

Cook Inlet Navigation Channel

Condition of Improvements
31 December 2019
Cook Inlet Navigation Channel, Alaska
(CWIS No. 010324, 010534)

Authorization (1) Water Resources Development Act of 1996 (Public Law 104-303, 104th Congress) authorizes the expenditure of \$5,700,000 subject to the report of the Chief of Engineers. (2) The Energy and Water Development Appropriations Act, 1999 (Public Law 105-245, Oct. 7 1998) increases the project total not to exceed \$12,600,000; one third of this total is to be cost shared with the local sponsor. (3) Energy and Water Appropriations Act, 2005, states that “The Secretary shall modify the channel in the existing Cook Inlet Navigation Channel approach to Anchorage Harbor, Alaska, to run the entire length of Fire Island Range and Point Woronzof Range and shall modify the depth of that channel to minus 45 Feet mean lower low water. The channel shall be maintained at a depth of minus 45 feet mean lower low water. This authorization has not been funded.

Table 1

Existing Project	Length ft.	Width ft.	Depth ft.
Original Channel	10,925	1,017	-38

Project Usage The channel provides additional time for the passage of deep draft vessels to and from the Port of Anchorage. In accordance with the Project Cooperation Agreement, January 1998, the channel width is dredged an additional 60 meters (197 feet) as an allowance for uncertainties in channel stability. Total channel width maintained is 1,214 feet.

Progress of Work

1996	The construction site and disposal area are surveyed. Pre-construction engineering and design work are initiated.
1997	Ship tracking studies over the winter of 96-97 confirm the project dimensions. Plans and specifications are begun.
1998	A Project Cooperation Agreement is signed with the Municipality of Anchorage in January. The construction contract is awarded in December.
1999	Dredging operations remove 576,934 yards from the project.
2000	The project is physically completed in September with the removal of an additional 882,609 cubic yards of material.

Progress of Work

- 2001 Three condition surveys are conducted at the beginning of June, August, and November.
- 2002 The project is surveyed in May, July, and September.
- 2003 Condition surveys are conducted in May, July and early October.
- 2004 Condition surveys are completed in June and October with multi-beam equipment.
- 2005 Survey coverage is increased along the Woronzof and Fire Island range lines in accordance with new authorization and the concern of shippers. 9,950 linear meters were surveyed at a width of 920 meters in May and September with full coverage multi-beam surveys.
- 2006 One full coverage multi-beam survey was conducted in August covering 7 and ¼ miles of channel, an extension of about 1 mile from last year to cover the concerns of shippers.
- 2007 A new best-fit channel alignment was created covering 8 ¾ miles along the Woronzof and Fire Island range lines. A multi-beam survey of the entire project was conducted in August.
- 2008 A multi-beam condition survey was conducted in August. USACE Comprehensive Evaluation of Project Datums Compliance report completed and recorded in September.
- 2010 A multi-beam condition survey was conducted by Terrasond in July. Until a cost shared decision document can be funded and prepared for the entire authorized project area, the maintenance dredging authority currently remains limited to stations 69+52 thru 178+77 (based on the proposed project limit stationing found in the July survey).
- 2012 A condition survey was completed in June; 4.1 million cubic yards of sand and gravel require dredging. Environmental documents and a geotechnical investigation were started in preparation for maintenance dredging.
- 2013 The government dredge ESSAYONS removed 2.7 million cubic yards of sand and gravel and Manson Construction used the hopper dredge WESTPORT to remove an additional 200,000 cubic yards. Environmental documents and geotechnical investigations were completed; pre-dredge, interim, and post-dredge surveys were performed.
- 2014 The US Army Corps of Engineers dredge ESSAYONS mobilized to Cook Inlet Navigation Channel and dredged from May 20 to June 14, removing 1,114,658 cubic yards. Manson's dredge Westport also dredged intermittently between mid-June and mid-August, removing 451,855 cubic yards. Both dredges placed the material in the open water disposal site, located southeast of the channel.
- 2015 A pre-dredge survey conducted in April did not indicate any areas of the channel above project depth of -38 feet MLLW and no dredging was performed.

Progress of Work

- 2016 A pre-dredge survey conducted in April did not indicate any areas of the channel above project depth of -38 feet MLLW and no dredging was performed. A second condition survey conducted in November 2016 also revealed no areas of the channel above project depth.
- 2017 A pre-dredge survey in April did not indicate any areas of the channel above project depth of -38 feet MLLW and no dredging was performed. A November condition survey revealed no areas of the channel above project depth but shoaling starting to occur in the middle of the channel.
- 2018 Condition surveys of the channel are conducted in May (pre-dredge) and October. Although there are a few points above project depth of -38 feet MLLW in the middle of the channel, volumes to project depth were 146 and 180 cubic yards, respectively, so no dredging was performed. A single beam condition survey was conducted on 30 November after a magnitude 7.1 earthquake in Knik Arm and did not show any changes or areas above project depth.
- 2019 A pre-dredge survey in May shows a few points above project depth of -38 feet MLLW in the same mid-channel area as previous years. Volume above project depth is 345 cubic yards, so no dredging was performed.

Table 2 Cost to Date

Project	Description	Cost \$
010324	GI PED Appropriations	307,252
	GI PED Costs	307,252
	CG Appropriations	8,409,492
	CG Costs	8,409,492
	CG Contributed Appropriations	2,498,971
	CG Contributed Costs	2,498,971
	O&M Appropriations	15,587,291
	O&M Costs	14,396,971

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
945 5920 Anchorage AK	26.19	29.16	41.25
945 5912 Fire Island, Cook Inlet AK	24.00	26.91	-

NOAA Publication Date: 9455920 - 07/03/2019; 9455912 - 05/21/2004

Controlling Depth A depth of -36.2 feet MLLW controls in the middle of the channel in May 2019.

Note: This project is subject to the strong tidal influence found in the upper Cook Inlet. Variation in available depth may occur over time. The information above is not provided for navigation purposes.

Table 4 Dredged Quantities and Contract Costs

Year	Quantity (cubic yards)	Cost \$
2013	2,965,269	6,719,906
2014	1,566,513	6,435,435

Maintenance Dredging Supplement

A. General

1. 2013 and 2014 dredging was accomplished with the USACE dredge *Essayons* and the Manson dredge *Westport*.

B. Sampling and Testing

1. Twelve primary samples were taken out of the Westport dredge hopper outfalls from two trial dredging areas, October 2012.
2. Chemical analysis was conducted using (10) tests as outlined with results below:

Table 5 Chemical Testing

Method	Chemical analysis	Results
AK101	Gasoline Range Organics	All below project screening limits
AK102/103	Diesel Range Organics/ Residual Range Organics	ND (none detected)
6000-7000's	(8) RCRA Metals	(8) of (8) detected; Arsenic 5.4 - 6.8 ppm, all others below minimum levels
9060	Total Organic Carbon	1200-1700 ppm
8260B	Volatile Organic Compounds	ND
8081A	Pesticides	ND
8082	Polychlorinated Biphenyls	ND
8270D	Semi-volatile Organics	ND or below minimum levels
D2216	Percent Moisture	69 – 77 %

Project limits are defined by ADEC 18 AAC 75 Method 2 Table B1 and B2 Cleanup Level and PSDDA Users Manual Table 5-1 Screening Level.

C. Disposal

1. Dredged material is transported by hopper barge to a deep water site, dumped, and dispersed by tidal activity. Water depths ranged from -38 to -90 feet MLLW (2012) in the site.
2. The four corners of the disposal site have the following geographic coordinates:

Table 6 Disposal Area

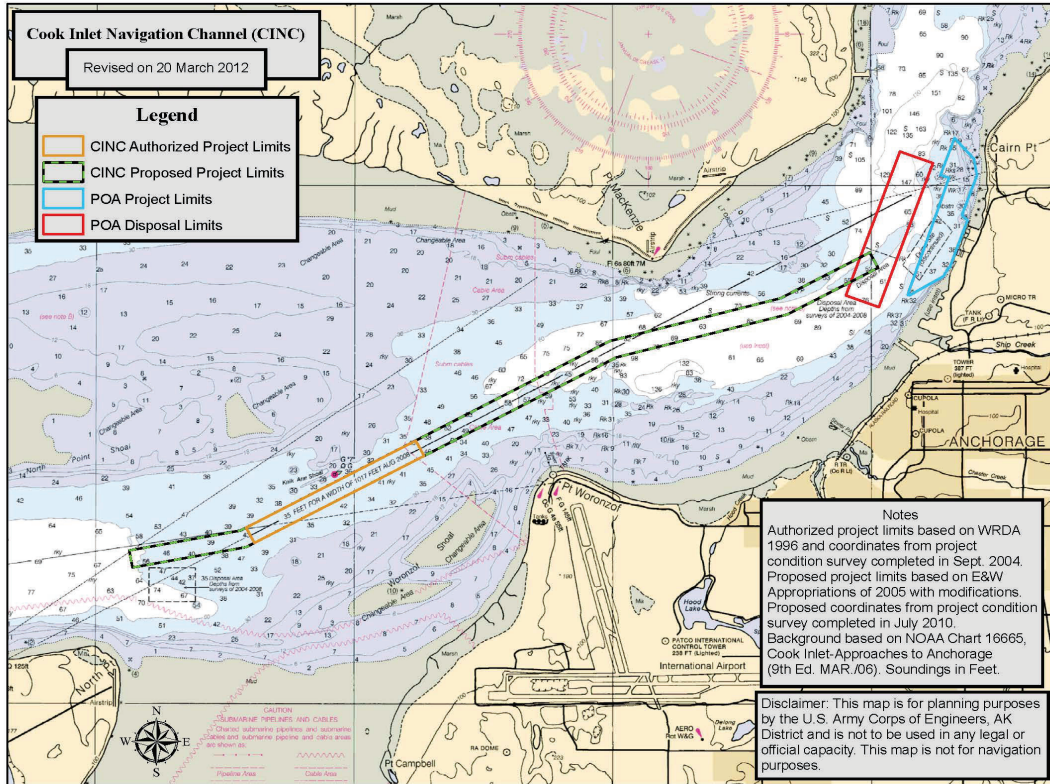
Corner	Latitude (N)	Longitude (W)
NW	61° 11' 18.40"	150° 08' 57.98"
NE	61° 11' 18.45"	150° 08' 04.43"
SW	61° 10' 59.01"	150° 08' 57.89"
SE	61° 10' 59.07"	150° 08' 04.35"

D. Environmental Permits and Reports

Table 7 Environmental Permits

Document Name	Date of Issue	Date of Expiration
ADEC Water Quality Certification	18-Apr-18	18-Apr-23
Environmental Assessment (EA)	Jan-13	n/a
Finding of No Significant Impact (FONSI)	Mar-13	n/a
NMFS Sec 7 Concurrence of No Adverse Effect	05-Mar-18	n/a
Determination of NEPA Sufficiency	12-Dec-17	n/a

Cook Inlet Navigation Channel, Alaska



Cook Inlet Navigation Channel map on navigation chart, 2012



Dredging by Manson's Westport hopper dredge, June 2014

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Channel dredging by the Essayons, May 2013



Channel dredging by the Essayons, June 2013