

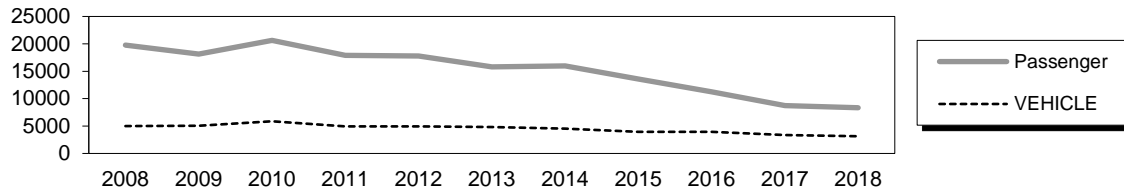
Petersburg Ferry Terminal

1100 South Nordic Road

Owner: State of Alaska

Terminal Manager: Richard Patteson – 907-772-3855

Terminal Description: The Petersburg Ferry Terminal is a side-berth facility and consists of staging and parking areas, terminal building, emergency generator facilities, approach span, transfer bridge, covered walkways, and eight steel mooring structures. The Petersburg facility is located in the Wrangell Narrows, about ½ mile south of town. The past 10 years of total passenger and vehicle traffic for Petersburg is shown below.



The most recent above water survey was completed on June 28, 2017. The most recent fracture critical inspection occurred on August 12, 2018. The most recent underwater inspection occurred on August 5, 2016.

Vessels	
Name	Berthing, Alignment
Taku / LeConte / Mat / Mal / Columbia	Port/ Starboard
Kennicott	Port
FVF	Starboard

Tidal Data (MLLW 0.0 feet)	
EHW	20.5
MHHW	16.4
MHW	14.8
ELW	-4.5

Terminal Building	
Year Built:	1982 (rebuilt and expanded in 2000)
Square Footage:	2078 s.f.
Heating System:	Furnace
Fuel Storage:	UST
Fire Protection:	Sprinkler / Alarm
Condition:	Good

Generator & Building	
Building / Generator:	1986
Square Footage:	120 s.f.
Heating System:	Electric
Fuel Storage:	UST
Fire Protection:	Halon
Condition:	Good

Uplands	
Short-Term Parking:	15 cars
Long-Term Parking:	N/A
Staging Area:	1375 lineal feet, 10 lanes
Paint Striping:	Yes
Driving Surface:	Asphalt

Vehicle Transfer Bridge - #0802	
Type:	16' x 140' twin box beam
Year Built:	1985
Shoreward support:	Steel approach bent
Seaward support:	Steel Support Float
Coating:	Wasser Paint
Pedestrian Access:	Concrete 4' wide on bridge
Lighting:	None
Condition:	Good
Load Posting Sign:	N/A
Original Design Load:	HS 20-44

Bridge Approach Trestle	
Type:	25' x 360' Pile-supported, Open grate deck
Year Built:	1986
Shoreward support:	Steel Beam/Driven Piling
Seaward support:	Steel Beam/Driven Piling
Pedestrian Access:	Covered walkway, guardrail separation
Anodes on piles:	No
Condition	Good

Bridge Support Float	
Type:	24' x 50' Steel Pontoon
Year Built:	1986
Ballasted:	Yes
Ramp lift:	Hydraulic/Block & Cable
Apron lift:	Hydraulic/Block & Cable
Anodes:	Yes, but poor reading
Condition:	Good

Utilities		
	at terminal	at ramp
Electrical:	Yes, city & backup power	
Water:	Yes	No
Sewer:	Yes	No
Telephone:	Yes	Yes
Cable TV:	No	No
Fuel:	Yes	No
Wireless Bridge:	Yes	–

Dolphins							
Dolphins	Dolphin Piles	Fender Support	Fender Face	Anodes	Built	Cond.	Notes
W4	3B, 3V	Hanging	UHMW	Yes	2013	New	
W3	2B, 2V	Hanging	UHMW	Yes	2013	New	Light Pole
W2	2B, 1V	4V	Ekki Timber	Yes	1986	Fair	
W1	2B, 1V	4V	Ekki Timber	Yes	1986	Fair	Windsock & light pole
WRS	2B, 2V	-	-	Yes	1986	Fair	
ERS	2B, 2V	-	-	Yes	1986	Fair	
E1	2B, 1V	4V	Ekki Timber	Yes	1986	Fair	Light pole
E2	2B, 1V	4V	Ekki Timber	Yes	1986	Fair	
E3	2B, 2V	Hanging	UHMW	Yes	2013	New	Light pole
E4	3B, 3V	Hanging	UHMW	Yes	2013	New	Red navlight

LEGEND

V = Vertical Steel Pipe Piling

H = Vertical Steel H-Piling

ERS = East Bridge Float Support Restraint Structure

EFP = East Float Platform

Catwalks / Gangways								
#	From Struct.	To Struct.	Length / Style / Main Members	Built	Safety Chains?	Cond.	Lighting	
C1	W4	W3	100' / Catwalk / 10"x10" Tube Girders	1986	Yes	Good	Jelly Jars	
C2	W3	W2	79' / Catwalk / 10"x10" Tube Girders	1986/ 2013	Yes	Good	Jelly Jars	
C3	W2	W1	33' / Catwalk / 10"x10" Tube Girders	1986	Yes	Good	Jelly Jars	
G1	W1	WFP	35' / Gangway / Pony truss	1986	Yes	Good	Jelly Jars	
G2	EFP	E1	35' / Gangway / Pony truss	1986	Yes	Good	Jelly Jars	
C4	E1	E2	33' / Catwalk / 10"x10" Tube Girders	1986	Yes	Good	Jelly Jars	
C5	E2	E3	79' / catwalk / 10"x10" Tube Girders	1986/ 2013	Yes	Good	Jelly Jars	
C6	E3	E4	83' / Catwalk / 10"x10" Tube Girders	1986	Yes	Good	Jelly Jars	

Terminal Projects			
Year	Project #	Project Name	Description
1963	F-095-6(1)	Petersburg Ferry Terminal	Original ferry terminal construction consisting of uplands fill for parking & staging area; waiting shelter; electrical and lighting; timber trestle approach span.
1963	N/A	Petersburg Ferry Terminal	Constructed timber transfer bridge, mooring dolphins and dock.
1976	6-75157	Petersburg Ferry Terminal Dolphins	Constructed two steel pile mooring dolphins and two steel catwalks.
1986	F-095-4(15)	Petersburg Ferry Terminal	This project re-aligned the mooring and vehicle transfer marine structures, including the replacement of all timber structures and the existing dock with a new steel approach trestle, steel transfer bridge & steel pontoon, steel mooring structures and steel catwalks.
2000	75382 & 75273	Petersburg Terminal Building Expansion & Uplands Improvements	Replaced the roof, expanded the footprint by 45% and made several other upgrades to the terminal building. Re-paved the uplands and installed new concrete curb & gutter and sidewalk.
2013	69422	Petersburg Ferry Terminal Improvements	Replaced the end dolphins, W3-4 & E3-4, modified catwalks, replaced catwalk lighting, installed anodes on all pile-supported structures.

Observations

1. The staging area is paved and illuminated. Neighboring development has crowded the AMHS facility to the point that the staging area can now only be expanded by purchasing additional property and by building onto the existing wetlands adjacent to the terminal. The Terminal Manager reports that additional parking space is required. The staging area and illumination were upgraded as part of the terminal building expansion project completed in 2000.
2. The original 1,432 square foot terminal building was constructed in 1982 and expanded to 2078 square feet in 2000. The terminal building is in good condition. The interior and exterior of the terminal building were completely redone as part of the building expansion. The facility now meets ADA requirements. The restrooms and office area were expanded. The heating system and fuel storage tank replaced. A fire alarm and sprinkler system were installed. A new roof was put on the structure. New sidewalks were installed around the building. New electrical, water and sewer utilities were installed. The terminal has a separate generator building and storage building for equipment. The generator and storage buildings are in good condition.
An area drain, in pavement near the beginning of the approach trestle is undermined. Pavement is eroded around the frame, along with several other potholes which present a driving hazard.
3. A 360'-long approach trestle connects the transfer bridge to shore. Overall, the trestle is in fair condition. At Pier 7, an anchor bolt is bent and corroding, concrete has spalled around the surface of the pier cap & anchor bolt on the eastern-most girder. The timber backwall is deteriorating at the shoreside transition. The galvanized coating has 50% remaining on the steel wheel guard, along the topside deck. The steel form pan for the concrete in-fill walkway is corroding, along with steel utility conduit hanging below.
4. The transfer bridge, built in 1986, has a hydraulically operated intermediate ramp and apron. A new paint coating was applied in 1997. A crack (approximately four inches long) in the bridge's wheel guard located near mid-span on the bridge has been repaired. Corrosion from the steel pan stay-in-place form for the concrete in-filled walkway, on the underside of the bridge deck, has leaked onto the

top flange of Stringer 1. The coating has failed, laminating corrosion & minor section loss covers the top flange of Stringer 1.

Observations (continued)

- The shore end of the bridge is supported on a concrete cap on steel pipe piles. The steel piling has minor corrosion near the underside of the concrete cap, which has minor spalling in some areas around the pile/cap surface. The bridge bearings appear to be in good condition. The expanded metal grating on the bridge apron has been damaged and several areas are missing. The girder access hatches are missing bolts, and need a neoprene gasket to seal off precipitation.

The underside of the bridge reveals widespread coating failures, with an estimated 40% painted surface remaining. The coating has failed within the wheel path of the open-grate decking. Similar to the approach trestle, the utility conduit hanging below the concrete in-fill decking is corroding. Stringer 1 and the girder web in this area has 100% coating failure with heavy laminating corrosion on the top flange of the stringer. There is miscellaneous paint failure on the seaward bridge support strut, likely accelerated from regular power washing.

- A roller bearing on the east gangway support platform has damaged bar grating, due to improper orientation of the grating bear bars.
- Dolphins W3-4 and E3-4 were replaced in 2013. W4 & E4 are large lead-in dolphins with curved fender panels to accept ship berthing contact from various angles to the fenderline.

Dolphins E3 and W3 receive heavy mooring (line) loads because of the tidal currents in Wrangell Narrows. In addition, during the fishing season many fishing vessels anchor off the ends of the facility and the ferries must approach the berth at a steep angle.

- Steel pipe hawse rail extensions have impacted and bent the middle rail of several of the catwalks. The most recent underwater inspection report revealed that all 1986-era mooring dolphin pipe piling have lost 80-90% of their galvanized coating. Overall these pipe piling have only experienced a minor loss of section, but this will accelerate once the coating is fully depleted. The master links are corroding on the horizontal chains between fender and dolphin caps. New 100# bar anodes were installed on all pile-supported structures in 2013, but cathodic protection readings are below -0.8V on existing dolphins (E1-2, W1-2) and only -0.8V on average for new dolphins (E3-4, W3-4). This is likely because new bar anodes are hanging from cables and laying covered in mud on the shore bottom. When the surface of an anode is not exposed to seawater, it is not electrically active.

Depth to shore bottom leadline measurements taken along the dolphin fenderline on the most recent above water survey ranged from 21 to 28 feet below MLLW.

The mooring structures are roosts for a large seabird population. Bird debris is deposited on the top of the pile caps, walkways, pontoon, and bridge. Expanded metal grating has been installed on the pile caps between dolphins in an attempt to improve traction, but this also provides a sanctuary for moss to grow. The combination of bird guano and moss causes the pile caps to become slippery.

- We could not visually inspect the gangway hanger brackets/pins due to lack of clearance between pin & plate.
- There is a 1.5" long crack in the northwest corner of the bridge pontoon deck. The paint coating is failing on the sides of the pontoon float. The top of the pontoon float requires a power washing. The galvanized coating on the restraint dolphins is failing in the splash/tidal zone.

Inspection Summary		
Structure	Priority	Recommendations
<i>Category I - Safety Repairs</i>		
Nothing required.		
<i>Category II - Rehabilitation Work</i>		
Transfer Bridge	1	Program a project to re-paint the entire bridge.
Bridge float	2	Patch the hole in the deck of the bridge support float.
Approach	3	Replace broken anchor bolt on West trestle girder at bridge abutment.
Gangways	4	Replace the gangway hanger pins.
Dolphin anodes	5	Adjust the length of cable supporting anodes so they are hanging vertically in the water.
Apron	6	Repair and replace the missing sections of expanded metal grating on the apron.

Inspection Summary (cont'd.)		
Structure	Priority	Recommendations
<i>Category II - Rehabilitation Work</i>		
Miscellaneous	7	Cut the hawse rail extensions back, or bend them, to avoid impacting the catwalk railing. Replace the master links on the horizontal chains between fender and dolphin caps. Pressure wash the dolphin caps more frequently.
Uplands	8	Adjust the elevation of the area drain at the head of the approach trestle.
Gangways	9	Reinstall bar grating that supports East gangway to provide proper orientation of bearing bars with relation to the gangway roller.
<i>Category III - Upgrades Needed</i>		
Uplands	10	Bring UST into compliance with current ADEC regulations. Review the need for additional parking.