Sitka
Crescent Bay Harbor

Condition of Improvements
31 December 2022
Crescent Bay Harbor,
Sitka, Alaska
(CWIS Nos. 010322 & 055030)

Authorization **(1)** Rivers and Harbors Act, 2 March 1945 (House Doc. 744, 79th Congress, 2nd Session) as adopted, provides for the improvement of Crescent Bay by dredging a 13 acre area to a depth of 10 feet below MLLW, protected by two breakwaters. **(2)** Rivers and Harbors Act, 3 September 1954 (House Doc. 414, 83rd Congress, 2nd Session) provides for dredging the Forest Service basin, a 130 foot by 270 foot area, and its approach to a depth of 10 feet below MLLW.

Table 1

Existing Project	**Length** (ft.)	**Width** (ft.)	**Depth** (ft.)
Basin	15 acres		-10
Entrance Channel	205	varies	-10
Forest Service Basin	270	130	-10
Main breakwater	1430		
Entrance Breakwater	335		

Project Usage Crescent Bay basin provides a base of operations for commercial fishing and moorage for approximately 500 vessels.

Progress of Work

1964	Design Memorandum No. 2 is approved which increases the basin area to 15 acres and modifies the breakwater design to accommodate increased vessel activity. Construction of the small boat basin and dredging of the Forest Service Basin begins in July.
1965	The project is completed in December; 304,300 cubic yards of common material were removed, and 27,100 tons of rock was placed during construction.
1972	In order to reduce a wave surge problem in Crescent Bay basin, a 135-foot extension to the jetty is begun in September.

Progress of Work

1973	The jetty extension is successfully completed in January.
1992	A condition survey of Crescent Bay is conducted in July.
2001	Crescent Bay Harbor, Western Channel, the Forest Service Basin, and the Channel Rock Breakwaters are surveyed under contract.
2003	Vertical and oblique aerial photography is taken in May.
2005	A condition survey of all three federal projects including the Forest Service Basin are conducted in May.
2010	A project condition survey was completed in August of Crescent Harbor and Western Channel.
2016	A project condition survey was completed in March of Crescent Harbor.
2021	A project condition survey was completed in May.

Table 2 Cost to Date

Project	Description	Cost $
010322	GI PED Appropriations	445,109
	GI PED Costs	445,109
	CG Appropriations	19,467,054
	CG Costs	18,900,628
	CG ARRA Appropriations	45,930
	CG ARRA Costs	45,930
	CG Contributed Appropriations	1,238,620
	CG Contributed Cost	1,238,620
055030	O&M Appropriations	129,329
	O&M Costs	129,329

Note: Costs for all Channel Rock, Crescent Harbor, and Western Channel combined.

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
945 1600 Sitka AK	7.7	9.94	18.98

NOAA Publication Date: 05/17/2017

Controlling Depth Project depth is effectively available throughout the project, May 2021. The controlling depth in the entrance channel is -2.8 feet located on the southwesterly toe of main breakwater as the channel enters the harbor basin. The controlling depth of Crescent Bay basin is -4.8 feet along the toe of slope on the eastern side of the basin. Project depth is effectively available throughout the Forest Service basin with a controlling depth in -0.3 feet located along the shoulder of the basin in the southeast corner.

Maintenance Dredging Supplement

A. General

1. The Federal project at Crescent Bay Basin has not required dredging since original construction in 1965, and likewise Western Channel has required no maintenance dredging. Federal responsibility for Thomsen Harbor includes only breakwater repair, if necessary, and will not require Federal maintenance dredging.
2. Some shoaling has occurred around the entire limit of Crescent Bay Basin with heavier shoaling along the northern limit.
3. A dredging window from 1 June to 14 March was approved for the Thomsen expansion project; further agency review should be conducted prior to the dredging of Crescent Bay Basin.
4. The method of dredging depends in part on the selection of the disposal site which is yet to be determined.

B. Sampling & Testing

1. Nine sites were sampled in May of 1997, seven in Crescent Bay Basin and two in Western Channel. The basin samples were classified by ASTM D 2487 as follows

Table 4A Soil Sampling

Sample No.	Classification	Results
1, 2	SM	Silty SAND with gravel
3	ML	Sandy SILT
6, 8	SM	Silty SAND
7	GM	Silty GRAVEL with sand
9	SP-SM	Poorly graded SAND with silt

Note: The two samples from Western Channel were classified as GP-GM, Poorly graded GRAVEL with silt and sand. Classification

2. Chemical analysis was conducted using (7) test methods as outlined with results below

Table 4B Chemical Testing

Method	Chemical analysis	Results
9060	Total Organic Carbon	9,500 - 67,200 ppm
8260A	Volatile Organic Compounds	All below management levels
8270B	Semi-volatile Organic Compounds	(3) sites total (7) SVOCs over management levels
Series 6000-7000	(8) RCRA Metals + Copper	All below management levels
8081	PCBs & Pesticides	All below management levels or thresholds not established
9200	Nitrate + Nitrogen	ND (none detect)
9035	Sulfate	560 - 5,200 ppm

C. Disposal

1. Designated upland sites, including intertidal if greater than +4 feet MLLW, has met previous agency approval. Environmental impacts are lessened and dredged material is put to good use when upland sites are utilized, but the costs of such activity can be prohibitive.
2. Deep water sites in the vicinity will have to be investigated and are subject to agency approval, if onshore options are exhausted.

Crescent Bay Harbor, Sitka, Alaska

Sitka Harbors, March 2016

Oblique of Crescent Bay Harbor, March 2016

Crescent Bay Harbor, Sitka, Alaska

Low Tide in Crescent Bay Harbor, May 2021

Crescent Bay Harbor Entrance Channel and Breakwater, May 2021