

Wrangell

Wrangell Harbor

Condition of Improvements
31 December 2022
Wrangell Harbor
Wrangell, Alaska
(CWIS No. 010435 & 021500)

Authorization (1) Rivers and Harbors Act, 22 September 1922 (House Doc. 161, 67th Congress, 2nd Session) as adopted, provides for a breakwater 300 feet long extending from Point Shekesti to protect the southern portion of the harbor. (2) Rivers and Harbors Act, 30 August 1935 (House Doc. 202, 72nd Congress, 1st Session) as adopted, provides for a mooring basin 600 feet long by 400 feet wide dredged to a depth of 10 feet below MLLW. (3) Rivers and Harbors Act, 2 March 1945 (House Doc. 284, 76th Congress, 1st Session) as adopted, provides for an inner mooring basin 550 feet long by 325 feet wide dredged to a depth of 10 feet below MLLW and connected to the outer mooring basin by a connecting channel 530 feet long by 120 feet wide at a depth of 10 feet below MLLW; includes authorization for a breakwater 320 feet long on the reef north of Shakes Island.

Table 1

Existing Project	Length ft.	Width ft.	Depth ft.
Outer Mooring Basin	600	400	-10
Connecting channel	530	120	-10
Inner Mooring Basin	550	325	-10
Breakwater	300		

Project Usage The original interconnected small boat basins have a capacity of 300 vessels and are used as an operating base for commercial fishing. The City of Wrangell has a dual economy based on the timber and fishing industries.

Progress of Work

1926	Point Shekesti breakwater is constructed.
1936	The outer mooring basin (original project) is dredged to project depth.
1956	Expansion of the harbor facilities begins in May with the dredging of the inner basin and connecting channel. The 320-foot rock mound breakwater north of Shakes Island is placed on inactive status.

Progress of Work

1957	Harbor expansion is completed in March to the present existing project.
1968	Maintenance dredging is performed in September and October, where necessary to meet project depth, resulting in the removal of 13,644 cubic yards of material.
1992	The concrete parapet wall atop the breakwater undergoes rehabilitation.
1993	Sampling and testing of bottom sediments is completed; the Federal project is dredged by contract in October with the removal of 3,575 cubic yards.
1998	A condition survey is conducted from 29 March - 2 April.
2001	A multi-beam survey provides full swath coverage of the harbor in April.
2004	The most recent condition survey of the federal project is conducted in July with single beam techniques. The dredging contractor that was constructing Heritage Harbor removes 220 cubic yards from beneath the inner harbor float to prevent recurring damage to the structure at extreme low tides.
2007	A project condition survey is completed for Wrangell Harbor in May.
2009	A project condition survey was completed for Wrangell Harbor in August.
2014	USACE Comprehensive Evaluation of Project Datums Compliance report completed and recorded in January.
2015	A project condition survey is completed in July.
2019	A project condition survey is completed in August.
2021	The amount of \$150,000 is appropriated for planning activities for a dredging project in Wrangell Harbor however most of the available cubic yardage is inaccessible because it is around the edges of the harbor, in the vicinity of the rock previously encountered in 1993 or under the float system. Since the authorized project depth of -10 feet MLLW is available over most of the harbor, a dredging project was not pursued.

Table 2 Cost to Date

Project	Description	Cost \$
010435	GI PED Appropriations	386,000
	GI PED Costs	386,000
	GI PED Contributed Appropriations	150,000
	GI PED Contributed Costs	110,642
	CG Appropriation	13,114,437
	CG Costs	13,087,656
	CG Contributed Appropriations	3,071,450
	CG Contributed Costs	3,119,380
021500	O&M Appropriation	1,269,839
	O&M Costs	1,132,361

Note: Costs for Wrangell Harbor and Heritage Harbor are combined.

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
945 1204 Wrangell, Wrangell Island AK	13.57	15.96	-

NOAA Publication Date: 07/15/2004

Controlling Depth For the Outer Mooring Basin in Wrangell Harbor, -2.7 feet MLLW controls near the southeast edge of the project limits. For the Connecting Channel, -4.2 feet MLLW controls near Daybeacon 5, August 2019. Project depth is effectively available in the Inner Mooring Basin except along the northern portion of the limits in which -5.8 feet MLLW controls, August 2019.

Maintenance Dredging Supplement

A. General

1. The Federal project was last dredged in 2004 with the removal of 220 cubic yards from beneath the inner harbor float to prevent recurring damage to the structure at extreme low tides. Previous maintenance dredging occurred in 1993 with the removal of 3,575 cubic yards of material and 1968 with the removal of 13,644 cubic yards of material.
2. Shoaling was most apparent along the eastern limit of the outer basin, both sides of the connecting channel, and along the northern limit and southeast corner of the inner basin.

3. The “no-dredging” window runs from 15 March to 1 June as established by the State of Alaska.
4. The project was last dredged with a hydraulic cutterhead and suction pipeline. Hard bottom conditions were encountered in all three areas of the project thwarting efforts at an additional foot of advance maintenance and resulting in a large under run. Of the 13,100 cubic yards reportedly possible for dredging, the contractor was able to remove 3,600 cubic yards.

B. Disposal

1. Dredge spoils were conveyed via portable pipeline and discharged in the deep-water of Zimovia Strait. The primary intertidal site north of project, with center at 56°28'13.33"N 132°22'50"W, was not utilized
2. The deep-water disposal site is located a minimum of 900 feet west of the main breakwater tip in water 100 feet deep or greater. The offshore geographic coordinates for a single discharge point are 56°28'2.5"N and 132°23'19.9"W.
3. The future location of the disposal site will have the option of upland or deep-water disposal.

C. Sampling & Testing

1. Three sites were sampled within the Federal project, September 1992, and classified as silty sand (SM), sandy silt (ML), and silt with sand (ML).
2. Chemical analysis was conducted using (5) test methods as outlined with results below.

Table 4 Chemical Testing

Method	Chemical analysis	Results
415.1 Series 6000-7000's	Total Organic Carbon (8) RCRA Metals	ND (none detected)- 3.48 % (6) of (8) detected; Mercury 0.3 - 0.5 marginal, all others below management levels
8270	Semi-volatile Organics	(12) above management levels
8080	Pesticides and PCB's	ND
8260	Volatile Organic Compounds	Methylene Chloride 25 - 58 ppb,* all others ND or below management levels

** Low levels detected in all samples; laboratory contamination suspected.*

D. Environmental Permits and Reports

1. A Chemical Data Report was prepared by the Corps in February 1993, an Environmental Assessment was completed in April 1993, and a Finding of No Significant Impact (FONSI) was signed 13 August 1993.

2. The following permits or authorizations are listed by agency below:

Table 5 Environmental Permits

Agency Name	Date of Issue	Date of Expiration
AK Department of Environmental Conservation	August 4, 1993	n/a
AK Department of Governmental Coordination	July 22, 1993	n/a
AK Department of Natural Resources	July 15, 1993	n/a
US Fish and Wildlife Service	July 6, 1993	n/a
NOAA -National Marine Fishing Service	April 14, 1993	n/a

3. Water Quality: Five physical parameters were measured through the water column at three locations within the federal project; temperature, salinity, pH, oxidation-reduction potential, and conductivity were measured in the field. No chemical analysis was conducted.

Wrangell Harbor, Wrangell, Alaska



Oblique of Wrangell Harbor, July 2015.



Wrangell Harbor Breakwater, July 2015.

Wrangell Harbor, Wrangell, Alaska



Oblique of Wrangell Harbor, July 2015



Oblique of Wrangell Harbor, July 2015