



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper – Larsen Bay, Alaska

Current as of October 12, 2007

Community Information

Larsen Bay (LAR-sun), population 90, is near the mouth of Larsen Bay, an extension of Uyak Bay, on the northwest coast of Kodiak Island. It is 60 miles southwest of the City of Kodiak and 283 miles southwest of Anchorage. The community is incorporated as a 2nd class city in the Kodiak Island Borough. Boat, snowmachine and ATV ramps; barge access; processing of fish; beachcombing; cultural and social events; access roadways; boat launch, storage, and repair; boardwalks; and pathways are land uses and community activities in or near the 4 erosion areas.

Description of Erosion Problem

The community has coastal and river erosion. The Kodiak Island Borough identified significant coastal erosion in Larsen Bay. High tides, wind, waves, and storm surges cause ongoing erosion in 4 locations. One of the 4 eroding areas is on the spit that extends into Larsen Bay; another is southwest of the base of the spit; the 3rd is on the east side of the spit where it joins the mainland; and the 4th is southeast of the community, where Boneyard Creek enters Larsen Bay. The community estimated that in 3 of these 4 locations, advancing erosion has moved to within 100 to 500 feet from at-risk structures. A roadway less than 100 feet from an eroding beach was recently damaged during a storm event.

A major erosion event occurred during a March 2003 storm, when about 4,100 feet along the shoreline was impacted by erosion. Apart from that event, the community estimates that approximately 50 linear feet of the shoreline is eroded each year. In the 1986 *Coastal Erosion Study Final Report* prepared by the Corps of Engineers, the erosion rate was estimated at 1 to 1.5 feet per year.

The community has had flooding problems ever since the 1964 earthquake when the land mass in the Larsen Bay area lowered 3 to 4 feet. The entire beach slope, beach berm and the slough between the community and cannery are flooded twice a month during extreme high tides. Increased flooding has accelerated erosion and associated erosion problems.

Potential Damages.

The road along the east side at the base of the spit; an area used for boat launching, storage, and repair; as well as numerous boardwalks and pathways are existing infrastructure and activities at risk from potential erosion damage.

Protective measures had been installed prior to the 2003 erosion event at 2 of the 4 erosion areas of concern to the community. Two areas that had previous protective measures needed repairs,

and new protective measures were added at the other 2 areas following the storm. Fill 84 cubic yards was placed behind the existing gabion baskets at the erosion area on the spit in Larsen Bay. Riprap 18 cubic yards and a 48-inch culvert were installed at the erosion area southeast of the community center. An 80-foot section of wooden seawall was replaced, 280 cubic yards of fill were placed behind the seawall, and 340 cubic yards of riprap were used to raise the existing roadbed by 3 feet at the erosion area on the east side of the spit where it joins the mainland. Gabion baskets were installed and backfilled with 252 cubic yards of fill at the erosion area south and east of the community, where Boneyard Creek enters the bay.

Photos and Diagrams

Photos of the Larsen Bay beachfront provided by the Kodiak Island Borough are attached. Also, attached is a diagram showing the linear extent of erosion in the community.

References

- Kodiak Island Borough. 2006.** *Hazard Mitigation Plan for the Kodiak Island Borough, Alaska.*
- USACE. 1970.** *Letter to Senator Mike Gravel.* Alaska District, U.S. Army Corps of Engineers.
- USACE. 1986.** *Coastal Erosion Study Final Report, Larsen Bay.* Alaska District, U.S. Army Corps of Engineers.
- USACE. 1994.** *Final Detailed Project Report with Environmental Assessment Small Boat Harbor, Larsen Bay, Alaska.* Alaska District, U.S. Army Corps of Engineers.
- USACE. 2007.** *Alaska Community Erosion Survey, OMB approved number 07100001,* expires September 30, 2009 received by facsimile from Susan Aga, Larsen Bay tribal council environmental assistant on September 13, 2007.

Additional Information

This information paper, as well as those for other communities, can be accessed on the internet at www.alaskaerosion.com. For more information please contact the Corps of Engineers project manager at (907) 753-5694 or email Alaska.Erosion.POA@usace.army.mil



Photo 1: Larsen Bay Seawall, February 2006.



Photo 2: Larsen Bay; school in background, February 2006.



Photo 3: Wood Seawall & gabion baskets, February 2006.



Photo 4: Larsen Bay from end of spit, February 2006.

LARSEN BAY

Coastal and Small Stream Erosion Area

Date of Aerial Photo: 15 June 02

NOTE: The extent of erosion shown on this figure is based on interviews with the community. This data has not been field verified. This figure is only intended to show areas of erosion, not rates or severity of erosion



Alaska District
Corps of Engineers
Civil Works Branch

--- Linear Extent of Erosion
Part 1



Alaska Baseline Erosion
Larsen Bay, Alaska



	<p>Alaska District Corps of Engineers Civil Works Branch</p>	<p>--- Linear Extent of Erosion Part 2</p>		<p>0 200 400 800 Feet 1 inch equals 400 feet</p> <p>N</p>	<p>Alaska Baseline Erosion Larsen Bay, Alaska</p>
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