



**U.S. Army Corps
of Engineers**
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Akhiok, Alaska

Current as of December 12, 2007

Community Information

Akhiok (AH-key-ock), including Kaguyak (kuh-GUY-uck), has a population of 44 and is at the southern end of Kodiak Island at Alitak Bay, 80 miles southwest of the city of Kodiak and 340 miles southwest of Anchorage. Akhiok is incorporated as a 2nd class city in the Kodiak Island Borough. The community is along the north and east sides of the Akhiok Bay (lagoon).

Description of Erosion Problem

According to the survey, Akhiok experiences coastal erosion caused by seasonal storms and wave activity. High tides and vehicle and boat traffic are contributing factors. Severe storms are common from December through February. East-facing shorelines on Kodiak are most vulnerable from storms centered in the Gulf of Alaska, which can achieve sustained winds of 50 to 85 mph. Approximately 350 to 500 feet of beach next to the community is eroding. A November 2007 storm combined with high tides destroyed 100-feet of the 350-foot long log retaining wall protecting the uplands above the beach. Three roads used by residents to access the beach on the west side of the lagoon were damaged during the storm event. Erosion occurred during this storm and has continued. Vehicle use on the road along the lagoon is contributing to erosion by causing the edge of the road to slide. The area in the northwest corner of the lagoon where the road to the airport is located is subject to inland erosion of approximately 1.5-feet per year.

Erosion in Akhiok has been a problem since the 1960s. Erosion reached serious proportions in 1983 when flood water levels covered the road and eroded house foundations. It was reported that waves, tidal actions, storm activity, and runoff periodically wash out the gravel behind barrels and logs placed along the shoreline of the lagoon. Most creek banks in the community also erode.

Potential Damages

According to the community survey, there are 2 shoreline areas along the lagoon eroding to the degree that structures are threatened. One area is along the north and east sides of the lagoon. The other area is on the northwest side of the lagoon. A road between the beach and the developed area of the community, and two residences are threatened on the northeast side of the lagoon. The two residences are less than 20 feet from erosion. In the northwest corner of the lagoon erosion is less than 8 feet from the road that connects the airport and community. Continued erosion in the area where the retaining wall was damaged may also threaten the boat ramp and sewer outfall pipe.

The only erosion protection measure used was the wood retaining wall in front of the road and fuel tanks in 1983, which was mostly destroyed in the November 2007 storm. The wall protected the north and east sides of the lagoon. The city had not addressed the loss of the wall at the time the survey.

The 1986 *Akhiok Comprehensive Plan and Capital Improvements Program* identified the protection of residences and other structures from areas subject to serious erosion as the #1 housing objective. The program concluded that a comprehensive study is needed to identify the scope of the problems and the specific measures necessary to keep shoreline erosion from destroying additional property. The estimated cost in the study was a minimum of \$100,000. The recommended study has not been undertaken.

Photos and Diagrams

No photos of erosion were provided by community or other sources. A diagram is attached depicting the linear extent of erosion.

References

DCCED-DCA. 1981. *City of Akhiok Community Profile*.

KIB. 1986. *Akhiok Comprehensive Plan and Capital Improvement Program*. Prepared by Kodiak Island Borough.

USACE. 2007. *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 administered to Dan McCoy, City Manager, on December 11, 2007.

Additional Information

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



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Civil Works Branch

--- Linear Extent of Erosion



Alaska Baseline Erosion
Akhiok, Alaska