



U.S. Army Corps  
of Engineers  
Alaska District

## **ALASKA BASELINE EROSION ASSESSMENT**

### **Erosion Information Paper - Egegik, Alaska**

Current as of March 3, 2009

#### **Community Information**

Egegik (EE-guh-gick), population 76, is on the south bank of the Egegik River on the Alaska Peninsula, 40 miles southwest of King Salmon, 100 miles southwest of Dillingham, and 326 miles southwest of Anchorage. The community is a 2nd class city in the Lake and Peninsula Borough.

#### **Description of Erosion Problem**

Coastal erosion associated with fall storms account for around 80 percent of the erosion problems in Egegik. Westerly and southwesterly winds across Bristol Bay can produce 8-foot waves as reported in a 1977 Corps *Technical Services Report* for Egegik. The South Spit at the entrance to Egegik Bay provides some protection from direct wind-generated waves while tidal flats tend to refract the waves, however the South Spit is reportedly losing its effectiveness due to a couple of erosion and holes. Twenty-foot tides in the fall and southwesterly storm winds add about 6 feet of surge that reportedly erode holes in a high bluff known as Church Hill. The holes freeze in the winter and thaw in the spring, causing the bank to cave in, slide onto the beach, and wash away with the tide.

Riverbank erosion along the Egegik River is a minor contributor to erosion at Egegik. Correspondence between the community and the Corps in 1977 indicated that Church Hill had been eroding since the 1940's at an average annual rate of 1.3 to 1.6 feet per year. The erosion site is estimated to be 1,200 feet long and the bank about 60 to 70 feet high in the center of the community. The riverbank is eroding across the river in an area referred to as North Egegik.

#### **Potential Damages**

A resident lost 10 feet of his property in the last 5 years for an annual average of 2 feet per year. The old Russian Orthodox Church was moved in the 1960's to prevent it from falling into the river. Remains of 3 humans were exposed and washed out of the cemetery one year. This is an ongoing issue as more graves are becoming exposed. The community received a grant in 1974 to relocate about 20 graves and to place old barrels at the base of Church Hill, however 62 graves remained in the old cemetery. Other gravesites were relocated in 1980 and 1998 with grant funds.

Icicle Seafood's has a seawall running from the city's dock to their dock. A resident installed a seawall of Concertainer® wire basket along a 100 foot section at the toe of the bluff in front of his home, which was reportedly about 40 feet from the eroding bluff in the fall of 2007, located 150 feet upstream from the city's dock. This containment wall had reportedly made it through the

fall 2007 storm season, but it is unknown if this product will prove an effective long term erosion control measure. The Concertainer® is currently in place and reportedly working well.

The Corps (1997, 2002) recommended that new buildings not be located in the path of the erosion and that the natural vegetation on the top of Church Hill not be disturbed. The Egegik Tribal Council requested help from the Corps to look further into shoreline erosion, erosion across the river, and erosion downstream at Coffee Point in August, 2001. The Corps budgeted funds to initiate feasibility studies for a potential Egegik project following this request. A 2002 Corps trip report indicated that the 4 to 5 graves in the southeast corner of the cemetery were about 35 to 40 feet from the edge of the eroding bluff. The report cited anecdotal evidence from community members regarding the 2001 loss of about 20 feet at the toe of the hill. The report estimated the cost of protecting the graves at \$2.5 million and the cost of relocating the graves at about \$10,000.

Structures and facilities threatened by coastal and river erosion include 20 homes, outbuildings, and sheds. Waterlines, fuel tanks, the old cemetery site, a road, utility poles and lines, sewer lines, and the city dock are within 50 feet of the active erosion area.

### **Photos and Diagrams**

Photos of erosion provided by the community are attached. The attached diagram depicts the linear extent of erosion in the community.

### **References**

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

**USACE. 1977.** *Egegik, Alaska: Technical Services Report. Engineers Study Initiation Fact Sheet: Egegik Streambank Protection.* Alaska District, U.S. Army Corps of Engineers.

**USACE. 2002.** *Egegik Section 103 Field Trip Report.* Alaska District, U.S. Army Corps of Engineers.

**USACE. 2008.** *Alaska Community Erosion Survey, OMB approved number 07100001, expires September 30, 2009 administered to Darrel Bakk, Egegik city councilman on February 20 and Don Strand, city administrator on February 18, 2008.*

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### **Additional Information**

This information paper, as well as those for other communities, can be accessed on the internet at [www.alaskaerosion.com](http://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](mailto:Alaska.Erosion.POA@usace.army.mil)



**Photo 1: Aerial view of Egegik, photo courtesy of the Becharof Corporation, 2005.**



**Photo 2: Looking across the Egegik River with the community  
In the background, photo courtesy of the Becharof Corporation, 2005.**

EGEGIK BAY

Old cemetery sites  
Church Point

Erosion area of  
greatest concern

EGEGIK RIVER

City dock

Flow

**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

Date of Aerial Photo: 17 June 04



Alaska District  
Corps of Engineers  
Civil Works Branch

--- Linear Extent of Erosion



Alaska Baseline Erosion  
Egegik, Alaska