

# **Dillingham Harbor**



Condition of Improvements  
31 December 2019  
**Dillingham Harbor, Alaska**  
(CWIS No. 004800, 087319)

**Authorization** Rivers and Harbors Act, 3 July 1958 (House Doc. 390, 84th Congress, 2nd Session) as adopted, provides for a small boat basin along Scandinavian Creek of 230,000 square feet at 2 feet above MLLW, an entrance channel 1,100 feet long with a bottom width of 40 feet in Scandinavian Creek, a sheet-pile sill across the basin outlet with a top elevation at 7 feet above MLLW, and an embankment on three sides of the basin to provide protection from the wind.

**Table 1**

<b>Existing Project</b>	<b>Length (max)</b>	<b>Width (max)</b>	<b>Depth ft.</b>
Basin	700	650 to 800	+2
Entrance Channel	1100	40	varies
Rock Sill*	n/a	n/a	+7

*\* removed to depth of existing bottom*

**Project Usage** The harbor provides half-tide access and all-tide moorage for about 320 commercial fishing and recreational craft. Commercial salmon fishing is the cornerstone of the community's economy; subsistence hunting and fishing continue to be vital local activities. Dillingham Harbor provides both moorage and an alternate landing area for lighterage vessels. All transportation to the area is by water or air.

**Progress of Work**

1960	Dredging of the basin begins in September and continues until freeze-up in November. The project is 52% complete.
1961	Design modifications change the sheet-pile sill to a rock sill and move the embankment back from the basin. Dredging of the basin is resumed in May and completed in October. The rock sill is only partially completed; damage by ice occurs during the winter months.
1962	The basin is found to be silted in. Restoration of the rock sill and dredging of the basin commences in May. The project is completed in July.
1963	The depth of the project is reduced from +2 feet to +7 feet MLLW due to siltation.

## Progress of Work

---

1964	Maintenance is suspended pending restudy of the project.
1966	A study of the siltation problem is completed in September.
1967	A General Design Memorandum is completed and submitted for approval.
1968	A supplemental design memorandum is approved authorizing re-excavation to project depth and the purchase of a Corps owned dredge.
1969	Dredging commences in June and continues through October by the Corps' pipeline dredge "Dillingham".
1970	From this year forward annual maintenance dredging is carried out from May through October as required.
1987	From this year through 1988 all dredging is performed by the "Dillingham".
1989	Beginning this year maintenance dredging is accomplished annually by contract.
1993	Sampling and testing is conducted on the harbor sediments.
1994	The Corps' project office is leased to the National Guard for a five year period.
1999	Rock from the "disturbed" rock sill is removed from the entrance channel, but only to the depth of the existing bottom.
2001	A Dredged Material Management Plan is initiated to study alternative disposal methods and sites as a result of the existing Peter Pan site reaching capacity.
2003	Annual maintenance dredging removes 103,299 cubic yards from the basin area. Alternate disposal sites are under consideration.
2004	The dredging contractor removes 90,000 cubic yards from the federal basin and entrance channel. In-water disposal was attempted but suspended due to insufficient contractor capability. The Peter Pan site was used for the remainder of the dredging period.
2005	The annual maintenance dredging effort again reports the removal of 90,000 yards. The open water disposal site is used successfully for the first time. The Dredged Material Management Plan continues with analyses of alternative disposal methods and sites.
2006	Annual maintenance dredging removes 98,320 cubic yards with a cutterhead and suction pipeline operation. Material is successfully disposed offshore in the turbid open water.
2007	Maintenance dredging removes 95,000 cubic yards in the annual effort, and disposal is conducted offshore.
2008	A pre-dredge survey was conducted in May 2008. 91,113 cubic yards of material was removed and a post-dredge survey was conducted in June 2008.

## Progress of Work

---

- 2009 A pre-dredge survey was completed in late May. Annual maintenance dredging removed approximately 73,000 cubic yards of material with disposal in the Nushagak River site. A post dredge survey was completed in late June. USACE Comprehensive Evaluation of Project Datums Compliance report completed and recorded in September.
- 2010 A pre-dredge survey was completed in May. The June post-dredge survey indicates that 76,738 cubic yards of material was removed by the annual maintenance dredging effort. Dredged material was placed in the Nushagak River site.
- 2011 Hydraulic dredging was conducted in May and June for a total of 86,459 cubic yards removed. Material was placed in the open water site in the Nushagak River.
- 2012 Portable Hydraulic Dredging completed the 4th year of a 5-year contract, performing annual maintenance dredging in June with the removal of 91,947 cubic yards.
- 2013 Annual maintenance dredging removed 69,847 cubic yards from the basin and placed the material in the Nushagak River site.
- 2014 A meeting was conducted in late March to gather and consider public findings regarding maintenance dredging with in-water placement at the designated location in the Nushagak River. A new, three year maintenance dredging contract was awarded to Alaska Marine Excavation with 99,022 cubic yards removed. This year's dredging operations were completed in just three weeks.
- 2015 A mild winter results in higher than average shoaling within the harbor. Annual maintenance dredging removed 103,431 cubic yards with placement in the designated Nushagak River site. Again, dredging activities were accomplished in just three weeks.
- 2016 The final year of a three-year maintenance dredging contract removes 109,886 cubic yards with placement in the designated Nushagak River site. Samples from the dredge prism and background locations were taken for chemical analysis.
- 2017 A new, three year maintenance dredging contract was awarded to Alaska Marine Excavation with 80,735 cubic yards removed. Dredged material was transported via pipeline to the Nushagak River site.
- 2018 Annual maintenance dredging removed 100,794 cubic yards from the basin and entrance channel with the material placed in the Nushagak River site.
- 2019 A public meeting was held in early April in Dillingham to gather and consider findings regarding maintenance dredging with in-water placement. Annual maintenance dredging removed 97,335 cubic yards in May. Additional dredging of approximately 313 cubic yards was conducted in the entrance channel to partially remove a shoal forming along the east bank. A new, three year maintenance dredging contract was awarded in December.

**Table 2 Cost to Date**

<b>Project</b>	<b>Description</b>	<b>Cost \$</b>
004800	O&M Appropriations	26,534,098
	O&M Costs	26,456,097
	O&M Contributed Appropriations	1,700
	O&M Contributed Costs	1,700
087319	CG Appropriations	1,060,678
	CG Costs	1,060,678

**Table 3 Range of Tides in feet**

<b>Tide Station</b>	<b>Mean Range</b>	<b>Diurnal Range</b>	<b>Extreme Range</b>
946 5374 Snag Point, Dillingham AK	16.58	20.64	-

*NOAA Publication Date: 04/29/2013*

**Controlling Depth:** A depth of +4.6 feet MLLW controls in the basin along the western toe. For the entrance channel, only the upper reach near the south boat ramp is maintained. The controlling depth there was +8.6 feet MLLW. These depths are from the post-dredge survey of May/June 2019. The harbor and entrance channel are subject to rapid and continuous shoaling during the ice free season.

**Table 4 Dredged Quantities and Contract Costs**

<b>Year</b>	<b>Quantity (cubic yards)</b>	<b>Cost \$</b>
2012	91,947	761,184
2013	69,847	696,485
2014	99,022	748,752
2015	103,431	752,444
2016	109,886	763,897
2017	80,735	653,368
2018	100,794	671,496
2019	97,648	692,124

## **Maintenance Dredging Supplement**

### **A. General**

1. Dredging of the Dillingham small boat harbor and entrance channel is carried out by contract typically for a three year term.
2. Shoaling is heavy throughout the basin area and the upper entrance channel.
3. The window for dredging activity runs from 10 May to 15 July, but usually dredging activity occurs from “ice out” to an early completion about the end of the first week in June to avoid conflicts with the salmon fishing fleet.
4. Dredging is accomplished with a hydraulic cutter-head and pipeline suction dredge which conveys the effluent to an open water site.

### **B. Sampling & Testing**

1. A total of fifteen (13 primary and 2 duplicate) soil and sediment samples were collected in August 2008. These samples were collected to the immediate north of the proposed breakwater site and from the shoreline in the area of the proposed revetments.
2. Chemical analysis in 2008 was performed using six test methods. Arsenic exceeded Alaska Department of Environmental Conservation (ADEC) cleanup criteria for soils in every sample. All sediments tested were suitable for open water disposal according to the Puget Sound Dredging Disposal Analysis (PSDDA) screening levels at the time.
3. Prior to 2016 maintenance dredging, six samples, including one duplicate, were taken from six locations within the harbor and entrance channel at depths from 0-2 feet from the sediment surface. Another six samples were taken in approximately the same locations during a second mobilization once maintenance dredging was nearly complete. These samples were taken at depths from 6-8 feet below the original sediment surface. Background samples were also taken from Scandinavian Creek as well as locations east and west of the harbor entrance from shore.
4. The following analytical methods were performed on the 2016 sediment samples submitted for analysis:

**Table 5 Chemical Testing**

<b>Parameter</b>	<b>Analytical Method</b>	<b>Target Contaminant</b>
Metals: antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc	SW846 6020A & 7471A	Regulated metals from fuels, paints, batteries, etc.
Polynuclear Aromatic Hydrocarbons (PAHs)	SW846 8270D-SIM	Fuel constituent compounds.
Chlorinated Pesticides	SW846 8081B	Pesticides (e.g., DDT) residue from previous pest control activities
Total Organic Carbon (TOC)	SW846 9060	Used in interpretation of organic chemical data.
Diesel Range Organics (DRO)	AK102	Diesel, heavy fuels
Residual Range Organics (RRO)	AK103	Heavy fuels, lubricating oil
Grain Size	ASTM D422	Particle size distribution

5. No exceedance of the Dredged Material Management Program (DMMP) limits for freshwater were noted; however, arsenic and chromium were detected in sediments at concentrations exceeding the most conservative ADEC criteria. These concentrations are assumed to be naturally occurring. The in-water placement method for dredged material remains environmentally acceptable. Further sampling and analysis is recommended if upland disposal or other alternatives for placement of dredged material are to be used.

### **C. Disposal**

1. Until 2004, the effluent was traditionally conveyed via portable pipeline from the dredge plant to upland, bermed disposal sites east and west of the harbor. An open water site immediately south of the entrance channel approximately 800 feet offshore was attempted in 2004, but failed with insufficient pipeline length and poor anchoring methodology. In-water disposal was successfully achieved in 2005. Turbidity monitoring of the open water site was continued in 2006.
2. A 20-year Dredged Material Management Plan was under development for the long term disposal needs of the harbor and planned for implementation in 2009.
3. The Preliminary Assessment in September 2007 states that a Dredged Material Management Plan will not be written because in-water disposal is expected to provide disposal capacity in excess of 20 years.



- The open-water placement site for dredged material is approximately 250 feet long by 300 feet wide in the Nushagak River approximately 1,200 feet southeast of the harbor basin. The center of the site is at approximately N59°02'06.34" W158°28'27.92".

**D. Environmental Permits and Reports**

- A Final Environmental Impact Statement (FEIS) for operation and maintenance was circulated in June 1974. Environmental Assessments for maintenance dredging were completed in January 1978, November 1979, December 2001, December 2002, January 2004, September 2005, and most recently in September 2007 by the Corps of Engineers. Findings of No Significant Impact (FONSI's) for maintenance dredging were signed in June 1974, January 1978, March 1980, February 2002, March 2003, May 2004, March 2006, and most recently in April 2008. A Dredged Material Management Plan Preliminary Assessment for maintenance dredging and in-water disposal was completed in September 2007.
- The following permits or authorizations have been issued for current dredging operations:

**Table 6 Environmental Permits**

<b>Agency Name</b>	<b>Purpose</b>	<b>Date of Issue</b>	<b>Date of Expiration</b>
AK Department of Natural Resources	Letter of Entry LAS 24608	7-Aug-19	31-Aug-22
AK Department of Environmental Conservation	Section 401 Certificate of Reasonable Assurance ER-07-26	8-Aug-19	n/a
AK Department of Fish and Game	Fish Habitat Permit FH19-II-0092	9-May-19	31-Dec-23
AK Department of Natural Resources	Section 106 Assessment – National Historic Preservation Act	16-Aug-19	n/a
NOAA - National Marine Fisheries Service	Section 7 Consultation – Endangered Species Act	17-Sep-07	n/a
US Fish and Wildlife Service	Section 7 Consultation – Endangered Species Act	23-Apr-07	n/a

*Note: A substantial change in project scope would trigger additional agency review and project authorization. The Corps of Engineers along with resource agency stakeholders will re-evaluate in-water disposal for adverse environmental impacts after twenty years (2029), or sooner if major changes in disposal methods or unexpected environmental impacts occur.*

- Water Quality: Five physical parameters were measured at three locations in the harbor, May 1992; temperature, pH, salinity, conductivity, and oxidation-reduction potential

were measured in the field. Water turbidity data was collected before and during in-water disposal in the 2005 and 2006 dredging season.

# Dillingham Harbor, Dillingham, Alaska



Maintenance dredging of harbor basin, June 2018



Shoaling in harbor basin prior to dredging, April 2019



# Dillingham Harbor, Dillingham, Alaska



View of maintenance dredging from Scandinavian Creek, May 2016



Dredge pipeline route to in-water placement site, May 2016