

**CITY DOCK AND FERRY TERMINAL IMPROVEMENTS  
REAL ESTATE APPENDIX C  
PORT LIONS, ALASKA**

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**CONTENTS**

I. Real Estate Summary .....	1
A. Project Summary .....	1
B. Current Ownership .....	1
C. Real Property Interests required for the project .....	1

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## **I. REAL ESTATE SUMMARY**

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### **A. Project Summary**

The purpose of this summary is to determine real estate requirements for the project planning document for potential repairs to the existing city dock at Port Lions, Alaska. The document includes an outline of reasonable alternatives, including replacement if warranted, for marine transfer needs. Real estate at this point has been tasked to:

- Determine ownership of land and tidelands of existing dock and two alternate locations.
- Identify rights of way required to repair the existing city dock.
- Prepare a map that illustrates ownership for the city dock and proposed alternative locations.

### **B. Current Ownership**

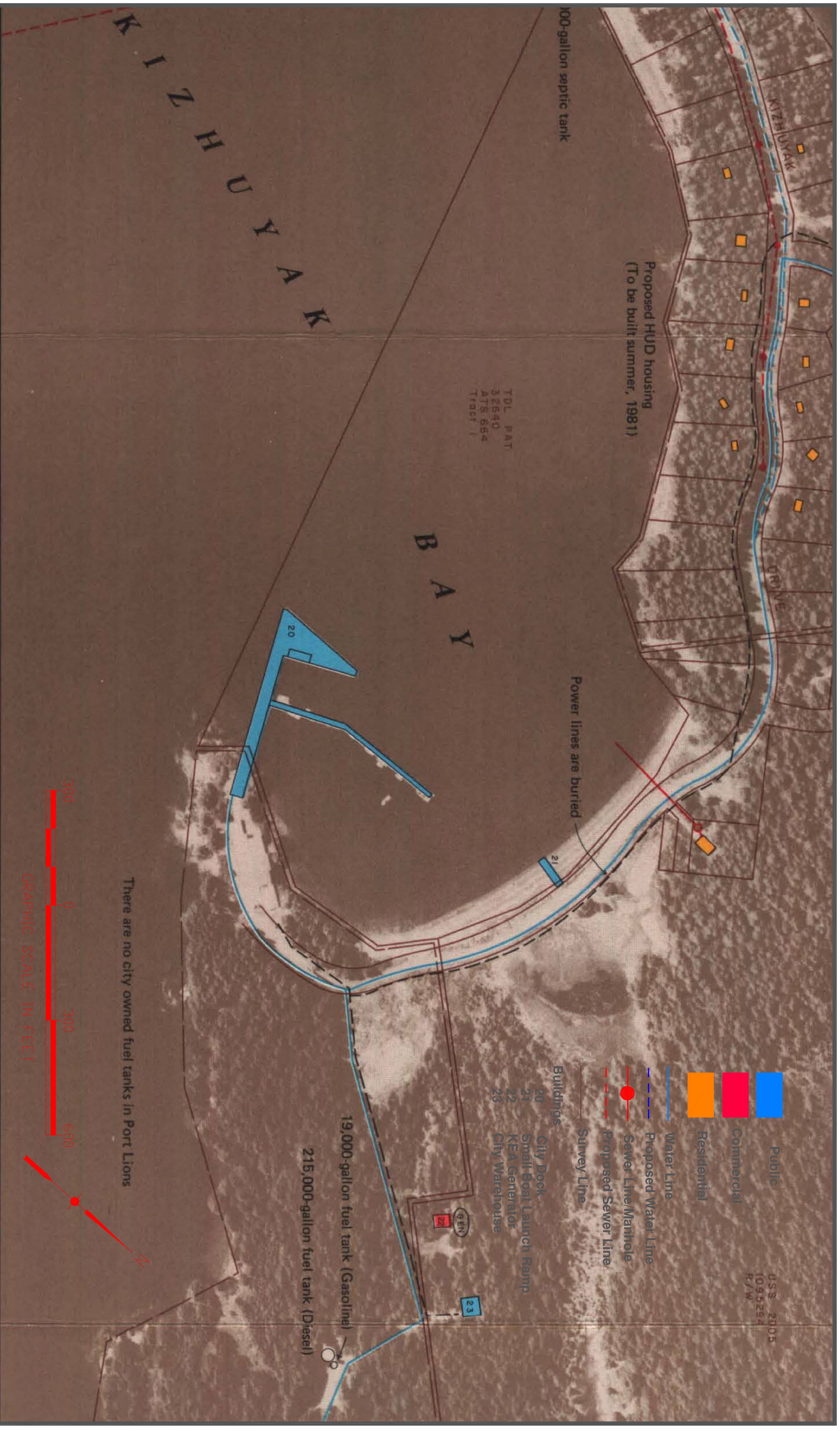
Alaska Statue 38.05.825 provides for conveyance to municipalities of tidelands that are occupied or suitable for occupation and development. The Division of Mining, Land and Water conveyed to the City of Port Lions, 220 acres, more or less, tide submerged land situated in Settler Cove on Kizhuyak Bay. The existing City Dock extends out into the tidelands. The City of Port Lions owns 43.31 +/- acres of land identified on USS 2005, Tract 'C', identified in figures 1, 3, and 4 as Alternative Sites 1, 3, and 4, where the existing City Dock is presently located, and 54.85 +/- acres, Tract 'F', identified in figure 2 as Alternative 2.

### **C. Real Property Interests required for the project**

Initial information indicates all lands required for construction, operation, and maintenance of the project are owned by the City of Port Lions. The Denali Commission is funding this project and has indicated that the City has a vested interest in the repair of the dock and will be responsible for operating and maintaining the project. Real estate requirements for all four (4) alternatives are the same.

**Recommendation:** That the City of Port Lions hold permanent interest in the structure and land.





DEPARTMENT OF THE ARMY  
OFFICE OF THE ALASKA DISTRICT ENGINEER  
PACIFIC OCEAN DIVISION

REAL ESTATE

**City Dock and Ferry Terminal Improvements**  
**Port Lions, Alaska**  
**September 2009**



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# City Dock and Ferry Terminal Improvements

## Appendix D – Trip Report

### Port Lions, Alaska



*Prepared for:*

Denali Commission

**October 2009**

*Prepared by:*



**U.S. Army Corps  
of Engineers**

Alaska District



**CITY DOCK AND FERRY TERMINAL IMPROVEMENTS  
TRIP REPORT APPENDIX D  
PORT LIONS, ALASKA**

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**CONTENTS**

I. Trip Report.....	1
II. Public Meeting Summary.....	11

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**FIGURES**

Figure D-1. Vegetation growing atop pile ends.....	5
Figure D-2. Gap between pile and dock.....	5
Figure D-3. Unbraced piles on bedrock.....	6
Figure D-4. Unbraced piles on bedrock with bolts indicating missing bracing.....	6
Figure D-5. View underneath causeway.....	7
Figure D-6. Dangling ladder missing supports due to decay of bracing.....	7
Figure D-7. View showing misaligned pile under causeway.....	8
Figure D-8. Tustumena at the dock.....	8
Figure D-9. Unbraced concrete barrel supports atop bedrock under causeway.....	9
Figure D-10. Fuel lines on edge of dock.....	9
Figure D-11. Typical dock surface with vegetative growth.....	10
Figure D-12. Decaying live crab pots, fuel lines, and vegetative growth including trees.....	10

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## **I. TRIP REPORT**

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### **Site Visit Summary Port Lions City Dock June 23 – 24, 2009**

#### **Participants**

Robert Tedrick – EN-CW-HH

George Kalli – EN-CW-PF

#### **Summary**

##### **June 23, 2009**

Robert and George arrived in Port Lions on the evening on June 23<sup>rd</sup> at approximately 17:00 on Island Air. After a quick reconnaissance of the city dock and dinner a community meeting was conducted. A summary of the community meeting can be found at O:\\_Projects by Location\Port Lions\AKV283 (322824) Port Lions City Dock and Ferry Terminal Repairs Denali Commission\06 Site Visits-Meeting Minutes.

Photos taken during the site visit are located at O:\\_Projects by Location\Port Lions\AKV283 (322824) Port Lions City Dock and Ferry Terminal Repairs Denali Commission\05 Photos-Maps-Drawings\Site Visit Jun23-24 2009

##### **June 24, 2009**

07:30

Robert and George returned to the city dock at 08:30 to take advantage of the lowest tide of the summer that was occurring that morning (Kodiak low tide -2.7 at 10:01).

Rich, the bulk fuel operator informed us that the new bulk fuel facility was constructed in 2007.

The causeway portion of dock is partially supported by concrete filled drums, some of which have eroded away from the concrete within. We observed no bracing at the top or bottom of these drums.

Cross beams located lower than high water were observed to be severely decayed with many detached from their pile attachment points and many missing large portions of the beams themselves.

Diagonal cross beams located above the water line appeared to be generally good shape, at least in comparison to those that are periodically submerged.

Some newer horizontal cross beams were observed.

Many horizontal cross beams near the base of the dock piles were missing completely. This was particularly visible during the low tide.

Numerous piles appear to have lost cross-sectional area towards the base of the pile.

A missing pile under the causeway portion of the dock was noted. (In photos, a dangling cross beam touches the ground near the shoreline in the vicinity of the missing pile.)

Crooked, non-vertical piles are obvious, especially in the outer piles. While many are batter piles, intended to be non-vertical to add horizontal stability by providing a wider base, others were not intended to be non-vertical (narrower base).

Multiple piles and drums were noted that are not touching the bottom of the deck.

A longitudinal and slightly crosswise sag in the causeway is evident.

New surface decking was constructed directly atop old decking material. This prevents adequate drainage through the decking. There is much vegetation, mostly grass, sprouting out of the cracks of the decking. Small trees were also observed, especially along the perimeter on the deck and along the bulk fuel lines.

The tops ends of most of the piles along the outside of the dock are recessed and have vegetation growing in them.

09:00

The harbormaster Russell Gundersen joined us on the dock. He stated that he had washed the deck 2 – 3 weeks ago and that the grass was already growing back atop the deck.

The original decking surface that was covered over was visible around the storage building located atop the dock. The top of this decking was covered in some sort of lichen-like vegetative growth and appeared to be ‘punky’.

The 2<sup>nd</sup> bollard from the seaward side of the dock is quite loose and can easily be made to sway by a human shoving on it.

Throughout the dock there is antiquated equipment including, pipes, pumps, and decaying wooden live crab traps, mostly related to its origin as a cannery dock. Removal of this equipment may be a consideration as part of any dock repair efforts.

The building located on the dock has a freezer on one side and storage on the other. The freezer did not appear to be in use or operational. The storage area contains an inoperable salt water pump.

09:20

Jon Scott Pestrikoff joined us on the dock.

- He stressed the community’s need to maintain the size of the dock to support future economic endeavors in the community.



- Jon stated that the dock swayed up to 18 inches during a storm with 80 – 90 mph winds.

09:25

The Alaska Marine Highway ferry Tustumena began approaching the dock to land under calm conditions.

After docking, Captain John Merrill spoke with us.

- He confirmed that the Port Lions dock is the worst dock that they call upon.
- He referred to the dock as dilapidated.
- Due to concerns with the dock, they often have to avoid it in the winter during rough conditions.
- He stated that a dock face alignment east of north of the current alignment would be advantageous to the ferry.
- There has been talk of the Kennicott coming to Port Lions in the future but Captain Merrill was not sure if that was plausible without dredging. The Kennicott is a larger boat than the Tustumena.
- Captain Merrill indicated that he would prefer a new dock, but that any improvements would be great.
- An independent fender system would be beneficial but the reduced weight limitation of the dock (23,000 lbs) would still limit what the ferry could bring to Port Lions.

Petro Marine Services is the fuel supplier for Port Lions. The K-Sea is the tug that services Port Lions. The last tug captain to service Port Lions was named Amos. He might be a good contact as a user of the dock.

10:30

Marvin Bartleson Sr. took us out on his boat for a water based inspection of the dock.

According to Marvin, the new decking was laid atop the old decking approximately 15 years ago.

Marvin stated that the dock was constructed in 1964 or 1965 (Port Lions was established after the 1964 Good Friday earthquake).

Bracing for the dock ladders are missing. The ladders are only supported by their attachment point to the dock at the top of the ladder. This is a safety concern.

Noting the extent of cross bracing that is missing and/or decayed in place it became evident that it would be prudent to replace all the cross bracing for the dock.

12:10

Robert and George returned to the dock on foot to explore underneath it as the tide was still quite low.

Bolts with nothing attached to them indicate a missing lowest level of cross bracing.

All bracing below a certain elevation are missing or obviously decayed.

A pile tapered at the bottom was noted resting upon bedrock.

Numerous crooked, non-batter piles were observed.

It appears that the sag in the causeway corresponds to where the piles are in soil as opposed to bedrock.

In summary, based upon our impressions during this site visit, the potential scope of repairing the Port Lions City Dock appears to contain the following efforts;

- Conduct follow-up dive inspection (recommended every 5 years)

- Replace all bracing

- Replace some batter piles

- Replace some piles (timber and concrete)

- Replace ladders

- Remove live crab tanks

- Replace decking

- Remove old equipment

- Cut and cap outer piles to prevent vegetative growth

- Install independent fender system

We question whether it would be cheaper and safer to demolish the existing dock and construct a new dock at Port Lions.

## **PHOTOS**





**Figure D-1. Vegetation growing atop pile ends**



**Figure D-2. Gap between pile and dock**



**Figure D-3. Unbraced piles on bedrock**



**Figure D-4. Unbraced piles on bedrock with bolts indicating missing bracing**





**Figure D-5. View underneath causeway**



**Figure D-6. Dangling ladder missing supports due to decay of bracing**



**Figure D-7. View showing misaligned pile under causeway**



**Figure D-8. Tustumena at the dock**





**Figure D-9. Unbraced concrete barrel supports atop bedrock under causeway**



**Figure D-10. Fuel lines on edge of dock**



**Figure D-11. Typical dock surface with vegetative growth**



**Figure D-12. Decaying live crab pots, fuel lines, and vegetative growth including trees**

## II. PUBLIC MEETING SUMMARY

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**Public Meeting Summary**  
**Port Lions City Dock Repairs**  
**June 23, 2009**

### **Participants**

#### **City of Port Lions**

Lorna Maughan  
Judith Clayton  
Jon Scott Pestrikoff  
Rich Pestrikoff  
Steve Anderson  
Susan Boslofsky  
Annie Kewan  
Wendy Bartleson  
Wayne L?  
Marvin Bartleson Sr.  
Katy Adkins  
Sheila Biehl  
Liz Pennington  
Dorinda Kewan  
Arnold Kewan  
Rodney K?  
Marilyn Wagner  
Chris Bartleson  
Russell Gunderson  
Harold Christensen Jr.  
Bruce Nelson  
Kathie Kyono  
Steve Kyono  
Jay Kaiser  
Julie Kaiser

#### **Corps of Engineers**

Robert Tedrick  
George Kalli

### **Purpose**

This meeting served as a scoping meeting for Denali Commission funded repairs to the Port Lions city dock. Considering Port Lions has a population below 200 and that it was summer charter season, attendance at the meeting was superb. The attendance reflects the importance of this project to community members.



## **Topics Discussed**

- The community is concerned about the condition of the dock. Due to its poor condition barge service from Seattle was discontinued in 2006. This caused the only store in town to close down. This has caused a financial and logistical burden upon the residents of Port Lions. Loss of barge service has made the community even more reliant upon the Alaska Marine Highway ferry stops in the community. Concerns are that if the dock continues to degrade that they may lose that service, and their fuel deliveries, as well. Due to the condition of the dock, current fuel deliveries are only conducted during daylight hours. The community is hopeful that barge service will return and ferry stops and fuel deliveries will continue with an improved or replacement dock
- It was confirmed that the current deck surface was placed directly atop the previous deck.
- It was the general impression that the piles of the dock were sound but the many cross braces were either missing or unsound.
- People expressed interest in the possibility of a dock replacement as opposed to repair. Corps employees informed community members that the current scope of work was for repair of the existing dock. The Corps would notify the Denali Commission if it appeared that replacement of the dock would be more economically feasible.
- The schedule to produce a final report was questioned. Mike McKinnon from the Denali Commission had indicated to some community members that a final report would not be available until December 2009. In order to apply for grants with application deadlines of November 1<sup>st</sup>, community members asked if we could have a final report available to them by mid-October. George offered to get back to Judith Clayton about this question.
- The Tustumena is the ferry currently servicing Port Lions. There is some talk of the larger Kennicott calling on Port Lions in the future, however, such a scenario is not part of the Borough of Kodiak regional transportation plan.
- Restoring the weight capacity of the dock to 50,000 lbs will reduce the costs to ship equipment and materials to the community (reduce mobilization and demobilization costs). Currently, items too heavy for the dock must be brought to the community via a barge beach landing at additional cost. The State of Alaska dictated the current weight limit of 23,000 lbs.
- Nobody was aware of any available original design drawings of the dock. The original design of the dock was intended to be dual purpose in that it was designed to serve the ferry and crab boats at the same time.
- A Koniag owned gravel source is available near the Port Lions airstrip. Koniag is in the process of developing a rock source nearby.
- One resident described that he can see the dock sway back and forth in heavy seas.
- Interest was expressed in reconstruction of the finger dock. The previous finger dock is the source of the string of pilings extending inland from the dock causeway.

- The fuel lines to the tank farm are atop the original decking at the edge of the dock.
- The status of the buildings on the dock was questioned.
- The dock ladders are on their “last legs” and are a safety concern.
- Judith asked if we were familiar with a project regarding a dock in Gustavus. Not being familiar with the project, she offered to follow up with a point of contact.
- Community members stressed that at some point repair may be more expensive than replacement.
- There was relative agreement among those present that if replaced, the current size of the dock would be adequate.
- It was suggested that the reef extending out from the end of the dock towards the red buoy could be built up as a breakwater which would provide additional protection for the ferry.



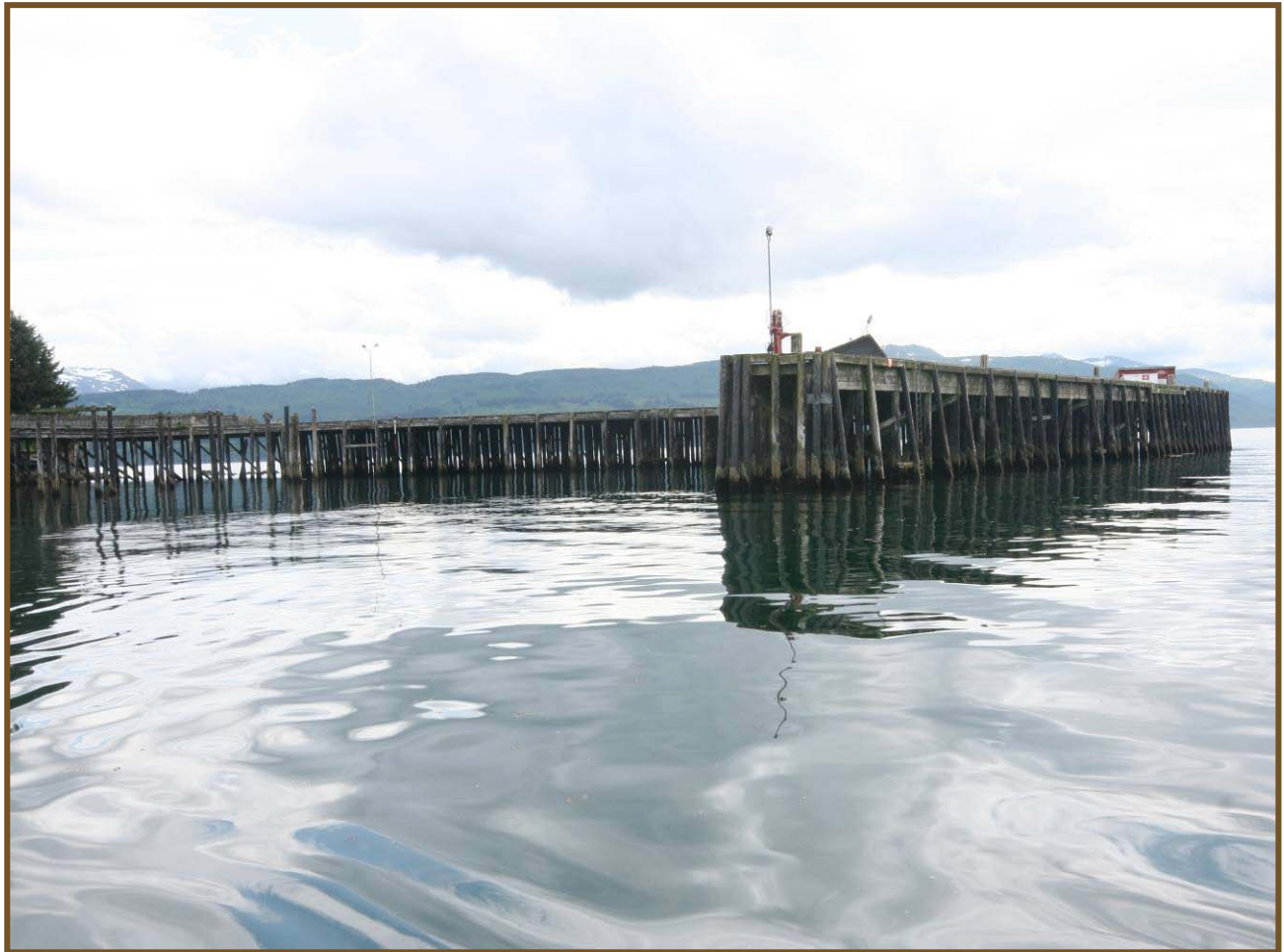
**Alaska Department of Transportation and Public Facilities**

## **Final Underwater Inspection Report**

**Port Lions Ferry Terminal**

**Structure 1428**

**Kizhuyak Bay**



**July 24, 2009**

**Project No. 80184/BR-NBIS(61)  
80182/BR-NBIS(63)**

**Developed by:**

**Infrastructure Engineers, Inc.**



**2009 UNDERWATER INSPECTION REPORT  
EXECUTIVE SUMMARY**

**INSPECTION DATA:**

Inspection Date:	July 24, 2009		
Field Time:	10.3 hours	Dive Time:	2.5 hours
Waterway Velocity:	0 fps	Ambient Temp:	50°F
		Water Temp:	51°F
Maximum Water Depth:	23 ft @ SE Corner	Water Access:	Charter Boat
Underwater Visibility:	20 ft	Debris Removed:	No
ISUs Inspected:	345 piles + fender system	Traffic Control:	No

Inspection Personnel: Dive Supervisor/Diver: Jeffrey B. Rowe, P.E.  
Diver/Tender: Jeffery Zawacki  
Diver/Tender: Donald Roberts

**SIGNIFICANT FINDINGS SUMMARY:**

- Bent 10 Pile C is missing.
- There are deteriorated, damaged, and missing fender piles. The fender system is undersized for the type of vessel being used.
- There are random, isolated areas of deterioration of the support piles.
- The cross bracing is moderately to severely deteriorated, with the most severe deterioration near shore.
- The piles on shore are resting on bedrock and not rock-socked in.

**REPAIR RECOMMENDATIONS:**

- Confirm or perform a load rating analysis of Bent 10. Stripe or block access so that traffic travels over Piles A and B of Bent 10, until the pile can be replaced.
- Evaluate fender system to upgrade and accommodate vessels that currently dock at the pier or at a minimum replace missing and deteriorated fender piles.
- Replace or repair Pile 37-I
- Replace and repair cross bracing.
- Rock socket piles near shore into bedrock.
- In accordance with NBIS recommendations, the next routine underwater inspection for this structure should be conducted at an interval not to exceed 60 months.

Note: For abbreviation descriptions, see the Appendix.

## **1.0 INTRODUCTION**

### **1.1 Purpose and Scope**

Alaska Department of Transportation and Public Facilities Structure No. 1428 is near Port Lions in Kizhuyak Bay. On July 24, 2009, Infrastructure Engineers, Inc. performed a routine underwater investigation at the structure to evaluate the condition of Identified Substructure Units (ISUs) located in the water. This report includes a description of the structure and the method of investigation as well as a detailed description of the conditions noted. In addition, this report contains a condition assessment of the structural components evaluated and presents recommendations for structural repairs.

The scope of the investigation included a visual inspection of selected bents located in the water from the top connection to the channel bottom. Depth soundings were also taken around the bents to assist in the identification and documentation of scour conditions.

### **1.2 General Description of the Structure**

The Port Lions facility is a timber wharf designed by the Corps of Engineers circa 1960. The dock is triangular in shape with an approximately 254 ft of berthing face. Access is via a 300 ft long timber trestle. There are abandoned raceways for wet storage of crabs. The dock and trestle are supported by creosote treated timber piling set on approximate 10 ft centers. There are over 350 support pilings. Later loads are distributed by a system of cross-braced 4 in. by 1 ft timbers between the piling as well as a series of battered piles. The fender system consists of timber piling. There are 1 ft by 1 ft timber pile caps and 4 in. by 1 ft timber stringers under the deck placed in clusters and singles along the face of the dock. There is a timber pile wave barrier along the east side of the trestle and dock. Refer to Photographs 1 through 5 for overall views of the ferry terminal and Figures 1 and 2.

### **1.3 Method of Investigation**

A dive team of inspectors led by an Alaska-registered Professional Engineer-diver conducted the underwater investigation. Access to the ferry was obtained from the 27 ft boat rented from Captain, Cliff Zawacki.



## Alaska Department of Transportation and Public Facilities

The underwater investigation generally consisted of a Level I “swim-by” visual inspection of 100 percent of the inspected portions of the structure. A Level II visual/tactile inspection was performed on at least 10 percent of the ISUs, which included cleaning marine growth at the waterline, mid-depth, and channel bottom to facilitate an evaluation of the underlying surfaces. A Level III inspection consisting of timber cores were taken of a sample of piles. The cores were reviewed to determine if internal decay was present and observe the depth of penetration of protective treatment. All core holes were plugged with a treated hardwood dowels. Particular attention was given to any observed areas of excessive deterioration or apparent distress, and the condition of any repairs was noted.

An assessment of the waterway and channel bottom conditions in the vicinity of the structure was also made. The type of channel bottom material was noted, as well as the location and extent of any observed scour, riprap, or debris.

The location of the waterline with respect to a fixed reference on the structure was noted at the time of inspection. Depth soundings were taken around each ISU using the combination of lead lines, sounders, computer depth gauges, and range poles and were correlated to a fixed reference point on the structure or MLLW.

### 1.4 List of Agency Contacts

The following list of people was contacted prior to performing the inspection:

<b>Name</b>	<b>Agency</b>	<b>Time</b>	<b>Date</b>	<b>Comments</b>
Ken Linder	AMFS	1500	7/16/09	Discussed upcoming inspection – Ken made initial contact with each of the Ferry Terminal Facilities
Russell Gunderson	Town of Port Lions	0800	7/24/09	Called and left message concerning the inspection. – No ferries scheduled.

## 2.0 INSPECTION FINDINGS AND SPECIAL CONDITIONS

Based on tidal information obtained from NOAA, the waterline elevation at the time of the inspection varied from -2.1 MLLW to 3.5 MLLW. All elevations referenced throughout the report feet and are referenced to MLLW. The water under the structure flowed with negligible velocity during the inspection. Soundings indicated that the maximum water depth was 23 ft at SE Corner. Refer to Figure 1 for soundings around the structure.

The banks along Kizhuyak Bay in the vicinity of the ferry terminal were observed to be in stable condition. Embankment protection in the form of large riprap was observed along the shore at the ferry terminal. There was no sign of active erosion. Refer to Photograph 6 for a view of the embankment. The channel bottom consisted of sand and silt.

### **Timber Piles**

The piles were covered with light to moderate marine growth consisting of barnacles and vegetative growth from the channel bottom to the high watermark. There are several piles that have minor to moderate amounts of decay. The most severely deteriorated pile is 37-I, which has an area of decay near the channel bottom, 14 in. high by 8 in. wide, with 4 in. of penetration. Refer to Photograph 7. The majority of the piles are sound with no evidence of decay.

The inspection revealed that Pile 10-C is missing. This is the third pile in a four pile bent. The drift pin still extends out of the cap, evidence of where the pile attached to the cap. There was no sign of the pile and no evidence of the pile below water at the channel bottom. Also there was no sign of any structural overloading of the cap in the location of the missing pile. Refer to Photographs 8 and 9.

Several of the piles located at the shore are sitting on bedrock and not rock socketed in to the underlying strata. The piles are encased by a 55 gallon drum filled with concrete. There was no evidence of any lateral movement of the piles or reduction in the bearing support.

Moderate to severe deterioration of the cross bracing was observed. The deterioration is most severe near the shoreline where the structure is not protected from the timber wave screen. This deterioration consisted of broken or missing sections of the cross bracing and in some locations the cross bracing has become detached from the piles. The cross bracing located on the section of the pier that is protected by the wave screen had less severe

deterioration consisting of random disconnected braces and moderate decay. Refer to Photograph 10.

The preservative treatment in the piles is in good condition and protecting the piles. This was confirmed by numerous timber cores taken from random piles. The cores also did not reveal any internal decay which could be a sign of marine borer infestation.

### **Fender System and Wave Screen**

The timber fender system has areas of impact damage and decay. There are a number of fender piles that are missing or damaged. The timber wave screen has several missing and deteriorated timber piles; however, the overall effectiveness of the system has not been compromised. It continues to function as a protective, dampening system for the pier. Refer to Photographs 11 through 16.

## **3.0 EVALUATION AND ASSESSMENT**

Overall, the inspected bents of the structure were found to be in **fair** condition. The deterioration of the support piles is relatively minor considering the number and typical load path redistribution found in timber piles. However, with the exception of Bent 10, having one of four piles missing and an interior pile at that, the capacity of the bent has been significantly compromised. Even though the previous underwater report did not indicate the missing pile, a review of several cycles of topside reports indicated that this pile has been missing for a number of years. The pier is load restricted, which may be a result of the missing pile. It is recommended that the load restriction be reviewed and the capacity of Bent 10 be evaluated. Traffic may need to be routed over the fully supported section of the Bent until the pile can be replaced.

Lateral support of the bents near the shore has been comprised by the deterioration and damage of the cross bracing. The cross bracing should be repaired or replaced to restore lateral support to the structure.

The fender system is in need of repair. For the vessels that call on the port, the fender system is undersized; resulting in excessive lateral loading, impact damage, and premature failure of the fender system. Just replacing or repairing the existing damage will only provide a



## Alaska Department of Transportation and Public Facilities

temporary solution. A fender and mooring system needs to be designed to accommodate the larger vessels that dock at the pier.

The inspected bents are rated as **Good to Fair (Code 7 to 5)**, with the exception of Bent 10, which is rated as **Serious (Code 3)** in accordance with the FHWA National Bridge Inspection Standards (NBIS) coding information. Condition rating forms in both NBIS and Bridge Management System (BMS) formats for this ferry terminal are presented in the Appendix.

**UNDERWATER INSPECTION  
NATIONAL BRIDGE INSPECTION STANDARDS  
CONDITION RATING FORM**

Structure No.: 1428  
 Waterway: Kizhuyak Bay  
 Inspectors: Infrastructure Engineers, Inc.  
 Inspection Date: July 24, 2009

NOTE: Use all applicable condition definitions as defined by the National Bridge Inspection Standards (NBIS) coding information.

**CONDITION RATING**

Bent	Substructure Code (Item 60)	Channel and Channel Protection Code (Item 61)	Underwater Inspection Code (Item 92B)	Scour Critical Bridge Code (Item 113)
8	7	8	Y60	Determined by State
9	7	8	Y60	Determined by State
10	3	8	Y60	Determined by State
11	6	8	Y60	Determined by State
12	6	8	Y60	Determined by State
13	6	8	Y60	Determined by State
14	6	8	Y60	Determined by State
15	6	8	Y60	Determined by State
16	6	8	Y60	Determined by State
17	6	8	Y60	Determined by State
18	6	8	Y60	Determined by State
19	6	8	Y60	Determined by State
20	6	8	Y60	Determined by State
21	6	8	Y60	Determined by State
22	6	8	Y60	Determined by State
23	6	8	Y60	Determined by State
24	6	8	Y60	Determined by State
25	6	8	Y60	Determined by State
26	7	8	Y60	Determined by State
27	7	8	Y60	Determined by State
28	7	8	Y60	Determined by State
29	7	8	Y60	Determined by State

Alaska Department of Transportation and Public Facilities

Bent	Substructure Code (Item 60)	Channel and Channel Protection Code (Item 61)	Underwater Inspection Code (Item 92B)	Scour Critical Bridge Code (Item 113)
30	6	8	Y60	Determined by State
31	6	8	Y60	Determined by State
32	6	8	Y60	Determined by State
33	6	8	Y60	Determined by State
34	6	8	Y60	Determined by State
35	6	8	Y60	Determined by State
36	6	8	Y60	Determined by State
37	5	8	Y60	Determined by State
38	6	8	Y60	Determined by State
39	6	8	Y60	Determined by State
40	6	8	Y60	Determined by State
41	6	8	Y60	Determined by State
42	6	8	Y60	Determined by State
43	6	8	Y60	Determined by State
44	6	8	Y60	Determined by State
45	6	8	Y60	Determined by State
46	6	8	Y60	Determined by State
47	6	8	Y60	Determined by State

Bridge is scour critical because abutment or pier foundation is rated as unstable due to observed scour at bridge site: \_\_\_\_\_ Yes                       No

(Note: Bridges may also be scour critical if abutment or pier foundations are rated as unstable due to scour potential as determined by a scour evaluation study.)

REMARKS: As the result of an underwater inspection, for Item 113, a structure may only be rated as 0, 1, or 2. Other ratings (N/A), will be assigned as the result of an analysis performed by the owner.



**UNDERWATER INSPECTION  
BRIDGE MANAGEMENT SYSTEM  
CONDITION REPORT FORM**

STRUCTURE NO.: 1428  
 WATERWAY: Kizhuyak Bay  
 INSPECTORS: Infrastructure Engineers, Inc.  
 INSPECTION DATE: July 24, 2009

NOTE: Element condition ratings are assigned in accordance with the AASHTO "Guide for Commonly Recognized (CoRe) Structural Elements," dated December 1997.

**BMS CONDITION REPORT**

Element	Total Quantity	Unit	Quantities in Condition State				
			1	2	3	4	5
CoRe Elements (Deck/Super/Sub)							
<b>206 Timber Column or Pile Extension</b>	<b>345</b>	<b>EA</b>	<b>339</b>	<b>4</b>	<b>1</b>	<b>1</b>	
Smart Flags							

**Daily Underwater Inspection Log**

<b>Date:</b> July 24, 2009	<b>Client:</b> AKDOT&PF
<b>Job Number:</b> 09024AK00.01-9	<b>Contact:</b> Ken Linder
<b>Structure Number:</b> 1428	<b>Lead Diver:</b> Jeffrey B. Rowe P.E.
<b>Location:</b> Kizhuyak Bay	<b>Support Diver:</b> Jeffery Zawacki
<b>Weather:</b> Cloudy	<b>Support Diver:</b> Donald Roberts
<b>Flow:</b> 0 fps	
<b>Sea State:</b> Calm	
<b>Water Temperature:</b> 51°F	
<b>Underwater Visibility:</b> 20 ft	
<b>Dive Vessel:</b> Charter Boat	

Dive No.	Max. Depth	Leave Surface	Leave Bottom	Total Bottom Time
1	23	10:25	13:05	2.5 hours

Time	Event
6:30	Left Hotel for Boat
6:55	Underway to Port Lions
7:30	Called Russell Gunderson with Port Lions. Left message
9:00	Arrived in Port Lions
9:10	Surveyed Ferry Terminal - No boats tied up
9:15	Began inspection of Port Lions Ferry Terminal - Structure # 1428
9:30	Waded Piers 8 - 20 at low tide
10:05	Began dive operations
12:20	Took core samples and underwater photos
13:05	Dive operations complete
13:20	Took topside photos and overall photos
14:15	Inspection complete - head back to Kodiak
15:30	Rough seas
17:15	Back in Kodiak (unload some gear)
17:55	Back at Hotel



**Photograph 1. Overall View of Dock**



**Photograph 2. View Wave Break – East Face**





**Photograph 3. View of Inside Face – South and West sides**



**Photograph 4. Typical Bent**

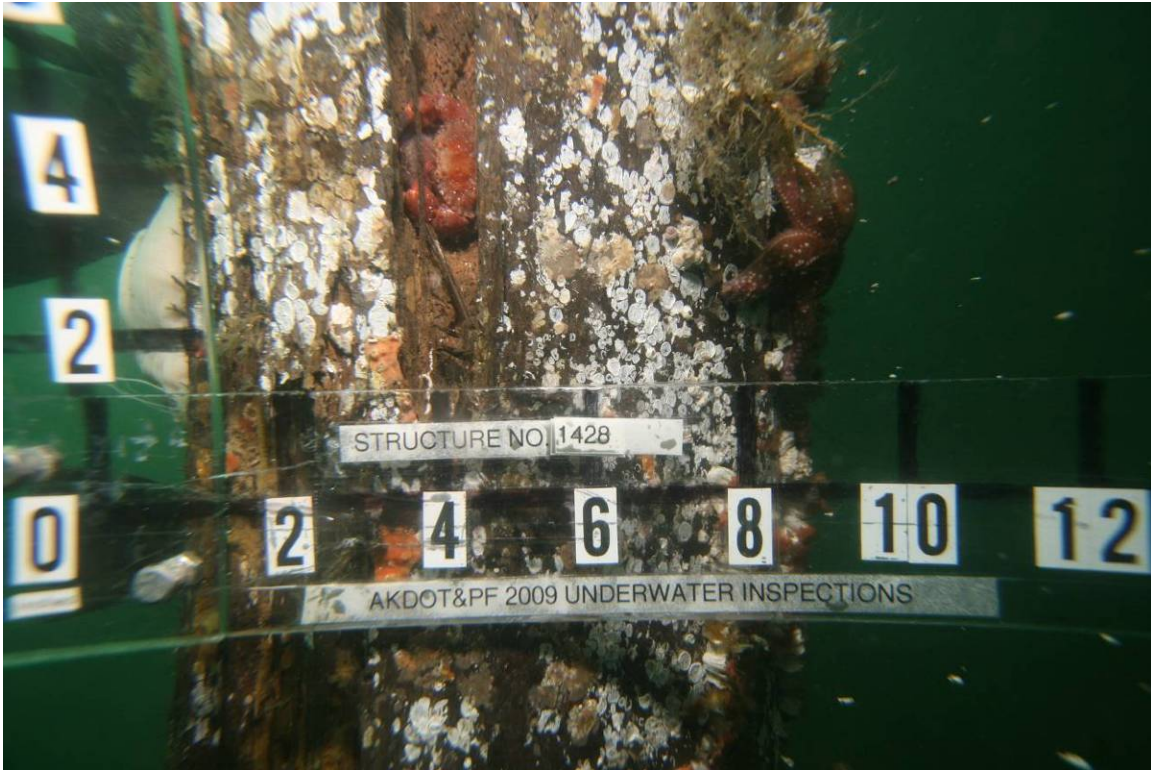


**Photograph 5 – Typical Timber Core**



**Photograph 6. Bent 7, View of Embankment**





**Photograph 7. Pile 37-I, Decay**



**Photograph 8. Bent 10 – Pile C Missing**



**Photograph 9. Bent 10 – Pile C Missing – Cap with Drift Pin**



**Photograph 10. View Typical Cross Bracing Deterioration**





**Photograph 11. Pile 35-J, Timber Fender Deterioration**



**Photograph 12. Timber Fender N Broken**

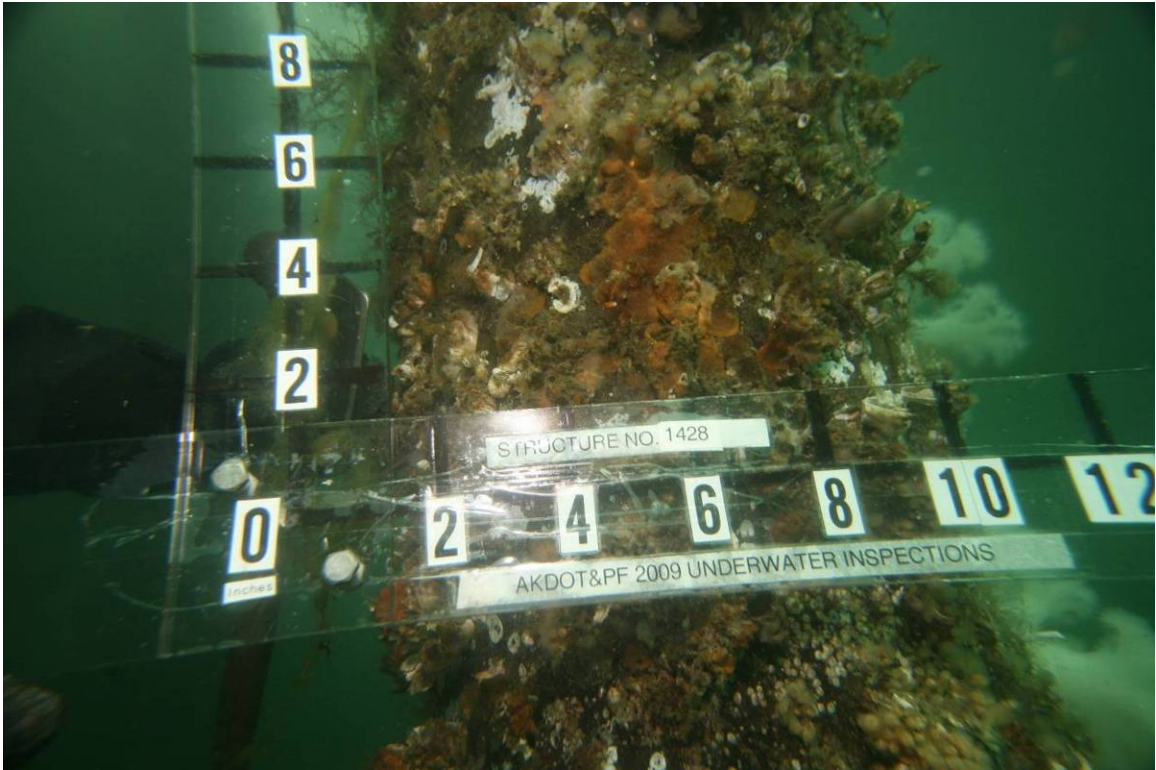




**Photograph 13. Timber Fender O Missing**



**Photograph 14. Wave Screen Missing Pile**



**Photograph 15. – Typical Marine Growth**



**Photograph 16. – Typical Level II – Cleaning**



**Abbreviations**

AASHTO – American Association of State Highway and Transportation Officials

AKDOT & PF – Alaska Department of Transportation and Public Facilities

BMS – Bridge Management System

CoRe – Commonly Recognized Elements of Bridge Construction

FHWA – Federal Highway Administration

fps – Feet per second

ft – Foot or Feet

in. – Inch or Inches

ISU – Identified Substructure Units

MLLW – Mean Lower Low Water

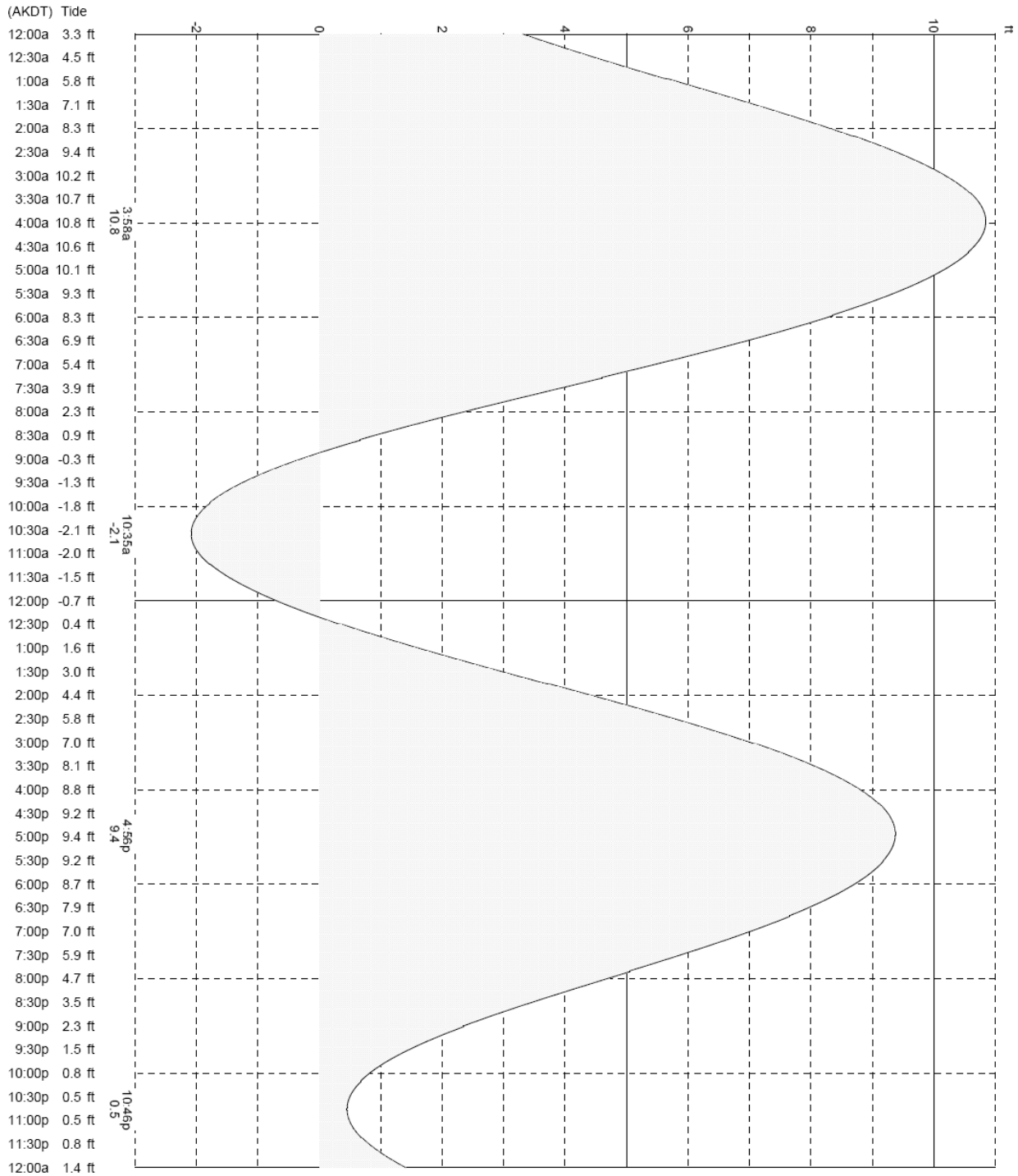
NBIS – National Bridge Inspection Standards

NOAA – National Oceanic and Atmospheric Administration

No. – Number

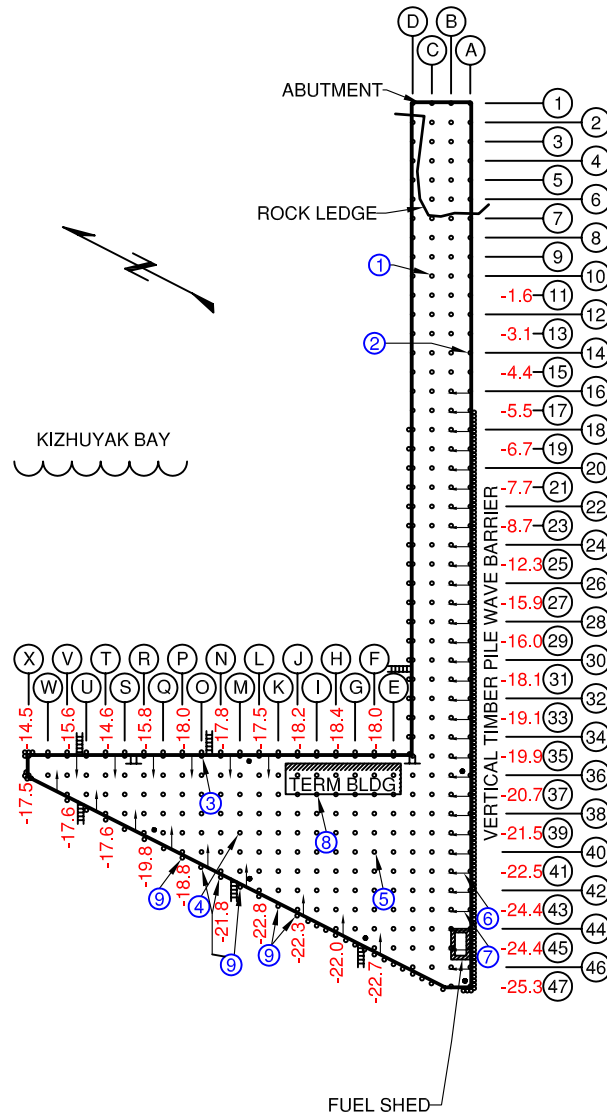
P.E. – Registered Professional Engineer

<b>Tides: Kizhuyak Bay</b>		
based on Kodiak, Womens Bay, Alaska (NOAA)		
57° 49' 12" N 152° 54' W		
<b>Friday, July 24, 2009</b>		
<b>Average Tides</b> Mean Range: 7.6 ft MHHW: 9.6 ft Mean Tide: 4.9 ft		<b>Daily Highs &amp; Lows</b> 3:58a 10.8 ft High 10:35a -2.1 ft Low 4:56p 9.4 ft High 10:46p 0.5 ft Low



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**INSPECTION NOTES:**

- ALL PILES HAVE HEAVY MARINE GROWTH CONSISTING OF BARNACLES FROM THE HIGH WATERMARK TO THE CHANNEL BOTTOM.
- THE MAJORITY OF THE CROSS BRACING IS BROKEN OR MISSING.
- ① PILE MISSING.
- ② FENDER PILE IS SLANTING INWARD. POSSIBLE IMPACT DAMAGE.
- ③ PILE HAS 1/4 IN. WIDE VERTICAL CHECK ALONG EXTENDING THE ENTIRE LENGTH OF THE PILE.
- ④ AN AREA OF SURFACE DECAY WITH 1/2 IN. OF PENETRATION WAS OBSERVED AT 15 FT BELOW THE WATERLINE.
- ⑤ A 5 FT LONG CHECK WITH 1 IN. OF PENETRATION WAS OBSERVED 17 FT BELOW THE WATERLINE.
- ⑥ A 2 FT LONG CHECK WITH 1/2 IN. OF PENETRATION WAS OBSERVED ON THE BATTER PILE AT THE CHANNEL BOTTOM.
- ⑦ A SMALL CHECK WAS OBSERVED ON THE BATTER PILE NEAR THE CHANNEL BOTTOM.
- ⑧ AN AREA OF DECAY MEASURING 14 IN. HIGH BY 8 IN. WIDE WITH 4 IN. OF PENETRATION WAS OBSERVED ON THE BATTER PILE AT THE CHANNEL BOTTOM.
- ⑨ BROKEN FENDER PILE.

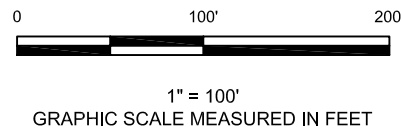
**LEGEND:**

-14.5 CHANNEL BOTTOM ELEVATIONS PARALLEL TO STRUCTURE.

① INSPECTION NOTE

**GENERAL NOTES:**

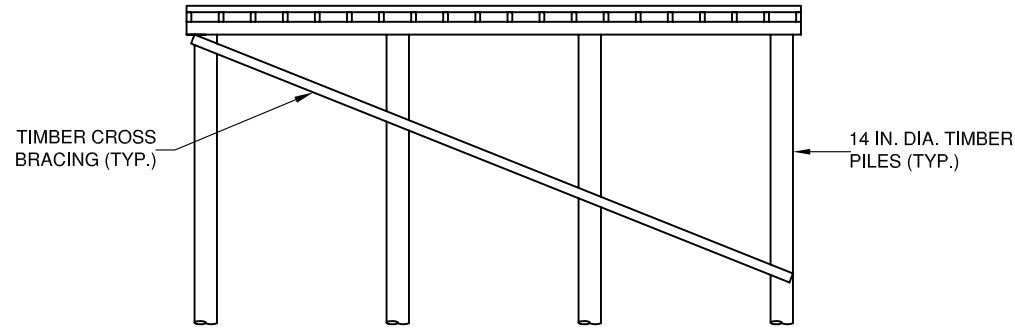
1. AT THE TIME OF INSPECTION, ON JULY 24, 2009, THE WATERLINE ELEVATION VARIED FROM -2.1 TO 3.5 BASED ON THE TIDAL DATA OBTAINED FROM NOAA.
2. SOUNDINGS AROUND THE DOCK ARE CHANNEL BOTTOM ELEVATIONS IN FEET REFERENCED TO MLLW.
3. THIS FIGURE WAS DEVELOPED FROM FIELD NOTES AND PREVIOUS INSPECTION REPORTS.



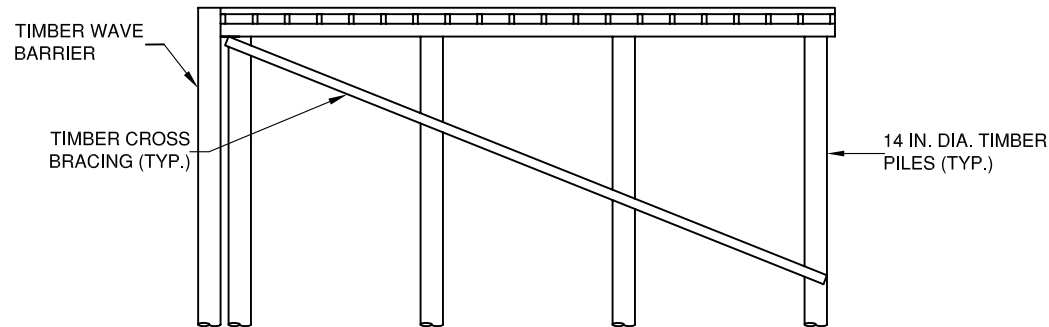
PREPARED BY:  INFRASTRUCTURE ENGINEERS, INC.	ALASKA DOT & PF PORT LIONS FERRY TERMINAL STRUCTURE NO. 1428	DATE JULY 2009
	PLAN VIEW	FIG NO. 1

**INSPECTION NOTES:**

- ALL PILES HAVE HEAVY MARINE GROWTH CONSISTING OF BARNACLES FROM THE HIGH WATERLINE TO THE CHANNEL BOTTOM.
- THE MAJORITY OF THE CROSS BRACING IS BROKEN OR MISSING.



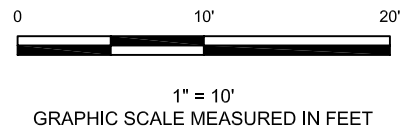
**SIDE ELEVATION**  
BENTS 1 THRU 17



**SIDE ELEVATION**  
BENTS 18 THRU 35

**GENERAL NOTES:**

1. AT THE TIME OF INSPECTION, ON JULY 24, 2009, THE WATERLINE ELEVATION VARIED FROM -2.1 TO 3.5 BASED ON THE TIDAL DATA OBTAINED FROM NOAA.
2. SOUNDINGS AROUND THE DOCK ARE CHANNEL BOTTOM ELEVATIONS IN FEET REFERENCED TO MLLW.
3. THIS FIGURE WAS DEVELOPED FROM FIELD NOTES AND PREVIOUS INSPECTION REPORTS.



PREPARED BY:  INFRASTRUCTURE ENGINEERS, INC.	ALASKA DOT & PF PORT LIONS FERRY TERMINAL STRUCTURE NO. 1428	DATE JULY 2009
	TYPICAL BENT ELEVATIONS	FIG NO. 2

# CITY OF PORT LIONS

## RESOLUTION # 11-4-R

### A RESOLUTION OF THE CITY OF PORT LIONS AMENDING THE CAPITAL IMPROVEMENT PROJECT LIST FOR THE FISCAL YEAR 2011

WHEREAS, a Capital Improvement Project List has been prepared by the City of Port Lions for the fiscal year 2011, and

WHEREAS, at the Special City Council meeting held December 5, 2010, the Port Lions City Council adopted Resolution 10-21-R, an Amended Capital Improvement Project List for FY2011;and

WHEREAS, the document entitled "City of Port Lions, Resolution NO 10-17-R, A Resolution Of the City of Port Lions Adopting a Capital Improvement Program for the Fiscal Year FY 2011" was adopted by a duly constituted quorum of the Port lions City Council.

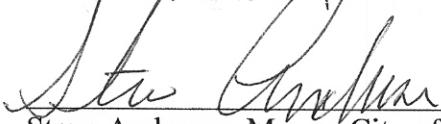
NOW THEREFORE BE IT RESOLVED, that Resolution NO 10-21-R is amended as follows:

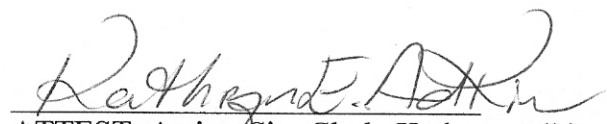
	Amended 12/5/2010	Amended 2/22/11
1. City Dock and Ferry Terminal Replacement	\$4,300,000.00	\$8,000,000.00
2. Small Boat Harbor Replacement Phase II	\$4,000,000.00	Remains the same
3. Port Lions Causeway	\$25,000.00	Remains the Same
4. Rock screen and Conveyor	\$100,000.00	Remains the Same
5. Excavator	\$85,000.00	Remains the Same
6. Native Village of Port Lions Building	\$7,000,000.00	Remains the Same
7. Harbor Water Main	\$1,000,000.00	Remains the Same
8. Municipal Building	\$300,000.00	Remains the Same
9. City Maintenance Shop	\$200,000.00	Remains the Same
10. Roads Upgrade	\$500,000.00	Remains the Same
11. New Subdivision	\$800,000.00	Remains the Same
12. Search & Rescue Skiff	\$100,000.00	Remains the Same

BE IT FURTHER RESOLVED that the Mayor is hereby instructed to advise the Governor of the State of Alaska, The Alaska State Legislators representing Port Lions, the Kodiak Island Borough Assembly and any applicable State or Federal Agencies of the Capital Improvement Program adopted by the Port Lions City Council.

This Resolution becomes effective immediately upon its adoption by a duly constituted quorum of the Port Lions City Council.

**PASSED AND APPROVED** by the City Council of the City of Port Lions, Alaska, this 22<sup>nd</sup> day of February 2011.

  
Steve Andresen, Mayor, City of Port Lions

  
ATTEST: Acting City Clerk, Kathryn Adkins