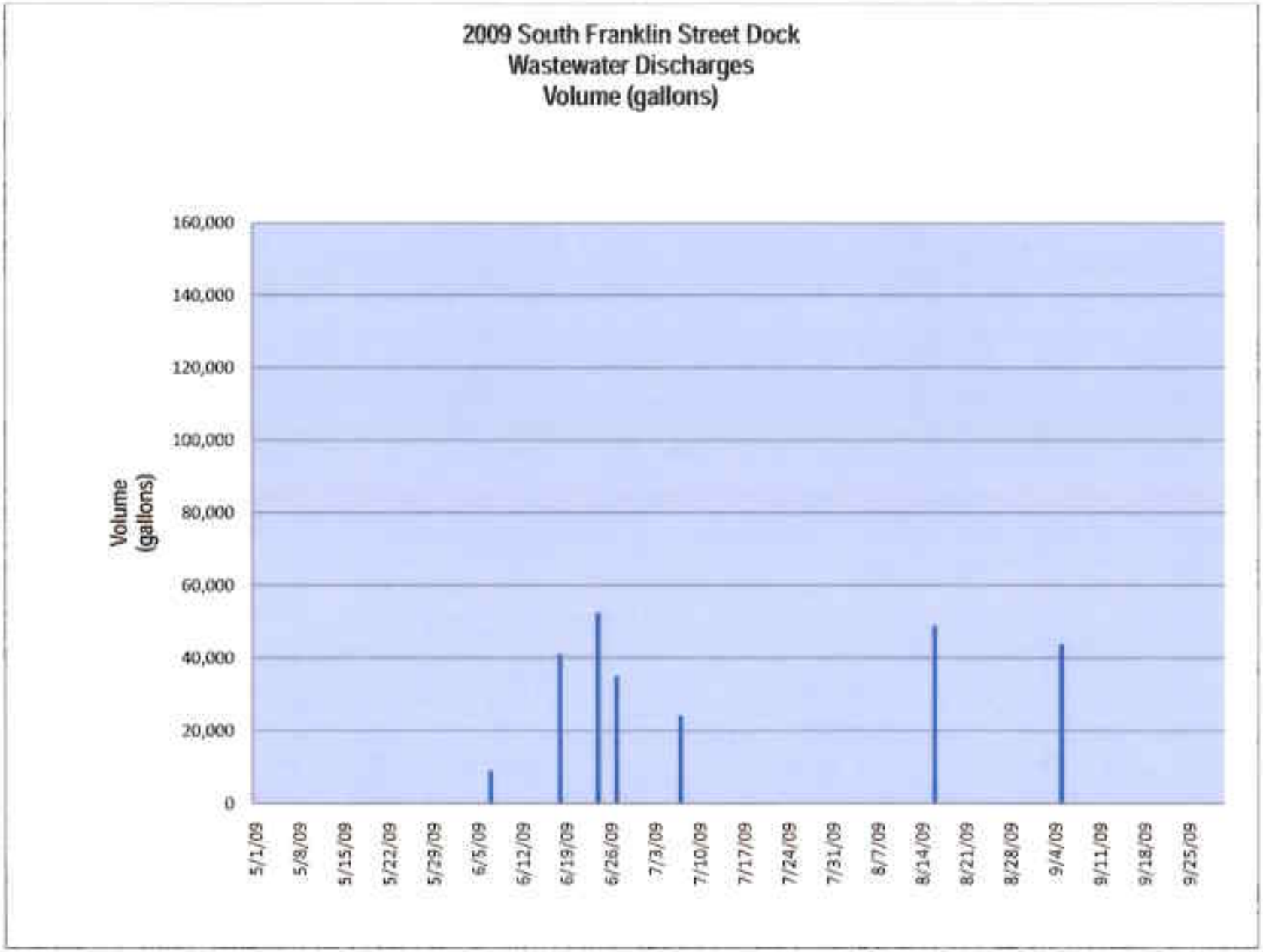
9/4/10
9/11/10
9/18/10
9/25/10


2010 South Franklin Street Dock
Wastewater Discharges
BOD (mg/l)
CSJ May Avg 280 mg/l
CSJ Jun Avg 466 mg/l
CSJ Jul Avg 412 mg/l
CSJ Aug Avg 336 mg/l
CSJ Sep Avg 354 mg/l
BOD (mg/l)
6,000
5,000
4,000
3,000
2,000
1,000
0
5/1/2010
5/8/2010
5/15/2010
5/22/2010
5/29/2010
6/5/2010
6/12/2010
6/19/2010
6/26/2010
7/3/2010
7/10/2010
7/17/2010
7/24/2010
7/31/2010
8/7/2010
8/14/2010
8/21/2010
8/28/2010
9/4/2010
9/11/2010
9/18/2010
9/25/2010

2010 South Franklin Street Dock
Wastewater Discharges
BOD (pounds)




2009 South Franklin Street Dock
Wastewater Discharges
Volume (gallons)
Volume (gallons)
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
5/1/09
5/8/09
5/15/09
5/22/09
5/29/09
6/5/09
6/12/09
6/19/09
6/26/09
7/3/09
7/10/09
7/17/09
7/24/09
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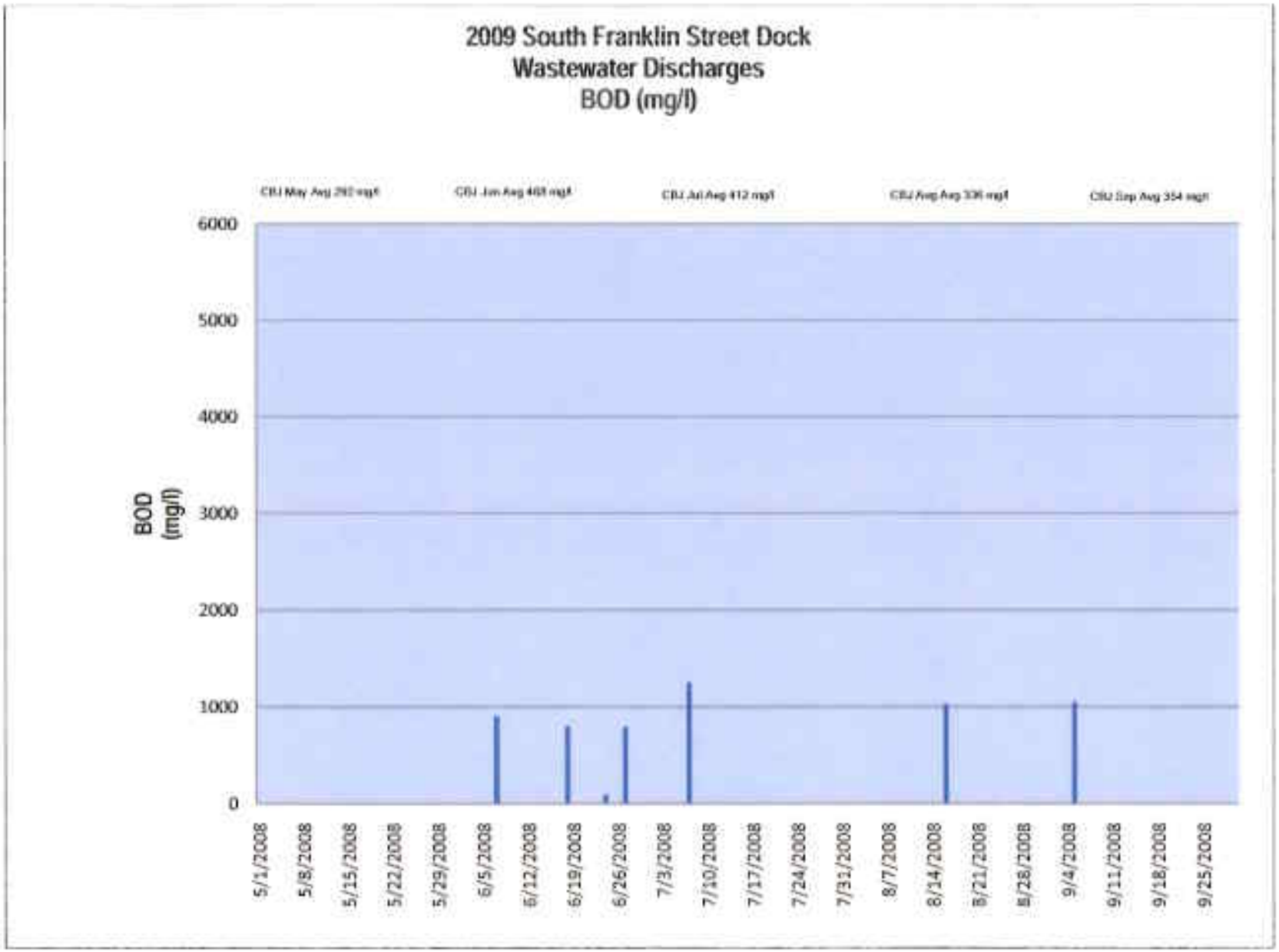
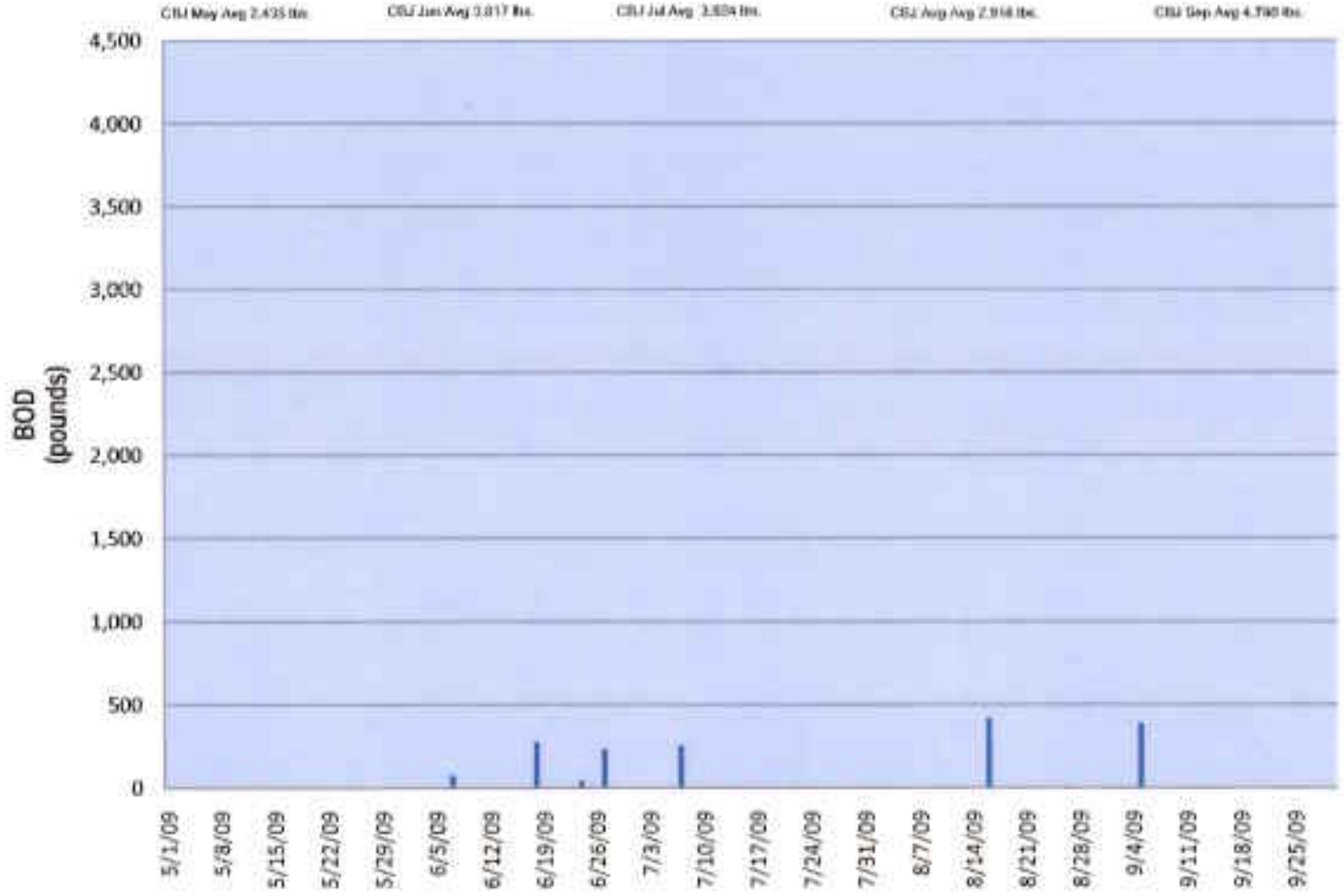
9/4/09
9/11/09
9/18/09
9/25/09


2009 South Franklin Street Dock
Wastewater Discharges
BOD (mg/l)
CBJ May Avg 292 mg/l
CBJ Jun Avg 463 mg/l
CBJ Jul Avg 412 mg/l
CBJ Aug Avg 336 mg/l
CBJ Sep Avg 354 mg/l
BOD (mg/l)
6000
5000
4000
3000
2000
1000
0
5/1/2008
5/8/2008
5/15/2008
5/22/2008
5/29/2008
6/5/2008
6/12/2008
6/19/2008
6/26/2008
7/3/2008
7/10/2008
7/17/2008
7/24/2008
7/31/2008
8/7/2008
8/14/2008
8/21/2008
8/28/2008
9/4/2008
9/11/2008
9/18/2008
9/25/2008

2009 South Franklin Street Dock
Wastewater Discharges
BOD (pounds)



APPENDIX B

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — May 2009

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP °F	RAIN FALL INCHES	HIGH TIDE FEET	24 HR TOTAL EFFL MGD	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia gas N mg/l 1/180 days	Ammonia as N lbs/day 1/180 days
SUN	3	45	0.32	14.9	1.171	126	1231						58.0	566					0.0
MON	4	44	0.06	15.8	1.064	256	2272			25.0	6.0	4.5	60.0	532					0.0
TUE	5	47	0.00	16.7	0.972	252	2043	187	1516	14.1	6.2	3.6	70.0	567	23	186			0.0
WED	6	46	0.36	14.8	1.127	220	2066			13.8	6.3	3.1	36.5	362			1010		0.0
THU	7	44	0.21	17.3	0.979	151	1233			12.7	6.4	2.7	34.0	278					0.0
FRI	8	45	0.04	17.6	0.846					12.8	6.2	3.0							0.0
SAT	9	45	0.02	17.7	0.845														0.0
SUN	10	46	0.00	17.4	0.944	168	1480						40.0	315					0.0
MON	11	49	0.00	17.0	0.799	338	2252			12.8	6.0	3.8	44.0	293					0.0
TUE	12	47	0.00	16.4	0.708	200	1181			13.3	6.4	4.9	43.0	254					0.0
WED	13	47	0.00	15.6	0.779	241	1566			13.3	6.1	4.4	31.0	201			57		0.0
THU	14	46	0.00	14.6	0.729	208	1265			12.2	6.1	3.2	33.5	204					0.0
FRI	15	43	0.11	13.6	0.636					14.1	5.9	2.9							0.0
SAT	16	50	0.05	12.6	0.597														0.0
SUN	17	50	0.00	12.5	0.695	247	1432						52.0	301					0.0
MON	18	49	0.00	13.4	0.702	186	1089			14.6	5.3	3.4	30.5	179					0.0
TUE	19	51	0.00	14.4	0.574	192	919			13.2	6.3	3.3	27.0	129					0.0
WED	20	50	0.00	15.6	0.872	270	1964			14.4	6.2	3.4	20.5	149			68		0.0
THU	21	50	0.00	16.7	0.776	255	1650			14.8	6.2	3.0	12.0	78					0.0
FRI	22	50	0.00	14.3	0.747					14.5	6.0	3.5							0.0
SAT	23	50	0.00	17.7	0.747														0.0
SUN	24	54	0.00	18.5	0.796	206	1368						16.8	112					0.0
MON	25	54	0.00	19.0	0.937	197	1539			15.6	6.0	3.7	14.8	116					0.0
TUE	26	50	0.70	19.0	1.252	192	2005			15.8	6.1	3.5	15.8	165					0.0
WED	27	46	0.20	16.5	0.807	201	1353			15.1	6.3	4.1	8.4	57			37		0.0
THU	28	50	0.00	17.6	0.813	224	1519			15.2	6.0	3.7	9.0	61					0.0
FRI	29	44	0.76	16.3	1.273					14.8	5.9	3.8							0.0
SAT	30	47	0.27	14.8	0.758														0.0
TOTAL			3.10		23.945														
MAXIMUM		54	0.76	19.0	1.273	338	2272	187	1516	25.0	6.4	4.9	78.0	567	23	186	1010	N/A	N/A
MINIMUM		43	0.00	12.5	0.574	126	919	187	1516	12.2	5.3	2.7	8.4	57	23	186	37	N/A	N/A
AVERAGE		48	0.111	16.1	0.855	218	1571	187	1516	14.6	6.1	3.6	32.9	246	23	186	110	N/A	N/A

% REMOVAL	
B.O.D.	88
S.S.	85

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly TSS,BOD Aver.	TSS mg/l	TSS lbs	BOD mg/L	BOD lbs	Weekly Coliform Geo. Mean
WEEK1	52	481	23	186	1010
WEEK2	38	253			57
WEEK3	28	167			68
WEEK4	13	102			37
MAX	52	481	23	186	1010

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — June 2009

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP °F	RAIN FALL INCHES	HIGH TIDE FEET	3-D TTL EFFL MGD	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia as N mg/l 37180 days	Ammonia as N lbs/day 37180 days
SUN	31	51	0.00	15.0	0.7730	190	1225						12.6	81					
MON	1	56	0.00	15.4	0.7250	235	1421			14.7	6.0	3.8	12.4	75					
TUE	2	58	0.00	15.8	0.7490	682	4260	190	1187	15.5	6.2	3.9	48.8	305	8.55	41			
WED	3	60	0.00	16.2	0.7660	232	1486			16.9	6.0	3.1	12.8	82			19.0		
THU	4	62	0.00	16.6	0.7810	226	1472			17.0	6.1	3.6	17.0	111					
FRI	5	63	0.00	13.7	0.7360					18.0	6.3	3.1							
SAT	6	62	0.00	16.7	0.7070														
SUN	7	62	0.00	16.7	0.8100	219	1479						11.6	78					
MON	8	57	0.00	16.7	0.7940	242	1603			17.4	6.5	3.7	11.6	77					
TUE	9	57	0.00	16.5	0.7890	262	1724			16.6	6.2	3.9	18.0	118					
WED	10	60	0.00	16.2	0.7660	224	1472			16.1	6.0	4.3	18.4	121			27.0		
THU	11	60	0.00	15.7	0.7920	225	1486			17.9	6.3	3.3	13.6	90					
FRI	12	51	0.11	15.0	0.6660					16.9	6.2	3.4							
SAT	13	53	0.02	14.1	0.6540														
SUN	14	54	0.01	13.4	0.6930	206	1202						18.0	104					
MON	15	53	0.15	13.7	0.9350	288	2246			17.4	6.0	3.6	23.2	181					
TUE	16	53	0.25	14.1	0.7500	232	1451			17.0	6.1	3.5	22.2	139					
WED	17	52	0.16	14.9	0.8100	291	1966			16.9	5.9	3.4	17.2	116			71.4		
THU	18	53	0.03	15.7	0.7600	226	1432			16.6	6.1	3.0	15.6	99					
FRI	19	52	0.03	16.7	0.7290					19.3	6.2	2.5							
SAT	20	54	0.02	17.7	0.7460														
SUN	21	52	0.06	14.4	0.8400	210	1471						12.8	90					
MON	22	51	0.56	18.5	1.3570	252	2852			16.2	7.0	2.7	23.2	263					
TUE	23	51	0.41	19.1	1.0420	176	1529			15.2	6.3	3.0	22.0	191					
WED	24	60	0.00	19.3	0.9330	170	1323			15.3	6.2	3.0	23.4	182			11.0		
THU	25	51	0.01	18.9	0.8330	256	1778			16.2	7.1	3.6	27.2	189					
FRI	26	51	0.03	17.9	0.8250					16.0	6.2	3.3							
SAT	27	52	0.09	16.6	0.8220														
TOTAL			1.94		22.6130														
MAXIMUM		63	0.56	19.3	1.3570	682	4260	190	1187	19.3	7.1	4.3	48.8	305	7	41	71	N/A	N/A
MINIMUM		51	0.00	13.4	0.6540	170	1202	190	1187	14.7	5.9	2.5	11.6	75	7	41	11	N/A	N/A
AVERAGE		55	0.069	16.1	0.8076	252	1744	190	1187	16.7	6.2	3.4	19.1	135	7	41	25	N/A	N/A

% REMOVAL	
B.O.D.	97
S.S.	92

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly TSS,BOD Aver.	TSS mg/L	TSS lbs.	BOD mg/L	BOD lbs.	Weekly Coliform Geo. Mean
WEEK1	21	131	7	41	19
WEEK2	15	97			27
WEEK3	19	128			71
WEEK4	22	183			11
- MAX -	22	183	7	41	71

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — July 2009

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP °F	RAIN FALL INCHES	WIND VELOCITY MPH	FLOW MGD	S.S. mg/L	S.S. LBS	BOD mg/L	BOD LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	BOD mg/L	BOD LBS	FECAL Colonies/ 100 ml	Ammonia as N mg/L 3/180 days	Ammonia as N lbs/day 3/MO days
SUN	28	51	0.21	16.0	1.0650	176	1563						34.4	306					
MON	29	49	0.42	15.6	0.8820	218	1604			15.9	6.3	4.4	21.0	154					
TUE	30	50	0.09	15.3	0.8040					16.7	6.1	3.2	19.8	131					
WED	1	52	0.03	15.2	0.7560	256	1927			16.6	6.2	2.6	16.0	101			16.0		
THU	2	57	0.00	15.2	0.7360	265	1811			17.1	6.3	3.1	20.0	123					
FRI	3	62	0.00	15.4	0.7920					16.8	6.2	2.9							
SAT	4	66	0.00	12.9	0.7940														
SUN	5	67	0.00	15.7	0.6140	240	1629						14.4	98					
MON	6	70	0.00	16.1	0.8060	218	1466			18.5	6.5	3.4	16.2	102					
TUE	7	69	0.00	16.3	0.8250	643	4424	244	1679	18.5	6.3	2.1	12.0	83	0.09	56			
WED	8	65	0.00	16.5	0.8970	180	1391			19.1	6.4	2.1	20.4	153			4.0		
THU	9	64	0.00	16.4	0.8798	237	1735			19.4	6.5	2.9	17.6	129					
FRI	10	62	0.00	16.1	0.8750					19.9	6.7	3.2							
SAT	11	61	0.00	15.5	0.7120														
SUN	12	63	0.00	14.5	0.7560	248	1504						16.4	103					
MON	13	66	0.00	14.8	0.7230	268	1616			18.6	6.3	2.9	23.3	140					
TUE	14	63	0.06	14.8	0.7270	177	1073			19.3	6.3	3.2	22.4	136					
WED	15	57	0.13	14.8	0.7520	168	1054			19.3	6.3	2.8	16.8	99			14.0		
THU	16	59	0.00	15.0	0.7470	275	1713			18.3	6.3	2.7	16.8	105					
FRI	17	56	0.28	15.5	0.8850					18.2	6.3	2.4							
SAT	18	57	0.18	16.3	0.8180														
SUN	19	57	0.38	17.4	1.2710	140	1484						21.4	227					
MON	20	56	0.41	14.5	1.3880	218	2524			17.4	6.3	3.2	20.5	237					
TUE	21	54	0.32	16.5	1.1950	456	4545			16.7	6.3	3.0	16.0	179					
WED	22	52	0.80	19.2	1.8410	179	2748			16.7	6.5	3.1	16.5	284			104		
THU	23	55	0.47	19.4	1.3390	136	1519			16.6	6.5	2.8	16.8	188					
FRI	24	53	0.01	19.1	0.9890					16.9	6.4	2.9							
SAT	25	56	0.00	18.1	0.8900														
SUN	26	59	0.00	17.4	0.8390	176	1232						12.2	85					
MON	27	61	0.02	16.6	0.8870	243	1798			17.6	6.2	3.5	15.2	112					
TUE	28	66	0.01	15.7	0.8020	32	214			17.8	6.2	3.8	14.4	96					
WED	29	68	0.00	14.8	0.8900	240	1781			18.1	6.0	2.5	12.8	95			17		
THU	30	68	0.00	14.2	0.7990	215	1415			19.1	6.3	2.7	13.6	89					
FRI	31	67	0.00	14.0	0.6920					19.1	6.4	2.8							
SAT	1	62	0.00	14.4	0.6720														
TOTAL			3.72		31.2960														
MAXIMUM		70	0.80	19.4	1.8410	643	4545	244	1679	19.9	6.7	4.4	24.4	306	0	56	104	N/A	N/A
MINIMUM		49	0.00	12.9	0.6620	32	214	244	1679	15.9	6.0	2.1	12.0	83	0	56	4	N/A	N/A
AVERAGE		59	0.132	16.1	0.9195	235	1634	244	1679	17.9	6.3	3.0	17.9	142	0	56	31	N/A	N/A

No Inf. Sample on 6-30-09 because of a bad suction hose

% REMOVAL	
B.O.D.	97
S.S.	92

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly TSS & BOD Aver.	TSS mg/L	TSS lbs/	BOD mg/L	BOD lbs/	Weekly Coliform Geo. Mean
WEEK1	22	163			16
WEEK2	16	113	0	56	4
WEEK3	19	117			14
WEEK4	19	223			104
WEEK5	14	86			17

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — August 2009

		WEATHER			INFLUENT					EFFLUENT									
DAY	DAY	TEMP °F	RAIN FALL INCHES	HIGH TIDE FEET	T.R. FLOW MGD	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia as N mg/l 1/180 days	Ammonia as N lb/day 1/360 days
SUN	2	56	0.00	15.1	0.6930	242	1399						8.8	51					0.0
MON	3	62	0.00	13.4	0.7830	271	1724			18.2	6.5	3.4	9.6	61					0.0
TUE	4	67	0.00	15.7	0.8120	178	1205	279	1883	18.7	6.1	3.0	9.6	58	4.49	30			0.0
WED	5	62	0.00	16.2	0.7990	282	1879			19.2	6.3	2.9	11.6	77			26.0		0.0
THU	6	61	0.00	16.6	0.8240	272	1868			18.8	6.5	2.5	9.0	62					0.0
FRI	7	58	0.08	16.7	0.6360					18.7	6.8	3.4							0.0
SAT	8	57	0.08	16.5	0.8550														0.0
SUN	9	56	0.22	16.1	0.8590	238	1705						11.2	80					0.0
MON	10	56	0.09	16.1	0.9310	279	2166			17.6	6.5	3.9	12.5	97					0.0
TUE	11	56	0.05	16.0	0.7860	240	1577			17.6	6.3	3.1	14.6	97					0.0
WED	12	56	0.00	15.6	0.7850	300	1964			17.6	6.3	3.1	15.2	100			45.0		0.0
THU	13	54	0.00	15.2	0.6870	328	1879			17.9	6.3	3.3	16.0	103					0.0
FRI	14	53	0.28	14.8	0.8140					18.1	6.5	4.2							0.0
SAT	15	54	0.24	15.0	1.1630														0.0
SUN	16	55	1.40	15.9	3.5420	88	2600						18.2	538					0.0
MON	17	55	1.48	17.1	3.0270	81	2045			18.7	6.5	3.6	10.4	263					0.0
TUE	18	56	0.01	15.2	1.4110	260	3060			18.6	6.3	3.9	10.0	118					0.0
WED	19	56	0.01	16.6	1.1920	287	2854			18.7	6.2	2.9	11.2	111			17.0		0.0
THU	20	55	0.07	19.0	1.4030	222	2598			18.8	6.5	2.8	12.0	140					0.0
FRI	21	54	0.31	19.2	1.2490					18.5	6.6	3.0							0.0
SAT	22	51	0.56	18.9	1.9270														0.0
SUN	23	51	0.40	18.6	1.7890	248	3721						12.4	186					0.0
MON	24	51	0.13	17.9	1.4300	179	2135			15.5	6.4	4.0	12.0	143					0.0
TUE	25	51	0.55	16.8	2.3670	162	3198			15.3	6.2	3.5	14.0	276					0.0
WED	26	51	0.53	15.4	1.7540	126	1843			14.7	6.4	4.3	11.2	164			44		0.0
THU	27	51	0.27	14.2	1.4410	196	2356			15.0	6.3	3.8	8.4	101					0.0
FRI	28	56	0.14	13.2	1.4740					16.1	6.3	3.3							0.0
SAT	29	56	0.67	13.1	1.7920														0.0
TOTAL			7.53		37.4170														
MAXIMUM		67	1.48	19.2	3.5420	328	3721	279	1883	19.7	6.8	4.3	18.2	538	4	30	45	N/A	N/A
MINIMUM		51	0.00	13.1	0.6870	81	1205	279	1883	14.7	6.1	2.5	8.4	51	4	30	17	N/A	N/A
AVERAGE		56	0.27	16.1	1.3363	223	2179	279	1883	17.1	6.4	3.4	12.0	141	4	30	31	N/A	N/A

% REMOVAL	
B.O.D.	98
S.S.	95

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly TSS /BOD Ratio	TSS		BOD		Weekly Coliform Geo. Mean
	mg/L	%	mg/L	lbs	
WEEK1	10	62	4	30	26
WEEK2	14	95			45
WEEK3	12	234			17
WEEK4	12	174			44

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — September 2009

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP. °F	RAIN FALL INCHES	MAX. TIDE FEET	I-D TTL EFFL PKD	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP. °F	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia as N mg/l 1/30D days	Ammonia as N lbs/day 1/30D days
SUN	30	54	0.00	13.7	1.0730	142	1271						7.8	70					
MON	31	54	0.00	14.5	0.9180	215	1646			15.4	6.3	2.8	7.6	58					
TUE	1	52	0.00	13.8	0.9040	224	1689	264	1990	16.0	6.1	4.5	10.2	77	5	38		0.3	2.3
WED	2	52	0.00	15.4	0.9290	348	2696			15.9	6.0	3.3	9.6	74			31.0		
THU	3	52	0.09	16.1	0.9830	226	1853			17.9	6.1	4.2	10.2	84					
FRI	4	52	0.09	16.5	0.8280					17.6	6.1	3.3							
SAT	5	60	0.00	16.9	0.9920														
SUN	6	56	0.02	17.2	0.9440	220	1732						10.9	132					
MON	7	53	0.00	17.3	0.8410	266	1866			16.2	6.2	3.0	16.0	112					
TUE	8	53	0.03	17.2	0.8330	243	1688			16.1	6.3	3.6	13.6	94					
WED	9	52	0.30	16.9	1.2400	226	2337			15.9	6.5	4.0	16.0	165			16.0		
THU	10	53	0.53	16.1	1.4010	202	2360			16.1	6.1	3.6	13.6	159					
FRI	11	52	0.22	15.2	0.8810					16.0	6.2	3.7							
SAT	12	47	0.67	14.5	1.8470														
SUN	13	49	0.11	14.5	1.1030	150	1380						5.2	48					
MON	14	48	0.00	15.4	0.8890	238	1747			17.0	6.4	3.0	5.6	41					
TUE	15	49	0.02	16.6	1.0030	223	1865			14.9	6.0	3.6	7.6	64					
WED	16	53	0.35	16.2	1.6710	226	3177			15.0	7.0	4.5	15.8	220			3		
THU	17	51	0.27	17.6	1.3190	176	1936			17.1	6.3	3.7	13.2	145					
FRI	18	51	0.12	18.7	1.2440					14.2	6.4	4.7							
SAT	19	49	0.15	19.2	1.2510														
SUN	20	49	0.64	19.3	1.8530	133	2055						23.2	359					
MON	21	49	0.37	18.8	1.9910	102	1694			17.2	6.2	3.9	17.6	292					
TUE	22	47	0.57	17.9	1.8500	155	2391			13.0	6.2	5.9	15.2	235					
WED	23	49	0.80	16.6	2.4280	160	3240			13.1	6.4	4.3	22.0	445			89		
THU	24	48	0.31	15.2	1.7270	134	1930			13.8	6.4	4.5	9.8	138					
FRI	25	48	0.54	13.8	1.9080					13.9	6.6	7.3							
SAT	26	49	0.47	12.7	1.6560														
SUN	27	45	0.04	12.4	1.0610	139	1230						9.6	85					
MON	28	43	0.00	12.9	0.8570	180	1287			13.3	6.5	4.0	8.4	60					
TUE	29	41	0.01	13.8	1.1530	207	1991			13.2	6.3	3.8	4.4	42					
WED	30	43	1.03	14.7	1.9950	126	2065			13.2	6.2	6.3	11.6	190			6		
THU	1	46	0.19	15.3	1.2490	151	1562			12.9	6.5	7.0	10.4	108					
FRI	2	42	0.00	16.3	0.9470					13.1	6.3	4.2							
SAT	3	41	0.00	17.1	0.9040														
TOTAL			7.84		44.6250														
HIGHEST		60	1.03	19.3	2.4280	348	3240	264	1990	17.9	7.0	7.3	22.2	445	5	38	89	0.31	2.34
MINIMUM		41	0.00	12.4	0.8280	102	1271	264	1990	13.0	6.0	2.8	4.4	41	5	38	3	0.31	2.34
AVERAGE		51	0.235	16.2	1.3035	201	2028	264	1990	15.6	6.3	4.0	12.8	151	5	38	15	0.31	2.34

% REMOVAL	
B.O.D.	98
S.S.	94

Copper	N/A	ug/L
NH3	0.31	mg/L
NH3	2.34	lbs

Weekly TSS BOD Ave.	TSS mg/L	TSS lbs	BOD mg/L	BOD lbs	Weekly Coliform Geo. Mean
WEEK1	9	73	5	38	11
WEEK2	15	133			18
WEEK3	9	104			3
WEEK4	18	294			89
WEEK5	9	97			6

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — May 2010

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP F	RAIN FALL (INCHES)	HIGH TIDE (FEET)	3-D TOT-EFFL HGB	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia as N mg/l 1/100 days	Ammonia as N lbs/day 1/100 days
SUN	2	39	0.20	16.8	0.8380					10.1	6.0	6.7							
MON	3	42	0.00	15.5	0.6710					12.6	6.8	6.1							
TUE	4	46	0.00	14.1	0.6400					14.4	6.4	6.0							
WED	5	46	0.00	12.9	0.6180					16.5	6.2	5.2					6.0		
THU	6	47	0.02	12.2	0.5760					15.1	6.0	6.0					1.0		
FRI	7	47	0.05	12.9	0.5880					15.3	5.8	5.9							
SAT	8	47	0.00	13.8	0.6690					15.1	5.8	5.8							
SUN	9	46	0.01	14.7	0.6440					14.7	6.3	4.8							
MON	10	47	0.38	15.6	0.7580					16.1	6.6	5.4							
TUE	11	47	0.00	13.9	0.7460					11.1	6.6	6.3					2.0		
WED	12	45	0.37	16.4	0.9840					15.7	6.5	4.9							
THU	13	45	0.02	17.1	0.7880					15.6	6.5	4.6					1.4		
FRI	14	48	0.00	17.6	0.8910					14.9	6.5	6.2							
SAT	15	48	0.67	17.9	1.1060					9.0	6.2	5.7							
SUN	16	48	0.00	17.8	0.8480					10.2	6.4	6.4							
MON	17	51	0.00	17.4	0.8100	170	1148			8.6	6.6	6.6	10.0	68					
TUE	18	54	0.03	16.6	0.8300					13.1	6.0	5.8							
WED	19	53	0.07	15.6	0.7700	281	1805			15.6	6.2	5.3	19.0	122			15		
THU	20	56	0.07	14.4	0.8900	240	1721	253	1815	15.6	6.2	5.3	12.0	86	5.00	36	6		
FRI	21	50	0.07	14.8	0.7220	338	2035			18.3	6.2	5.6	14.0	84					
SAT	22	54	0.00	15.6	0.7210	296	1780			17.3	6.3	5.5	15.0	90					
SUN	23	51	0.00	16.5	1.1270	252	2369			16.7	6.5	5.6	9.0	85					
MON	24	57	0.00	17.3	0.9600					16.8	6.4	5.8							
TUE	25	58	0.05	14.5	0.9300	142	1101	127	985	16.5	6.4	4.8	10.0	78	5.00	39	1		
WED	26	59	0.00	17.8	0.8250					17.9	6.6	4.9					12		
THU	27	65	0.00	18.1	0.9640	358	2580	224	1614	17.2	6.3	4.5	6.0	43	2.00	14			
FRI	28	61	0.00	18.1	0.7040					20.8	6.8	5.5							
SAT	29	60	0.00	17.7	0.6800					20.5	6.7	5.7							
TOTAL			1.96		22.1670														
MAXIMUM		65	0.67	18.1	1.1270	358	2580	253	1815	20.8	6.7	6.7	19.0	122	5	39	15	N/A	N/A
MINIMUM		39	0.00	12.2	0.5760	142	1101	127	985	8.6	5.8	4.5	6.0	43	2	14	1	N/A	N/A
AVERAGE		50	0.070	15.8	0.7917	260	1817	201	1471	15.1	6.3	5.6	11.9	82	4	30	3	N/A	N/A

% REMOVAL	
B.O.D.	86
S.S.	95

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly TSS,BOD Aver	TSS		BOD		Weekly Coliform Geo. Mean
	mg/l	lbs.	mg/l	lbs.	
WEEK1					2
WEEK2					2
WEEK3	14	90	5	38	9
WEEK4	8	68	4	27	3
MAX	14	90	5	38	9

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — June 2010

		WEATHER			INFLUENT					EFFLUENT									
DAY	DAY					S.S.	S.S.	B.O.D.	B.O.D.				S.S.	S.S.	B.O.D.	B.O.D.			
						mg/L	Lbs	mg/L	Lbs					Lbs	mg/L	Lbs			
SUN	30	59	0.00	17.2	0.7020														0.0
MON	31	61	0.00	16.4	0.7810					20.9	6.7	5.4							0.0
TUE	1	62	0.04	15.4	0.6150					21.2	6.7	5.3				0	5.0		0.0
WED	2	54	0.07	14.3	0.8540					18.4	6.4	4.7							0.0
THU	3	53	0.01	13.2	0.7800	529	3441	287	1867	17.1	6.5	4.4	11.0	72	4.00	26		0.0	5.7
FRI	4	54	0.02	13.0	0.6600					18.8	6.8	4.6							0.0
SAT	5	52	0.02	13.3	0.7430														0.0
SUN	6	56	0.00	13.8	0.6510														0.0
MON	7	58	0.00	14.6	0.6810					17.1	6.7	5.7							0.0
TUE	8	56	0.00	15.4	0.7460					18.1	6.8	4.8					1.0		0.0
WED	9	60	0.03	16.3	0.7050					18.8	6.8	4.4							0.0
THU	10	56	0.06	13.8	0.6200	436	2992	305	2098	18.3	6.8	4.2	4.0	27	3.00	21			0.0
FRI	11	48	0.56	17.1	1.1300					16.8	7.0	5.5							0.0
SAT	12	48	0.30	17.8	0.9200														0.0
SUN	13	48	0.06	18.2	0.8450														0.0
MON	14	50	0.04	16.3	0.6910					14.9	6.6	6.7							0.0
TUE	15	50	0.01	16.0	0.6300					14.8	6.9	6.3					1.0		0.0
WED	16	51	0.03	17.2	0.7500					16.1	6.4	5.1							0.0
THU	17	54	0.00	16.0	0.6700	388	2056	280	1565	16.3	6.8	4.7	8.0	45	3.00	17			0.0
FRI	18	53	0.00	15.8	0.6800		0			14.4	6.7	6.1		0					0.0
SAT	19	58	0.00	15.8	0.6660		0							0					0.0
SUN	20	58	0.00	15.8	0.7530		0							0					0.0
MON	21	57	0.00	16.2	0.6630		0			18.7	6.7	4.7		0					0.0
TUE	22	53	0.38	16.5	1.6490		0			18.2	6.8	4.8		0			2.0		0.0
WED	23	55	1.52	16.8	2.8150		0			17.6	6.6	4.9		0					0.0
THU	24	54	0.18	13.8	1.3880	138	1071	127	1467	18.0	6.7	5.7	135.0	1569	88.00	782			0.0
FRI	25	54	0.05	17.0	1.1030		0			16.2	6.7	4.7		0					0.0
SAT	26	53	0.05	17.2	0.9200		0							0					0.0
SUN	27	53	0.04	17.1	0.1600		0							0					0.0
MON	28	54	0.00	16.8	0.8450		0		0					0		0			0.0
TUE	29	50	0.01	16.4	0.8700		0							0.0					0.0
WED	30	48	0.58	15.7	1.2300		0							0.0					0.0
THU	1	48	0.08	14.7	0.8790	204	1495						8.0	58.6					0.0
FRI	2	51	0.20	14.2	1.0030														0.0
SAT	3	50	0.60	14.0	1.5880														0.0
TOTAL			4.93		39.9870														
MAXIMUM		61	1.52	18.3	2.8150	529	3441	305	2098	21	7	7	135	1569	88	782	5	1	6
MINIMUM		48	0.00	13.0	0.6510	138	0	127	0	14	6	4	4	0	3	0	1	1	0
AVERAGE		54	0.14	15.8	1.1419	336	878	250	1397	17	7	5	33	104	19	138	2	1	0

% REMOVAL	
B.O.D.	92
S.S.	90

Copper	N/A	ug/L
NH3	0.9	mg/L
NH3	5.7	lbs

Weekly TSS/BOD Ave.	TSS		BOD		Weekly Coliform Geo. Mean
	mg/l	lbs	mg/l	lbs	
WEEK1	11	72	4	13	5
WEEK2	4	27	3	21	1
WEEK3	8	15	3	17	1
WEEK4	135	223	88	782	2
WEEK5	8	12	#DIV/0!	0	#NUM!

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — JULY 2010

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP °F	RAIN FALL INCHES	HIGH TIDE FEET	I-D TOT.EFFL MGD	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia as N mg/l 1/1(M) days	Ammonia as N lbs/day 1/1(M) days
SUN	4	50	0.22	13.9	1.0970														
MON	5	51	0.12	14.0	1.2030					20.4	6.3	5.8							
TUE	6	53	0.12	14.4	0.9910					18.4	6.8	6.2					20		
WED	7	60	0.00	15.1	0.9530					17.1	6.7	5.1							
THU	8	63	0.00	16.1	0.9230	248	1909	212	1632	17.4	6.9	5.4	6.0	46	3.00	23			
FRI	9	61	0.08	13.2	1.2190					16.0	7.1	6.5							
SAT	10	57	0.28	17.1	1.2360														
SUN	11	51	0.52	18.0	1.4480														
MON	12	53	0.04	18.7	1.0660														
TUE	13	53	0.14	19.0	1.2570					16.9	6.7	5.9							
WED	14	51	0.39	19.6	1.4060					17.4	6.8	6.4							
THU	15	50	0.15	17.8	1.0990					16.8	6.7	5.4					81		
FRI	16	52	0.08	17.3	0.9670					17.6	6.7	6.5							
SAT	17	56	0.01	16.8	0.7390														
SUN	18	56	0.00	16.2	0.7730														
MON	19	57	0.00	15.6	0.8990					17.3	6.4	6.3							
TUE	20	57	0.00	15.3	0.9960					18.2	6.4	6.4							
WED	21	54	0.17	15.4	0.6870					18.4	6.8	6.4					8		
THU	22	54	0.18	15.8	1.3060					18.0	6.5	6.4							
FRI	23	52	0.05	13.6	1.8610					17.9	6.8	5.5							
SAT	24	51	0.04	16.2	0.9810														
SUN	25	53	0.01	16.6	0.9810														
MON	26	56	0.00	16.8	0.9960					17.9	6.7	6.9							
TUE	27	59	0.00	16.7	0.8670					18.3	6.7	6.7							
WED	28	61	0.00	16.5	0.8440					18.4	6.6	6.3					16		
THU	29	58	0.00	16.0	0.6170					16.5	6.5	6.1							
FRI	30	58	0.00	15.4	0.8390					16.9	6.4	6.4							
SAT	31	56	0.32	15.2	0.9540														
TOTAL			3.48		27.2340														
MAXIMUM		63	0.95	19.0	1.8610	248	1909	212	1632	20.4	7.1	6.9	6.0	46	3	23	81	N/A	N/A
MINIMUM		50	0.00	13.2	0.7390	248	1909	212	1632	16.8	6.3	5.1	6.0	46	3	23	8	N/A	N/A
AVERAGE		55	0.134	16.3	1.0475	248	1909	212	1632	18.0	6.7	6.1	6.0	46	3	23	23	N/A	N/A

% REMOVAL	
B.O.D.	99
S.S.	98

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly tss,bod Aver.	TSS		BOD		Weekly Coliform Geo. Mean
	mg/L	lbs.	mg/L	lbs.	
WEEK1	6	46	3	23	20
WEEK2					81
WEEK3					8
WEEK4					16

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — August 2010

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP °F	RAIN FALL INCHES	HIGH TIDE FEET	T.R.C. TOT. EFFL. mg/l	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/l	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Ammonia as N mg/l 1/180 days	Ammonia as N lb/day 1/180 days
SUN	1	58	0.08	14.9	0.8170														0.0
MON	2	61	0.00	14.5	0.8080					18.5	6.5	5.2							0.0
TUE	3	64	0.00	14.2	0.8330					17.2	6.2	2.0							0.0
WED	4	63	0.00	14.2	0.7800					18.8	6.8	5.3							0.0
THU	5	64	0.05	14.7	1.2220	292	2976	254	2589	19.7	6.8	5.0	7.0	71	10	102	42.0		0.0
FRI	6	58	0.56	15.6	1.0710					19.4	6.9	4.8							0.0
SAT	7	54	0.11	17.1	0.9140														0.0
SUN	8	54	0.23	15.0	1.2520														0.0
MON	9	55	0.06	16.2	1.0330					16.9	6.7	6.3							0.0
TUE	10	55	0.19	19.0	1.2360					17.7	6.7	5.5							0.0
WED	11	56	0.04	19.3	1.1940					19.1	6.5	5.6					35.0		0.0
THU	12	59	0.00	19.0	0.9490					17.2	6.5	5.4							0.0
FRI	13	59	0.00	18.8	0.8940					17.6	6.7	5.3							0.0
SAT	14	62	0.00	18.2	0.8330														0.0
SUN	15	62	0.00	17.1	0.8060														0.0
MON	16	63	0.00	15.9	0.7870					19.2	6.5	5.2							0.0
TUE	17	60	0.60	14.8	1.2460					19.7	6.8	5.2							0.0
WED	18	53	0.47	14.2	1.2420					18.3	6.7	5.6							0.0
THU	19	52	0.19	14.4	1.1130					17.6	6.6	6.0					32		0.0
FRI	20	53	0.14	14.9	0.9560					17.6	6.8	5.6							0.0
SAT	21	55	0.04	13.8	0.8040														0.0
SUN	22	53	0.13	15.6	1.1090														0.0
MON	23	52	0.34	16.1	1.3310					17.6	6.9	5.8							0.0
TUE	24	53	0.30	16.5	1.1710					17.2	6.7	5.1					32		0.0
WED	25	54	0.00	16.6	1.0180					18.8	6.5	5.1							0.0
THU	26	54	0.01	16.5	1.0570					17.9	6.7	5.3							0.0
FRI	27	54	0.01	16.5	0.7520					18.1	7.0	4.6							0.0
SAT	28	51	0.01	16.3	0.7150														0.0
TOTAL			3.56		27.9610														
MAXIMUM		64	0.60	19.3	1.3310	292	2976	254	2589	19.8	7.0	6.3	7.0	71	10	102	42	N/A	N/A
MINIMUM		51	0.00	13.8	0.7150	292	2976	254	2589	16.9	6.2	2.0	7.0	71	10	102	32	N/A	N/A
AVERAGE		57	0.127	16.1	0.9988	292	2976	254	2589	18.3	6.7	5.2	7.0	71	10	102	35	N/A	N/A

% REMOVAL	
B.O.D	98
S.S.	98

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly Ave	TSS mg/l	TSS lbs.	BOD mg/l	BOD lbs.	Weekly Coliform Geo. Mean
WEEK1	7	71	10	102	42
WEEK2					35
WEEK3					32
WEEK4					32

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

EPA REPORT — Juneau, Alaska — September 2010

		WEATHER			INFLUENT					EFFLUENT									
DAY	DATE	TEMP F°	RAIN FALL INCHES	HIGH TIDE FEET	FLOW MGD	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	TEMP C°	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	FECAL Coliform /100 ml	Removal Rate % mg/L 1/180 days	Removal Rate % lbs/day 1/180 days
SUN	29	51	0.01	14.6	0.7190														0.0
MON	30	54	0.01	13.5	0.7990					17.7	6.6	5.8							0.0
TUE	31	54	0.01	12.4	0.9840					17.4	6.9	5.4							0.0
WED	1	54	0.28	14.2	1.3000					17.8	6.8	5.7							0.0
THU	2	51	0.69	13.9	1.6540	284	3918	194	2678	17.0	6.8	5.8	10	138	8.20	113	310		0.0
FRI	3	53	0.09	14.3	0.9200					16.7	6.9	5.8							0.0
SAT	4	53	0.01	15.5	0.8210														0.0
SUN	5	50	0.74	16.8	1.4160														0.0
MON	6	54	0.00	16.0	1.1640					17.1	6.8	5.9							0.0
TUE	7	55	0.00	17.0	1.1800					16.3	7.0	5.5							0.0
WED	8	54	0.04	18.9	1.0030					16.4	6.7	6.1							0.0
THU	9	52	0.65	19.7	1.4550					16.5	6.7	6.0					30		0.0
FRI	10	52	0.01	19.8	0.9400					16.1	6.8	6.2							0.0
SAT	11	53	0.00	19.4	0.8990														0.0
SUN	12	56	0.00	18.4	0.8690														0.0
MON	13	53	0.00	17.0	0.6240					17.4	6.6	6.1							0.0
TUE	14	53	0.00	15.4	0.7830					16.6	6.8	5.8					68		0.0
WED	15	55	0.00	14.0	0.7250					16.7	6.7	5.0							0.0
THU	16	53	0.00	13.3	0.7340					16.5	6.7	5.2							0.0
FRI	17	51	0.00	13.5	0.6670					19.2	6.7	4.8							0.0
SAT	18	56	0.00	14.1	0.6810														0.0
SUN	19	57	0.00	14.9	0.7100														0.0
MON	20	51	0.00	15.0	0.7270					16.3	6.8	6.3							0.0
TUE	21	44	0.00	15.8	0.6700					17.7	6.7	5.4							0.0
WED	22	46	0.00	16.4	0.7550					16.9	6.4	6.3							0.0
THU	23	47	0.15	16.9	0.6800					16.4	6.3	6.0					7		0.0
FRI	24	48	0.67	17.2	1.4320					16.0	6.4	6.4							0.0
SAT	25	50	0.78	17.2	1.6410														0.0
TOTAL			4.14		27.2390														
MAXIMUM		57	0.78	19.8	1.6540	284	3918	194	2678	19.2	7.0	6.4	10.0	138	8	113	310	N/A	N/A
MINIMUM		44	0.00	12.4	0.6810	284	3918	194	2678	16.0	6.3	4.8	10.0	138	8	113	7	N/A	N/A
AVERAGE		52	0.148	15.9	0.9729	284	3918	194	2678	17.3	6.7	5.8	10.0	138	8	113	46	N/A	N/A

% REMOVAL	
B.O.D.	%
S.S.	%

Copper	N/A	ug/L
NH3	N/A	mg/L
NH3	N/A	lbs

Weekly TSS,BOD Aver.	TSS		BOD		Weekly Coliform Geo. Mean
	mg/l	lbs.	mg/l	lbs.	
WEEK1	10	138	8	113	310
WEEK2					30
WEEK3					68
WEEK4					7

Juneau Cruise Ship Docks
Electrical Systems

Conceptual Design **February 2011**

Shore Power:

Existing Shore Power Facility, South Franklin Dock (Princess Cruises): The existing shore power facility at the South Franklin Dock was placed in operation in 2001 for Princess Cruises. The facility is configured with a substation on the mountainside above the dock, adjacent to the two 69 KV transmission lines routed from the Thane Substation to distribution substations in downtown Juneau. A transformer at this substation provides either 11.2 KV or 6.6 KV power to the shore power stations dependent on the vessel requirements. The power is transmitted through underground cables to a switch at the dock where the cables become large, flexible mining type cables laid in cable trays up and onto the festooning system where the cables are suspended to the ship. The system is capable of supporting a 16.25 MVA[1] load.

The energy consumption for each ship visit has been recorded since the beginning of operations on 10 July 2001. The energy consumed varies from year-to-year dependent primarily on the amount of energy available from AEL&P. AEL&P provides this energy to Princess Cruises on a "non-firm" rate[2]. The energy consumed is graphically illustrated over the past ten year period – see Attachment A. The average consumption over the past nine years[3] was 4,107 MWh[4], while last year (2010) 4,266 MWh was consumed.

Last year, AEL&P began recording the load demand at the South Franklin Dock. Six different vessels visited Juneau and demanded peak loads varying from 7.24 MW (Sea Princess) to 10.6 MW (Diamond Princess). Most of the loads were between 8 and 10 MW – see Attachment B.

The vessels' connection to shore power requires cooperative coordination between the AEL&P staff and the vessel crew. This involves synchronizing the generators on the ships to the utility frequency and voltage before closing the switch allowing connection, and then removing operation of the vessel's generators. Vessel departure involves a reverse procedure. The connection of the vessel is monitored with protective relays and interlocks which open the vessel's connection with any problematic conditions.

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[1] MVA = Mega Volt-Amperes, a measure of apparent power.

[2] AEL&P utilizes this rate structure allowing them to provide excess energy to specific customers when it is available. These customers utilize this energy in lieu of producing electricity with their own generators. With this rate structure, AEL&P is not required to maintain additional standby generators supporting "firm" capacity as stipulated by the regulatory commission.

[3] The first year (2001) was not a full year, thus the consumption for that year was not included in the average.

[4] MWh = Mega Watt hours, a measure of real energy.

Figure 1 - South Franklin Dock Shore Power

Future Shore Power Facilities, Downtown Docks: AEL&P officials state that they currently lack capacity to support additional "non-firm" shore power facilities. When the second phase of the Dorothy Lake facility is constructed, their capacity will be improved with likely allowance for additional shore power facilities.

When implemented, the shore power facilities should be constructed at both docks. As illustrated in the site drawings, the ships will be moored stern-to-stern. From recent meetings with the cruise ship agencies, it was learned that the vessels are configured with their shore tie connections near their sterns, on one side or the other, but not on both sides.

The new shore tie facilities will involve the construction of a new substation on the mountainside, south of Gastineau Avenue. Again, this substation will be close to the 69KV transmission lines, located on land owned by an AEL&P sister company. It is probable that it will utilize two transformers, allowing selection of either 6.6KV or 11.2KV power to the each dock. The feeders from the substation will be parallel to the shoreline where they will separate direction to the individual docks.

The feeders from the dock will traverse down the transfer bridges to the floating docks. The cables will pass within the docks to the ends to the most strategic location for connecting to the vessels. The cables will terminate on a festooning type of structure allowing the cables with connectors to be suspended and swung out to the vessel.

The feeders on shore will utilize single conductors with 15KV rated insulation. These conductors typically utilize large strands with little flexibility. Before crossing from the stationary dock to the floating docks, the conductors will probably have to change to a finely-stranded type with much greater flexibility. And these cables will probably be a mine type cable encompassing the conductors for all three phases. The transition from one conductor type to the other will occur at a control switch or a pedestal type junction. This detail will be better studied during design.

Figure 2 - Shore Tie Connectors

When energy becomes available, the first phase of the facility to be constructed may be adequate to just power one shore tie. In this case, the system will be configured with a single transformer at the substation and a single feeder[5] to a switch at the shore. The switch will be configured to select the dock to be powered as well as provide synchronizing control.

Figure 3 - Shore tie Cable Festoon

When it is determined that an adequate supply of energy is available to serve to shore ties simultaneously, the second transformer will be installed in the substation with a second feeder similar to the first installed to the switch at the shore. The switch bank will be reconfigured such that each switch individually controls synchronization to the associated dock. The cables from the switches to the festoons and connectors on the floating docks will remain the same.

With the understanding that excess energy is unavailable for the shore power facilities at this time, it is prudent to only install the required raceways, manholes, and vaults. The raceways constructed in duct banks will be installed from the hillside above South Franklin Street down to the shore line, first crossing beneath the street and then transitioning beneath the new

[5] Four sets of conduits with three conductors.

parking area to the new portion of dock where the old ferry transfer bridge was once located. One or two manholes will be located on the shore side of South Franklin Street to provide access to install new cables. The duct bank will terminate in a vault at the shore with ten ducts stubbed through the retaining wall at the shore. There will be ten, 6 inch diameter raceways in the duct bank for the entire route.

Installing the infrastructure at this time will minimize future disturbances to the new uplands area. Along with the installation of an infrastructure on shore, some raceways, or support structures for raceways will be installed on the transfer bridges and within the floating docks.

Attachment C illustrates the layout of the shore power system. It defines the portion to be installed initially, and the portion, or portions, to be installed in the future.

Facility Power:

A power distribution system will be installed for both floating docks to support lighting, capstans, pumps, small vessel shore tie equipment, and miscellaneous equipment. The system will be powered at 480 volts, wye connected three phase.

The system will involve the installation of a feeder from shore to each floating dock. The feeders will terminate in distribution panels constructed for a marine environment with stainless steel enclosures and hardware. Step-down transformers will provide reduced voltage power (208Y/120 volt, three phase) to a second panel for small loads and maintenance receptacles.

The feeder to the dock will be a mining type cable (Type W). The circuits on the floating dock will be single conductors installed in Hot-Dipped Galvanized Steel Conduit. Connections to vibrating or shifting equipment will be flexible cable, either Type W or a type of SO.

All boxes will be cast metal suitable for a marine environment. Cabinets will be stainless steel with drip shields, gaskets, and stainless steel hardware. All support structures and materials will be stainless steel or Hot-Dipped Galvanized Steel.

The system will be metered a single point on shore with separate circuit protection for the feeder to each floating dock.

Grounding:

A grounding system will be installed to support both the medium voltage shore power facilities and the low voltage distribution system. It will incorporate bare copper conductors installed in the duct banks, ground rod type electrodes in the manholes and vaults, and insulated conductors beneath the stationary docks.

Grounding conductors will be incorporated into the feeders from the shore meter/load center to the distribution panels on the floating docks. Ground bars will be incorporated into the distribution panels with bonding to the floating docks and equipment. Additionally, sea water ground rod electrodes will be installed and bonded to the same distribution panel ground buses.

The grounding system on the floating docks will be constructed to allow integration to the medium voltage ground grid component of the shore power facility in the future.

Lighting:

Luminaires will be installed to illuminate the transfer bridges, gangways, catwalks, dolphins, and the floating docks. The luminaires will all utilize LED type lamps with night-time and motion sensing control. The lighting will only operate during night-time hours. The motion sensors will control the illumination levels from a partial output to full output when human activity is recognized within their sensing area. All luminaires will be manufactured with glare control features.

The luminaires on the transfer bridge will be small fixtures mounted beneath canopies where provided, to protect pedestrians. The illumination of the vehicle lane will be small fixtures mounted to the rails.

The luminaires on the floating dock will be area lights mounted to posts 15 to 20 feet in height, mounted along the shore side of the dock.

The luminaires on the catwalks and dolphins will be small fixtures mounted to the rails, not obstructing movement or line handling.

Navigational lighting will be installed as required.

Surveillance Cameras:

Surveillance cameras will be installed to observe problematic activities on the floating docks, catwalks and dolphins, and on the transfer bridges. The cameras will utilize Ethernet technology with wireless communications to a central DVR[6] and monitor.

The cameras will be small and relatively inconspicuous with fixed lenses. Some cameras will also have infrared capability for night time observations. The cameras will be mounted to poles supporting area luminaires.

The DVR may be installed in the Downtown Library with connection to the CBJ network. The DVR may be programmed to collect images at designated intervals from specific cameras, or in video streams during specific times as initiated by camera motion sensing. The DVR will include storage capacity for a minimum of 30 days of images and video. It will have the capability of automatically erasing images and video stored for more than 30 days.

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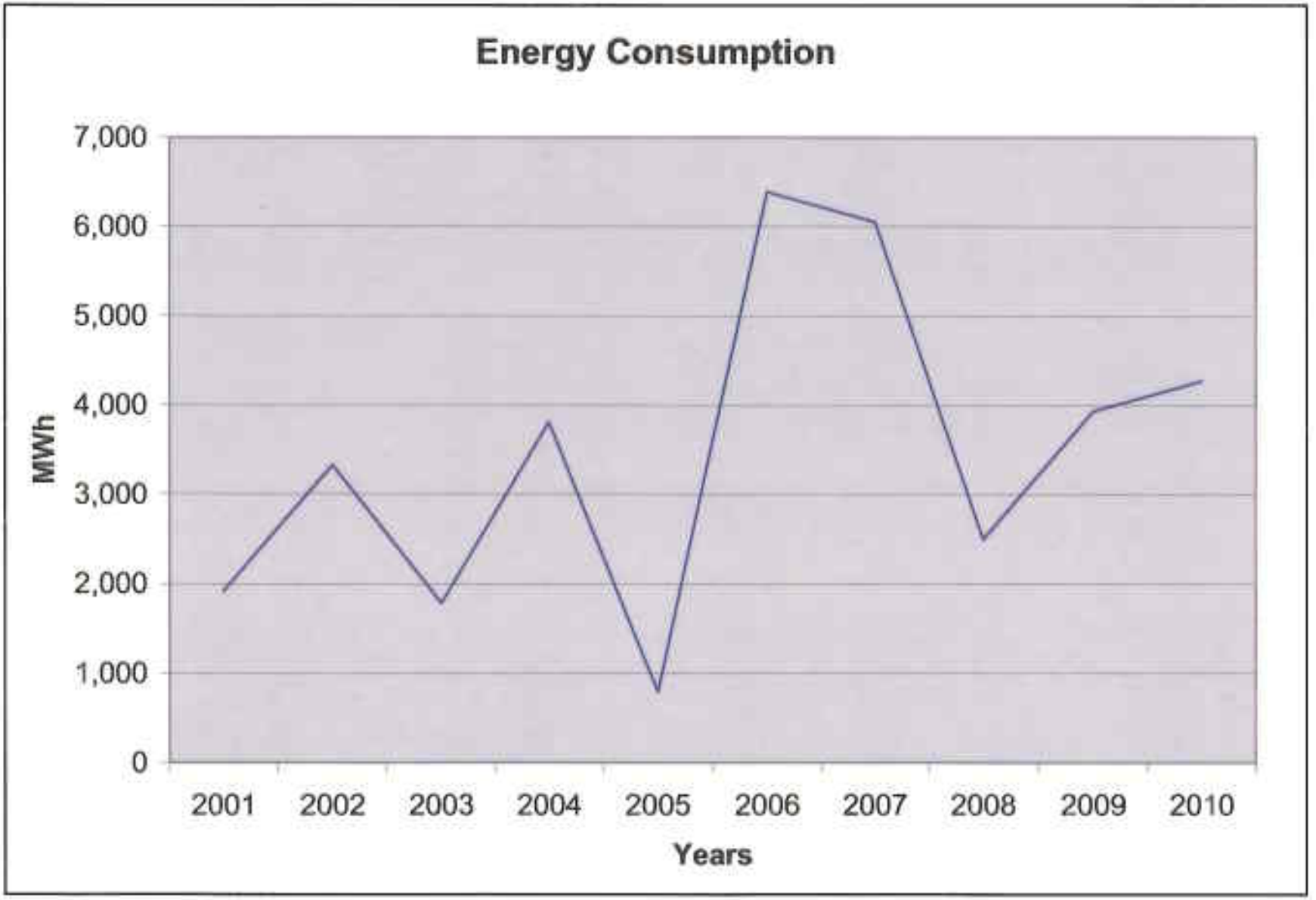
[6] DVR = Digital Video Recorder

Applicable Codes:

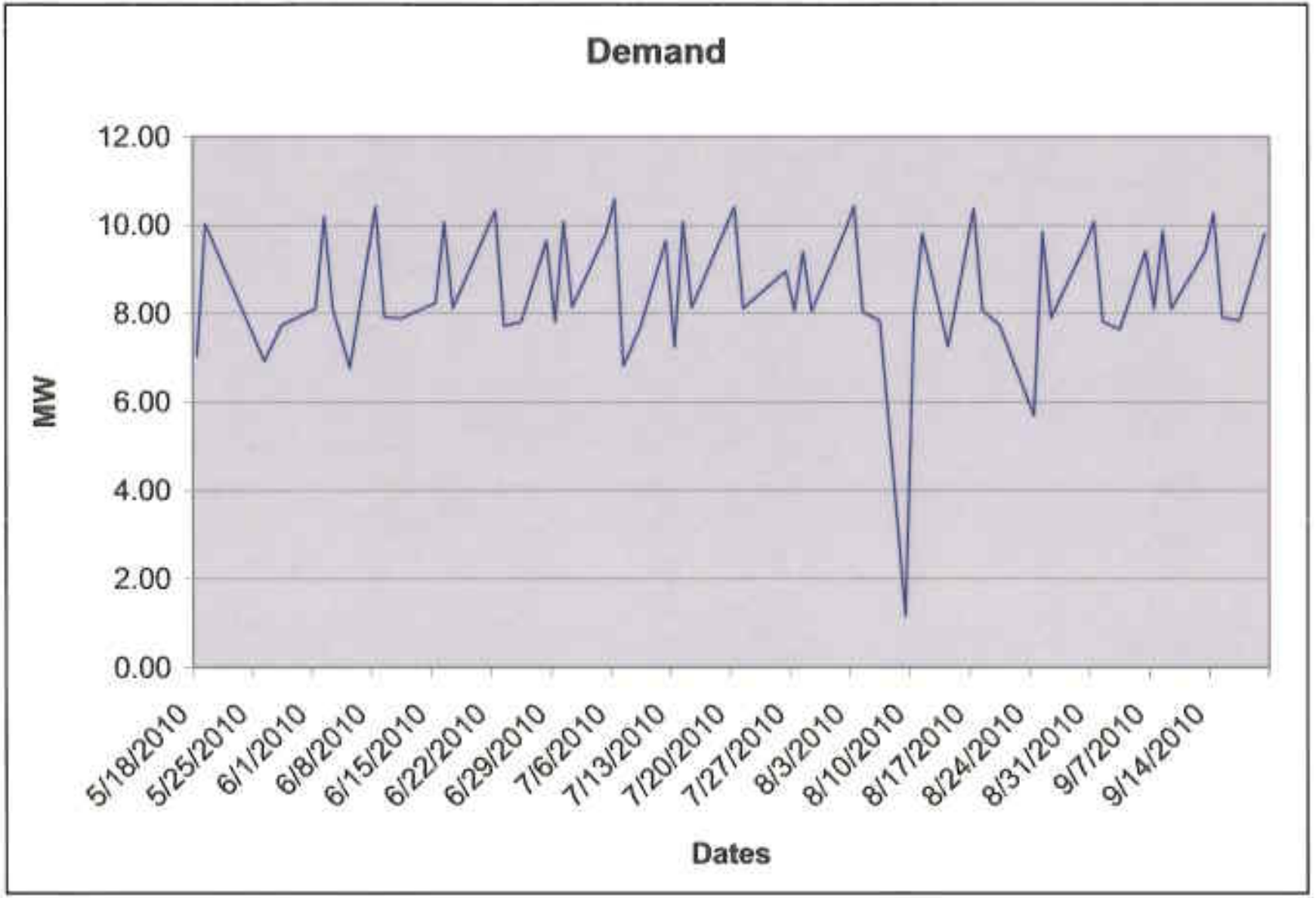
Shore Power Facilities – National Electrical Safety Code and National Electrical Code

Low Voltage Distribution Facilities – National Electrical Code

Lighting – Illuminating Engineers Society of North America



Attachment A



Attachment B

Attachment C

P | N | D
ENGINEERS, INC.

December 14, 2010 PND 102050.01

John Stone, P.E.
Port Director
CBJ Docks & Harbors Department
155 South Seward Street
Juneau, Alaska 99801

Subject: Downtown Cruise Ship Docks
Pontoon Barge Alternative Analysis

Dear Mr. Stone:

The following alternative analysis is intended to assist CBJ with making an informed decision on whether to utilize concrete pontoon barges or steel pontoon barges for the proposed Downtown Cruise Ship Docks project. The goal is to provide adequate information with which to evaluate important design and operational elements as well as assess key financial considerations including initial costs and long term maintenance costs.

To accomplish this, PND has researched and utilized our past experience with the design, fabrication and construction of floating dock facilities that employ each type of pontoon barge under consideration. Examples of PND designed cruise ship facilities that have floating concrete pontoon barges include the Whittier Tour Ship Facility and the Nanaimo, BC, Cruise Ship Facility. Other floating concrete dock projects that PND designed, or has extensive knowledge of, include the Servs Veoc Facility and the City of Valdez Container Terminal, both in Valdez, Alaska. Examples of PND designed cruise ship facilities that have floating steel pontoon barges include the Jacobsen Drive Dock in Juneau, and Ketchikan's Berth III and Berth IV Facilities. In addition, as part of this analysis, PND has researched and incorporated information obtained from conversations with the Ketchikan Shipyard for dry dock maintenance work anticipated for the steel pontoon barge alternative. Both alternatives were evaluated for a 50-year life.

Steel Pontoon Barge

Steel pontoon barges have many positive attributes that make them attractive as a viable alternative with the main disadvantage being the regular maintenance required to keep them in good condition.

There are a number of qualified steel fabricators in the Northwest with the experience and competence required for such a project. Different bollard, cleat, access hatch, and railing configurations for the pontoon barge are all easily installed initially and subsequently repaired or modified by welding. Also, PND has worked successfully on several projects in the past with Columbia-Sentinel Engineers, a naval architect and marine engineering firm with a vast amount of experience in the design of steel barges capable of resisting the magnitude of lateral loads associated with the berthing of cruise ships.

In general, a steel pontoon barge provides a lower risk of severe damage than a concrete pontoon barge. Should an extreme event occur, such as a vessel impact, the ductile nature of steel material enables it to

absorb energy by local crushing. If damage is below waterline, the use of multiple internal chambers will prevent the pontoon barge from sinking. Depending on the extent of damage, temporary repairs could be made on-site, with the pontoon barge remaining in place, and the facility could be returned to service in a relatively short period of time. Permanent repairs could then be made during a future dry dock maintenance interval. Cruise Ships would need to be anchored out during this period, and lightering boats utilized until the facility is returned to service. The current design concepts include a mooring float behind the South Berth that could accommodate the lightering boats.

Similarly, after fabrication is complete, the risk associated with transporting a steel pontoon barge from Seattle to Juneau is less due to the inherent ability of a steel structure to absorb and withstand potential storm wave activity that may be encountered during transport. The Whitter Tour Ship Facility has one steel pontoon barge and one concrete pontoon barge because one of the originally designed concrete pontoon barges did not survive the winter season transport across the Gulf of Alaska. The pontoon barge sustained heavy damage, broke up and eventually sank. In addition, the transport costs would be less for a steel pontoon barge because the overall mass would be less than a concrete pontoon barge. A steel pontoon barge would likely draft about 3 ft and consequently be easier to tow and take less time to transport.

The key to longevity of a steel pontoon barge is the quality and maintenance of the coating system. Steel structures provide years of service as long as the protective coatings remain in good condition. This however, presents the main drawback of a steel pontoon barge alternative. It is anticipated that a steel pontoon barge would need to go into dry dock at a regular interval of every five years and periodic topside and interior inspections by qualified structural and corrosion engineers would be necessary. During dry dock, the bottom of the pontoon barge would be cleaned of marine growth, inspected, blasted, solvent washed and new bottom paint applied. Other top side coatings would be inspected and repaired as necessary, including deck coatings. All anodes would be replaced with new materials. It is also anticipated that every ten years coatings internal to the pontoon barge may need to be repaired.

As part of the dry dock operation, the pontoon barges would need to be removed and towed to a shipyard. This would involve temporarily supporting the access bridge to the pontoon barge, disassembly of all utilities, and disconnecting the pile hoops that connect the pontoon barge to the mooring pile frames. Following dry dock activities, the process would be reversed.

There will be general wear-and-tear, but overall, if the maintenance schedule discussed above is followed, the steel pontoon barges will provide a minimum service life of 50 years. At the end of that time, if the CBJ elects to replace them, they will likely have a significant salvage value.

Based upon bids received for a similar, recent project in Nanaimo, BC, the initial fabrication cost for a steel pontoon barge would be approximately $4,000,000. A 50 year life cycle cost analysis indicates that the average annual maintenance costs for a steel pontoon barge would be approximately $100,000/year. The total Present Value of anticipated maintenance costs over the 50 year service life is approximately $2,000,000. See attached Life Cycle Cost Assessment for detail.

Concrete Pontoon Barge

While initial costs for fabrication are higher, concrete pontoon barges excel in the area of reduced maintenance costs. When designed properly, with minimizing maintenance as a primary goal, a concrete pontoon barge can be expected to have a minimum service life of 50 years, similar to the steel pontoon barge, but with significantly less costs associated with maintenance.

Collectively, the Northwest and Canada have a small number of qualified, experienced and competent concrete fabricators that have both the professional staff and graving yard facilities necessary for constructing pontoon barges of the size proposed for this project.

As already mentioned, special attention needs to be given during the design phase to incorporate materials and details into the fabrication process that will ensure minimal maintenance over the service life of the pontoon barge. While these add to the initial capital costs, the savings in life cycle maintenance costs validates this approach.

A major consideration in the evaluation of a concrete pontoon barge alternative is whether or not to allow fabrication of the pontoon barge in one piece or two pieces, with a splice connection. Only one fabricator has the facilities to construct a 50'x350' pontoon barge in one piece, without splices. Again, the initial cost of this option would likely be higher, but the long term maintenance costs would be reduced. If it is determined that a spliced connection would be allowed, PND recommends the pontoon barge be dry docked and all connection hardware be replaced at the 25 year point. This operation is estimated to cost approximately $750,000 to $1 million.

A concrete pontoon barge would generally have a higher risk of being severely damaged as the result of an extreme event such as an impact from a vessel or other significantly large, floating objects. Although concrete is both durable and strong, it is also brittle by nature. The ability to absorb significant amounts of energy does not exist with concrete. If damage is minor, and depending on the location of the damage, field repairs can be made; however, if damage is significant enough, the pontoon barge may need to be replaced and could be potentially lost for the season. Like the steel pontoon barge alternative, the concrete pontoon barge would incorporate the use of multiple internal chambers to prevent it from sinking if damage occurs below waterline. Again, cruise ships would need to be anchored out during this period, and lightering boats utilized until the facility is returned to service.

As indicated earlier, the risk associated with transporting a concrete pontoon barge from Seattle to Juneau is higher, as would be the cost of towing. A concrete pontoon barge would be substantially heavier than a steel pontoon barge, and would likely draft about 8-10 ft. The time required to tow a concrete pontoon barge would likely be an additional 2 to 3 days. The potential for damage due to weather could be reduced by means of scheduling the transport operation during a favorable time of the year. In addition, the likelihood of severe weather is less within the Inside Passage.

While routine maintenance for a concrete pontoon barge is significantly less than a steel pontoon barge, concrete pontoon barges would not be maintenance-free. It is anticipated that the concrete pontoon barges will have a nominal annual maintenance cost, as well as require periodic topside and interior inspections by qualified structural and corrosion engineers. Dive inspections every 5 years, performed in conjunction with a qualified structural engineer, are anticipated to be necessary to ensure damage does not exist below waterline. Based on similar floating concrete structures, hair line cracks may develop in the concrete as it ages. These cracks may require epoxy-injection treatment to maintain the condition of the pontoon barge.

Unlike steel pontoon barges, it is not anticipated that concrete pontoon barges would need to be dry docked for routine maintenance (assuming one piece pontoon). This results in another significant reduction in life cycle costs, as all costs associated with removing, towing, and replacing the pontoons are eliminated, not to mention the reduced risk of some unforeseen damage occurring during such operations.

It is anticipated that the salvage value of concrete pontoon barges at the end of their 50 year service life will be minimal.

Based upon bids received for a similar, recent project in Nanaimo, BC, the initial fabrication cost for a concrete pontoon barge would be approximately $5,000,000. A 50 year life cycle cost analysis indicates that the average annual maintenance costs for a concrete pontoon barge would be approximately $15,000/year. The total Net Present Value of anticipated maintenance costs over the 50 year service life is approximately $300,000. See attached Life Cycle Cost Assessment for detail.

Conclusion

Summary of Evaluation Criteria

A. Initial Fabrication Cost
    1. Qualified, available fabricators in Northwest w/ necessary facilities
    2. Concrete – One piece or two pieces spliced together
B. Damage Risk
    1. Overall – General reparability of Steel vs. Concrete
    2. Severe Event Damage – Time w/o use of Facility
C. Transport
    1. Damage Risk – Time of Year (Weather)
    2. Time – Number of Days
D. Maintenance
    1. General Wear-and-Tear from typical operations
    2. Concrete
        a. One piece Pontoon
        b. Two piece Pontoon w/ splice connection
    3. Removal from Service
        a. Temporary support of Access Bridge
        b. Disconnect/Connect all utilities and Pile Connections (Electrical, sewer, water, etc.)
        c. Transport to and from Dry Dock Facility
E. Salvage Value

As discussed and illustrated in the attached life cycle cost analysis, the estimated initial cost for fabrication of concrete pontoon barges is approximately 20% higher than the fabrication costs estimated for steel pontoon barges. However, the average annual maintenance costs are anticipated to be substantially less. While the other criteria listed above are important to consider and thus included in this analysis, these two evaluation criteria are the most significant from a cost standpoint. Based upon initial input from CBJ regarding the importance of having a facility that requires the least amount of maintenance, PND recommends CBJ utilize concrete pontoon barges for the proposed Downtown Cruise Ship Docks project, if initial capital funds are available and concrete fabrication facilities are available.

With regard to the availability of concrete fabricators, PND contacted Mr. Millard Barney with Concrete Technology Corporation (CTC) in Tacoma, WA, and Mr. Freddy McMaster with Vancouver Pile Driving in Vancouver, BC. Both fabricators indicated that they would be available to fabricate the concrete pontoon barges for this project beginning in January, 2012, with completion by fall of 2012. Both fabricators also indicated that their schedules and facilities would enable them to produce two pontoon barges in a single construction season, if CBJ elects to attempt that option.

PND appreciates the opportunity we have had to assist you with this work, and we hope this information serves your needs. Should you have any questions, please feel free to contact us.

Sincerely,
PND Engineers, Inc. | Juneau Office

John DeMuth, P.E.
Senior Engineer

Attachments

LIFE-CYCLE MAINTENANCE COST ASSESSMENT OF PONTOON BARGE ALTERNATIVES
JUNEAU CRUISE SHIP TERMINAL

P N D ENGINEERS, INC.

CONCRETE PONTOON BARGE COST ASSESSMENT: (Single - 50' x 300' Pontoon/Barge)

Concrete Pontoon Barge Estimated Initial Cost - $3,000,000

CONCRETE PONTOON BARGE LIFE CYCLE COSTS - MAINTENANCE

ASSUMPTIONS
1. 50 YEAR LIFE - SINGLE PIECE PONTOON
2. INTEREST = 4% (see note below)
3. ANNUAL REPAIRS = $6,000
4. PERIODIC INSPECTION = $20,000
5. PERIODIC DIVE INSPECTION = $40,000

$PV = FV \times 1 / (1+i)^n$

i = INTEREST RATE (see note below)
n = YEAR
PV = Present Value of a future payment or sum of future payments discounted to reflect the time value of money

	YEAR	5	10	15	20	25	30	35	40	45	50	TOTALS
COSTS	REPAIRS	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	
	INSPECTION	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$800,000
	DIVE	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	$40,000.00	
	PRESENT VALUE	$65,754	$54,015	$44,425	$36,511	$30,009	$24,665	$20,273	$16,661	$13,696	$11,252	$317,395

AVG EQUIVALENT ANNUAL MAINTENANCE COST: $15,000

STEEL PONTOON BARGE COST ASSESSMENT: (Single - 50' x 300' Pontoon/Barge)

Steel Pontoon Barge Estimated Initial Cost - $4,000,000

STEEL PONTOON BARGE LIFE CYCLE COSTS - MAINTENANCE

ASSUMPTIONS
1. 50 YEAR LIFE
2. INTEREST = 4% (see note below)
3. ANNUAL REPAIRS = $5,000
4. PERIODIC INSPECTION = $20,000

	YEAR	5	10	15	20	25	30	35	40	45	50	TOTALS
COSTS	REPAIRS	$25,000.00	$25,000.00	$25,000.00	$25,000.00	$25,000.00	$25,000.00	$25,000.00	$25,000.00	$25,000.00	$25,000.00	
	INSPECTION	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	$20,000.00	
	REMOVE/REPLACE	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	
	TUG	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	
	DRY DOCK	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$200,000.00	$4,775,000
	ANODES	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	$50,000.00	
	OUTSIDE PAINT	$100,000.00	$100,000.00	$100,000.00	$100,000.00	$100,000.00	$100,000.00	$100,000.00	$100,000.00	$100,000.00	$100,000.00	
	INSIDE PAINT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	PRESENT VALUE	$406,934	$308,449	$276,956	$262,422	$199,695	$177,285	$125,441	$119,366	$84,735	$60,930	$2,106,698

AVG EQUIVALENT ANNUAL MAINTENANCE COST: $98,000

** Notes: 1) Costs shown are ROM costs used to compare the different pontoon types, and do not represent actual total cost associated with maintenance and operation of complete facility.
2) Interest rate shown was used only to convert future expenses into present value; it does not represent an anticipated interest value nor does it attempt to account for inflation.
3) Concrete pontoon assumed to be single piece, w/o splices; additional maintenance cost would be incurred if pontoon is two pieces. Recommend two piece pontoon be dry docked at 25 years to replace splice connection hardware.

PND ENGINEERS, INC.

March 18, 2011 PND 102050.03

Mr. John Stone, P.E.
Port Director
CBJ Docks and Harbors Department
155 South Seward Street
Juneau, Alaska 99801

Re: Cruise Ship Dock Reconfiguration – Concept 16B3
Design Phase Proposal

Dear Mr. Stone:

PND Engineers, Inc. (PND) is pleased to provide this fee proposal for engineering services on the proposed Cruise Ship Dock Reconfiguration project. The scope of services under this proposal includes environmental permitting assistance, final designs, bid ready contract documents and bid phase support services. Construction phase engineering services are not included in this proposal however can be negotiated at a future date following successful completion of the design and bid phases.

Scope of Improvements

The scope of construction improvements anticipated under this proposal is illustrated by the enclosed drawing entitled "Concept No. 16B-3 Proposed Dock Project" dated March 8, 2001. The specific improvements are further listed in the attached Schematic Design Budget dated March 14, 2011. We do not anticipate significant changes to this proposed plan since the layout has already been vetted through the public process over the course of several years.

Project Schedule

The proposed improvements will be implemented under two separate construction contracts with a three year completion schedule as outlined in the enclosed project schedule. The first set of contract documents will be prepared for the Phase 1 work scope. It will include removal of the CST transfer bridge and construction of specific pile supported decks and retaining wall structures adjacent to the South Berth. That work will be combined with shoreside electrical utilidors crossing Franklin Street and other upland improvements proposed under the Cruise Ship Terminal Staging Area Project, No. DH10-749. Phase 1 is designated for completion by May 2013.

The second set of contract documents will be prepared for the combined work contemplated under Phase 2 and Phase 3. It will include the two new floating berths, vehicle transfer bridges, mooring and breasting dolphins, remaining pile supported decks, small vessel moorage facilities, gangways, catwalks and various dockside water, sewer and electrical utilities. Phases 2 and 3 will be combined under one construction contract with separate completion schedules for each of the two new berths. The South Berth will be completed by May 2014 and the North Berth will be completed by May 2015. One general contractor will be awarded this work.

PND's engineering services shall be performed in accordance with the proposed schedule to allow construction to be completed for each phase of work within the timeframes indicated.

Fee Proposal

PND's proposal assumes the scope of improvements and completion schedule for each phase are now firm. We will provide engineering services under two primary tasks.

1. Design and Bid Phase services shall be provided on a fixed fee basis in accordance with the enclosed breakdown. The fee is broken down into four distinct design deliverables – 35%, 65%, 95% and 100% bid ready documents for two projects. Total fixed fee is proposed at $2,747,500.

2. Environmental permitting services shall be provided on a Time and Expenses reimbursable basis with an estimated fee not to exceed $100,000. All consultants will invoice labor at their standard billing rates at time of service. Mark ups on all third party consultants and reimbursable expenses shall be at a mutually agreeable rate negotiated with the CBJ.

The PND Team includes seven local engineering and architectural firms all dedicated to the successful completion of these exciting waterfront improvements. We appreciate the opportunity to provide services to the CBJ on this important project. Thank you for reviewing our fee proposal and let me know if we have scoped your needs appropriately for this project. We are available to commence immediately with this work and look forward to working with you.

Sincerely,
PND Engineers, Inc. | Juneau Office

Dick Somerville, P.E.
Vice President

Enclosures

CBJ DOWNTOWN CRUISE SHIP DOCK RECONFIGURATION
CONCEPT 16B-3
DESIGN & BID PHASE SERVICES FEE PROPOSAL
18-Mar-11
Prepared by: PND Engineers, Inc.

Item	Design Scope Description	35% Prelim. Design	65% Design Dev.	95% Final Design	100% Bid Ready Docs	Total Line Item Fee
1	Contract Mgmt, Subcontracts, Work Sessions, Tech Specs, Bid & Contract Docs	$25,000	$25,000	$25,000	$10,000	$85,000
2	Demolition	$15,000	$12,500	$12,500	$5,000	$45,000
3	South Berth Retaining Walls, Earthwork and Concrete Paving	$30,000	$30,000	$30,000	$5,000	$95,000
4	North Berth Pile Supported Approach Docks	$20,000	$20,000	$20,000	$2,500	$62,500
5	South Berth Pile Supported Approach Docks	$100,000	$90,000	$90,000	$10,000	$290,000
6	North Berth Floating Concrete Pontoon 50'x300'	$70,000	$70,000	$70,000	$7,500	$217,500
7	South Berth Floating Concrete Pontoon 50'x400'	$70,000	$70,000	$70,000	$7,500	$217,500
8	Floating Dock Pile Restraints	$80,000	$75,000	$75,000	$10,000	$240,000
9	Floating Dock Marine Fenders	$20,000	$15,000	$15,000	$2,500	$52,500
10	Vehicle Transfer Bridges & Pile Supported Abutments	$75,000	$70,000	$70,000	$10,000	$225,000
11	Transfer Bridge Support Floats	$15,000	$10,000	$10,000	$5,000	$40,000
12	Transfer Bridge Landing Floats	$20,000	$15,000	$15,000	$5,000	$55,000
13	Transfer Bridge End Support Structures	$15,000	$10,000	$10,000	$2,500	$37,500
14	Breasting & Mooring Dolphins	$175,000	$150,000	$150,000	$10,000	$485,000
15	Upgrade Existing Mooring Dolphins	$20,000	$10,000	$10,000	$2,500	$42,500
16	Catwalks	$15,000	$10,000	$10,000	$2,500	$37,500
17	Catwalk Access Gangways	$15,000	$10,000	$10,000	$2,500	$37,500
18	Water Services (Seasonal Use)	$20,000	$12,500	$12,500	$5,000	$50,000
19	Electrical & Lighting	$25,000	$15,000	$15,000	$5,000	$60,000
20	Port Security Gates & Cameras	$10,000	$7,500	$7,500	$2,500	$27,500
21	Safety Railings Along Wharf & Visual Enhancements	$30,000	$25,000	$25,000	$5,000	$85,000
22	Pile Anodes	$15,000	$10,000	$10,000	$2,500	$37,500
23	16' x 250' Small Vessel Moorage Float	$20,000	$15,000	$15,000	$5,000	$55,000
24	Moorage Float Piles	$5,000	$4,000	$4,000	$1,500	$14,500
25	New Pedestrian Gangway & Deck at Moorage Float	$10,000	$7,500	$7,500	$1,500	$26,500
26	Moorage Float Power & Lighting	$7,500	$5,000	$5,000	$2,000	$19,500
27	Sewer Service Discharge Piping & Utility Connection	$20,000	$15,000	$15,000	$2,500	$52,500
28	Tides Fisheries Deck Expansion (Add. Alt)	$20,000	$15,000	$15,000	$4,500	$54,500
	Proposed Fixed Fee Design Costs (Excludes Permitting)	**$962,500**	**$824,000**	**$824,000**	**$137,000**	**$2,747,500**


PROPOSED DOCK PROJECT

CBJ DOWNTOWN CRUISE SHIP DOCK RECONFIGURATION
CONCEPT 16B-3
SCHEMATIC DESIGN BUDGET - MARINE FACILITIES
14-Mar-11
Prepared by: PND Engineers, Inc.

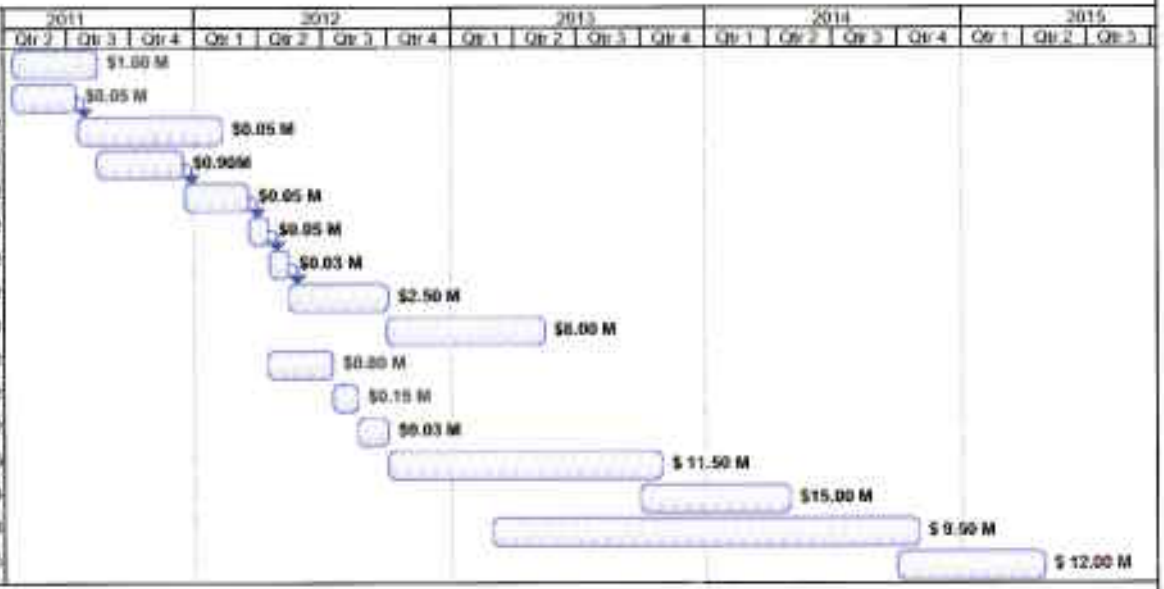
Item	Item Description	Units	Quantity	Unit Cost	Item Cost	Phase 1 Uplands/Docks	Phase 2 South Berth	Phase 3 North Berth	Check
	Base Bid								
1.01	Mobilization	LS	All Reqd	10%	$4,349,200	$582,500	$2,082,450	$1,684,250	
1.02	Demolition	LS	All Reqd	$750,000	$750,000	$700,000		$50,000	
1.03	South Berth Retaining Walls, Earthwork and Concrete Paving	LS	All Reqd	$950,000	$950,000	$950,000			
1.04	North Berth Pile Supported Approach Docks	SF	2,500	$250	$625,000			$625,000	
1.05	South Berth Pile Supported Approach Docks	SF	17,000	$250	$4,250,000	$2,975,000	$1,275,000		
1.06	North Berth Floating Concrete Pontoon 50'x300'	SF	15,000	$290	$4,350,000			$4,350,000	
1.07	South Berth Floating Concrete Pontoon 50'x800'	SF	20,000	$290	$5,800,000		$5,800,000		
1.08	Floating Dock Pile Restraints	EA	4	$1,200,000	$4,800,000		$2,400,000	$2,400,000	
1.09	Floating Dock Marine Fenders	LF	700	$1,000	$700,000		$400,000	$300,000	
1.10	Vehicle Transfer Bridge & Pile Supported Abutment	EA	2	$1,350,000	$2,700,000		$1,350,000	$1,350,000	
1.11	Transfer Bridge Support Float	EA	2	$200,000	$400,000		$200,000	$200,000	
1.12	Transfer Bridge Landing Float	EA	2	$580,000	$1,160,000		$580,000	$580,000	
1.13	Transfer Bridge End Support Structure	EA	2	$250,000	$500,000		$250,000	$250,000	
1.14	Breasting & Mooring Dolphins	EA	9	$1,000,000	$9,000,000		$6,000,000	$3,000,000	
1.15	Upgrade Existing Mooring Dolphins	EA	2	$250,000	$500,000			$500,000	
1.16	Catwalks	LF	900	$550	$495,000		$247,500	$247,500	
1.17	Catwalk Access Gangways	EA	4	$120,000	$480,000		$240,000	$240,000	
1.18	Water Service (Seasonal Use)	EA	2	$300,000	$600,000	$100,000	$250,000	$250,000	
1.19	Electrical & Lighting	EA	2	$250,000	$500,000	$100,000	$200,000	$200,000	
1.20	Port Security Gates & Cameras	LS	All Reqd	$200,000	$200,000		$100,000	$100,000	
1.21	Safety Railings Along Wharf & Visual Enhancements	LS	All Reqd	$1,000,000	$1,000,000			$1,000,000	
1.22	Pile Anodes	EA	800	$2,000	$800,000		$400,000	$400,000	
1.23	10' x 250' Small Vessel Moorage Float	SF	4,000	$150	$600,000		$600,000		
1.24	Moorage Float Piles	EA	11	$12,000	$132,000		$132,000		
1.25	New Pedestrian Gangway & Dock at Moorage Float	EA	1	$250,000	$250,000		$250,000		
1.26	Moorage Float Power & Lighting	EA	1	$150,000	$150,000		$150,000		
1.27	Sewer Service Discharge Piping & Utility Connection	EA	2	$400,000	$800,000			$800,000	
1.28	Shore Tie Power Utilities to Dock	EA	1	$1,000,000	$1,000,000	$1,000,000			
	Estimated Construction Costs				**$47,841,200**	**$6,407,500**	**$22,986,950**	**$18,526,750**	**$47,841,200**
	Contingency (10%)				$4,784,120	$640,750	$2,298,695	$1,852,675	**$4,784,120**
	Local, State and Federal Permits & Lease Applications				$100,000	$100,000			**$100,000**
	Final Design - P, S & E, Contract Documents				$2,093,000	$486,919	$1,219,649	$986,432	**$2,093,000**
	Contract Administration & Construction Inspection				$2,093,000	$486,919	$1,219,649	$986,432	**$2,093,000**
	2011 Project Budget				**$56,111,320**	**$8,122,088**	**$27,636,944**	**$22,352,288**	**$56,111,320**
	Additive Alternatives								
	Tidal Fisheries Dock Expansion	LS	All Reqd	$546,425	$546,425	$546,425			
	Estimated Construction Costs				**$546,425**	**$546,425**			**$546,425**
	Contingency (10%)				$54,643	$54,643			**$54,643**
	Final Design - P, S & E, Contract Documents				$54,643	$54,643			**$54,643**
	Contract Administration & Construction Inspection				$54,643	$54,643			**$54,643**
	2011 Project Budget				**$710,353**	**$710,353**			**$710,353**
	Uplands Staging Area								
	Estimated Construction Costs (see separate cost breakdown)				**$2,096,600**	**$2,096,600**			**$2,096,600**
	Contingency (10%)				$209,660	$209,660			**$209,660**
	Local, State and Federal Permits & Lease Applications				$15,000	$15,000			**$15,000**
	Site Investigations - Survey & Geotechnical				$40,000	$40,000			**$40,000**
	Final Design - P, S & E, Contract Documents				$188,694	$188,694			**$188,694**
	Contract Administration & Construction Inspection				$188,694	$188,694			**$188,694**
	2011 Project Budget				**$2,738,648**	**$2,738,648**			**$2,738,648**
				Total	**$61,560,321**				

Total Project Budget	$33,771,088	$27,636,944	$22,352,288	$61,560,321
Phase	Ph 1	Ph 2	Ph 3	Total
Scope of Work	Uplands/Docks	South Berth	North Berth	All
Completion Date	May-13	May-14	May-15	May-15

Notes: Final scope of improvements under Base Bid, Add. Alts and Phasing Sequences subject to change based on CBJ direction. Cost of thruet dissipator structure and Marine Park Seawalk not included in this budget. Cost of Uplands Staging Area project added to budget. Inflationary costs not included.

DOWNTOWN CRUISESHIP DOCKS CONCEPT 16B-3
3 SEASON - UPLANDS AND MARINE FACILITIES
PROJECT SCHEDULE & CASH FLOW PROJECTION

ID	Task Name	Start	Finish
1	Preliminary Design Ph 1, 2 & 3 - 35%	Fri 4/15/11	Mon 8/15/11
2	Prepare Permit Applications / Agency Mtgs	Fri 4/15/11	Fri 7/15/11
3	Environmental Review & Permit Authorizations	Mon 7/18/11	Fri 2/10/12
4	Design Development Ph 1, 2 & 3 - 65%	Mon 8/15/11	Fri 12/16/11
5	Final Design Ph 1 - 95%	Mon 12/19/11	Mon 3/19/12
6	Stamped Bid Ready Contract Docs - Ph 1	Tue 3/20/12	Mon 4/16/12
7	Advertise & Award Construction Contract - Ph 1	Wed 4/18/12	Tue 5/15/12
8	Submittals, Material Fabrication & Delivery Ph 1	Wed 5/16/12	Tue 10/2/12
9	On Site Construction - Ph 1 Uplands & Docks	Mon 10/1/12	Wed 5/15/13
10	Final Design Ph 2 & 3 - 95%	Mon 4/16/12	Mon 7/16/12
11	Stamped Bid Ready Contract Docs - Ph 2 & 3	Tue 7/17/12	Mon 8/20/12
12	Advertise & Award Construction Contract - Ph 2 & 3	Tue 8/21/12	Tue 10/2/12
13	Submittals, Material Fabrication & Delivery Ph 2	Wed 10/3/12	Thu 10/31/13
14	On Site Construction - Ph 2 South Berth	Tue 10/1/13	Thu 5/1/14
15	Submittals, Material Fabrication & Delivery Ph 3	Fri 3/1/13	Fri 10/31/14
16	On Site Construction - Ph 3 North Berth	Wed 10/1/14	Fri 5/1/15



Project: PND No. 102000.01
March 18, 2011

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline

P | N | D
ENGINEERS, INC.

February 25, 2011 PND 102081.02

Mr. Gary Gillette, AIA
Port Engineer
CBJ Docks and Harbors Department
155 South Seward Street
Juneau, Alaska 99801

Re: Cruise Ship Terminal Staging Area
RFP No. DH10-749
Fee Proposal – Electrical Utilidor

Dear Mr. Gillette:

PND Engineers, Inc. (PND) is pleased to provide this fee proposal for additional design phase engineering services on the Cruise Ship Terminal Staging Area project. The scope of services under this proposal includes surveying, permitting, preliminary design, final design, bid ready contract documents and bid phase services associated with a proposed electrical raceway/utilidor crossing South Franklin Street to a location near the new dock improvements. The utilidor will consist of approximately ten (10) each six inch ducts encased in concrete to service future shore tie power to the new cruise ship docks.

The scope of construction improvements anticipated under this proposal is illustrated on the enclosed drawing entitled *Site Plan – Vessel Shore Power Facility*. The limits of final design work under this proposal extend from a future vault location on the east side of South Franklin Street to a new vault located adjacent to the Tram Building in the vicinity of a proposed retaining wall under the Cruise Ship Dock project.

Enclosed please find a detailed breakdown of PND's fixed price proposal to complete the work described along with backup from Haight & Associates, our electrical engineering subconsultant.

The PND Team appreciates the opportunity to provide engineering services on this important project. Thank you for reviewing our fee proposal and let me know if we have perceived your needs appropriately for this project.

Sincerely,
PND Engineers, Inc. | Juneau Office

Dick Somerville, P.E.
Vice President

Enclosures

CBJ Cruise Ship Dock Staging Areas
DH 10-749
Fixed Fee Proposal for Final Design Services - Amendment No.1 Electrical Raceway/Utilidor Design
South Franklin St Crossing to CSD Retaining Wall
February 25, 2011

	Senior Engineer VII	Senior Engineer II	Senior Land Surveyor	Staff Engineer IV	Staff Engineer III	CAD Designer V	Tech IV	Line Item Costs	Task Subtotal Costs
	$160.00	$120.00	$105.00	$95.00	$80.00	$90.00	$80.00		
TASK 1: Pre-Design - Project Management, Surveying, Work Session, Schematic Design Updates & Permitting									
1.1 Project Management - subcontracts, clerical and admin	8						16	$2,720	
1.2 Field topographic survey and base map preparation - Franklin St ROW and hillside to future AELP substation, locate property boundaries (easements & conveyances to be proposed separately at later date if required)	4		20	24		8		$5,740	
1.3 CBJ, AELP, DOT/PF & HAI coordination meetings	8			4				$1,660	
1.4 Prepare schematic design budget	2			4				$700	
1.5 Permits: ADOT/PF Electrical Utility Permit	2			8		4		$1,440	**$12,260**
TASK 2: Preliminary Design - 65% Design Review Submittal (Plans, Outline Specifications & Cost Estimate)									
2.1 Civil site plan - utilidor layout	2			16		4		$2,200	
2.2 Utilidor profile design	2			16		4		$2,200	
2.3 Typical trench, vaults and utilidor sections and details	2			16		4		$2,200	
2.4 Technical specifications & contract document outline format	2			8			4	$1,440	
2.5 Material quantities & 65% cost estimate	1			4				$540	**$8,580**
TASK 3: Final Design - 95% Review Submittal (Plans, Specifications, Bid Documents & Cost Estimate)									
3.1 Civil site plan - utilidor layout	2			12		4		$1,620	
3.2 Utilidor profile design	2			12		4		$1,620	
3.3 Typical trench, vaults and utilidor sections and details	2			12		4		$1,620	
3.4 Technical specifications & contract document outline format	2			4			2	$880	
3.5 Material quantities & 95% cost estimate	1			2				$350	**$6,890**
TASK 4: Bid Ready Stamped Contract Documents									
4.1 PND Internal QC/QA Audit	2			4		2	2	$1,060	
4.2 Address final review comments	2			4		4		$1,080	
4.3 Prepare final bid ready stamped deliverables	2			4		4	2	$1,240	**$3,360**
TASK 5: Bid Phase Assistance									
5.1 Participate w/ prebid conference	1			1				$255	
5.2 Respond to bidder questions	2			2				$510	
5.3 Assist w/ addenda preparation	1			4		2		$720	**$1,485**
Estimated Third Party Expenses									
Haight & Assocs	Electrical Engineering							$55,015	**$55,015**
								Total Estimated Fee	**$87,390**

FEE ESTIMATE

PROJECT NAME: Cruise Ship Terminal Uplands - Raceway Design

HAIGHT & ASSOCIATES, INC.
JUNEAU, ALASKA

CLIENT: PND Engineers, Inc.
PROJECT NO.: 137-80

DATE: January 27, 2011

FEE SCHEDULE [$/HR]		165	155	115	95	85	85	85		0.9
X	TASK DESCRIPTION	Ben [HRS]	Barry [HRS]	Ryan [HRS]	CAD/Dsr [HRS]	CAD [HRS]	Clerical [HRS]	Admin [HRS]	TIME [$]	EXPENSE [$]
SCHEMATIC DESIGN (LUMP SUM):										
	100 Project administration		6				1	2	1,165	
	101 Site/asbuilt review		12						1,860	
	102 Utility coordination		8						1,240	
	120 Construction cost estimate		6						930	
SUB	SUBTOTAL	0	32	0	0	0	1	2	$5,195	
SUB	CBJ Sales Tax (5%)								$0	
	SUBTOTAL (Reimbursable Expenses)								$0	
	TOTAL - SCHEMATIC DESIGN								**$5,195**	
DESIGN DEVELOPMENT (LUMP SUM):										
	200 Project administration		10				2	2	1,850	
	205 Plan development		2		4				690	
	208 Site plan layout		1		4				535	
	210 Power layout		12		6				2,430	
	220 Utility coordination		8						1,240	
	221 CBJ coordination		4						620	
	250 Specification draft		8				1		1,305	
	270 Coordination meetings		6						930	
	275 Client review		2						310	
	280 Construction cost estimate		8						1,240	
	290 Review revisions		1		2				345	
	295 Document production		1		2		1		410	
	SUBTOTAL (time)	0	63	0	18	0	4	2	$11,905	
	SUBTOTAL (CBJ Sales Tax - 5%)								$0	
	SUBTOTAL (Reimbursable Expenses)								$0	
	TOTAL - DESIGN DEVELOPMENT								**$11,905**	
CONTRACT DOCUMENTS (LUMP SUM):										
	300 Project administration		20				4	4	3,700	
	301 Final power layout		30		20				6,550	
	302 Utility coordination		8						1,240	
	303 CBJ coordination		4						620	
	304 Raceway design calculations		30						4,650	
	350 Special details		40		60				11,900	
	360 95% specification		6				1		995	
	365 95% document production		1		2		1		410	
	370 Coordination meetings		6						930	
	380 Construction cost estimate		4						620	
	390 Client review		2						310	
	391 Q A review	4							660	
	392 Drawing revisions		2		4				690	
	393 Final specification		2				1		375	
	395 Final production		2		2		1		565	
	SUBTOTAL (time)	4	157	0	88	0	8	4	$34,215	
	SUBTOTAL (CBJ Sales Tax - 5%)								$0	
	SUBTOTAL (Reimbursable Expenses)								$0	
	TOTAL - CONTRACT DOCUMENTS								**$34,215**	

FEE ESTIMATE

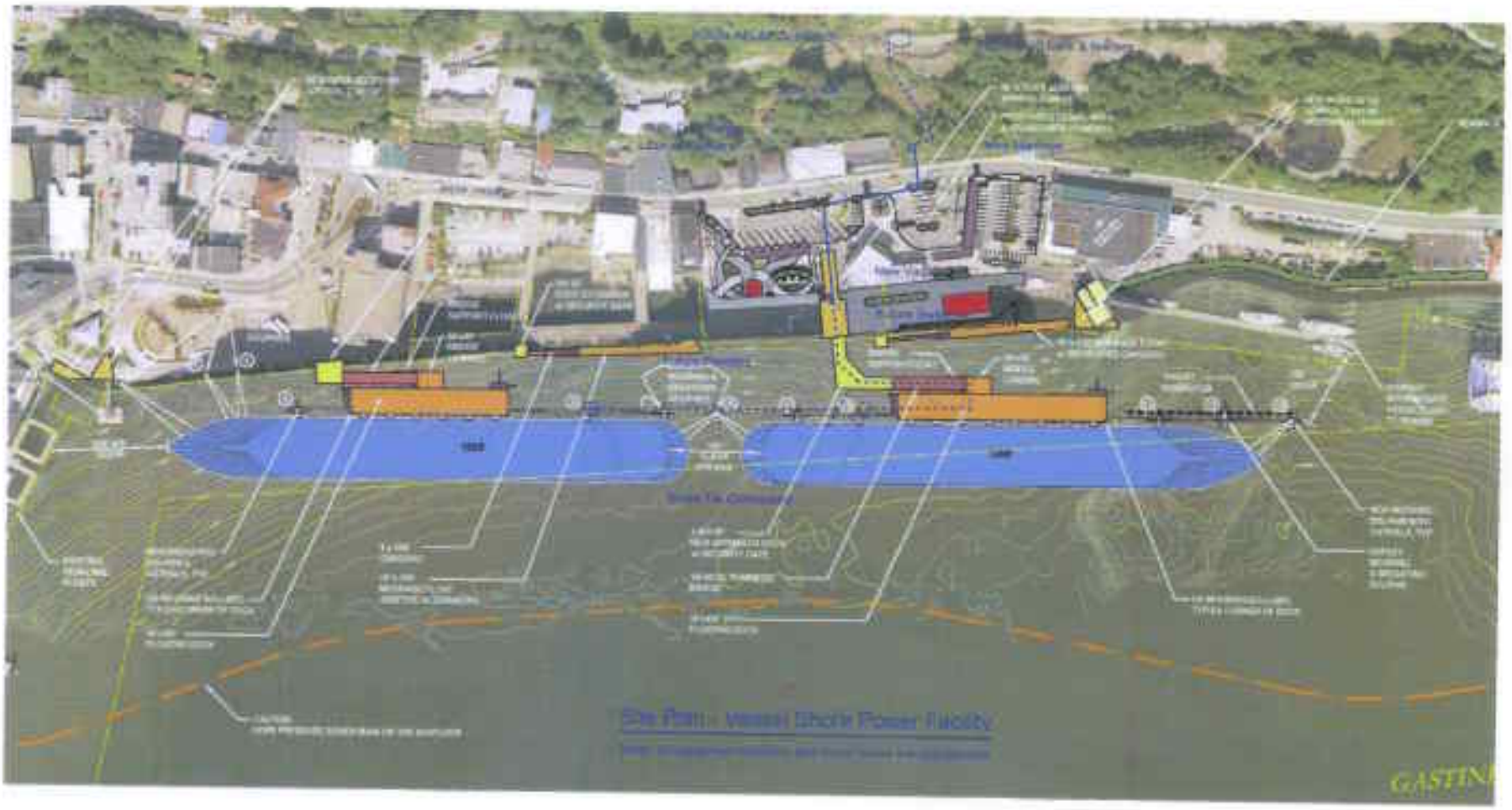
PROJECT NAME: Cruise Ship Terminal Uplands - Raceway Design

HAIGHT & ASSOCIATES, INC.
JUNEAU, ALASKA

CLIENT: PND Engineers, Inc.
PROJECT NO.: 137-80

DATE: January 27, 2011

FEE SCHEDULE [$/HR]	165	155	115	95	65	85	85		0.9
X TASK DESCRIPTION	Ben [HRS]	Barry [HRS]	Ryan [HRS]	CAD/Dsr [HRS]	CAD [HRS]	Clerical [HRS]	Admin [HRS]	TIME [$]	EXPENSE [$]
BIDDING (T&E):									
400 Project administration		2					1	385	
405 Prebid meeting (in basic agreement)								0	
410 Document interpretation		6						930	
430 Addendum development		4		2				810	
490 Bid review		2						310	
495 Conforming documents		4		6		1		1,255	
SUBTOTAL (time)	0	18	0	8	0	1	1	$3,700	
SUBTOTAL (CBJ Sales Tax - 5%)								$0	
SUBTOTAL (Reimbursable Expenses)								$0	
TOTAL - BIDDING								**$3,700**	
PROJECT TOTAL (time):	4	270	0	114	0	14	9	$55,015	
PROJECT TOTAL (CBJ Sales Tax - 5%):								$0	
PROJECT TOTAL (Reimbursable Expenses)								$0	
GRAND TOTAL==========>								**$55,015**	



Attachment C

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

City & Borough of Juneau • Docks & Harbors
155 S. Seward Street • Juneau, AK 99801
(907) 586-0292 Phone • (907) 586-0295 Fax

Port of Juneau

MEMORANDUM

To: Harbor Board CIP and Planning Committee
From: Gary Gillette, Port Engineer
Date: March 10, 2011
Re: Account Close Out - Amalga Harbor Launch Ramp Upgrade

The Amalga Harbor Launch Ramp Upgrade project began back in 2003 and was completed in phases over the past years. The most recent work of the project was the installation of a kayak launch ramp which was completed in 2009. The Alaska Department of Fish & Game (ADF&G) provided funding for this project. They inspected the recent work in 2010 and directed that a sign be erected acknowledging the funding contributions by ADF&G and US Fish and Wildlife Service. The sign has been installed thus the project is officially complete and the CIP account (H354-79) may now be closed.

ADF&G funds were provided for design, permitting, construction, and construction inspection. The funds were not allowed to be used for CBJ staff time to manage and administer the project. The state of the account at this time shows approximately $65,800 of ADF&G funding remaining. This amount is no longer eligible for reimbursement and must be de-appropriated by the Assembly in order to close out the account.

The total overall CBJ administrative/management costs from 2003 to date are more than the CBJ portion of the account balance resulting in a funding shortfall of approximately $28,000. A funding transfer ordinance is required in order to close the CIP account. We recommend this amount be taken from the Harbors fund balance which currently has approximately $3.7M remaining.

CITY AND BOROUGH OF JUNEAU DOCKS AND HARBORS
CIP ACCOUNTS SUMMARY
As Of March 15, 2010

CIP #	Project	Revenues	Expenditures & Encumberances	Balance	Notes
H354-79	**Amalga Harbor Launch Ramp Upgrade**				Project Complete
	ADF&G Grants	$2,535,000.00	$2,469,205.00	$65,795.00	Funds to be returned to ADF&G
	Harbor Funds	$300,000.00	$327,999.00	($27,999.00)	Fund transfer needed to close account
H354-84	**Douglas Harbor Phase III**				Breakwater
	ADOT Breakwater MOU	$800,000.00			
	2003 GO Bond	$3,500,000.00			
	2003 GO Bond Interest (yet to be appropiated)	$67,145.00			
		$4,367,145.00	$4,306,986.00	$60,159.00	
H354-74	**Auke Bay Loading Facility-Phase I**				Mitigation Phase
	ADCCED Grant	$50,778.00			
	Denali Commission	$1,000,000.00			
	FY01 Marine Passenger Fees	$100,000.00			
	FY02 Marine Passenger Fees	$411,500.00			
	FY02 Harbor Funds	$175,000.00			
	FY02 Dock Funds	$175,000.00			
	FY04 Marine Passenger Fees	$50,000.00			
	FY05 Marine Passenger Fees	$300,000.00			
	FY05 Dock Funds	$150,000.00			
	FY06 Marine Passenger Fees	$500,000.00			
	FY08 F326	$4,411,351.00			
	FY09 Harbor Funds	$292,514.00			
	FY11 Harbor Funds	$130,000.00			
	2003 GO Bond	$3,250,000.00			
	2003 GO Bond Interest	$328,598.00			
		$11,324,741.00	$11,209,065.00	$115,676.00	
H354-85	**Juneau Harbors Deferred Maintenance**				Old Douglas Harbor Re-Build
	ADOT - Bonds for Harbors	$7,047,810.00			
	ADF&G Coop #04-003	$180,000.00			
	ADF&G Coop #05-071	$900,105.00			
	NFF In-Kiind Douglas Pump-out	$73,000.00			

CITY AND BOROUGH OF JUNEAU DOCKS AND HARBORS
CIP ACCOUNTS SUMMARY
As Of March 15, 2010

	FY02 Harbor Funds	$13,508.00		
	FY06 Marine Passenger Fees	$500,000.00		
	FY06 Harbor Funds	$15,606.00		
	FY08 F326	$4,411,351.00		
	FY99 Temp Sales Tax	$6,631.00		
	2003 GO Bonds	$2,500,000.00		
	FY2003 GO Bond Interest	$40,000.00		
		$15,688,011.00	$11,823,591.00	$3,864,420.00
H354-93	**Statter Harbor Improvements**			New Launch Ramp
	FY08 ADF&G Grant	$900,000.00		Statter Float Repairs
	DCCED Grant	$800,000.00		
	FY06 Marine Passenger Fees	$250,000.00		
	FY07 Marine Passenger Fees	$250,000.00		
	FY09 1% Prop 2 Sales Tax	$2,500,000.00		
	Sales Tax	$400,000.00		
	FY11 Temp 1% Sales Tax	$3,804,600.00		
		$8,904,600.00	$1,867,070.00	$7,037,530.00
H354-95	**Cruise Ship Berth Enhancements**			New Cruise Berths
	DCCED 09 Grant	$1,500,000.00		Port/Cusotms/Visitor Center
	DCCED 10 Grant	$2,500,000.00		CT Staging Reconfiguration
	DCCED 11 Grant	$9,000,000.00		
	FY02 Port Development Fees	$20,124.00		
	Fy03 AW Sales Tax	$3,018.00		
	FY03 Docks	$9,755.00		
	FY03 Port Development Fees	$203,043.00		
	FY05 Docks	$24,194.00		
	FY06 Docks	$30,000.00		
	FY07 Docks	$32,280.00		
	FY08 Marine Passenger Fees	$1,000,000.00		
	FY09 Marine Passenger Fees	$379,520.00		
	FY09 Marine Passenger Fees	$924,200.00		
	FY09 Port Development Fees	$1,750,000.00		
	FY10 Marine Passenger Fees	$1,443,800.00		
	FY10 Port Development Fees	$1,750,000.00		
	FY11 Marine Passenger Fees	$1,023,900.00		

CITY AND BOROUGH OF JUNEAU DOCKS AND HARBORS
CIP ACCOUNTS SUMMARY
As Of March 15, 2010

	FY11 Port Development Fees	$1,500,000.00		
		$23,093,834.00	$11,254,121.00	$11,839,713.00
H354-96	**Cruise Ship Tug Moorage Rehabilitation**			Aurora Harbor Re-Build
	FY08 Marine Passenger Fees	$500,000.00		
		$500,000.00	$0.00	$500,000.00
H354-97	**Landing Craft & Security Cameras**			Harbor Security Cameras
	Federal Security Grant	$219,000.00	$140,066.00	$78,934.00
H354-99	**Auke Bay Loading Facility - Phase II**			ABLF - Phase II
	TIGER Grant	$3,640,000.00	$2,602,360.00	$1,037,640.00