



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Palmer, Alaska

Current as of September 7, 2007

Community Information

Palmer, population 5,574, is in the center of the Matanuska Valley, 42 miles northeast of Anchorage on the Glenn Highway. It is a home rule city in the Matanuska-Susitna Borough and is bounded by the west bank of the 80-mile long Matanuska River. The only flood on record is the flood of 1971 was caused by a rainfall of 3 to 9 inches over much of the watershed and the concurrent outburst of a mountain lake. Community activities on the Matanuska River near Palmer include boating, snow machining and the use of ATV's.

Description of Erosion Problem

The Matanuska River is wide and braided in this area, which is typical of most reaches of the river that are not confined by bedrock. The river is highly dynamic, both vertically and laterally, with areas of bank erosion, aggradations, and channel-shifting along much of its length. Based information in the OMB Community Erosion Survey, Palmer is on the river bank the most active recent river bank erosion. The two most extensive areas of erosion along the west bank are at Mountain View Estates and Sky Ranch Subdivisions; both downstream from Palmer, and outside the Palmer City limits. Direct flooding in Palmer from flows overtopping the channel banks is also typically not a problem.

The dynamic nature of the Matanuska River and the resulting erosion is caused by natural physical processes associated with active glaciers that cover about 12 percent of the 2,070-square-mile watershed. The glaciers contribute large quantities of sediment and rock ranging in size from clay to boulders. In 1992, The U.S. Geologic Survey estimated the average suspended sediment load in the lower portions of the Matanuska River near Palmer to be 5,000,000 tons per year and the bedload to be 500,000 tons per year. In addition to the large sediment load, the bank erosion is partially attributable to the non-cohesive and easily eroded nature of bank materials in some reaches.

According to information from the assistant to the city/airport manager, erosion has been a problem in the past for Palmer; but currently there is no significant erosion because the active channel of the river has been moving along the opposite bank. No discrete major events have been noted in the last 20 years within the Palmer city limits. The city does not have any active erosion control projects at this time.

Potential Damages

Along the river there are houses, agricultural fields, the Palmer sewage lagoon, the Palmer golf course, and the airport. The Natural Resources Conservation Service and the Matanuska-Susitna

Borough have compiled aerial photographs from more than 60 years that show continuing episodic erosion. No information was provided by the city regarding the types of measures, the related costs or the structures and/or facilities that may have been damaged by erosion. Armor rock, groins constructed with riverbed material, and vehicles and machinery cabled together have been used to retard erosion at Palmer and elsewhere along the lower Matanuska. The airport runways and buildings have remained in their original location since they were built. According to the assistant to the city /airport manager, if the active river channels changed location and moved towards Palmer, the wastewater treatment facility, the airport, golf course, and other structures and facilities along the west bank of the river at Palmer could be damaged.

Photos and Diagrams

No photos were provided by community. See attached diagram of the Matanuska River at Palmer.

References

USACE. 1996. *Palmer Sewage Lagoon Bank Protection Under Section 14 of the Flood Control Act of 1946*, Alaska District, U.S. Army Corps of Engineers.

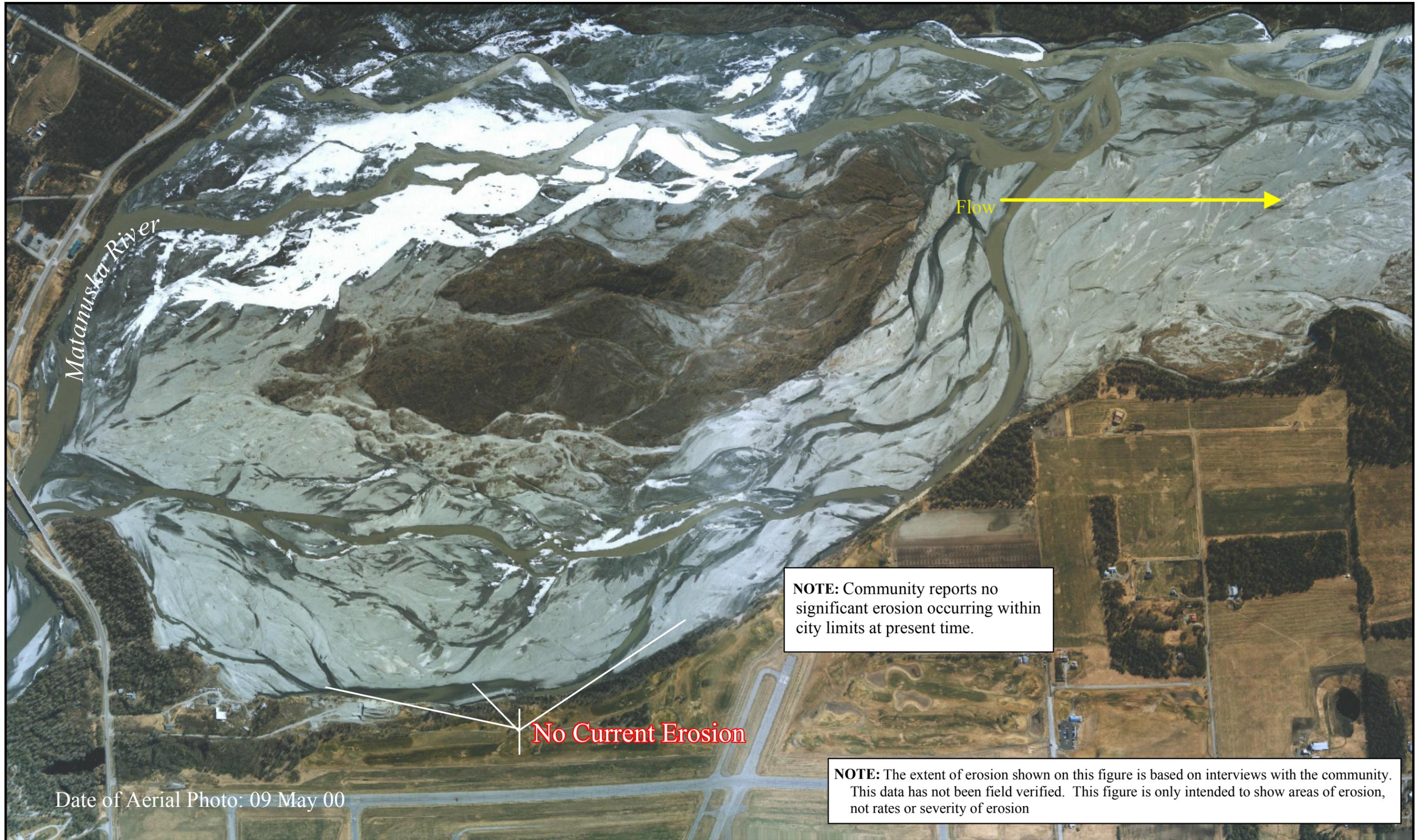
USACE. 1999. *Matanuska River Reconnaissance Report, General Investigations Report, Section 905(b) (WRDA 86) Analysis*, Alaska District, U.S. Army Corps of Engineers.

USACE. 2003. *Background Studies for Expedited Reconnaissance Study of Matanuska River Erosion*, Alaska District, U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey*, OMB approved number 07100001, expires September 30, 2009 completed by the assistant to the city manager/airport manager, Jane Dale, on September 4, 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



Alaska District
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Civil Works Branch

--- Linear Extent of Erosion



Alaska Baseline Erosion
Palmer, Alaska