Bethel Harbor

Condition of Improvements
30 December 2022
Bethel Harbor, Alaska
(CWIS No. 024100)

Authorization Rivers and Harbors Act, 14 July 1960, under Section 107 (P.L. 86-645) as authorized by the Chief of Engineers on 29 June 1978, provides for a 12 acre small boat harbor and 1,270 foot entrance channel by deepening, widening and straightening a portion of Lousetown Slough.

Table 1

Existing Project	**Length** ft.	**Width** ft.	**Depth** ft.
Entrance Channel	1270	31	-4
Maneuvering & Turning Channel	418	94	-4
Basin (Federal)	519	160	-4

Project Usage This project is the only protected harbor in the Kuskokwim River Delta area and provides beach moorage for about 1,200 small boats with the possibility of a future medium-draft mooring basin.

Progress of Work

1982	Project is approved as amended by the Office of the Chief of Engineers under Section 107 of the 1960 River and Harbor Act, dated 30 July 1982.
1983	Construction begins on 21 January 1983 and is completed on 20 March 1983.
1988	Local interests report that the removal of beach mooring fingers from the basin is complete, and a condition survey is conducted.
1991	Sampling and testing of harbor sediments is conducted.
1992	Maintenance dredging of the Federal project is carried out while the harbor is frozen in March 1992 with 15,100 cubic yards removed within the Federal limits. A follow up survey in September 1992 reveals that the project is subject to rapid shoaling from the fine sediment prevalent in the vicinity.
1997	Federal project is dredged to two feet over project depth; 28,300 cubic yards of material are removed in late winter with land-based equipment and trucked to an upland disposal site.

Progress of Work

2001	A condition survey is conducted in July.
2002	Vertical aerial photography is taken in June.
2004	A condition survey is completed in August.
2010	A condition survey was completed in mid-October.
2011	Harbor sediment samples were taken in October and the results were compared to the Toxicity Characteristic Leaching Procedure (TCLP) criteria. Additional samples were collected in September which showed no potential for fuel contamination. USACE Comprehensive Evaluation of Project Datums Compliance report completed and recorded in September.
2012	Awarded maintenance dredging contract in September to Denali Drilling.
2013	Annual maintenance dredging removed 17,800 cubic yards from the basin and entrance channel and placed the material in an upland stockpile. A condition survey is completed in late September.
2016	A project condition survey was completed in June.
2020	A project condition survey was completed in August.

Table 2 Cost to Date

Project	Description	Cost $
024100	CG Appropriations	1,514,398
	CG Costs	1,514,398
	CG Contributed Appropriations	2,000,000
	CG Contributed Costs	2,000,000
	O&M Appropriations	2,978,460
	O&M Costs	2,978,460

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
946 6477 Bethel, Kuskokwim River AK	2.42	3.66	-

NOAA Publication Date: 01/14/2011

Controlling Depth A condition survey was conducted in August of 2020 which indicated the following controlling depths: -2.9 feet MLLW along the western toe of the seaward curve in the entrance channel; -2.4 feet MLLW in the maneuvering and turning channel near the toe of the

southern boat ramp; -3.6 feet MLLW in the eastern turning channel; and -2.5 feet MLLW in the northeast corner of the basin (Federal).

Table 4 Dredged Quantities and Contract Costs

Year	Quantity (cubic yards)	Cost $
2013	17,800	1,239,500

Maintenance Dredging Supplement

A. General

1. The Federal portion of the Bethel small boat harbor was last dredged in 2013 (a 16-year interval) while the project was frozen. On average, maintenance dredging is required approximately every 10 years.
2. Shoaling is hazardous to navigation and occurs along most of the entrance channel due to the inability of the material to hold a side slope.
3. The dredging period runs from 15 February to 15 April.
4. The last dredging venture employed the use of a D-8 Caterpillar to rip the ice and frozen material which could then be stockpiled and loaded onto trucks for upland disposal.

B. Sampling and Testing

1. Sediment samples were collected from three points within the Bethel SBH in 2011. The sample results were generally within ADEC soil cleanup criteria, but contained 26-56 mg/kg arsenic and 34-48 mg/kg total chromium concentrations that were above ADEC cleanup levels but consistent with previous samples taken from the harbor sediment, and within BLM background studies of Kuskokwim River Sediment.
2. Chemical analysis was conducted using (12) tests as outlined with results below:

Table 5 Chemical Testing

Method	Chemical analysis	Results
Series 6000-7000's TCLP	TCLP (8) RCRA Metals	(1) of (8) detected None detected (ND) or below minimum cleanup levels (1)
8260B TCLP	TCLP Volatile Organic Compounds	ND
8270D TCLP	TCLP Semi-volatile Organic Compounds	ND
AK 101	Gasoline Range Organics	All below cleanup levels (2)

AK 102/103	Diesel Range Organics/ Residual Range Organics	All below cleanup levels (2)

Method	Chemical analysis	Results
8260B	Volatile Organic Compounds	Methylene chloride 0.041 – 0.06 ppm*, Hexachlorobutadiene ND- 0.15 pp*, all others ND or below cleanup levels (2)
8082	Polychlorinated Biphenyls	ND
8081	Pesticides	All below cleanup levels (2)
Series 6000-7000's	(8) RCRA Metals	8) of (8) detected Arsenic 23 – 56 ppm, Chromium 31- 39 ppm, all others below cleanup levels (2)
8270C SIM	Polynuclear Aromatic Hydrocarbons	All below cleanup levels (2)
E160.3M	Percent Moisture	51-56 %

** Believed to be associated with method blank contamination and were qualified with "B"*
(1) *Project limits are defined by the Toxicity Characteristic Leaching Procedure (TCLP) criteria*
(2) *Project limits are defined by ADEC 18 AAC 75 Method 2 Table B1 and B2 Cleanup Levels*

C. Disposal

1. The current upland disposal area is a 14-acre site located on City of Bethel land northeast of the harbor basin. Corners have the following geographic coordinates:

Table 6 Disposal Area

Corner	Latitude (N)	Longitude (W)
A	60°47'37.937"	161°43'45.905"
B	60°47'38.875"	161°43'45.902"
C	60°47'39.491"	161°43'51.543"
D	60°47'41.903"	161°43'51.537"
E	60°47'46.829"	161°43'56.464"
F	60°47'46.820"	161°43'38.832"
G	60°47'36.736"	161°43'38.855"

This area was used to dispose of material from the 1992, 1997, and 2013 maintenance dredging events. The harbor sediment is hauled by truck to the disposal area. A background sample collected from this area in 1991 had a concentration of 26 mg/kg arsenic.

2. The current upland disposal site is both preferred and adequate to meet dredging disposal needs.

D. Environmental Permits and Reports

The Corps prepared an EA in February 2012 for continued maintenance dredging, with a FONSI signed by the Denali Commission. DA Permit POA-2011-896 (expires May 2017) was issued to the City of Bethel. ADFG Fish Habitat Permit FH 10-II-0188 was amended (Amendment I) in March 2012.

Table 7 Environmental Permits

Agency Name	Date of Issue	Date of Expiration
AK Department of Fish and Game	March 23, 2012	December 31, 2013
AK Department of Environmental Conservation	May 14, 2012	May 14, 2017
Department of the Army	May 1, 2012	May 1, 2017

Bethel Harbor, Alaska

Oblique of Bethel Harbor, June 2016

Bethel Harbor, 2016

Bethel Harbor, Alaska

Maintenance dredging of the basin and channel in the winter of 2013.

Replacement of the South Ramp, February 2014