

Old Harbor

Condition of Improvements
 30 December 2019
Old Harbor, Alaska
 (CWIS No. 006501, 154295)

Authorization Under Section 107 of the Rivers and Harbors Act, 14 July 1960 (Public Law 86-645), as amended, and authorized by the Chief of Engineers, 15 June 1966, provides for a small boat basin 200 feet wide by 700 feet long at 8 feet below MLLW, an entrance channel 60 feet wide by 600 feet long at a depth of 8 feet below MLLW, and construction of an earth filled dike 1,200 feet in length to divert the freshwater of Big Creek from the basin area.

Table 1

Existing Project	Length ft.	Width ft.	Depth ft.
Basin	700	200	-8
Entrance Channel	650	60	-8
Diversion Dike	1250		
Groin	240		

Project Usage The small boat basin provides protected moorage for 40 resident and transient commercial fishing vessels. Old Harbor, Kodiak Harbor (project 1-20) and Port Lions (project 1-41) are the only protected basins between Cook Inlet and the Shumagin Islands, and are important harbors of refuge for this region.

Progress of Work

1966	Preliminary planning activities are initiated in August.
1967	Plans and specifications are completed in May with the inclusion of a 240 foot long groin constructed with rock filled gabions to protect the entrance channel from shoaling. Construction begins in July by removing 106,000 cubic yards from the channel and harbor. The diversion dike is constructed by the placement of 31,700 cubic yards of fill material and 2,400 cubic yards of rock slope protection. The project is completed in November.
1971	Maintenance dredging in the basin and entrance produces 9,870 cubic yards of material. The elevation of the gabion groin is increased to provide better protection.

Progress of Work

1993	After sampling and testing is completed, the project is dredged by contract in December with a total of 3,376 cubic yards removed within the Federal limits.
2002	A project condition survey is conducted in June, and vertical aerial photography is taken in the same month.
2005	A project condition survey is accomplished in June.
2009	A tidal datum update study and a project condition survey are conducted in August and September.
2010	NOAA officially establishes a tidal datum for the community in June. Tying in the 2009 condition survey to the new datum reveals entrance channel elevations to be approximately -3 ft MLLW; about 5 ft. higher than it was previously. The absence of an accurate tidal datum determination originally, a rise of the ocean floor, and concern that the entrance channel may have never been dredged to its authorized depth originally are likely contributions to the difference. USACE Comprehensive Evaluation of Project Datums (CEPD) Compliance report completed and recorded in July.
2012	Contract documents for the geotechnical investigation and chemical sampling of the harbor sediment were prepared.
2014	An April 2014 condition survey determined the 2009 NOAA tidal datum was in error; the 5-foot vertical discrepancy did not exist. NOAA republished the tidal datum using the 2014 survey data. Plans and specifications were completed and a contract awarded to Western Marine Construction to dredge the harbor and entrance channel.
2015	Dredging started in mid-June and was completed in early September, dredging 14,000 cubic yards of sands and gravels and stockpiling the material on the beach sand spit for reuse as building material. Dredging was by mechanical means with material placed in a hopper on the derrick barge and offloaded with front end loaders to off-road trucks for placement in the stockpile. The narrow, 60 feet wide entrance channel precluded the derrick and scow working side-by-side.

Table 2 Cost to Date

Project	Description	Cost \$
	CG	370,415
006501	O&M Appropriations	5,417,891
	O&M Costs	4,447,673
154295	CG Appropriations	47,204
	CG Costs	47,204

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
945 7527 Old Harbor, Kodiak Island AK	6.47	8.31	21.87

NOAA Publication Date: 06/29/2018

Controlling Depth As of August 2015, the entrance channel and basin are below project depth of -8 feet MLLW; the controlling depth is -4.9 feet MLLW at the western side slope at about the midpoint of the basin (Station 14+00 on the 2015 post dredge survey).

Maintenance Dredging Supplement

A. General

1. The project was completed in 1967, saw major maintenance dredging in 1971 (9,870 cubic yards), but required no further dredging until 1993 when 3,376 cubic yards were removed from the project.
2. Shoaling predominates along the southern limit of the entrance channel and the eastern limit of the basin.
3. No dredging windows have been established. In order to avoid times of peak activity, the fall months may be assumed to be the best window for dredging activity.
4. Dredging was last accomplished with a cutterhead and suction pipeline, a means well suited to the harbor and the adjacent upland disposal site. Efforts to advance maintenance by increasing the allowable over depth to (2) feet proved unsuccessful due to hard bottom conditions.
5. In 2015 contract documents required mechanical dredging. Dredging depth included 1 foot of allowable over depth resulting in a required depth of -9 feet mean lower low water and a maximum pay line of -10 feet mean lower low water.

B. Sampling & Testing

1. Six borings were drilled at the Old Harbor maintenance dredging site. Two samples were collected from each boring for a total of twelve primary samples, November 2012.
2. Chemical analysis was conducted using (10) test methods as outlined with results below

Table 4 Chemical Testing

Method	Chemical analysis	Results
AK 101	Gasoline Range Organics	All ND or below cleanup levels
AK 102/103	Diesel Range Organics / Residual Range Organics	All below cleanup levels
Series 6000-7000's	(11) RCRA Metals	(11) of (11) detected; Arsenic 4.2 - 12 ppm, Chromium 22 – 50 ppm, all others below minimum levels
9060	Total Organic Carbon	3200 – 28000 ppm
8260B	Volatile Organic Compounds	ND or below cleanup levels
8081A	Pesticides	ND
8082	Polychlorinated Biphenyls (PCBs)	ND
8270D	Semi-Volatile Organic	Pentachlorophenol 0.15 ppm*, all others below minimum levels.
D2216	Percent Solids	63-93%

** Exceeds the ADEC level of 0.047 ppm but is below the PSDDA level of 0.4 ppm.*

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

C. Disposal

1. Dredged effluent was transported via portable pipeline to the nearby upland disposal site for the 1971 and 1993 dredge events. This upland site, located immediately to the south of the float access point, is an irregular polygon roughly described as 200 by 235 feet along its axes. The disposal site center 57°12'24.35"N latitude and 153°18'06.2"W longitude. An alternate deep water site, a rectangle 750 by 1500 yards (approximately 65 fathoms deep), is located about 5.5 nautical miles to the east of the project in the waters of Sitkadilak Strait. The alternate project corner coordinates in latitude and longitude are as follows:

Table 5 Alternate Deep Water Disposal Area

Corner	Latitude (N)	Longitude (W)
1	57°12'29"	153°08'39"
2	57°12'29"	153°07'44"
3	57°11'57"	153°07'44"
4	57°11'57"	153°08'39"

2. The upland site, about 90 feet wide and 1,000 feet long, with corners listed below, was used for the 2015 dredging event:

Table 5A 2015 Upland Disposal Area

Corner	Latitude (N)	Longitude (W)
1	57°12'28.42"	153°18'00.86"
2	57°12'28.03"	153°17'59.18"
3	57°12'17.65"	153°18'07.71"
4	57°12'18.00"	153°18'09.53"

3. The upland site is preferred for dredge spoils disposal and should have ample capacity for the foreseeable future.

D. Environmental Permits and Reports

1. An Environmental Assessment was completed by the Corps in February 1976 followed by a Finding of No Significant Impact (FONSI) February 1976. A FONSI was signed in October 1993 prior to the December 1993 dredging effort.
2. Water Quality: Three sites were measured through the water column within the federal project, January 1993; at the two entrance channel sites depth, temperature, and salinity were recorded, and conductivity was included as an additional physical parameter at the inner harbor location. No chemical analysis was conducted.
3. An Environmental Assessment was completed by the Corps in November 2013 followed by a Finding of No Significant Impact signed in January 2014, in advance of the 2015 dredge event.
4. Water Quality Certification ER-14-04 was issued by the Alaska Department of Environmental Conservation in March 2014 in advance of the 2015 dredging.

Old Harbor, Old Harbor, Alaska



Aerial of Old Harbor, May 2014



Old Harbor, 2010