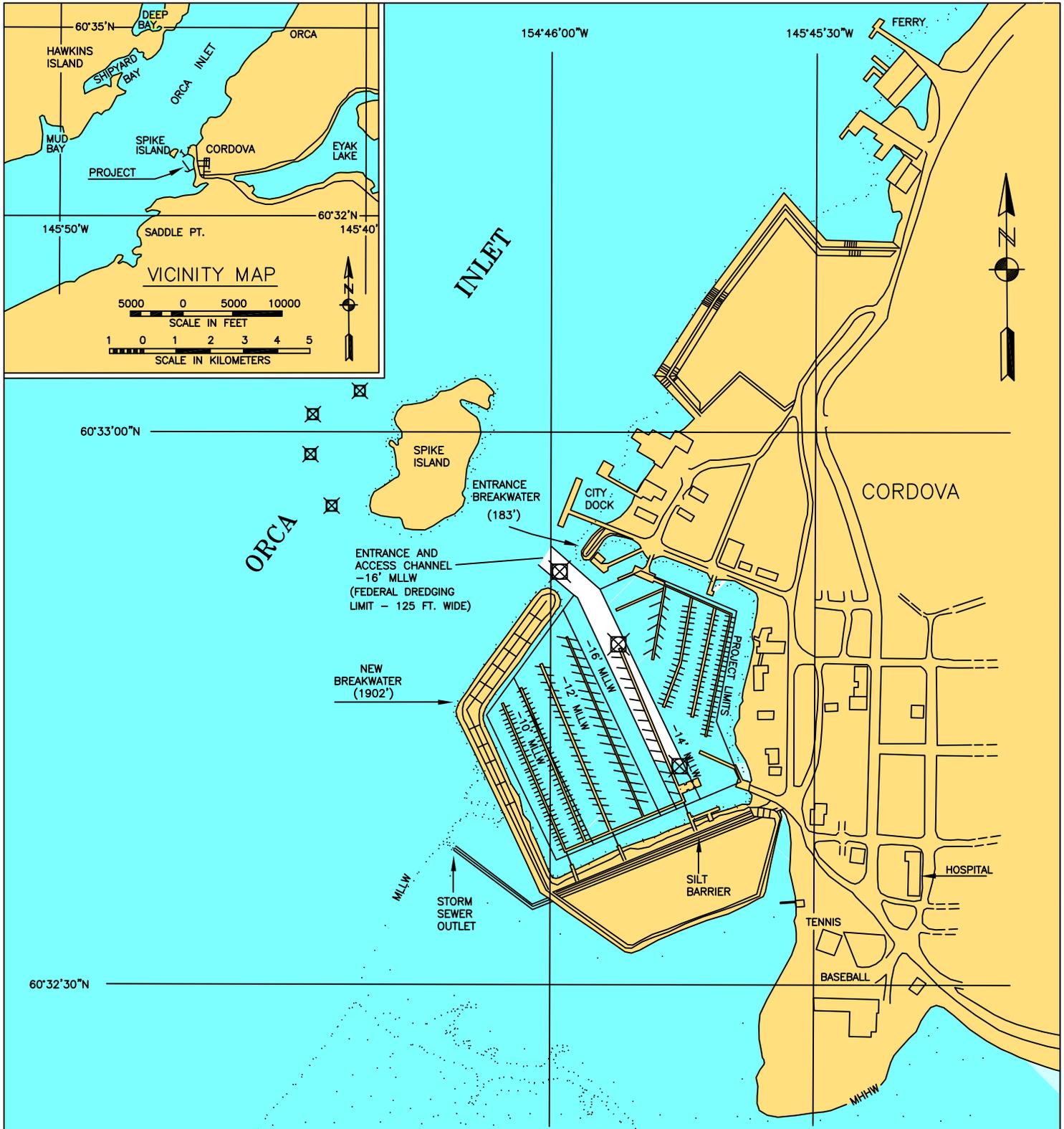


CORDOVA



NOTES:

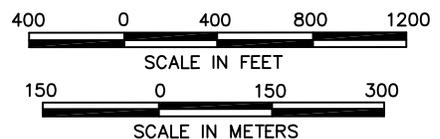
1. THIS LOCALITY IS SHOWN ON USC & GS CHARTS Nos. 16710, 16709, 16700 & 16013.
2. ELEVATIONS AND DEPTHS ARE IN FEET AND REFER TO MEAN LOWER LOW WATER (M.L.L.W.=0.0').

LEGEND

- ⊠ BOTTOM SAMPLE LOCATION
- ⊠ COMPOSITE SAMPLE LOCATION (4 SHOWN)

CORDOVA HARBOR
ALASKA

REVISED 2011



CORDOVA HARBOR, ALASKA
 (CWIS NO. 87136)
 (CWIS NO. 87186)
 (CWIS NO. 87711)

Condition of Improvement 30 September 2011

AUTHORIZATION: Rivers and Harbors Act, 30 August 1935 (R & H Committee Doc. 33, 73rd Congress, 2nd Session) as adopted, provides for a sheltered small boat harbor of 8.26 acres with a depth of -10 feet MLLW protected by north and south breakwaters of 1,100 feet and 1,400 feet respectively, with provision for a future expansion of 10.4 acres to -14 feet MLLW.

EXISTING PROJECT:	<u>LENGTH</u>	<u>DEPTH</u>	<u>WIDTH</u>
• Entrance & Access Channel	1750 ft	-16 ft	125 ft
• Entrance Breakwater	183 ft		
• Western Breakwater	1902 ft		
• Silt Barrier (contained)	1450 ft	650 ft	
• Mooring Basin (maintained by others)	19.55 acres	project depths: -10,-12,-14,-16 ft	

PROJECT USAGE: The small boat basin is used as a base of operations for commercial fishing, and provides moorage for 852 boats. Approximately 650 boats and skiffs are based in the Cordova area. The Cordova canning season is the longest and most diversified in the state.

PROGRESS OF WORK:

- 1938 - The original basin and breakwaters are completed in October of this year.
- 1951 - Maintenance dredging is accomplished to a depth of -12 feet MLLW.
- 1962 - Dredging to -12 feet from September - October removes 41,347 cubic yards of material from the harbor.
- 1964 - The area is uplifted 6.2 feet by the 27 March 1964 earthquake causing major damage to the project. Restoration work begins in June. Basin expansion is approved on 19 August 1964 and begins in November.
- 1965 - Restoration and expansion phases are completed in June.
- 1966 - Contract for construction of the 183 foot entrance breakwater is awarded in September and completed in October.
- 1968 - 13,170 cubic yards of material are dredged in February.
- 1970 - A shoal at the entrance channel is dredged to -15 feet MLLW.
- 1972 - The entrance channel and basin are dredged from September to October with 13,646 cubic yards removed.
- 1977 - Maintenance dredging removes 11,313 cubic yards from September to October.
- 1981 - Under the River and Harbor Act of 14 July 1960, Section 107, P.L. 86-645, authorized by the Chief of Engineers, 29 June 1978, harbor expansion is approved to 20 acres by the removal of the 1,400 foot breakwater, the construction of a 2,000 foot breakwater, and an increased depth for the entrance and access channel to -16 feet MLLW.
- 1983 - Harbor expansion contract is successfully completed.

CORDOVA HARBOR, ALASKA (continued)

30 September 2011

- 1991 - Sampling and testing is carried out followed by maintenance dredging in December 1991 with 3,900 cubic yards removed from the Federal project.
- 2000 - A condition survey of the harbor is completed in June.
- 2002 - Vertical aerial photography is obtained of the harbor in June.
- 2003 - A condition survey of the harbor is conducted in June.
- 2006 - The most recent condition survey is completed in May. E&D begins for a new maintenance dredging contract to be awarded in 2008. Contaminated sediments found in both the entrance channel and maneuvering area require upland disposal.
- 2008 - A Department of the Army permit authorizing the construction of a breakwater extension and to raise the height of the north breakwater is issued.
- 2009 - Maintenance dredging of the small boat basin from September to November removed 33,206 cubic yards of material. Contaminated material was disposed at the city landfill and non-contaminated material was disposed using the in-water site.
- 2010 - A Project Condition Survey was conducted in June

COST TO DATE:

CG Appropriation 87186	\$10,341,656
CG Costs 87186	\$10,341,656
CG Contributed Appropriation 87186	\$4,811,891
CG Contributed Costs 87186	\$4,811,891
O&M Appropriation 87136	\$2,516,670
O&M Costs 87136	\$2,513,716
O&M ARRA Appropriation 87136	\$1,221,613
O&M ARRA Cost 87136	\$1,221,613
Rehab Appropriation	\$675,000
Rehab Cost	\$675,000

RANGE OF TIDE: Mean Range Diurnal Range Extreme Range
 10.2' 12.6' 22.1'

CONTROLLING DEPTH: The entrance channel controlling depth is -16.1 feet MLLW. Depths along the transient float range from -13.7 to -19.9 feet MLLW, June 2010.

MAINTENANCE DREDGING SUPPLEMENT:**A. General**

1. The Federal access and entrance channel requires dredging activity approximately every (12) years, as indicated by our records.
2. The harbor entrance is subject to shoaling activity, is within the Federal project, and thus requires periodic survey and ultimately dredging.

Continues on page 1-6b

CORDOVA HARBOR, ALASKA (continued)

30 September 2011

3. Sediments are typically removed with a clamshell and barge during the open dredging window from 8 September to 1 April.

B. Sampling & Testing

Seven samples (including a duplicate) were collected from six locations within the Federal project area in July 2006. A summary of the sampling activities is provided in the following table.

Cordova Harbor Dredge Material Sampling Overview				
Parameter	Analytical Method	Target Contaminant or Purpose	Number of Samples¹	Results² (Overview)
Semi-Volatile Organic Compounds (SVOCs) – Low Level	SW846 8270C	Broad range of fuel-related compounds, phenolics, etc.	7	0.97 to 19,000 ppb (35 analytes detected)
Volatile Organic Compounds (VOCs)	SW846 8260B	Broad range of fuel-related compounds, solvents, etc.	7	2.1 to 120 ppb (10 analytes detected)
Gasoline Range Organics (GRO)	AK-101	Gasoline-range fuels and common constituents	7	0.61 to 0.76 ppm
Diesel Range Organics (DRO)	AK-102	Diesel-range fuels.	7	9.9 to 75 ppm
Residual Range Organics (RRO)	AK-103	Heavy fuel oils and lubricants.	7	20 to 68 ppm
Polychlorinated Biphenyls (PCBs)	SW846 8082	PCBs from electrical equipment, fire suppressants.	7	Non-Detected
Pesticides (PEST)	SW846 8081A	PEST from run-off.	7	0.20 to 25 ppb
CLP Target Analyte Metals	SW846 6010, 6020 or 7471	Metals from fuels, paints, electrical equipment.	7	23 Metals detected
Total Volatile Solids (TVS) [sediment only]	EPA 160.4	Screening criterion for off-shore sediment disposal.	7	2.3 to 2.8 %
Total Organic Carbon (TOC)	SW846 9060	Used in interpretation of organic chemical data.	7	1.8 to 7.5 g/kg
Ammonia N	EPA 350.3	Screening criterion for off-shore sediment disposal.	7	62 to 120 ppm
Sulfides	EPA 376.2	Screening criterion for off-shore sediment disposal.	7	210 to 560 ppm
Grain Size Distribution (Sediment Only)	ASTM D422	Physical Characterization of dredged material	5	7.1 to 11.8 % Sand 88.2 to 92.9 % Silt/Clay
1. Numbers include duplicate samples.				
2. See Cordova Harbor Report 2007 (06-059) for complete analytical data				

Continues on page 1-6c

CORDOVA HARBOR, ALASKA (continued)

30 September 2011

C. Disposal

1. Dredged material is transported by barge and tug to a deep water site, dumped, and dispersed by tidal activity.
2. A rectangular site is located approximately 500 yards west of Spike Island: southeast Corner (1) 60°32'27.8"N 145°46'40.6"W, northwest Corner (2) 60°32'36.6"N 145°46'31.9"W, northeast Corner (3) 60°32'34.9"N 145°46'24.7"W, and southeast Corner (4) 60°32'26.0"N 145°46'33.4"W.
3. The previous disposal site has met the approval of various agencies; other options may be available for future operations.

D. Environmental Permits and Reports

1. An Environmental Assessment was completed by the Corps in July 1991, followed by a Finding of No Significant Impact (FONSI) in September 1991. A Final Environmental Impact Statement (FEIS) was previously circulated in 1979.

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>
EPA	11 Jul 91	n/a
USFWS	5 Aug 91	n/a
NOAA	8 Aug 91	n/a
ADGC	28 Aug 91	n/a
ADEC	30 Aug 91	n/a
ADF&G	10 Feb 77	n/a

3. Water Quality: Four physical parameters were measured through the water column at three locations in the federal project and one location at the disposal site, May 1991; temperature, pH, oxidation reduction potential (ORP), and conductivity were measured in the field. No chemical analysis was conducted.

Cordova Small Boat Harbor, Cordova, Alaska



Cordova Small Boat Harbor pictures of dredging taken in 2009.

Cordova Small Boat Harbor, Cordova, Alaska



Dredging in Cordova SBH in 2009.