

## DISTRICT TRIP REPORT

**Project:** Denali Commission Moorings Points Phase 4 – Yukon River

**Description:** Galena Trip Report

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George Kalli, Jason Norris, and Bo Wycoff traveled to the Yukon River community of Galena, Alaska on June 8th via Era Aviation. The purpose of the trip was to conduct a site visit and scoping meeting related to potential installation of barge mooring points in the community. A total of three barge landing sites were investigated during the site visit. These include, (from downstream to upstream), the Downtown (Crowley) Landing, the “Jake’s Place” landing, and the city freight landing. An overview of the community and barge landing sites are shown in Figures 1 and 2.



Figure 1. Overview of downstream landings at Galena. The Yukon River flows top to bottom.



Figure 2. Overview of upstream landing at Galena. The Yukon River flows top to bottom.

We were met at the airport by Tom Corrigan, Galena City Manager. We immediately conducted site investigations at the three landings. A public meeting was conducted at noon. Eight residents participated in the meeting. Following is a summary of the information learned during the public meeting and site visit.

## **GENERAL**

Prior to the visit the team spoke with various barge operators such as Crowley Marine, Ruby Marine, and Inland Barge. The operators had various preferences for mooring point spacing based on the size of their vessels.

According to Mayor Russ Sweetsir, land along the riverbank is generally public property.

There is a rock and gravel source in the community. The most recent price the city paid for crushed gravel is \$25 per cubic yard delivered in 2011.

Some in attendance at the public meeting inquired regarding the status of a previous barge dock project. It appeared that they favored the completion of this project over the proposed mooring point installations. They stressed the dangerous combination of riprap protected banks and single hulled fuel delivery barges. A project for the Western Federal Land Highway Division to construct a barge dock in Galena had been funded by the Denali Commission in 2009. However, in 2010, the project was halted prior to construction. This report will only deal with mooring

points at existing barge landing sites. The sheetpile, associated tie backs, and concrete rubble is stockpiled on site and is shown in Photo 1.



Photo 1. Stockpiled Sheetpile at the Upstream Landing.

Those in attendance at the public meeting were not aware of any potential conflicts with archaeological or cultural resources.

Those in attendance at the public meeting did not foresee any construction problems due to permafrost.

There are contractors in town with equipment. They may be good points of contact regarding conditions for drilling/pile driving in the region.

### **CURRENT BARGE LANDINGS (Upstream to Downstream)**

#### **CITY LANDING SITE**

The city landing is the most upstream landing in Galena. The City's fuel header (Photo 2) is located at the landing and the City's fuel tanks are located approximately ¼ mile behind the landing. In addition to landing freight and fuel, it is used as a driftwood recovery area. It consists of a ramp perpendicular to the river (Photo 3).

There are existing bollards at the site approximately 200 feet apart that were installed approximately 15 years ago (Photos 3 – 4). They consist of 3 driven vertical round piles that are welded together. The upstream mooring point is approximately 50 feet from the top of the bank and is located at 64°44.453'N and 156°52.126'W. The downstream mooring point is located

even with the top of the ramp 20 feet inland from the top of bank at 64°44.433'N and 156°52.184'W. Even though the upstream mooring point is leaning heavily away from the river both points are in working condition and no installations are recommended at this landing.

There is some small armor stone placed both upstream and downstream of the landing (Photos 5 – 7). This rock was placed as erosion protection by the Alaska District of the US Army Corps of Engineers under their emergency bank stabilization authority.



Photo 2. Galena City Barge Landing and Fuel Header



Photo 3. Galena City Barge Landing Ramp with Downstream Mooring Point Evident



Photo 4. Corps employee near existing upstream mooring point at Galena City landing.



Photo 5. View of City Landing. Existing downstream mooring point visible (far center). Some small armor visible (near left).



Photo 6. Armoring upstream of Galena City landing.



Photo 7. Armoring downstream of Galena City landing.

### **“JAKE’S PLACE” LANDING SITE**

Locally known as “Jake’s Place”, this landing is located 1.5 road miles downstream of the City Landing. It consists of a ramp perpendicular to the bank (Photo 8). Photo 9 shows a partial view of the uplands at this landing.

The landing is city property with a secured fuel header located just downstream of the ramp (Photo 10). This landing is locally known as “Jake’s Place” because a man by the name of Jake lives on the adjacent downstream lot. His property line runs to the downstream edge of the fuel header cage. He uses the lot on which the fuel header is located to store various items but was very agreeable to moving them should access to the site be needed for mooring point installation.

In addition to being constrained by private property to the downstream, this landing site is also constrained by private property owned by Crowley on its upstream end. Photo 11 shows the area containing the property line where the property transitions from the city-owned street right-of-way to private property.

There are three existing 1” cable deadmen located at this landing. There is one point on the top of the bank adjacent to Jake’s Place just downstream of the header enclosure, one point near the fuel header, approximately 20 feet from the top of the bank, and one point near the top of the bank on the upstream side of the landing. The existing upstream deadman may be on Crowley’s property.

A potential location for a downstream mooring point was placed in line with the downstream end of the fuel header fence 23 feet inland from the top of bank and 9 feet on the river side of the fuel header fence (Photo 12). GPS coordinates at this location are 64°44.028'N and 156°55.199'W.

Potential upstream mooring point locations were located 150 and 200 feet upstream of the downstream mooring point at 64°44.033'N, 156°55.139'W and 64°44.033'N, 156°55.122'W (Photo 13), respectively. They are located between 43 and 44 feet inland from the top of bank.

During the site visit, future use of this landing site was unclear. According to Tom Corrigan, the last fuel delivery to this header was to occur in a few days time. Due to the private property constraints, the City may discourage future use of this landing for deliveries. Subsequent follow up with Tom Corrigan confirmed continuation of regular freight deliveries to this site while fuel deliveries may not occur for up to 6 years due to the current stockpile of fuel.

Since future deliveries at this site for some time will be limited to freight deliveries upon the smaller barges used by the freight barge companies currently servicing Galena, installation of the two proposed mooring points spaced 150 feet apart, as detailed above, is recommended.

Due to the potential for traffic at this landing site, any installed mooring points should be subgrade installations. A property line locate will be needed to ensure that they are not installed on adjacent public property.



Photo 8. “Jake’s Place” Landing.



Photo 9. View of Uplands at “Jake’s Place” Landing.



Photo 10. Fuel Header with Jake’s House visible in the background.



Photo 11. View of area of property line.



Photo 12. Corps employee at proposed location of downstream mooring point.



Photo 13. Corps employee at location of proposed most upstream mooring point location

### **DOWNTOWN (CROWLEY) LANDING SITE**

The Downtown landing site, where Crowley’s fuel header is located, consists of a ramp perpendicular to the bank, shown in Photo 14. This site is located approximately ½ mile downstream from “Jake’s Place” Landing. This landing is located on a street with no appreciable uplands as houses are located across the street (Photo 14).

The barge operators indicated a preference for three mooring points here that would accommodate multiple barges at one time. Two downstream mooring points spaced 175 feet apart with a third mooring point located 150 feet upstream of the middle mooring point was the configuration recommended by barge operators. This would allow for a Crowley fuel barge to lie alongside the bank out of the way of the ramp while simultaneously allowing a smaller freight barge to utilize the ramp.

We were told that the city owns the top of the bank on the river side of the street.

This site is located in an active erosion zone with high water combined with south winds causing the majority of the erosion. Local estimates are that the bank is eroding at approximately six inches per year.

There is an existing short utility pole along the top of bank upstream of the ramp (Photo 14) which we were told has been used by the barges to tie off to.

There are fuel headers approximately 20 feet from the top of the bank and are connected to Crowley’s fuel tanks which are located approximately 500 feet away, (Photo 15).

There is an existing deadman (Photo 16) approximately 150 feet upstream of the center of the ramp at 64°44'1.98"N, 156°55'8.34"W that consists of a six inch pipe with a chain and rope attached.

The potential mooring point locations listed in Table 1 were recorded at this site.

**Table 1. Downstream (Crowley) Landing Potential Mooring Point Locations**

Point #	Direction	Feet from Center of Ramp	Feet from Top of Bank	Latitude	Longitude
1	Upstream	75	15	64°43.949'N	156°56.130'W
2	Upstream	150	4	64°43.947'N	156°56.109'W
3	Upstream	200	0	64°43.946'N	156°56.087'W
4	Downstream	75	15	64°43.949'N	156°56.186'W
5	Downstream	210	0	64°43.947'N	156°56.234'W
6	Downstream	250	20	64°43.948'N	156°56.256'W

Point 3 is located near a bend of street, leaving little room for installation of a mooring point outside of the street’s right of way (Photo 17).

Point 5 is located near an existing right-of-way for “H Street” (Photo 18). There is an ATV path in the right of way that dead-ends at the river.

Point 6 (Photo 19) would be the most downstream point at this landing. It is located between the river and a home. Despite city maps that show the city’s ownership of the land it is unclear whether this is still the case as the bank has eroded over the years. Surveying would be needed to confirm ownership. In addition, if it is found that this bank has eroded back to private land it would be difficult to relocate the point as there is a small gully upstream of Point 6 and it may not be feasible to relocate the point downstream due to property ownership issues.

Installation of mooring points is recommended at Points 1, 4, and 6. If real estate ownership, or other issues, prevents installation at any of these sites, a configuration of mooring point locations that most closely meets the recommended configuration detailed above. should be pursued

Due to the easy vehicular access to these proposed mooring point locations, all should be subgrade installations with the exception of Point 6.



Photo 14. Downtown (Crowley) landing. Short utility pole utilized as a barge tie-off point is evident on far river side of road



Photo 15. Crowley fuel header (inside fence) and Crowley fuel tanks (far right).



Photo 16. Existing deadman at Downtown landing.



Photo 17. Location near "Point 3".



Photo 18. Right of Way for "H Street".



Photo 19. Approximate Location of Point 6.