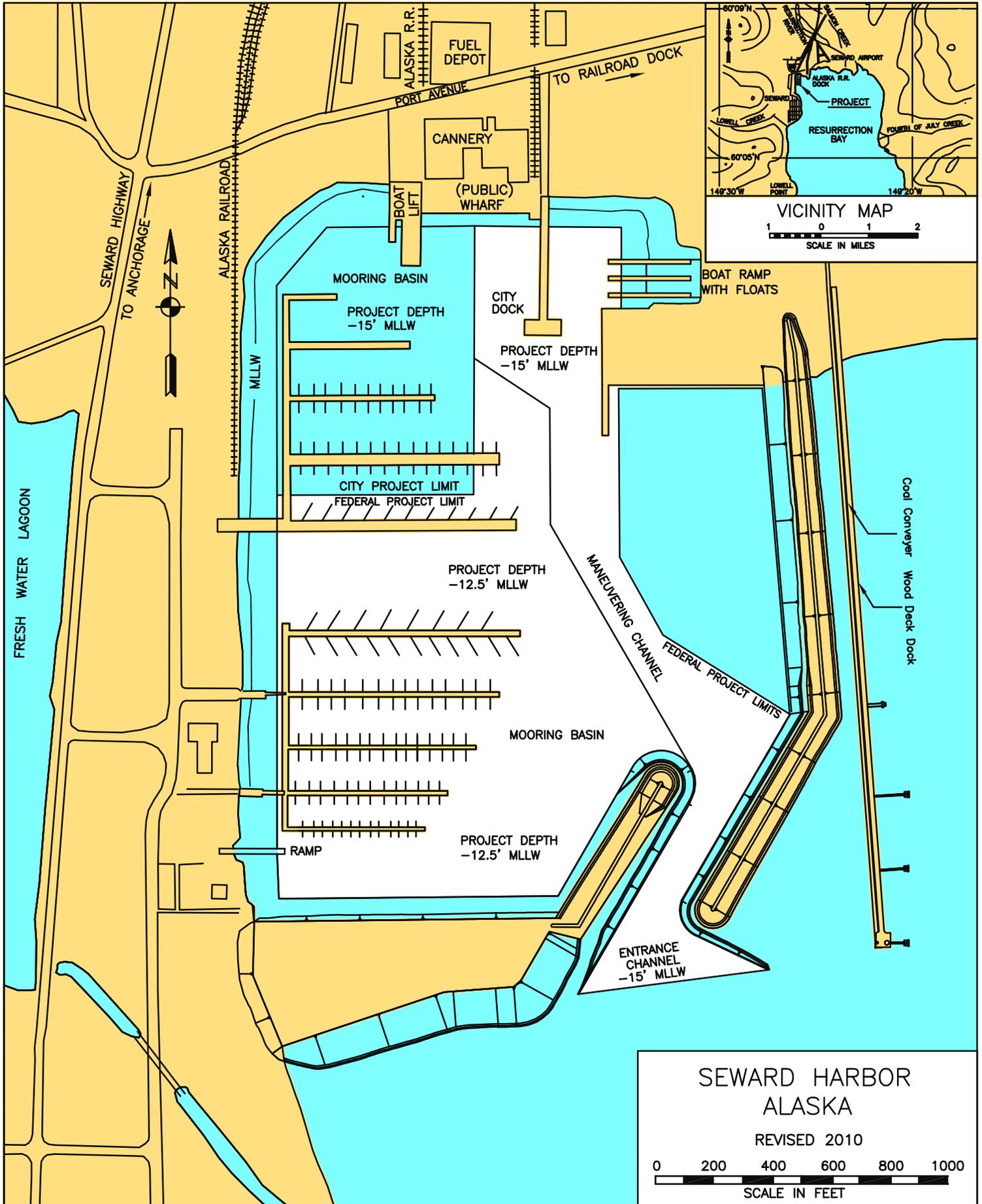


SEWARD HARBOR



SEWARD HARBOR
ALASKA

REVISED 2010



SEWARD HARBOR, ALASKA
(CWIS NO. 72765, 10391, 87773, 72766, 87667, 87173, & 72767)

Condition of Improvement 30 September 2011

AUTHORIZATION: The Water Resources Development Act of 1999 authorized the project. Authorization was based on the Chief of Engineers report dated 8 June 1999. The authorized cost of the project is \$12,240,000, with an estimated Federal share of \$4,089,000 and a non-Federal share of \$8,151,000. P.L. 107-66, Energy and Water Appropriations Act, 2002: “Provided further, That using \$1,000,000 of the funds provided herein, the Secretary of the Army, acting through the Chief of Engineers, is directed to initiate construction on the Seward Harbor, Alaska, project in accordance with the Report of the Chief of Engineers dated June 8, 1999 and the economic justification contained therein.”

PREVIOUS AUTHORIZATION: (1) Rivers and Harbors Act, 3 July 1930 (House Doc. 109, 70th Congress, 1st Session) and modified by the Rivers and Harbors Act, 30 August 1935 (Rivers and Harbors Committee Doc. 3, 74th Congress, 1st Session) provides for a small boat basin of about 4.75 acres at a depth of 12.5 feet below MLLW protected by a south breakwater 580 feet long and a north breakwater 950 feet long. (2) Rivers and Harbors Act, 3 September 1954 (House Doc. 182, 83rd Congress, 1st Session) as adopted, provides for raising the elevation of the south breakwater, and construction of two pile breakwaters at the basin entrance. (3) Rivers and Harbors Act, 19 August 1964 (Public Law 88-451) provides for a sheltered small boat harbor through the relocation and reconstruction of the previous project (a 4.75 acre basin at -12.5 feet MLLW), and construction of a 12.45 acre expansion basin at -12.5 feet MLLW with an entrance channel at -15 feet MLLW protected by two rock-mound breakwaters of 1,060 and 1,750 feet in length; provision for future basin expansion is included.

PROJECT USAGE: The small boat basin is used as a base of operations for fishing and pleasure craft and provides anchorage for 465 boats. The Port of Seward is considered to be one of the best containerized cargo ports and fishing boat harbors in the Pacific Northwest.

EXISTING PROJECT:	<u>LENGTH</u>	<u>DEPTH</u>	<u>WIDTH</u>
• Entrance and Maneuvering Channel	13.13 acres	-15 ft	Varies
• Mooring Basin, Federal	17.40 acres	-12.5 ft	Varies
• Mooring Basin, City	20.58 acres	-15 ft	Varies

- PROGRESS OF WORK:**
- 1931 - The original south breakwater is constructed.
 - 1932 - Dredging of the basin to project depth is completed.
 - 1937 - The north breakwater is constructed.
 - 1952 - Maintenance dredging is accomplished to restore project depth throughout the navigable limits.
 - 1954 - The north breakwater is restored during March and April with the placement of 1,482 cubic yards of rock.
 - 1956 - Two pile breakwaters are constructed to improve the entrance, and the elevation of the south breakwater is increased between June and September.

SEWARD HARBOR, ALASKA (continued)

30 September 2011

- 1962 - Maintenance dredging is conducted June through July with the removal of 61,346 cubic yards (including 2 feet advance maintenance).
- 1964 - The original project is completely destroyed by the earthquake of 27 March 1964. Restoration of the basin and construction of the breakwaters begins in August. Dredging for expansion proceeds incrementally with other water-front improvements.
- 1965 - The breakwaters are completed in June, and the final increment of basin expansion in November.
- 1972 - Beach slope repair and protection are carried out at the north end of the basin in October.
- 1986 - A post-flood survey reveals little impact on the Federal project; some bank erosion in the northwest corner produces shoaling in the city project.
- 1994 - A condition survey of the harbor is performed in April. Sampling and testing is completed.
- 1995 - The Resurrection River floods its banks in September carrying in excess of 20,000 cubic yards of material into the harbor. After damage assessment, survey, and sampling & testing, plans are made to dredge the harbor in FY96.
- 1996 - Dredging of the upper basin is accomplished in January with the removal of 20,005 cubic yards.
- 2002 - The latest condition survey is conducted in May. Vertical aerial photography is taken in June.
- 2004 - A construction contract for harbor expansion is awarded on February 3, 2004 for a new 1,700 foot rubble mound breakwater and entrance channel approximately 400 feet east of the existing harbor. 1,100 feet of the existing breakwater is to be removed. The expansion is to add 11.7 acres of moorage basin at two design depths and will accommodate 336 additional vessels.
- 2005 - Harbor expansion work continues into the spring before shutting down for the summer tourism season. Dredging in various parts of the new project area is to be completed the following spring 2006.
- 2006 - Work on the harbor expansion is physically completed. A condition survey of the expanded project is conducted at the end of April.
- 2009 - A contract is awarded for construction of a breakwater extension to be completed in the following year. A project condition survey is conducted in late May to early June. The surveyors also collected aerial photography of the harbor.
- 2010 - An additional 215 feet was added to the East Breakwater. Work was accomplished using American Reinvestment Recovery Act (ARRA) funding through both the Construction General and Operations and Maintenance appropriations. There was 49 cubic yards of material dredged from the entrance channel using ARRA O&M funds. Construction was completed in December 2010.

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SEWARD HARBOR, ALASKA (continued)

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COST TO DATE:

GI PED Appropriation 10391	\$196,036	CG Costs 10391	\$8,127,961
GI PED Costs 10391	\$196,035	CG ARRA Appropriation 10391	\$3,880,000
GI PED Contributed Appropriation 10391	\$242,536	CG ARRA Costs 10391	\$3,850,085
GI PED Contributed Costs 10391	\$240,597	CG Contributed Appropriation 10391	\$2,759,824
CG Appropriation 87773	\$1,091,946	CG Contributed Costs 10391	\$2,590,593
CG Costs 87773	\$136,463	O&M Appropriation 72765	\$549,245
CG Appropriation 87173	\$1,184,841	O&M Costs 72765	\$544,245
CG Costs 87173	\$1,184,841	O&M ARRA Appropriation 72765	\$195,476
CG Appropriation 10391	\$8,178,960	O&M ARRA Costs 72765	\$195,476
CG Appropriations 87773	\$1,091,946	CG Costs 87773	\$136,473
CG Appropriations 87667	\$89,017	CG Costs 87667	\$89,017

RANGE OF TIDE:

Mean Range
8.3'

Diurnal Range
10.6'

Extreme Range
19.7'

CONTROLLING DEPTH: A depth of -11.1 ft MLLW controls within the Federal project limits of the mooring basin and -10.7 ft MLLW in the northwest corner of the city project limits. Project depth is effectively available within the entrance channel. A depth of -14.6 ft MLLW controls in the maneuvering channel and -5.9 ft MLLW in the vicinity of the city dock, June 2009.

MAINTENANCE DREDGING SUPPLEMENT:**A. General**

1. Maintenance dredging was carried out in 1952 and in 1962. The project was restored after the 1964 earthquake and did not require maintenance dredging again until September 1995 when upland flood waters carried almost 23,000 cubic yards of material into the harbor.
2. The last two surveys, prior to the flood event of September 1995, showed shoaling in the outer entrance channel and along the project limits nearest to the breakwaters and shoreline.
3. The dredging window runs from 1 November to 1 April; a cut-off as early as 15 March is possible subject to agency review.
4. The 1995 dredging effort was conducted with hydraulic cutterhead and pipeline to return the coarse fines to the eroded site located immediately to the northeast of the basin.

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B. Sampling & Testing

1. Six (6) sites were sampled in the Federal project, November 1994; all samples received a classification type (ML) with descriptions ranging from sandy silt to silt.
2. Chemical analysis was performed using (8) tests as outlined with results below:

Method 8080	Pesticides and PCB's	none detected (ND)
Series 6000-7000's	(8) RCRA Metals (4) of (8) detected	Lead 18 - 323 ppm*, all others below management thresholds
Method 415.1	Total Organic Carbon	0.80 - 0.94 %
Method 305.2	Ammonia as Nitrogen	7.3 - 35 ppm
Method 9030	Total Sulfides	21 - 3500 ppm
Method 8260	Volatile Organic Compounds	ND or below minimum levels
Method 8270	Semi-volatile Organics	(12) above management levels
Method 160.1	Total Solids	55.6 - 72.0 %

* One sample marginally exceeded the PSSDA minimum threshold of 300 ppm for lead.

C. Disposal (Winter 1996)

1. Dredged effluent will be conveyed via portable pipeline and discharged behind an intertidal containment dike to fill the eroded upland area and that small portion of the harbor in the intertidal zone including the old boat grid.
2. The present disposal site consists primarily of the channel cut by flood waters, an area about 450 feet long by 110 feet wide with steep sides dropping almost vertically 5 feet or more. This site, immediately to the northeast of the harbor, will in all likelihood not be used for future dredge spoils disposal, and therefore no coordinates are provided.
3. Upland and contained intertidal sites are preferred because of the quality of the marine environment in the vicinity and the value of the harbor material as fill.

D. Environmental Permits and Reports

1. The last permit activity for the existing small boat harbor was carried out in 1971. An Environmental Assessment, April 1984, and a FONSI, November 1984, as well as a Draft Environmental Impact Statement, 1982, were circulated for the Nash Road harbor expansion project.
2. Permits were issued for the Nash Road expansion project as follows:

<u>Agency Name</u>	<u>Date of Issue</u>	<u>Date of Expiration</u>
ADGC	22 Nov 82	n/a
ADF&G	Apr 82	n/a
ADEC	17 Mar 81	n/a
EPA	Apr 84	n/a

Future projects, dredging or expansion, will be subject to agency review.

Water Quality: Seven physical parameters were measured at three locations within the harbor, November 1994; temperature, pH, conductivity, oxidation-reduction potential (ORP), turbidity, dissolved oxygen, and salinity. No chemical analysis was conducted.

Seward Small Boat Harbor, Seward, Alaska



Seward SBH (top) and a day's catch (below) in 2009.

Seward Small Boat Harbor, Seward, Alaska



Seward aerials in the summer of 2009.

Seward Small Boat Harbor, Seward, Alaska



Seward aerial oblique photographs taken in the summer of 2009.