



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - McCarthy, Alaska

Current as of February 7, 2008

Community Information

McCarthy, population 60, is located off the Edgerton Highway, 61 miles east of Chitina. It is situated on the Kennicott River at the mouth of McCarthy Creek, 12 miles northeast of the junction of the Nizina and Chitina Rivers, in the heart of the Wrangell-Saint Elias National Park and Preserve. McCarthy is reached via the Chitina-McCarthy road, a state maintained gravel road which follows the abandoned railroad route. McCarthy is unincorporated and within the unorganized borough. The following information on erosion was obtained through telephone interviews and completion of an OMB Community Erosion Survey with the president of the McCarthy area council in February 2008.

Description of Erosion Problem

Based on the community survey, McCarthy experiences almost year-round erosion associated with McCarthy Creek and other local drainages, due to steep drainages, heavy rains, glacial-outburst floods, and seasonal thawing permafrost. During the annually-occurring flooding from heavy rains, McCarthy Creek can expand from 10 feet to as wide as 500 feet, with high velocity and volume. When the creek is flowing high and fast, the accumulated gravel deposits in the creek are often carried downstream with the flow. The McCarthy creek streambed is aggrading in the vicinity of the community.

The Kennicott Glacier is located about 4.5 miles up the mountain from McCarthy, with the main drainage being the Kennicott River. McCarthy is on the list of the most endangered landmarks by the National Trust for Historic Preservation. Emergency stabilization of old buildings has been required in past years, and similar work is anticipated in the future. A 1997 U.S. Geological Survey *Water Resources Investigation Report* states that yearly outburst floods and drainage from glacier-dammed Hidden Creek Lake occurring from early fall to mid-summer result in channel erosion, aggradation, and migration of the Kennicott River, which disrupt transportation links, destroy property, and threaten life. The river used to have 2 main channels, but with the glacier retreating over the years, the river changed course a decade or so ago, so that at present only the west channel remains. The community survey respondent also reported that a related problem for the community (albeit not an erosion problem) involves the water table in the area. The aggradations in the river bed and creek bed are possibly forcing low-quality water to migrate towards the community's clear water source, and this is a potential threat.

Potential Damages

Based on the community survey, erosion from the annually-occurring outburst floods from Hidden Creek Lake have in the past, and continue in present times to cause damage in the

community and vicinity. Although the community site has not lost any land in recent years, the foot bridges connecting the community across some drainage-ways have been lost frequently during the last 10 years. The respondent stated that 2 years ago a footbridge had to be replaced 6 times. In 2000 or 2001, the former brothel building in the old mining town was reportedly lost to the river, and the powerhouse, another historic building, is earmarked by the community for protection under a current levying project. In September 2007 an access bridge was wiped out and a lot with stored items were lost.

According to the survey respondent, the community is quite concerned that the rising creek bed in McCarthy Creek in the vicinity of the community will eventually affect the community site dramatically. At the present time the community is attempting through public and private efforts to fund and develop an elaborate levy system between the creek and the community site. This project includes levees and a bridge. The levies and bridge would be constructed of old railroad cars that the proposed bridge owner has procured. The cars to be used for the bridge are flatbed railroad cars that are being barged up to the Alaska at a cost of \$40,000 each. The McCarthy community council has contributed to the cost of additional railroad cars to be used for the levees, at a cost of about \$7,500. Additional costs for equipment and labor were un-reported. It is anticipated that the bridge owner would recover some costs through collection of fees for bridge crossings.

Photos and Diagrams

Attached are photos of flooding provided by Wayne Marrs, owner/guide of St. Elias Alpine Guides, LLC. Also, attached is a diagram depicting the linear extent of erosion.

References

Rickman, R.L., and Rosenkrans, D.S., 1997. *Hydrologic conditions and hazards in the Kennicott River Basin, Wrangell-St. Elias National Park and Preserve, Alaska.* U.S. Geological Survey Water-Resources Investigations Report 96-4296.

USACE. 2008. *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 administered to Jeremy Keller, president of McCarthy area council on February 7, 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



Photo 1: McCarthy Creek flooding just downstream from the footbridge, 2007.



Photo 2: September 2007 flooding McCarthy Creek.



Photo 3: Access bridges to McCarthy area often wiped out by flooding and erosion, 2007.



Photo 4: Flooding at McCarthy, 2007.



Date of Aerial Photo: 19 September 03

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