

GENERAL LAYOUT
AUKE BAY
15

Auke Bay East Berth

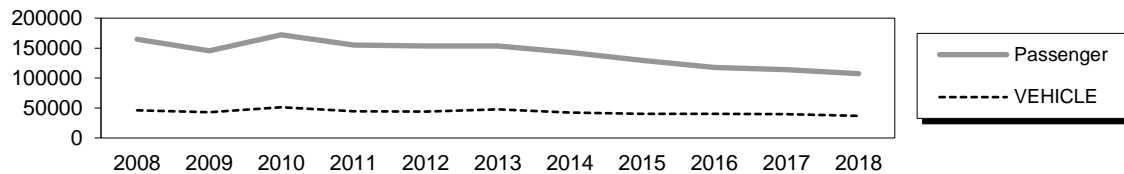
13.8 Mile Glacier Highway

Owner: State of Alaska
Terminal Manager: Lisa Moore – 907-465-8853

Terminal Description: The Juneau Auke Bay terminal has three active berths and has the highest traffic volumes of all AMHS facilities. This terminal often accommodates three vessels simultaneously.

Auke Bay East Berth is a side-loading facility consisting of a transfer bridge, steel support float, six steel pile dolphins and catwalks/gangways for line-handling access. This facility was constructed in 1982 to handle mainline vessels.

Auke Bay's past 10 years of total passenger and vehicle traffic for all berths is shown below.



The most recent above water survey was completed on August 22, 2017. The most recent fracture critical & underwater inspections occurred on August 3, 2016.

| Vessels | |
|-------------|---------------------|
| Name | Berthing, Alignment |
| All Vessels | Port/Starboard |

| Tidal Data (MLLW 0.0 feet) | |
|-------------------------------|------|
| EHW | 22.0 |
| MHHW | 15.9 |
| MHW | 15.0 |
| ELW | -6.0 |

| Terminal Building | |
|-------------------|--------------|
| Year Built: | 1982 |
| Square Footage: | 4879 s.f. |
| Heating System: | Boiler |
| Fuel Storage: | UST |
| Fire Protection: | Remote Alarm |
| Condition: | Good |

| Generator & Building | |
|-----------------------|--------------|
| Building / Generator: | 1988 |
| Square Footage: | 1118 s.f. |
| Heating System: | Electric |
| Fuel Storage: | N/A |
| Fire Protection: | Remote Alarm |
| Condition: | Good |

| Uplands | |
|---------------------|------------------|
| Short-Term Parking: | 151 cars, 6 HCP |
| Long-Term Parking: | 30 |
| Staging Area | 3770 lineal feet |
| Paint Striping: | Yes |
| Driving Surface: | Asphalt |

| Utilities | | |
|------------------|--------------------------|--------|
| | @ terminal | @ ramp |
| Electrical: | Yes, city & backup power | |
| Water: | Yes | Yes |
| Sewer: | Yes (City) | No |
| Telephone: | Yes | Yes |
| Cable TV: | No | No |
| Fuel: | UST | Yes |
| Wireless Bridge: | Yes | Yes |

| Bridge Support Float | |
|----------------------|-------------------------|
| Type: | 24'x60' Steel Pontoon |
| Year Built: | 1995 |
| Ballasted: | Yes |
| Ramp lift: | Hydraulic/Block & Cable |
| Apron lift: | Hydraulic/Block & Cable |
| Anodes: | Yes |
| Condition: | Fair |

| Vehicle Transfer Bridge - #1474 | |
|--|---|
| Type: | 16' x 140' twin box beam |
| Year Built: | 1982 |
| Shoreward support: | Steel Beam/ Driven Piling |
| Seaward support: | Steel Support Float |
| Coating: | Wasser Paint |
| Pedestrian Access: | Concrete 4' wide on bridge |
| Lighting: | Jelly Jars on bent posts, both girders |
| Condition: | Fair |
| Load Posting Sign: | N/A |
| Original Design Load: | HS 20-44 |

| Dolphins | | | | | | | |
|-----------------|----------------------|-----------------------|--------------------|---------------|--------------|--------------|-------------------------------|
| Dolphins | Dolphin Piles | Fender Support | Fender Face | Anodes | Built | Cond. | Notes |
| W2 | 2B, 1V | 4V | Sitka Spruce | Yes | 1982 | Fair | Added anodes all dolphins '15 |
| W1 | 2B, 1V | 4V | Sitka Spruce | Yes | 1982 | Fair | |
| E1 | 2B, 1V | 4V | Sitka Spruce | Yes | 1982 | Fair | |
| E2 | 2B, 1V | 4V | Sitka Spruce | Yes | 1982 | Fair | |
| E3 | 2B, 1V | 4V | Sitka Spruce | Yes | 1982 | Fair | |
| E4 | 3B, 3V | Chains | UHMW | Yes | 2015 | New | Light Pole & Nav Light |
| EG | 1B, 1V | - | - | Yes | 1995 | Good | |
| WG | 1B, 1V | - | - | Yes | 1995 | Good | |
| WR | 2B, 2V | - | - | Yes | 1982 | Fair | |
| ER | 2B, 2V | - | - | Yes | 1982 | Fair | |

LEGEND

ER = East Bridge Support Float Restraint Dolphin

V = Vertical Steel Pipe Piling

G1 = Gangway

WG = West Gangway Support Dolphin

B = Battered Steel Pipe Piling

EFP = East Float Platform

| Catwalks / Gangways | | | | | | | | |
|----------------------------|--------------------|------------------|--|--------------|-----------------------|--------------|-----------------|--------------------------------|
| # | From Struc. | To Struc. | Lenth / Style / Main Members | Built | Safety Chains? | Cond. | Lighting | Notes |
| C1 | E4 | E3 | 49' / Catwalk / 10"x10" Tube Girders | 1982 | Yes | Good | Jelly Jars | Shortened '15 |
| C2 | E3 | E2 | 108' / Catwalk / 10"x10" Tube Girders | 1982 | Yes | Good | Jelly Jars | |
| C3 | E2 | E1 | 58' / Catwalk / 10"x10" Tube Girders | 1982 | Yes | Good | Jelly Jars | |
| C4 | C3 | EG | 15' / Catwalk / Single 16x8 Tuber Girder | 1982 | No | Good | Jelly Jars | |
| G1 | EG | EFP | 50' / Gangway / C 6x10.5 Bottom Chord | 1982 | Yes | Good | No | Safety chain is poorly welded. |
| G2 | WFP | WG | 50' / Gangway / C 6x10.5 Bottom Chord | 1982 | Yes | Good | No | Safety chain is poorly welded. |
| C5 | WG | C6 | 15' / Catwalk / Single 16x8 Tuber Girder | 1982 | No | Good | Jelly Jars | |
| C6 | W1 | W2 | 64' / Catwalk / 10"x10" Tuber Girders | 1982 | Yes | Good | Jelly Jars | |

| Terminal Projects | | | |
|--------------------------|------------------|--|--|
| Year | Project # | Project Name | Description |
| 1982 | F-093-2(2) | Auke Bay Ft Modifications | Construction of new terminal structures. Uplands consisted of existed fill between East and West berths. |
| 1982 | H-78002 | Auke Bay Marine Terminal Building | Construction of new terminal building. |
| 1995 | 75265 | Auke Bay FT Pontoon Upgrade | Replaced bridge support float and restraint dolphins, recoated the transfer bridge, intermediate ramp and catwalks, relocated gangways and 15' catwalks. |
| 1998 | 75227 | Auke Bay Staging Area | Uplands extension consisting of staging area for East berth, extended between berths, and West berth staging area. Also constructed: employee parking area across the street; storage building; mods to electrical building; waiting shelter; upgrades to all electrical utilities; waterline & sewer extension; East ramp waterline improvements; improvements to Glacier Highway in front of facility. |
| 2004 | 68021 | Auke Bay East Stern Berth | Construction of new transfer bridge, bridge support float, floating fenders, gangway, catwalk, and approach with a covered walkway. |
| 2005 | 68318 | Auke Bay East Stern Berth Fender Modifications | Modified existing floating rubber fenders at Auke Bay East stern berth. |
| 2008 | 73651 | Auke Bay East & West Terminal Repairs | This project rehabilitated the fender support piles at all mooring dolphins on East Berth. Work also included repairs to the seaward bridge bearing plates on East and West Berths, installation of anodes on all East Berth pipe pile groups, and installation of UHMW line guards on dolphin E1 at both East and West berths. |
| 2015 | 67463 | Auke Bay Ferry Terminal Improvements | Removed dolphin E4, disconnected from dolphin W1 on Stern Berth. Built new 6-pile dolphin E4, installed new piles on dolphin W1 |

Observations

1. The terminal building is adequately sized for current terminal operations. ADA compliance modifications were completed in 1997. Water and sewer modifications were completed in the 1998 upgrade project. A new sewer septic system was installed, the public address system was replaced and the building was re-keyed. The terminal building roof needs to be replaced as roof penetrations have leaked, and the roof condition needs to be inspected annually. The fire alarm system was replaced in 2004 by Alcan Electric. The terminal building heating system controls were replaced in 2007 with Direct Digital Controls (DDC). The existing boiler needs replacement. The interior of the building is in fair condition. The carpet was replaced in 2008. The restrooms & ticket counters are in need of being renovated.
2. The terminal facility uplands were modified in 1998 to improve traffic flow, signage, and site illumination. The eastern waiting shelter was reconstructed and the size of onsite warehousing was increased. The parking areas were modified to create distinctly separate eastern and western staging areas, short term, long term, commercial and employee parking areas.
Traffic flow out of the terminal staging area remains a concern for AMHS operations even after the 1998 upgrade. Exit visibility is limited looking west due to road alignment and tractor-trailers must cross into westbound lanes of Glacier Highway when exiting the eastern staging area.
3. The pipe hinges at the shoreward bridge transition plate have up to 50% section loss from corrosion & wear. The transfer bridge box girders were recoated with Wasser Moisture Cure Paints in 1994. The paint top coat is peeling on 75% of the underside of the transfer bridge; spot corrosion appears along the edges of beams and stringers near the abutment. There is a clanging sound with the apron in the

Observations (continued)

upward, stowed position. Steel grating on the in-filled pedestrian walkway is exposed and is freely corroding. There is minor damage to the expanded metal grating on the apron. Corners of the concrete abutment backwall are deteriorated.

Stringers 1 and 5 have surface and laminating corrosion on the top flanges with up to 1/16-inch section loss. Generally, stringer 1 is worse than 5, due to location beneath the pedestrian walkway and application of deicing salts.

The exterior webs of both girders are bowing out-of-plumb in the area of Floorbeam 7. At the LT Girder, bowing was measured laterally up to 3/8" out-of-plumb over the height of the web. At the outboard web of the RT Girder at Floorbeam 7 a bow measured laterally of up to 11/16" was recorded.

The most recent Fracture Critical inspection found cracks in utility bracket stitch welds in the interior of girder 1, outboard web. Cracks do not propagate into the base metal at this time. There are weld crack indications at corners of the Stringer 1 to Floorbeam 16 connection.

4. The bridge pontoon was replaced in 1995. This pontoon is an internally reinforced steel pontoon structure that can be supported by chains from the restraint dolphins for maintenance and cleaning. The float was recoated with Wasser 'Marine Blue' Paint by AMHS Maintenance in 2017.

Each of the seaward hinge bearings are worn between hinge plates; 1/4" section loss on RT side; 1/8" section loss on LT side. Cause of wear appears to be a result of float bearing on LT restraint pile, hinge plates shifted over to LT side of bearing – leaving a gap on the RT side of the hinge plates.

5. Two fender piles on dolphin E4 were cracked just below the lowest fender wale, where a single gusset plate distributes the loads to the pile in a point load. Of the four fender piles, only the two inner piles have this feature. All other dolphins at East Berth had similar fatigue damage and were repaired on the 2008 fender pile repair project.

The coating has failed on all steel pipe piles and the base metal is bright red, with approximately 1/16" scale and 1/8" deep pitting and less than 10% loss of section from high-water to mudline. Anodes were installed on all piles on the '15 project. Depth to mudline elevations, taken with leadline readings at locations along the fender line, range from -42' to -56' MLLW.

The steel cap on the fender panel of dolphin E1 was pried off by a vessel's sponson leaving several fastening nails on the face protruding. The steel caps were replaced with UHMW sheets. Restraint chain connections on the fender cap of dolphin E1 have been bent upwards, due to collision with fender crown during vessel impact, and are corroding.

6. There is damage to the handrail from the hawse rail extension near E3. There are broken conduit connections on Dolphin W1. The video camera has failed at the top of the light pole at Dolphin E4. The light poles (2005) are undergoing rapid coating failure and surface corrosion.
7. There is a 15'x15' void at the toe of the riprap slope near the shoreward end of the Stern berth Flexifloat pontoon.

| Inspection Summary | | |
|--|----------|---|
| Structure | Priority | Recommendations |
| <i>Category I - Safety Repairs</i> | | |
| None noted. | | |
| <i>Category II - Rehabilitation Work</i> | | |
| Bridge | 1 | Program project for bridge paint recoat. Remove & replace the shoreward transition plate pipe hinge. Replace the failed hinge assembly at bridge transition plate between the apron and intermediate ramp. Replace the minor damage to the bridge apron metal grating. Repair the field coating on bridge stringers 1 and 5. Repair the failed welds between Stringer 1 and Floorbeam 16. |
| Dolphins | 2 | Monitor condition of dolphin structures for structural integrity. Program future project(s) for eventual replacement of aged structures. |
| Catwalks | 3 | The catwalk retaining bolts, mounted on the dolphins at each end, should be checked and replaced as needed. Several are in need of replacement. |
| Catwalk Access Platform/Gangways | 4 | Replace damaged grating on east platform. |
| Gangways | 5 | Replace the worn UHMW pads beneath the dolphin access gangway skids. |
| Uplands | 6 | Fill in voids in armor rock at toe of riprap slope near the stern berth. |
| <i>Category III - Upgrades Needed</i> | | |
| None noted. | | |

Auke Bay Stern Berth

13.8 Mile Glacier Highway

Owner: State of Alaska

Terminal Manager: Lisa Moore – 907-465-8853

Terminal Description: Auke Bay Stern Berth is an all-tide stern-loading facility consisting of an approach, transfer bridge, steel support float, employee access gangways, four floating rubber fender dolphins and one fixed fender panel dolphin.

The facility is the homeport for the Fast Vehicle Ferry (FVF) M/V Fairweather. See West Berth report for passenger and vehicle traffic counts. The most recent above water survey was completed on August 22, 2017. The most recent fracture critical & underwater inspections occurred on August 3, 2016.

| Vessels | |
|---------------|---------------------|
| Name | Berthing, Alignment |
| FVF / LeConte | Stern |

| Terminal Building |
|--|
| Main terminal building data in East Berth report |

| Generator & Building |
|--|
| Main generator data in East Berth report |

| Approach Trestle | |
|---------------------|---|
| Type: | 29' x 142' Pile-Supported Steel Frame |
| Shoreward support: | Steel Beam/Driven Piling |
| Seaward support: | Steel beam/Driven Piling |
| Pedestrian Walkway: | Covered and separated from vehicles by guardrail. |
| Anodes on piles: | Yes |
| Condition: | New |

| Bridge Support Float | |
|----------------------|------------------------------|
| Type: | 50' x 80' Flexifloat Pontoon |
| Year Built: | 2004 |
| Ballasted: | Yes |
| Ramp lift: | Hydraulic tower |
| Apron lift: | Hydraulic |
| Anodes: | Yes |
| Condition: | New |

| Uplands |
|--|
| Uplands is shared between West, East and Stern berths. See East berth report for data. |

| Vehicle Transfer Bridge - #0191 | |
|---------------------------------|---|
| Type: | 18' x 142' twin box beam |
| Year Built: | 2004 |
| Shoreward support: | Steel Beam/ Driven Piling |
| Seaward support: | Steel Support Float |
| Coating: | Wasser Paint |
| Pedestrian Access: | Covered and separated from vehicles by guardrail. |
| Lighting: | Light posts, left girder |
| Condition: | New |
| Load Posting Sign: | N/A |
| Original Design Load: | HS 20-44 |

| Utilities at Ramp | |
|-------------------|--------------------------|
| Electrical: | Yes, city & backup power |
| Water: | Yes |
| Sewer: | No |
| Telephone: | Yes |
| Cable TV: | No |
| Fuel: | No |
| Wireless Bridge: | Yes |

| Catwalks / Gangways | | | | | | | |
|---------------------|-------------|-----------|--|-------|----------------|-------|-------|
| # | From Struc. | To Struc. | Lenth / Style / Main Members | Built | Safety Chains? | Cond. | Notes |
| G1 | SFP | A1 | 62'8" / Gangway / 2.5"x2.5" Bottom Chord | 2004 | No | New | |
| G2 | A1 | Shore | 49' / Gangway / W18x40 Girders | 2004 | No | New | |

| Dolphins | | | | | | | | |
|-----------------|----------------------|-----------------------|--------------------|---------------|--------------|--------------|-----------------------|------------------|
| Dolphins | Dolphin Piles | Fender Support | Fender Face | Anodes | Built | Cond. | Mooring Crown? | Notes |
| W1 | 2B, 3V | Floating | Rubber Fender | Yes | 2015 | New | No | Modified in '15 |
| E1 | 2B, 3V | Floating | Rubber Fender | Yes | 2004 | Good | Yes | |
| E2 | 2B, 3V | Floating | Rubber Fender | Yes | 2004 | Good | No | |
| E3 | 2B, 2V | 1V | UHMW | Yes | 2004 | Good | No | |
| E4 | 2B, 3V | Floating | Rubber Fender | Yes | 2004 | Good | Yes | Windsock mounted |
| WR | 2B, 2V | - | - | Yes | 2004 | Good | - | |
| ER | 2B, 2V | - | - | Yes | 2004 | Good | - | |
| A1 | 4V | - | - | Yes | 2004 | Good | - | |

LEGEND

V = Vertical Steel Pipe Piling

B = Battered Steel Pipe Piling

A1 = Gangway Access Dolphins

SFP = Shoreward Float Platform

ER = East Bridge Support Float Restraint Dolphin

| Terminal Projects | | | |
|--------------------------|------------------|---|--|
| Year | Project # | Project Name | Description |
| 2004 | 68021 | JNU Auke Bay East Stern Berth | Original construction of facility. |
| 2005 | 68318 | JNU Auke Bay East Stern Berth Modifications | Modifications to floating fender dolphins. |
| 2009 | 67763 | JNU AMHS - Auke Bay FVF Support Facility | New 50'x125' building construction, uplands fill and site work, sanitary sewer line from vessel to new on site holding tank. |
| 2015 | 67463 | Auke Bay Ferry Terminal Improvements | Removed dolphin E4, disconnected from dolphin W1 on Stern Berth. Built new 6-pile dolphin E4 on East berth, installed new piles on dolphin W1 Stern berth. |

Observations

1. The Concrete apron at the approach trestle abutment has settled 1 inch.
2. The anchor bolts of all stringer bearings at Bent 5 are damaged. Access to the piers and bridge abutment is difficult but the bolts appear bent and may have possibly failed.
3. The right side shoreward hinge bearings for the transfer bridge are inaccessible due to the enclosed pedestrian walkway overhang.
4. A bolt is missing on the base plate of the right seaward roller bearing.
5. There is a minor paint failure in the seaward-side weld between the LT most hinge plate & bearing beam on the shoreward LT hinge bearing.
6. In summer of 2011, an inspection of the ends of the seaward bridge roller bearings found that the bronze bushings had failed. AMHS Maintenance pulled the failed cast bronze bushings and replaced these with new higher-strength sintered bronze bushings. The new bushing renewed the proper clearance between the roller and the stiffener of ~1".
7. The blue urethane paint topcoat on the Flexifloat pontoons has only 30% remaining. Rust staining is apparent on 10% of the seaward faces of the floats. The field weld coating has failed at most pontoon-to-frame connection tabs, and the steel in these areas is freely corroding. AMHS Maintenance crews made coating repairs to the float surface in 2017.
8. The hydraulic rams are exposed while the apron is stowed in the 'up' position, exhibiting minor surface corrosion.

Observations (continued)

9. Rubber fenders between the restraint dolphin & Flexifloat have been crushed & replaced at least once since the project was completed. Thinner UHMW bearing pads have been used to better bend under load; thicker pads were cracking under load. The 2017 inspection found deformed, but functional, UHMW pads.
10. There is a waterline leak around the gate valve at the bridge-vessel connection. Precipitation/humidity has filled the ballast compartment in the bridge lights with water.
11. Several of the mounting studs for fender panel UHMW facing have sheared off.
12. The ocean floor is within 10' of the bottom of the northwest corner of the Flexifloat pontoon at extreme low tide.
13. Looking forward at the steel grating deck adjacent to the pontoon at the forward end of the structure, there are a few broken and distorted deck bars.
14. There is a 1 3/4-inch weld indication between the girder web and tee stiffener on the interior of Girder 1, at Floorbeam 0.
15. There are weld indications at the lower corners of Floorbeam 9 to both LT & RT Girders.
16. There is a broken conduit connection at the junction box under the right side of the shared pier of the approach trestle and bridge.
17. The anodes are 50-75% consumed on the mooring dolphins. Cathodic protection readings on dolphins E4-5 and approach trestle bent 4 are below -0.8V, which means the steel isn't adequately protected.
18. Depth to mudline elevations, taken with leadline readings at the front edges of the bridge float in 2015, range from -23' to -36' MLLW.

| Inspection Summary | | |
|--|----------|---|
| Structure | Priority | Recommendations |
| <i>Category I - Safety Repairs</i> | | |
| None required. | | |
| <i>Category II - Rehabilitation Work</i> | | |
| Approach Trestle | 1 | Monitor the condition of the bent girder bearing bolts at the shared bridge pier. |
| Fenders | 2 | Remove UHMW facing, re-mount studs, increase size of bore hole and counter-boring and remount. |
| Bridge | 3 | Inspect with NDT methods and repair (as necessary) weld indications at FB 9 to both Girders. Install a ladder/catwalk to access the underside of the RT shoreward bridge bearing at the shared approach pier. Repair broken conduit in this location. |
| Dolphins & Trestle piles | 4 | Replace anodes on all pipe piles and the bridge support float. |
| All welds | 5 | Remove surface corrosion, perform touch-up repairs to field weld coating. |
| Pontoon Float | 6 | Repaint the polyurethane topcoat. |
| Gangways | 7 | Install safety cables. |
| Apron & Ramp | 8 | Repair the chrome treatment on the ramp's hydraulic lift rams and cover with a rubber boot. Replace rubber fender units on the apron lift arms. Weld repair the broken grating. Re-coat the apron with non-skid. |
| <i>Category III - Upgrades Needed</i> | | |
| Nothing Needed | | |

Auke Bay West Berth

13.8 Mile Glacier Highway

Owner: State of Alaska

Terminal Manager: Lisa Moore – 907-465-8853

Terminal Description: Auke Bay West Berth is side-loading facility consisting of a transfer bridge, steel support float, eight steel pile dolphins and catwalks/gangways for linehandling access. The facility was built in 1989 to serve both mainline & feeder vessels, and is the homeport for the M/V LeConte. See East Berth report for passenger and vehicle traffic counts. The most recent above water survey was completed on August 23, 2017. The most recent fracture critical & underwater inspections occurred on August 3, 2016.

| Vessels | |
|---------------------|---------------------|
| Name | Berthing, Alignment |
| Kennicott/Tustumena | Port |
| All other Vessels | Port/Starboard |

| Terminal Building |
|--|
| Main terminal building data in East Berth report |

| Generator & Building |
|--|
| Main generator data in East Berth report |

| Bridge Support Float | |
|----------------------|------------------------------|
| Type: | 24' x 60' Steel Pontoon |
| Year Built: | 1989 |
| Ballasted: | Yes |
| Ramp lift: | Hydraulic/Block & Cable |
| Apron lift: | Hydraulic/Block & Cable |
| Anodes: | Yes, but inadequate reading. |
| Condition: | Fair |

| Uplands |
|--|
| Uplands is shared between West, East and Stern berths. See East berth report for data. |

| Utilities at Ramp | |
|-------------------|--------------------------|
| Electrical: | Yes, city & backup power |
| Water: | Yes |
| Sewer: | No |
| Telephone: | Yes |
| Cable TV: | No |
| Fuel: | Yes |
| Wireless Bridge: | N/A |

| Vehicle Transfer Bridge - #0803 | |
|---------------------------------|--|
| Type: | 16' x 140' twin box beam |
| Year Built: | 1988 |
| Shoreward support: | Concrete abutment |
| Seaward support: | Steel Support Float |
| Coating: | Wasser Paint |
| Pedestrian Access: | Concrete 4' wide on bridge |
| Lighting: | Jelly Jars on bent posts, both girders |
| Condition: | Good |
| Load Posting Sign: | N/A |
| Original Design Load: | HS 20-44 |

| Dolphins | | | | | | | | |
|-----------------|----------------------|-----------------------|--------------------|---------------|--------------|--------------|------------------------|--------------|
| Dolphins | Dolphin Piles | Fender Support | Fender Face | Anodes | Built | Cond. | Hawse Extension | Notes |
| W2 | 2B, 1V | 4V | Ekki Timber | No | 1989 | Good | No | |
| W1 | 2B, 1V | 4V | Ekki Timber | No | 1989 | Good | No | |
| E1 | 2B, 1V | 4V | Ekki Timber | No | 1989 | Good | No | |
| E2 | 2B, 1V | 4V | Ekki Timber | No | 1989 | Good | Yes | |
| E3 | 2B, 1V | 4V | Ekki Timber | No | 1989 | Good | No | Light Pole |
| E4 | 1B, 1V | 4V | Ekki Timber | No | 1989 | Good | Yes | |
| E5 | 1B, 1V | 4V | Ekki Timber | No | 1989 | Good | Yes | |
| E6 | 1B, 1V | 4V | Ekki Timber | No | 1989 | Good | Yes | Light Pole |
| EG | 1B, 1V | - | - | No | 1989 | Good | - | |
| WG | 1B, 1V | - | - | No | 1989 | Good | - | |
| WR | 2B, 2V | - | - | No | 1989 | Good | - | Light Pole |
| ER | 2B, 2V | - | - | No | 1989 | Good | - | Light Pole |

LEGEND

ER = East Bridge Support Float Restraint Dolphin

V = Vertical Steel Pipe Piling

G1 = Gangway

EBW2 = East Berth, Dolphin W2

WG = West Gangway Support Dolphin

B = Battered Steel Pipe Piling

EFP = East Float Platform

| Catwalks / Gangways | | | | | | | |
|----------------------------|--------------------|------------------|--|--------------|-----------------------|--------------|-----------------|
| # | From Struc. | To Struc. | Lenth / Style / Main Members | Built | Safety Cables? | Cond. | Lighting |
| C1 | EBW2 | E6 | 91' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |
| C2 | E6 | E5 | 91' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |
| C3 | E5 | E4 | 69' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |
| C4 | E4 | E3 | 53' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |
| C5 | E3 | E2 | 44' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |
| C6 | E2 | E1 | 53' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |
| C7 | C6 | EG | 22' / Catwalk / 5" x 7" Tube Girders | 1989 | No | Good | Jelly Jars |
| G1 | EG | EFP | 57' / Gangway / Tube & Pipe Thru Truss | 1989 | Yes | Good | Jelly Jars |
| G2 | WFP | WG | 57' / Gangway / Tube & Pipe Thru Truss | 1989 | Yes | Good | Jelly Jars |
| C8 | WG | C9 | 22' / Catwalk / 5" x 7" Tube Girders | 1989 | No | Good | Jelly Jars |
| C9 | W1 | W2 | 53' / Catwalk / 12" x 12" Tube Girders | 1989 | Yes | Good | Jelly Jars |

| Terminal Projects | | | |
|--------------------------|--|---|---|
| Year | Project # | Project Name | Description |
| 1963 | F-095-8(1) | Southeast Alaska Ferry System Terminal Facility at Juneau, Alaska | Original construction of timber Side Berth in Auke Bay (present site of West Berth) |
| 1968 | N/A | N/A | Original construction of timber Stern Berth |
| 1970 | N/A | Auke Bay FT Dredging | Dredging at original timber Stern Berth. |
| 1982 | F-093-2(2) | Auke Bay FT Modifications | Original East Berth construction. Work included demolition of existing timber Stern Berth. |
| 1982 | F-093-3(2) H-78002 74268 A38282 | Auke Bay FT Modifications | Construction of terminal building. |
| 1989 | F-095-4(16) / 74626 | Auke Bay Western Terminal Modification | Demolition of existing structures, construction of new steel terminal structures. Also includes construction of generator/storage building, purser station, atrium/covered pedestrian walkway, and miscellaneous electrical and lighting enhancements. |
| 1989 | F-095-4(16) A70041 74618 | Auke Bay FT Rehabilitation / Relocation | Associated with 74626. |
| 1989 | 3711-SE(2) | Auke Bay FT Passenger Shelter | Associated with 74626. |
| 1989 | 74914 | Auke Bay FT Water Service | Associated with 74626. |
| 1991 | 75134 MT 763 | Auke Bay FT Floor Covering Replacement | Modified flooring of terminal building. |
| 1995 | 75265 | Auke Bay FT Pontoon Upgrade | Recoated the bridge support float. |
| 1998 | 75227 | Auke Bay Staging Area | Uplands extension of West berth staging area. |
| 2006 | HHE-093- 3(29) 68975 | JNU- Ferry Terminal Sight Distance Improvements | Modified main roadway vehicle entrance. |
| 2008 | N/A | Auke Bay Delta - Wye Conversion | This work replaces existing transformer at the Auke Bay Ferry Terminal with a new WYE-Configured Secondary, 480Y/277, 3-phase, 500KVA transformer. |
| 2008 | 73003(4) | Auke Bay FT Carpet Replacement | Replaced carpet in the terminal building modular carpet panels. |
| 2008 | 259S030 | Auke Bay FT Heat Trace | This project replaced all existing heat trace and controls on West Berth, East Berth, and East Stern Berth. |
| 2008 | 73003(1) | Auke Bay FT Heating Control System Upgrade | This project replaced existing pneumatic HVAC controls with a new HVAC control system consisting of a Direct Digital Control (DDC) Building Automation System (BAS). The new system allows network capability for interface through the internet for monitoring & manipulation of the Heating System. |

| Terminal Projects (continued) | | | |
|--------------------------------------|------------------|---------------------------------------|--|
| Year | Project # | Project Name | Description |
| 2008 | 73651 | Auke Bay East & West Terminal Repairs | This project rehabilitated the fender support piles at all mooring dolphins on East Berth. Work also included repairs to the seaward bridge bearing plates on East and West Berths, installation of naoes on all East Berth pipe pile groups, and installation of UHMW line guards on dolphin E1 at both East and West berths. |
| 2008 | 67763 | Auke Bay FVF Support Facility | This project constructed tidelands fill adjacent to East berth parking lot, paved, installed underground utilities, constructed the FVF Support Building and installed an underground septic holding tank for pumping out vessel wastewater. |

Observations

1. The most recent Fracture Critical inspection found a 3" long weld crack, and 1-1/4" long spur into the Girder web, at the top flange-shoreward corner of FB 1 to LT Girder (no propagation since last inspection) and a 7 3/8" long weld crack (2-3/4" horizontal and 4-5/8" vertical) between the top flange-shoreward corner of FB 1 to RT Girder (no propagation since last inspection).
2. The 2014 FC inspection found cracks in the welded connection between the top of FB 16 and the bottoms of Stringers 1 & 5. The crack on Stringer 1 is 3-3/8 inches long. The crack on Stringer 5 is 2-3/4 inches long. Neither of the cracks have propagated since the last inspection.
3. There is 100% section loss to the steel soffit form pans underneath concrete in-filled pedestrian walkway, over Stringer 1. Additionally, there is laminar corrosion and up to 1/16" section loss along the top flange of Stringer 1. The corrosion is most likely due to corrosive ice-melt solutions applied to the concrete in-filled walkway.
4. On the underside of the transfer bridge, the paint coating shows brown bleed-through corrosion or algae on the vertical surfaces of the framing.
5. There is an approximate 1/4" gap between the bottom of the seaward end of the steel base plate of the RT girder bearing & the top of the concrete abutment.
6. The pontoon float was listing roughly 10" to the north and the anodes had less than half their life remaining. The float was recoated by AMHS Maintenance in 2017.
7. A 2'x7' area of expanded metal is missing on the apron.
8. Several utility lines beneath the bridge are loosely hanging or laying near the ground. There is a broken conduit connection, with exposed wiring, near exterior of LT girder @ FB 13.
9. The pipe truss hand rails on the gangways have split in several locations due to accumulated condensation that froze, and expanded. The handrail frames are primary structural members of the gangway through truss, so any failure in the rails could lead to failure of the structure.
10. Many of the hanger/retainer bolts at the gangway & platform catwalk end connections are wearing down. In addition, cotter pins retaining the bolts are loose and inadequately sized for the pin holes. The 'wander limit' plate welded to the Hillman rollers on the western gangway is cutting into the support tube below. The LT little gangway RT UHMW skid was worn & replaced by Hillman Rollers.
The lower Hillman Roller bearing for the LT gangway was replaced with a UHMW skid, to reduce the possibility of the bearing jumping the track. The upper gangway pin-hanger bearings were replaced with new pins & hangers in 2011 by AMHS Maintenance.
11. There is a cracked truss tube in the LT gangway, 6' from the upper bearing. There are failing pipe hinges at the LT access ramp.
12. Cathodic potential (CP) readings for all mooring dolphins are all above -0.8V except dolphin E6, after the most recent project installed new anodes. Depth to mudline elevations, taken with leadline readings at locations along the fender line in 2015, range from -17' to -31' MLLW.

| Inspection Summary | | |
|--|----------|--|
| Structure | Priority | Recommendations |
| <i>Category I - Safety Repairs</i> | | |
| Nothing recommended. | | |
| <i>Category II - Rehabilitation Work</i> | | |
| Transfer Bridge | 1 | Program a project to repair weld crack in the first floor beam-to-girder connections & the cracks at Stringers 1 & 5 near FB 16. |
| Gangways / Catwalks | 2 | Weld repair the splits in pipe handrails. Drill drain holes near the bottom of each pipe. Check all hanger/retainer bolts - replace as needed. Install washers that match the O.D. of the bolts on the outside of connections before installing new cotter pins. Replace the retaining plate on the western access platform gangway with UHMW pad and backing plate. |
| Bridge Support Float | 3 | Investigate cause for seaward list in bridge float, re-ballast float if required. Maintain anode replacement as needed. Program the float for paint re-coating. Replace the anode cables and mounting studs as needed. |
| Bridge Apron | 4 | Replace expanded metal grating. |
| Utilities | 5 | Reinstall supports for hanging conduit and repair the conduit breaks. |
| UHMW Skids | 6 | Replace the worn UHMW skids on LT little gangway. |
| Bridge | 7 | Monitor the gap between the bottom of the RT hinge baseplate and the top of the concrete abutment. Inspect entire bridge for potential paint recoat. Floor stringer 1 is in noticable need for abrasive blast cleaning and recoat. |
| <i>Category III - Upgrades Needed</i> | | |
| Nothing recommended. | | |