

# **Cook Inlet Navigation Channel**



Condition of Improvements  
31 December 2022  
**Cook Inlet Navigation Channel, Alaska**  
(CWIS No. 010324, 010534)

**Authorization** (1) Water Resources Development Act of 1996 (Public Law 104-303, 104<sup>th</sup> 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.
2020	A pre-dredge survey in May and an interim condition survey in August show a few points above project depth of -38 feet MLLW in the same mid-channel area as previous years. Volume above project depth was 530 cubic yards in May and 96 cubic yards in August. No maintenance dredging was performed.
2021	Condition surveys in May and October show no areas above project depth. No maintenance 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	15,654,073
	O&M Costs	14,506,349

**Table 3 Range of Tides in feet**

<b>Tide Station</b>	<b>Mean Range</b>	<b>Diurnal Range</b>	<b>Extreme Range</b>
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 -38.7 feet MLLW controls in left outside corner in May 2021 and a depth of -38.4 feet MLLW controls in the right inside quarter in October 2021.

**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**

<b>Year</b>	<b>Quantity (cubic yards)</b>	<b>Cost \$</b>
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**

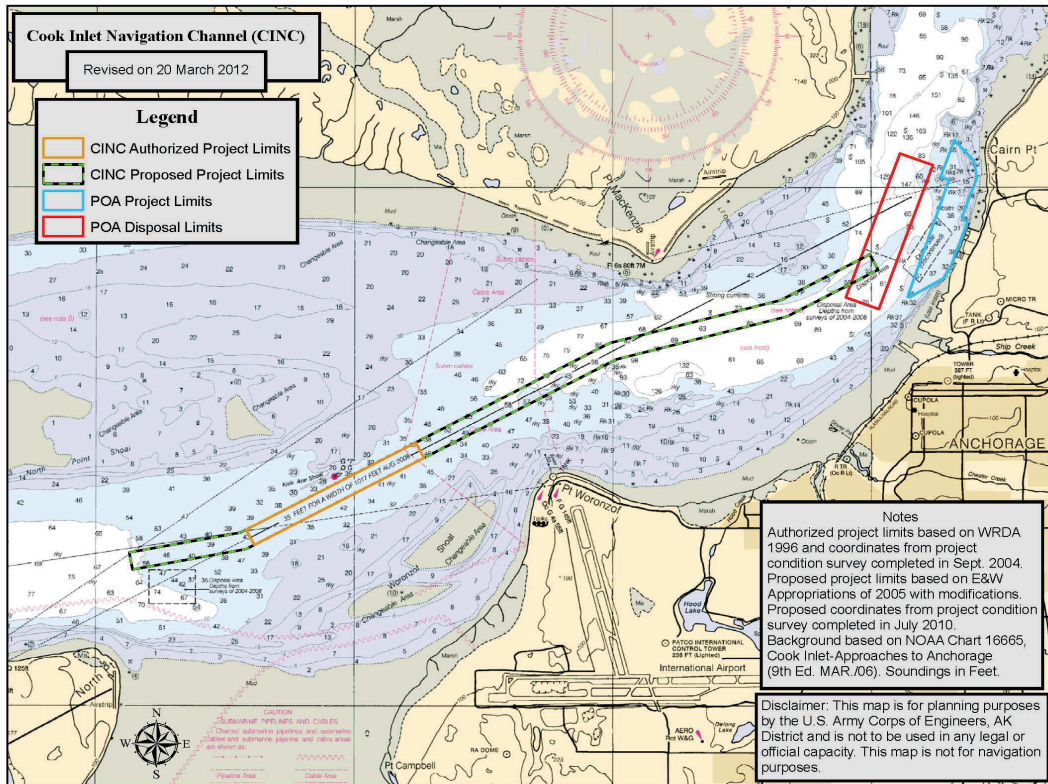
Corner	Latitude (N)	Longitude (W)
NW	61° 11' 18.40"	150° 08' 57.98"
NE	61° 11' 18.45"	150° 08' 04.43"
SW	61° 10' 59.01"	150° 08' 57.89"
SE	61° 10' 59.07"	150° 08' 04.35"

## **D. Environmental Permits and Reports**

**Table 7 Environmental Permits**

<b>Document Name</b>	<b>Date of Issue</b>	<b>Date of Expiration</b>
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	08-Apr-20	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

# Cook Inlet Navigation Channel, Alaska



Channel dredging by the Essayons, May 2013



Channel dredging by the Essayons, June 2013