U.S. Army Corps of Engineers
Alaska District

Erosion Information Paper - Togiak, Alaska

Current as of February 20, 2009

Community Information

Togiak (TOAG-ee-ack) population 783 is at the head of Togiak Bay, 2 miles west of the Togiak River and 67 miles west of Dillingham. It is in the Togiak National Wildlife Refuge. The community is incorporated as a 2nd class city in the unorganized borough. The Nasaurluo Creek bank is used by the community primarily for boat storage and fish processing.

Description of Erosion Problem

The community is affected by coastal erosion along Togiak Bay and bank erosion along Nasaurluq Creek, which is in the northern part of the community. Conditions reported to cause and contribute to the coastal erosion include storm surges, storm-driven wind and waves, high tides, heavy rains, and flooding. Erosion and flooding along the shoreline have been persistent problems for Togiak, with major flood-erosion events in 1964, 1979, 1980, and 1982. Ninety percent of the village was flooded under water as deep as 3 to 4 feet during the 1964 flood-erosion event.

Togiak is expanding south along Togiak Bay. The unprotected coastal areas north of the bulkhead and the expanding community area south of the seawall are being eroded. In a 1983 Tetra Tech *Togiak Erosion Control Assessment* study, the rate of erosion was estimated at about 1 foot per year. The report estimated that erosion could increase to 7 to 8 feet per year if major storms were to regularly occur. The city estimates the rate of coastal erosion is 4 feet per year and that the rate of erosion along Nasaurluq Creek is 4 to 6 feet per year. Conditions causing and contributing to Nasaurluq Creek bank erosion are reported to include periodic fluctuations in creek flow and water levels, flooding, and spring break up.

Potential Damages

A mile-long seawall built in 1984 and an additional bulkhead built in 1987 protects the northern part of the community. The National Guard Armory was moved more than 25 years ago so it would not erode into the bay. Structures and facilities are reportedly 150 to 200 feet inland from the eroding shoreline of the bay.

The city's fuel tanks are at the northern end of the community between Nasaurluq Creek and the bay. The bulkhead on the bay side of the fuel tanks was funded with a $660,000 grant from the State of Alaska and was installed by the city in 1987. The mile-long African ironwood seawall on the northern portion of the community was built by the city in 1984. The seawall project was funded with a state grant for approximately $3 million. Both structures are reportedly effective.

The community is concerned about the area south of the seawall and the material deposited on the seaward side of the seawalls after storms. Waves wash over the seawalls instead of being stopped or tripped when the material is not removed.

The community reported that the creek by the bulkhead (constructed of creosote treated timbers at 6 inch by 8 inch, buried approximately 6 to 8 feet into the beach gravel) has eroded away nearly 2 feet of this material and the bulkhead has started to lean toward the water. The community feels that this bulkhead will soon need extensive repair to insure its stability. The community also reported the ironwood seawall works very well but has one problem in that the boat ramps allow the storm waves to wash out the backfill at the ramp locations. This material must be replaced every year to insure that later storms do not wash out more fill material causing the seawall to be in danger of washing out at the ramp locations. It has cost the City of Togiak over $5,000 to truck in this replacement rock material every year.

Erosion along Nasaurluq Creek reportedly threatens residences, outbuildings, sheds, water lines, sewer lines, and a church. Some of these structures are less than 100 feet from the eroding bank. Locally installed erosion protection measures include a line of 55-gallon drums filled with rocks approximately 30 feet inland from the bank. The city dumps rock and gravel on the creek side of the 55-gallon drums when needed.

Photos and Diagrams

No photos of erosion have been provided by community or other source. A diagram depicting the linear extents of erosion in the community is also attached.

References

Alaska DOT/PF. 1984. *Task Force on Erosion Control Final Report.* Department of Transportation and Public Facilities.

Tetra Tech. 1983. *Togiak Erosion Control Assessment: Final Report*. Tetra Tech Inc.

USACE. 1973. *Flood Data, Togiak.* Alaska District, U.S. Army Corps of Engineers.

USACE. 2008. *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 administered to Darryl Thompson, the City of Togiak director of sewer and water on February 21, 2008.

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

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

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Linear Extent of Erosion

Togiak

Alaska Baseline Erosion

Togiak, Alaska