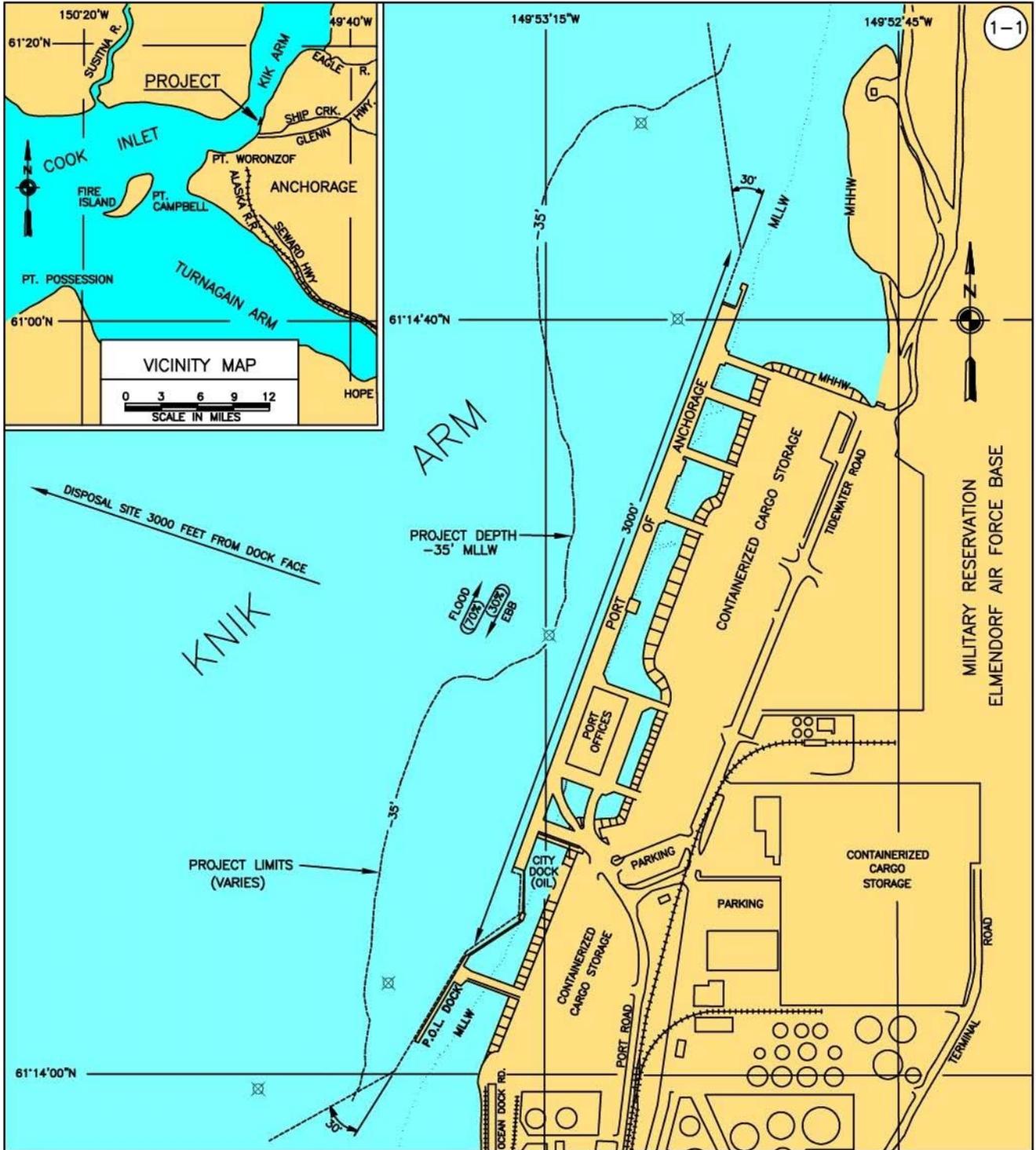


# **ANCHORAGE HARBOR**



NOTES

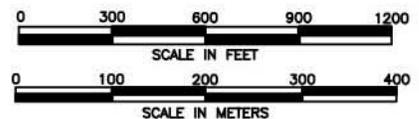
1. THIS LOCALITY IS SHOWN ON USC & GS CHART NOS. 16664, 16660, 161013, AND 500.
2. ELEVATIONS AND DEPTHS ARE IN FEET AND REFER TO MEAN LOWER LOW WATER (MLLW = 0.0').
3. THE BOTTOM SAMPLE FROM THE DISPOSAL SITE AND THE WATER SAMPLE SITE ARE LOCATED OFF THE MAP TO THE WEST.

LEGEND

⊗ BOTTOM SAMPLE LOCATION (FIVE SHOWN)

ANCHORAGE HARBOR  
ALASKA

REVISED 1996



**ANCHORAGE HARBOR, ALASKA**  
(CWIS NO. 00360)

Condition of Improvement 30 September 2009

**AUTHORIZATION:** (1) Rivers and Harbors Act, 3 July 1958 (House Doc. 34, P.L. 85-500, 85th Congress, 1st Session) as adopted, provides for a deep water harbor by dredging to a depth of -35 feet MLLW adjacent to docks and protected by two jetties or other works as required. (2) The Consolidated Appropriations Act, 2005, P.L. 108-447, Division C – Energy and Water Development Appropriations, Section 118(a) and 118(d) modified the project authorization for the Port of Anchorage in Anchorage, Alaska, directing the Secretary of the Army to construct a harbor depth to minus 45 feet mean lower low water for a length of 10,860 feet. Federal maintenance shall be in accordance with Section 101 of the River and Harbor Act of 1958, except that the project shall be maintained at a depth of minus 45 feet mean lower low water for a length 10,860 feet.

<b>EXISTING PROJECT:</b>	<u>LENGTH</u>	<u>DEPTH</u>	<u>WIDTH</u>
• Basin . . . . .	3000 ft	-35 ft	varies

**PROJECT USAGE:** The Federal project accommodates three dry cargo berths and one oil handling facility. It is the main supply and distribution center for the south-central and interior areas and the two large military bases that lie within the Municipality of Anchorage. The Port of Anchorage is the largest cargo port in Alaska; 4,358,766 tons of cargo (all commodities) passed through the port in 2008.

**PROGRESS OF WORK:**

- 1959 - The City of Anchorage constructs the first dry cargo berth at City Dock from 1959 through 1961, and dredges its approach to -35 feet MLLW.
- 1961 - The approach to Ocean Dock is increased to a depth of -32 feet MLLW at a distance of 50 feet from the dock face, and with a depth of -10 feet MLLW at the dock face.
- 1964 - The earthquake of March 27th destroys the federally owned Army Dock, and damages Terminal 1 and the POL Dock. Repairs are authorized under the River and Harbor Act of August 19, 1964 (P.L. 88-451) as amended. Terminal 1 and the POL Dock are repaired.
- 1965 - Emergency maintenance dredging is performed off the face of City Dock during July and August. The entire project basin is modified to a depth of -35 feet MLLW.
- 1966 - Dredging begins in October 1966 and is completed in June 1967; it includes 2 feet of advance maintenance to -37 feet MLLW.
- 1967 - Annual maintenance dredging begins by the Corps.
- 1968 - Terminal 2 construction begins.
- 1970 - Terminal 2 construction is completed.
- 1973 - Terminal 3 construction begins.
- 1977 - In early fiscal year 1977 Congress approves extending the original 2,000 foot project limit baseline to the present 3,000 foot length (P.L. 94-587, 22 OCT 76). Proposed jetties for the northern and southern ends of the project are de-authorized in November.

Continues on page 1-1a

**ANCHORAGE HARBOR, ALASKA** (continued)

30 September 2009

- 1978 - Development of large shoals in the northern and southern ends of the project necessitates emergency dredging from October 1978 through January 1979. All phases of Terminal 3 construction are completed.
- 1981 - Excessive shoaling during the spring and summer of 1981 requires using the Corps-owned dredge "BIDDLE", in addition to a contract dredge, to remove 894,076 cubic yards of material to reach project depth by the end of the ice free season.
- 1982 - Annual maintenance dredging by contract begins during the summer; an average of 350 to 400 thousand cubic yards is removed each year through 1988.
- 1988 - The angles of the dredging limits at the north and south ends of the project are changed from 45 to 30 degrees.
- 1992 - The POL 2 terminal is completed.
- 1994 - Sampling and testing of bottom sediments is conducted.
- 1995 - Maintenance dredging quantities since 1988 average 200,000 to 250,000 cubic yards per year.
- 1997 - The contractor removes 196,162 cubic yards of material during Phase I of the dredging which ended 15 August 1997.
- 1998 - During the second year of a five year continuing contract, the combined quantity from 1 October 1997 through 30 September 1998 equals 356,000 cubic yards.
- 1999 - Maintenance dredging removes 438,800 from 1 October 1998 through 30 September 1999.
- 2000 - The Corps hopper dredge ESSAYONS is mobilized to the port in November 1999, and removes 565,000 cubic yards of hazardous shoaling in 15 days of work. The annual maintenance dredging contract removes an additional 893,236 cubic yards from 1 October 1999 through 30 September 2000.
- 2001 - Two dredging contractors remove 167,140 cubic yards in October 2000 to achieve project depth. From June through September 2001, the dredging contractor removes 284,291 cubic yards of material. Dredging will continue through October.
- 2002 - The dredging contractor removes 631,728 cubic yards from June through September, and with a carryover of 131,540 yards from last October, a total of 763,268 cubic yards is removed in this fiscal year. New vertical aerial photography is also taken.
- 2003 - Dredging with clamshell only was insufficient to keep up with heavy infill to the project. Raise-the-Flag procedures were implemented in July and September to augment dredging needs with Manson's WESTPORT and Great Lakes' SUGAR ISLAND hopper dredges. With carryover yardage of 117,726 from October 2002 added to the clamshell yardage of 427,242 and the 300,000 cubic yards removed by the hopper dredge, we see a total of 844,968 cubic yards removed by contract in FY03.
- 2004 - Utilizing both clamshell and hopper dredges, dredging contractors remove 2,504,511 cubic yards in FY04.

Continues on page 1-1b

**ANCHORAGE HARBOR, ALASKA** (continued)

30 September 2009

- 2005 – The Consolidated Appropriations Act, 2005, P.L. 108-447, Division C – Energy and Water Development Appropriations, Section 118(a) and 118 (d) modified the original project authorization. Maintenance dredging removes 1,832,610 yards in FY05 using both a clamshell and hopper dredge. Plans for port expansion are underway.
- 2006 - Port expansion work begins with fill on the north end backlands. Maintenance dredging for FY06 saw the removal of 1,749,385 cubic yards utilizing both a clamshell and hopper dredge.
- 2007 - Port expansion continues with the completion of fill for the north end backlands. The planned expansion would move the dock face 400 feet seaward and lengthen it by about 5,000 feet. Annual maintenance dredging saw the removal of 1,766,357 cubic yards in FY07 using both a clamshell and a hopper dredge.
- 2008 - Maintenance dredging continues with 1,338,281 cubic yards of material removed from the original project area. Port expansion will continue to the north for barge berth and north port areas.
- 2009 - Installation of the new sheet pile structure is nearly completed in the north expansion. Transitional dredging begins and removes 666,708 cubic yards of material within the new project limits by clamshell. Maintenance dredging continues with 702,366 cubic yards removed by clamshell and hopper dredges. A heavy shoaling rate along the north dock face in terminal three deposits three to five feet of material between November and December.

**COST TO DATE:**

CG Appropriation	\$533,235
CG Costs	\$533,235
O&M ARRA Appropriation	\$27,623,400
O&M ARRA Costs 3135	\$5,708,604
O&M Appropriation 3123	\$126,498,020
O&M Costs 3123	\$115,569,841
O&M Appropriation 5125	\$3,274,000
O&M Costs 5125	\$3,274,000
O&M Contributed Appropriation	\$638,080
O&M Contributed	\$638,080

**RANGE OF TIDE:**

<u>Mean Range</u>	<u>Diurnal Range</u>	<u>Extreme Range</u>
25.9'	28.8'	40.7'

**CONTROLLING DEPTH:** The survey dated 11 November 2009 shows that project depth is available over most of the Federal project. The port is subject to heavy shoaling due to sedimentation and strong tidal currents.

Continues on page 1-1c

**ANCHORAGE HARBOR, ALASKA** (continued)

30 September 2009

**DREDGED QUANTITIES AND CONTRACT COSTS**

Item	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008*	FY 2009*
Quantity Cubic Yards	2,504,511	1,832,610	1,749,385	1,766,357	1,338,281	1,369,074
Contract Cost	\$12,863,578	\$10,064,718	\$9,409,484	\$8,504,315	\$12,269,992	\$17,822,880

\*Quantities and costs are based on the dredging season.

**MAINTENANCE DREDGING SUPPLEMENT:****A. General**

1. Anchorage Harbor is an annual maintenance dredging project; contract years have varied in duration from 1 to 5 years.
2. Heavy shoaling typically occurs along the main dock face, the POL dock, that area between the POL dock and the main dock, and along the 30 degree project limit extensions.
3. The project is open to dredge activity during the ice-free season. Work begins in the spring and continues through the summer, when shoaling is greatest, and on into the fall until depth is achieved or ice conditions make further dredging untenable.
4. Historically, dredging operations were most often conducted with a clamshell and barge. Recently, increased shoaling has required the use of additional equipment, and a small hopper dredge has been employed in addition to the clamshell.

**B. Sampling & Testing**

1. Samples were taken at five sites within the project, June 1994; all material was classified as silt (ML). One disposal site sample was taken and classified as silty gravel (GM).
2. Chemical analysis was conducted using (7) test methods as outlined with results below:

Method 8080	Pesticides and PCB's	none detected
Series 6000-7000's	(8) RCRA Metals* (6 samples)	Arsenic 7-17 ppm Barium 74-167 ppm Chromium 23-47 ppm Lead 4.1-13 ppm
Method 415.1	Total Organic Carbon (1 sample)	2,450 ppm
Method 418.1	Total Recoverable Petroleum Hydrocarbons	none detected
Method 160.3	Percent Solids	65.5 - 77.1 %
Method 8260	Volatile Organic Compounds	none detected
Method 8270	Semivolatile Organic Compounds	none detected

\* All heavy metal concentrations well below management levels; no cadmium, mercury, selenium, or silver were detected.

Continues on page 1-1d

**ANCHORAGE HARBOR, ALASKA** (continued)

30 September 2009

**C. Disposal**

1. Dredged material is moved by barge and tug to the deep water site, dumped, and dispersed by tidal activity.
2. Material is disposed in a rectangular site (2,000' x 3,000') 3,000 feet seaward from the southern end of the project. The coordinates are as follows: Corner (1) lat. 61°14'17.49247"N & lon.149°54'29.23606"W, Corner (2) lat. 61°14'24.25516"N & lon.149°55'07.62216"W, Corner (3) lat. 61°13'56.50589"N & lon.149°55'28.66298"W, and Corner (4) lat. 61°13'49.74495"N & lon.149°54'50.28481"W.
3. The current dredge disposal is located to the south of the project to avoid the reintroduction of dredged sediments back into the project.

**D. Environmental Permits and Reports**

1. An Environmental Assessment was completed in August 2008 and the Finding of No Significant Impact (FONSI) was signed in June 2009.

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

<u>Agency Name</u>	<u>Date of Issue</u>	<u>Date of Expiration</u>
ADGC	13 Apr 01	n/a
ADF&G	29 Mar 83	n/a
ADEC	20 May 09	20 May 14
EPA	31 Mar 83	n/a
USFWS	5 Apr 83	n/a
NOAA	1 Apr 83	n/a
NOAA	12 May 09	n/a
ADEC	20 May 09	20 May 14

3. Water Quality: Four physical parameters were measured through (40) feet of water column in June of 1994; temperature, pH, conductivity, and oxidation-reduction potential (ORP). No chemical analysis was conducted.

# Anchorage Harbor



The Paula Lee dredges in the north during June, 2009.



Aerial view of the north expansion in July, 2009.