

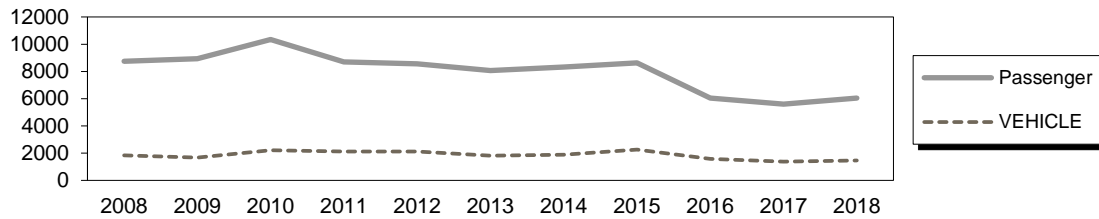
# Angoon Ferry Terminal

2.5 Mile Killisnoo Road

**Owner:** State of Alaska

**Contact:** Simon Bradley, AMHS Terminal Ops Manager (Ketchikan) – 907-228-7290

**Terminal Description:** The Angoon Ferry Terminal is a stern-loading facility that was originally constructed in 1976 and completely removed and reconstructed in 2011 for the LeConte class & FVF vessels. The terminal consists of a steel transfer bridge, adjustable intermediate ramp & apron, steel support float and five steel pile fender dolphins. FVF service to Angoon started in May, 2012. Angoon's past 10 years of total passenger and vehicle traffic is shown below.



The most recent above water survey was completed on July 7, 2017. The most recent underwater inspection occurred on August 8, 2016.

Vessels	
Name	Berthing Alignment
LeConte/FVF	Stern
N/A	Port
N/A	Stbd

Tidal Data (MLLW 0.0 feet)	
EHW	19.0
MHHW	14.1
MHW	13.2
ELW	-5.5

Terminal Building	
Year Built:	2016
Square Footage:	342 s.f.
Heating System:	Heat Pump & Baseboard
Fuel Storage:	N/A; Electric
Fire Protection:	N/A
Condition:	New

Generator & Building	
N/A	
Building / Generator:	
Square Footage:	
Heating System:	
Fuel Storage:	
Fire Protection:	
Condition:	

Utilities	
Telephone:	No
Electrical:	Yes

Uplands	
Short-Term Parking:	10 cars
Long-Term Parking:	10 cars
Staging Area	65 lineal feet
Driving Surface:	Asphalt

Vehicle Transfer Bridge - #0181	
Type:	16' x 132'; 4 Girders
Year Built:	2011
Shoreward support:	Concrete Abutment ('77)
Seaward support:	Steel Support Float
Coating:	Spray Metallizing
Pedestrian Access:	On Bridge
Lighting:	3 overhead light posts
Condition:	New
Load Posting Sign:	N/A
Original Design Load:	HL93

Bridge Support Float	
Type:	60x60x5' Flexifloat
Year Built:	2011
Ballasted:	Yes
Ramp & Apron:	Electric Actuators
Anodes:	Yes
Condition:	New

Dolphins							
Dolphins	Dolphin Piles	Fender Support	Fender Face	Anodes	Built	Cond.	Notes
S2	2B, 1V	-	-	Yes	2011	New	Ladder ring
S1	2B, 1V	-	-	Yes	2011	New	
N1	2B, 1V	-	-	Yes	2011	New	
N2	2B, 1V	-	-	Yes	2011	New	Ladder ring
N3	2B, 3V	Floating	Plastic	Yes	2011	New	
N4	2B, 1V	Hanging	UHMW	Yes	2011	New	
N5	2B, 1V	Hanging	UHMW	Yes	2011	New	
N6	2B, 1V	Hanging	UHMW	Yes	2011	New	
N7	2B, 3V	Floating	Plastic	Yes	2011	New	Nav Light

#### LEGEND

N1 = North Mooring Dolphin  
B = Battered Steel Pipe Piles

V = Vertical Steel Pipe Piles

Terminal Projects			
Year	Project #	Project Name	Description
1977	RS-0998(1)	Ferry Terminal Facilities at Angoon	Construction of new terminal structures. Uplands fill from end of the road to the abutment.
1984	X30006	Angoon FT Basin Dredge	The floor of the basin was excavated beneath the float and beneath the docking footprint.
1988	RS-005(78) 74665	Southeast Secondary Upgrade	The bridge was over-coated with spray metallizing and the bridge support float was replaced with the existing barge from Clark Bay.
1990	75122	Angoon Ferry Terminal Basin Dredge	The floor of the basin was excavated beneath the north corner of the float.
2011	68502	Angoon Ferry Terminal Improvements	This project replaced the marine berthing and transfer structures with new all-tide mooring dolphins and transfer bridge. The new design accommodates the Fast-Vehicle Ferries (FVF) M/V Fairweather & M/V Chenega, as well as LeConte class vessels.
2016	69440	Angoon Ferry Terminal Passenger Facility	This project expanded the uplands approximately 40' seaward along the northeast edge of the embankment, adding 16 parking spaces, staging lanes for 15 vehicles, curb and sidewalk, and area lighting. Also constructed was a new 21' x 21' Waiting Building, Purser's Shelter and Pit Toilet. The bridge abutment backwall, apron and transition plate were replaced with new structures that provide better clearance to vehicles at low tide. An access platform was built on dolphin S1 for vessel personnel to aid line handling.

### Observations

1. Marine structures seaward of the bridge abutment were new as of fall of 2011. Uplands parking/staging area & waiting building are new as of Fall of 2016.
2. An adjacent stream has, in past years, deposited sediment in the moorage basin. The basin was dredged in 1984 and again in 1992 to remove the sediment and maintain acceptable basin depth. A diversion dike was installed in 1992 to remedy the problem. A bathymetric survey performed in 2003 determined the basin depth within the vicinity of the terminal is adequate.
3. There is an above-ground 1-1/2" Ø PVC pipe running along the RT ditchline of Killisnoo Road. The City would like to use this pipe to provide City water to Whalers Cove Lodge across the Bay, but haven't been able to complete the DEC permitting process.
4. A privately owned fuel storage facility was constructed adjacent to the ferry terminal in 2010.
5. The external housing for the bridge lift cylinders are corroding near their base (above the accordion cylinder cover).
6. The most recent underwater inspection found that 30-50% of all anodes are depleted on the mooring dolphins.
7. On October 1, 2016 the apron lift system was damaged as the M/V Aurora was preparing to dock. The apron is normally stowed in a vertical up position but must be rotated into the water prior to berthing of 235 class vessels. As the M/V Aurora approached the berth the apron was being lowered when the lift system controller (PLC) detected a fault and halted the operation. Vessel personnel went ashore and attempted to correct the fault but damaged both actuators while adjusting the system manually. Emergency repairs were completed the next day to lower the apron and the damaged actuators were removed. The actuators have been refurbished and are stored in Ketchikan awaiting re-installation. The apron lift system is currently inoperable with the apron stowed in the down position. The apron is not required for 235 class vessels and they continue to serve the Angoon terminal. The apron is required for FVFs; therefore, they cannot use the terminal until operation of the apron lift system is restored.
8. Depth to mudline elevations, taken with leadline readings at the front edges of the bridge float in 2015, range from -13' to -20' MLLW. The highest ground occurs 10-feet away from the edge of the vessel berthing surface; the minimum bottom elevation at the vessel should approximate the deeper of the two readings.

Inspection Summary		
Structure	Priority	Recommendations
<i>Category I - Safety Repairs</i>		
Nothing required.		
<i>Category II - Rehabilitation Work</i>		
Dolphin anodes	1	Replace anodes on all mooring dolphins
Bridge apron	2	Install actuators on apron lift system prior to FVF sailings.
<i>Category III - Upgrades Needed</i>		
Nothing required.		