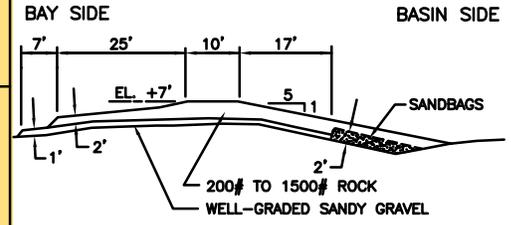
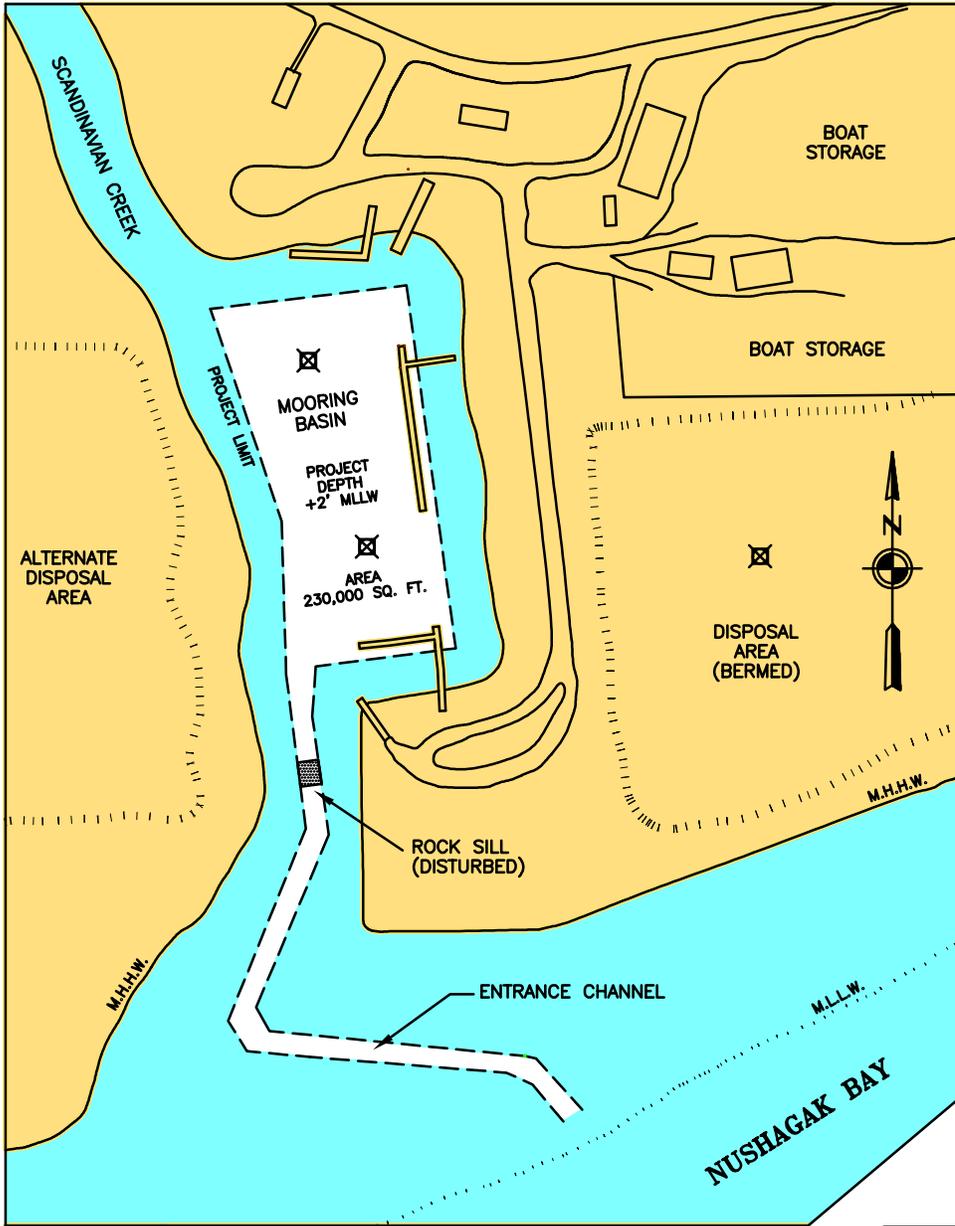


Dillingham Harbor



DETAIL OF ROCK SILL
NOT TO SCALE

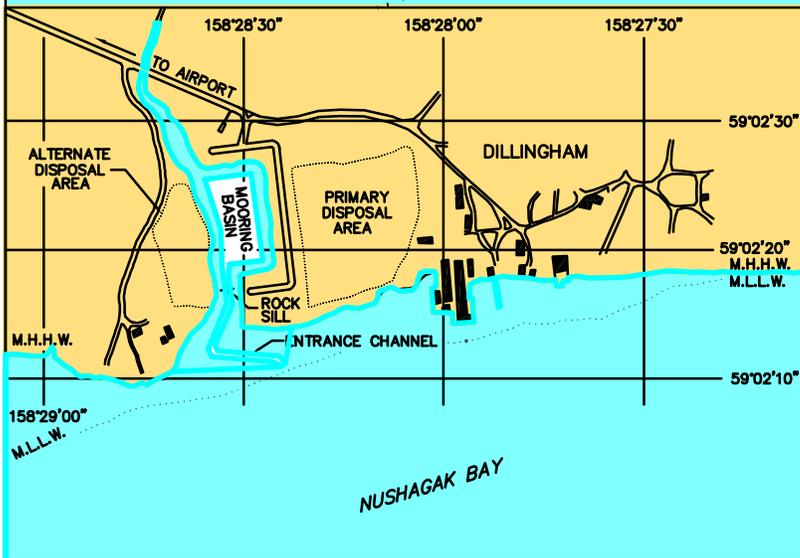
NOTE: SECTION TAKEN ALONG CHANNEL CENTERLINE.

NOTES

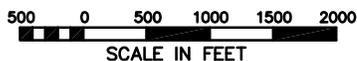
1. SOUNDINGS AND ELEVATIONS ARE BASED ON MEAN LOWER LOW WATER (MLLW = 0.0').
2. THIS LOCALITY IS SHOWN ON USC & GS CHART NOS. 16011 AND 16322.

LEGEND

SEDIMENT SAMPLE LOCATION



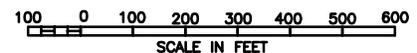
VICINITY MAP



METRIC CONVERSIONS					
FEET	METERS	FEET	METERS	FEET	METERS
0.5	0.15	11.0	3.55	20.0	6.10
1.0	0.30	12.0	3.66	21.0	6.40
2.0	0.61	13.0	3.96	24.0	7.32
4.0	1.22	15.0	4.57	50.0	15.54
5.0	1.52	16.0	4.88	100.0	30.48
6.0	1.83	18.0	5.49	300.0	91.44
10.0	3.05	19.0	6.40	700.0	213.36

DILLINGHAM HARBOR ALASKA

REVISED 1996



Condition of Improvements
30 December 2014
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

Existing Project	Length (max)	Width (max)	Depth ft.
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.
- 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.

Progress of Work

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 annually 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.

Table 2 Cost to Date

Project	Description	Cost \$
004800	O&M Appropriation	21,585,698
	O&M Costs	21,331,799
	O&M Contributed Appropriation	1,700
	O&M Contributed Costs	1,700
087319	CG Appropriation	1,060,678
	CG Costs	1,060,678

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
946 5374 Snag Point AK	16.58	20.64	-

Controlling Depth: A depth of +2.7 feet MLLW controls in the entrance channel and +1.4 feet MLLW controls in the harbor as shown on the post-dredge survey of June 2014.

Table 4 Dredged Quantities and Contract Costs

Year	Quantity (cubic yards)	Cost \$
2008	91,113	524,813
2009	76,738	726,858
2010	84,467	749,833
2011	86,459	753,324
2012	91,947	761,184
2013	69,847	696,485
2014	99,022	925,098

Maintenance Dredging Supplement

A. General

1. Dredging of the Dillingham small boat harbor and entrance channel is carried out by contract for a two or three year term.
2. Shoaling is heavy throughout the basin area and the upper entrance channel.
3. The window for dredging activity runs from 15 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 cutterhead and pipeline suction dredge which conveys the effluent to an open water site.

B. Sampling & Testing

1. A total of thirteen soil and sediment samples were collected, August 2008. These samples were collected to the immediate north of the breakwater site and from the shoreline in the area of the proposed revetments
2. Chemical analysis was performed using (6) test methods as outlined with results below

Table 5 Chemical Testing

Method	Chemical analysis	Results
AK101	Gasoline Range Organics	ND (none detected) or below minimum levels
AK102/103	Diesel Range Organics/ Residual Range Organics	ND or below minimum levels
6000-7000's	(8) RCRA Metals	(10) of (10) detected; Arsenic 6.4 – 9.1 ppm*; all others below minimum levels
8260B	Volatile Organic Compounds	ND or below minimum levels

Method	Chemical analysis	Results
8081A	Pesticides	ND or below minimum levels
8270C SIM	Polycyclic Aromatic Hydrocarbons	ND or below minimum levels
8270C	Semi-volatile Organic Compounds	ND or below minimum levels
E160.3	Percent Moisture	7.1 - 44 %

** Arsenic exceeded ADEC criteria in every sample but did not exceed PSDDA criteria.*

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. 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 (DMMP) was under development for the long term disposal needs of the harbor and planned for implementation in 2009.
3. The DMMP Preliminary Assessment in September 2007 states that a DMMP will not be written because in-water disposal is expected to provide disposal capacity in excess of 20 years.

D. Environmental Permits and Reports

1. 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 DMMP Preliminary Assessment for maintenance dredging and in-water disposal was completed in September 2007.
2. The following permits or authorizations have been issued for current dredging operations:

Table 6 Environmental Permits

Agency Name	Purpose	Date of Issue	Date of Expiration
AK Department of Natural Resources	AK Coastal Management Program Review	15-Oct-2007 and 2-Feb-2006	n/a
AK Department of Natural Resources	Letter of Entry	3-Nov-08	2-Nov-13
AK Department of Environmental Conservation		15-Apr-08	15-Apr-13
NOAA -National Marine Fishing 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
AK Department of Fish and Game	Fish Habitat Permit	17-Oct-08	31-Dec-13
AK Department of Fish and Game	Fish Habitat Permit Amendment I	18-May-09	31-Dec-13

**A substantial change in project scope would trigger additional agency review and project authorization. The Corps of Engineers, DNR, ADEC, and ADF&G will re-evaluate in-water disposal for adverse environmental impacts after ten years (2019), or sooner if major changes in disposal methods or unexpected environmental impacts occur.*

3. 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



Aerial of Dillingham Harbor, 2014.



Dredging operations in Dillingham Harbor, 3 June 2013.