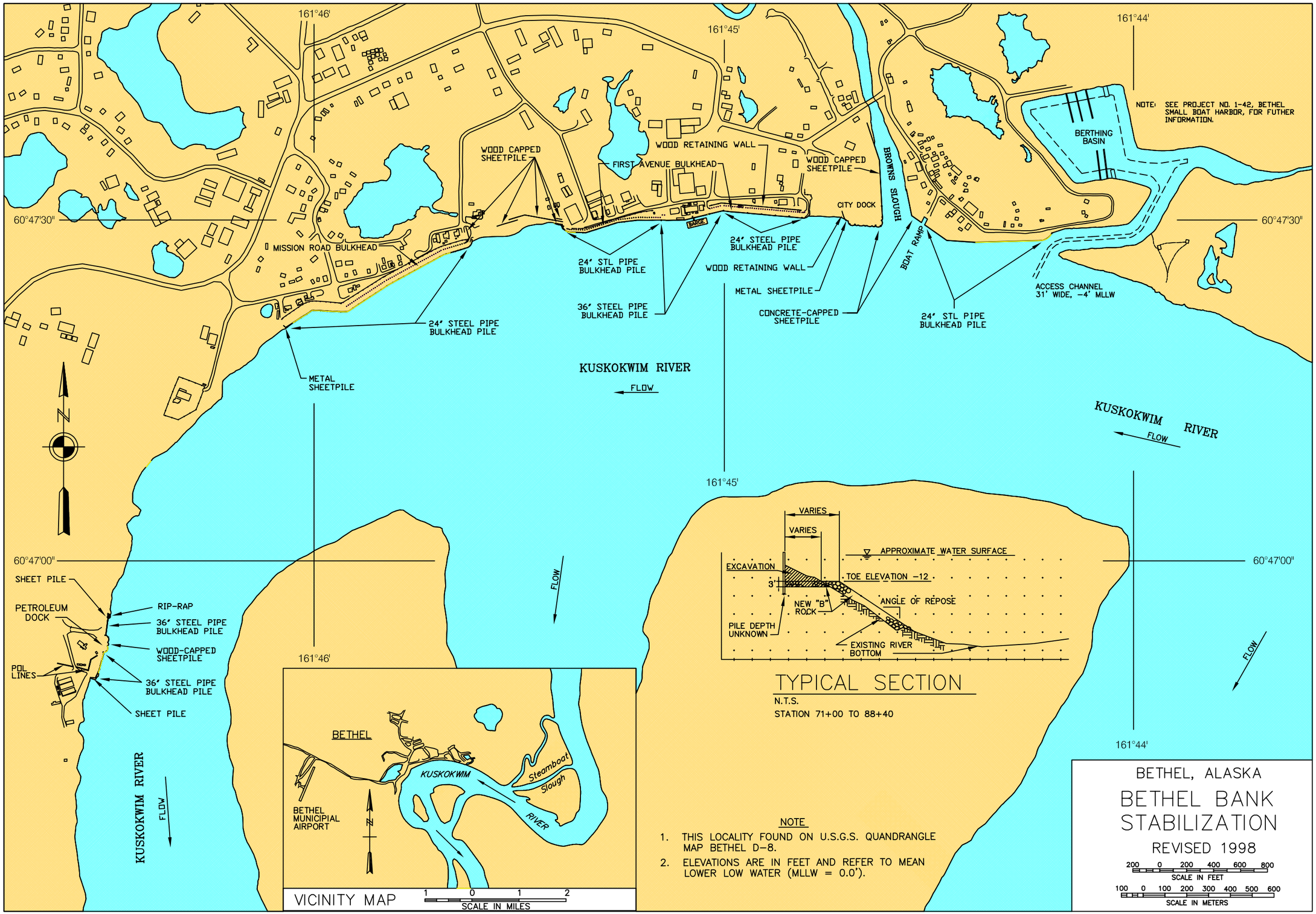
Bethel
Bank Stabilization

CORPS OF ENGINEERS

U.S. ARMY



Condition of Improvements
30 December 2014
Bethel Bank Stabilization, Alaska
(CWIS No. 012314, 075440)

Authorization Public Law 99-662, under Section 202, 17 November 1986, as adopted, provides for the placement of 8,500 linear feet of rock rip-rap along unprotected river bank and existing bulkhead structures.

Table 1

Existing Project	**Length** ft.
Rock rip-rap	8200

Project Usage Located on the north bank of the Kuskokwim River 400 air miles west of Anchorage, Bethel is a commercial and cultural center for the southwest region of the state. Improvements to the project will protect the city from the harmful effects of rapid riverbank erosion.

Work Prior to Existing Project

1985	Under the continuing authority of Section 14, Public Law 79-526, dated 24 July 1946, emergency bank protection is authorized by the Chief of Engineers 13 September 1985. Approximately 200 linear feet of rock rip-rap is placed at the toe of the petroleum dock, and 40 linear feet of rock rip-rap is positioned at the downstream end of the Mission Road bulkhead for a total of 1,650 cubic yards of rock. Total cost for emergency protection equals $ 553,970 of which $ 30,000 is contributed by non-Federal sources.
1986	Under Section 116 of Public Law 99-190 (House Joint Resolution 465) dated 19 December 1985, emergency protection is authorized for the Mission Road bulkhead. A contract is awarded in August and completed before freeze-up in October at a cost of $ 538,942.

Progress of Work

1984	Initial planning and preparation of the General Design Memorandum is begun.
1985	The City of Bethel constructs 4,000 linear feet of bulkhead to protect the river bank. A storm in May endangers the bulkhead; the Corps moves ahead with an emergency bank protection project to save the works.

Progress of Work

1986	Work on the General Design Memorandum is 75% complete; the plan calls for rock rip-rap protection for 8,500 feet of river bank.
1987	The General Design Memorandum is published in November.
1989	The project is inspected by the Corps this year and the next.
1991	Project dimensions are revised to protect 3,000 linear feet of previously installed bulkhead and 3,500 feet of unprotected river bank.
1992	Plans and specifications are initiated, surveys conducted, and plans reviewed by the Corps.
1993	Plans and specifications are approved in October.
1994	Real estate acquisition is initiated.
1995	Necessary real estate is acquired, and a construction contract is awarded in June. Armor rock protection is placed along 300 feet of the City Cargo Dock and along 700 feet of river bank downstream from the Mission Road Bulkhead. Placement of steel tie-back rods to hold the pipe-pile bulkheads in place is begun in September.
1996	Bank protection work nears completion: (1) structural tie-backs along the pipe-pile bulkhead are completed, (2) 157,220 tons of "B" rock are placed along the embankment with only minor placement remaining, and (3) the embankment requires some erosion protection and seeding to reach completion.
1997	Final inspection of the project, except for seeding, occurs in September. The completed project protects 8,200 feet of river bank and included placement of 221,220 tons of rock. Seeding of the sloped river bank is scheduled for June 1998.
1998	The project is physically completed. Some contract issues are still outstanding.
1999	Inspection finds the project in generally good condition. Minor erosion is noted at the downstream end of "Bootlegger Beach" where the rock ties into the bank. The bank slope downstream of the Petroleum Dock is filled and seeded.
2000	The Federal project appears to be in good condition. Locals are notified of the need to keep adequate quantities of rock stockpiled in case of an emergency.
2001	The rock revetment is found in good condition. Local interests make recommended repairs to eroded areas. Additional areas requiring fill and seeding are noted.
2002	The bank stabilization project is inspected by the Corps and found to be in good condition with some minor areas of maintenance needed. The City of Bethel has been notified. Vertical aerial photography is taken in June.
2003	Corps and local officials inspect the project in August. The project is reported to be in good condition with minor areas of needed maintenance. Continued monitoring is required.
2004	The project is found in good overall condition. Areas of concern were noted, recommendations made, and continued monitoring is required.

Progress of Work

2005	The federal bank stabilization project was thoroughly inspected in June and found to be in good condition with some minor areas of maintenance needed. The City and Petro docks should be monitored on a continuing basis, especially after high water and breakup events.
2007	A FY 2001 Congressional Add authorized and directed the Corps to extend the existing project an additional 1,200 feet upstream. Phase 1 of the project extension, placement of rip rap at the toe of the existing bulkhead was completed in September 2007.
2009	The control of overland flow and traffic on the slope face appears to have greatly helped the establishment of vegetation and the prevention of erosion of the bluff behind the revetment. Overall the project looks to be in good condition, but the rock revetment needs maintenance.
2011	The bank stabilization project was thoroughly inspected and found to be in good condition with some minor areas of maintenance needed.

Table 2 Cost to Date

Project	Description	Cost $
012314	CG Appropriation	23,299,007
	CG Costs	22,876,840
075440	CG Contributed Appropriation	5,715,000
	CG Contributed Costs	5,318,451
075440	CG Appropriation	537,000
	CG Costs	537,000

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
946 6477 Bethel AK	2.42	3.66	-

Bethel Bank Stabilization, Bethel, Alaska

Aerial of Bethel along the Kuskokwim River, 2014.

Oblique of Bethel, June 2002.

Bethel Bank Stabilization, Bethel, Alaska

The Port of Bethel along the Kuskokwim River, 6 June 2007.

Bethel Bank Stabilization along Brown's Slough, 6 June 2007.

Bethel Bank Stabilization, Bethel, Alaska

Riprap transport for the Bethel Bank Stabilization project, 17 July 2007.

Placement of riprap, 5 August 2007.