



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper – Circle View and Stampede Estates, Alaska

Current as of October 31, 2007

Community Information

Circle View and Stampede Estates are subdivisions in the Butte community area that comprise the Flood and Water Erosion Control Service Area. The service area is in an unincorporated area of the Matanuska-Susitna Borough. The service area is about 42 miles north of Anchorage on the left bank of the Matanuska River, southeast and downstream of Palmer. The service area includes about 70 homes (primarily on large single family lots) and some agricultural land. The west boundary of the service area starts about 1 mile west of the Old Glenn Highway and the east boundary is state-maintained Bodenbug Butte Loop Road. The south boundary is Doc McKinley Avenue and the north boundary the Matanuska River.

Description of Erosion Problem

The 2 subdivisions are aggressively eroded by the Matanuska River undercutting the high banks (20 to 30 feet high) along this area. The river's primary source is the Matanuska Glacier, augmented by several tributaries entering along its course to the Knik Arm. The river's steep gradient, heavy sediment loads, and diurnal variations in flow create a braided stream channel system typical of most glacial rivers. As the day warms, melting ice produces a daily high flow period when the river moves a very large bed load of gravels, sands and silts. During the daily lower flow periods the river deposits much of the bed load in the lower velocity areas of the river. These variations cause the river channel to braid and constantly shift and erode its banks. Erosion may continue for months in the same location or shift to a different location in a matter of hours, with erosion in the former area stopping for short or long periods. Over the last 20 years in the vicinity of Circle View Estates and Stampede Estates subdivisions the river has eroded more than 1,000 feet inland along more than 1 mile of the riverbank. The service area is generally not flood prone. The adjacent upstream and downstream sections of the river are flood and erosion prone.

Potential Damages

The river caused notable erosion damage in the 2 subdivisions during the early 1980's, 1990-1994, 2004, and 2005. The area was declared a disaster area in response to the erosion in the 1990's when 2 homes were lost to the fast-eroding river. Both homes were able to collect a portion of their losses from their federal flood insurance policies. In response, the Matanuska-Susitna Borough constructed 4 dikes in the early 1990's, using \$500,000 in state money. After more erosion damage at Circle View Subdivision in 2004, the Matanuska-Susitna Borough spent about \$172,000 of combined state funds and local tax assessment to repair the 15-year-old dikes. A new dike was added in 2007 funded from Natural Resource Conservation Services. Although

the dikes have required frequent maintenance, they have helped prevent erosion in their immediate vicinity. Erosion continues upstream and downstream of the dikes.

Other efforts to reduce potential erosion damage such as placing boulders and junk cars along the eroding riverbank have had very limited success. Several homes, a tri-plex, a 120-foot long greenhouse, and a horse barn have fallen into the river since 1992. About another dozen homes have been relocated or demolished to avoid erosion since 1992. The majority of home losses and relocation costs were covered by owners' federal flood insurance policies administered by the Federal Emergency Management Agency (FEMA). Between 1990 and 1994, FEMA policies allowed for the relocation or demolition of flood-insured structures subject to imminent threat of erosion that received orders of condemnation by the Borough. Flood insurance is still available, but specific coverage for "relocation or demolition due to imminent threat" is no longer available and has been replaced by a mitigation grant program.

Dozens of dwellings, accessory structures, private wells, septic systems, utility lines, major power transmission lines, farm land, borough-maintained subdivision roads, the state-maintained Bodenbug Loop Road (now within 50 feet of the riverbank), and East Brian Drive (where several hundred feet of road has eroded) are improvements and infrastructure are at risk as the river erosion continues to approach developed areas in the 2 subdivisions. There is no control or regulation of development in the subdivisions based on erosion risk and new development is ongoing.

Photos and Diagrams

Photos of erosion provided by community or other sources are attached. A diagram of the Matanuska River Erosion at Circle View Subdivision from 1949 through 2005 provided by Matanuska-Susitna Borough is attached. Also, attached is a diagram depicting the linear extent of erosion in the service area.

References

- Alaska Rim Engineering. 2007.** *Erosion along the Matanuska River: An Overview of the Problem with Suggested Mitigation Measures (Preliminary)*. Prepared for the Matanuska-Susitna Borough.
- SOA, DES. 1992.** *Matanuska River Erosion Task Force Interim Report*, 1992.
- USDA, NRCS. 2004.** *Matanuska River Erosion Project*, September, 2004. US Department of Agriculture, Natural Resources Conservation Service.
- USACE. 2007.** *Alaska Community Erosion Survey*, OMB approved number 07100001, expires September 30, 2009 administered to Frankie Barker, Matanuska-Susitna Borough environmental planner on August 31, 2007 and Linda Smith, chair of the Circle View and Stampede Estates Flood and Water Erosion Control Service Area on September 16, 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



Photo 1: Finger dike #5 added in 2006 to protect lower end of Circle View Subdivision, Sept. 2007.



Photo 2: View from river end of Dike #5 Circle View Subdivision looking back at junk cars placed illegally to slow erosion, Sept. 2007.

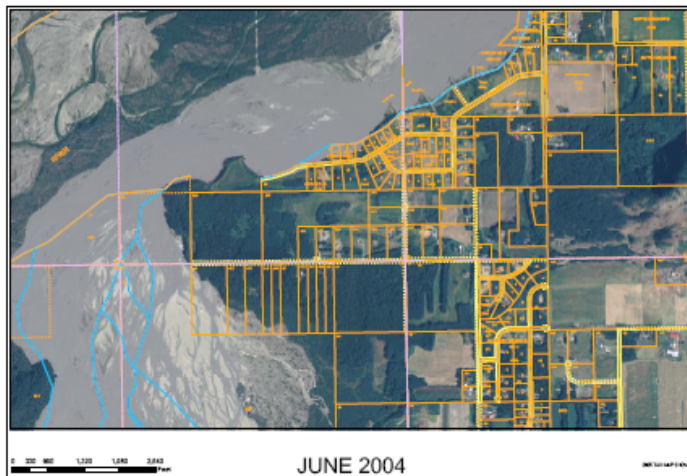
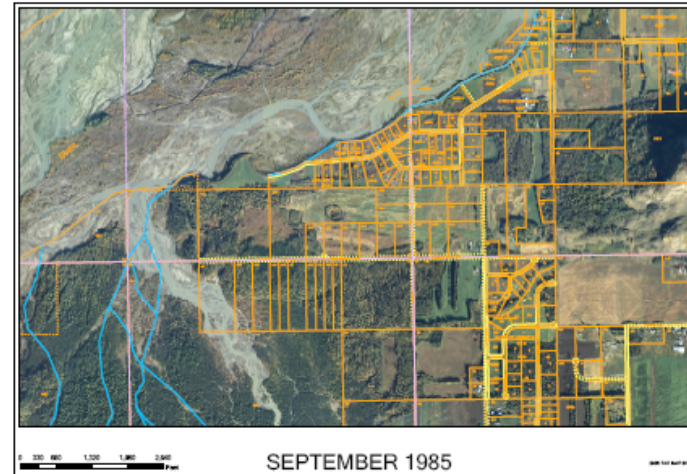
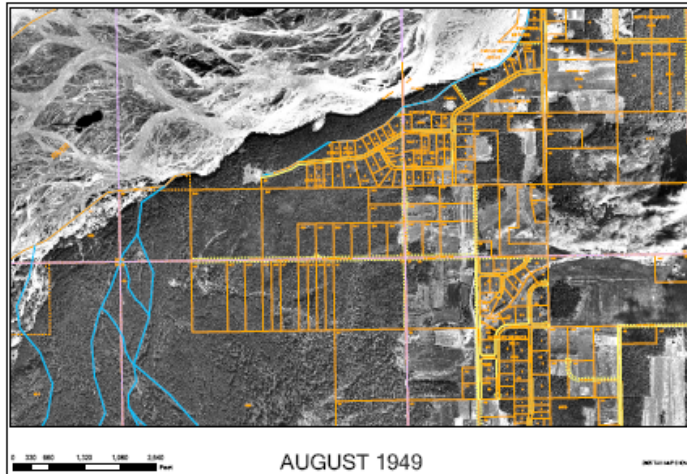


Photo 3: Stake marking 10 ft to the Matanuska river's edge at less than 2 ft, Sept. 2007.



Photo 4: Well casing all that remains of former home site lost to Matanuska river erosion during early 1990's, Sept. 2007.

MATANUSKA RIVER EROSION AT CIRCLE VIEW SUBDIVISION



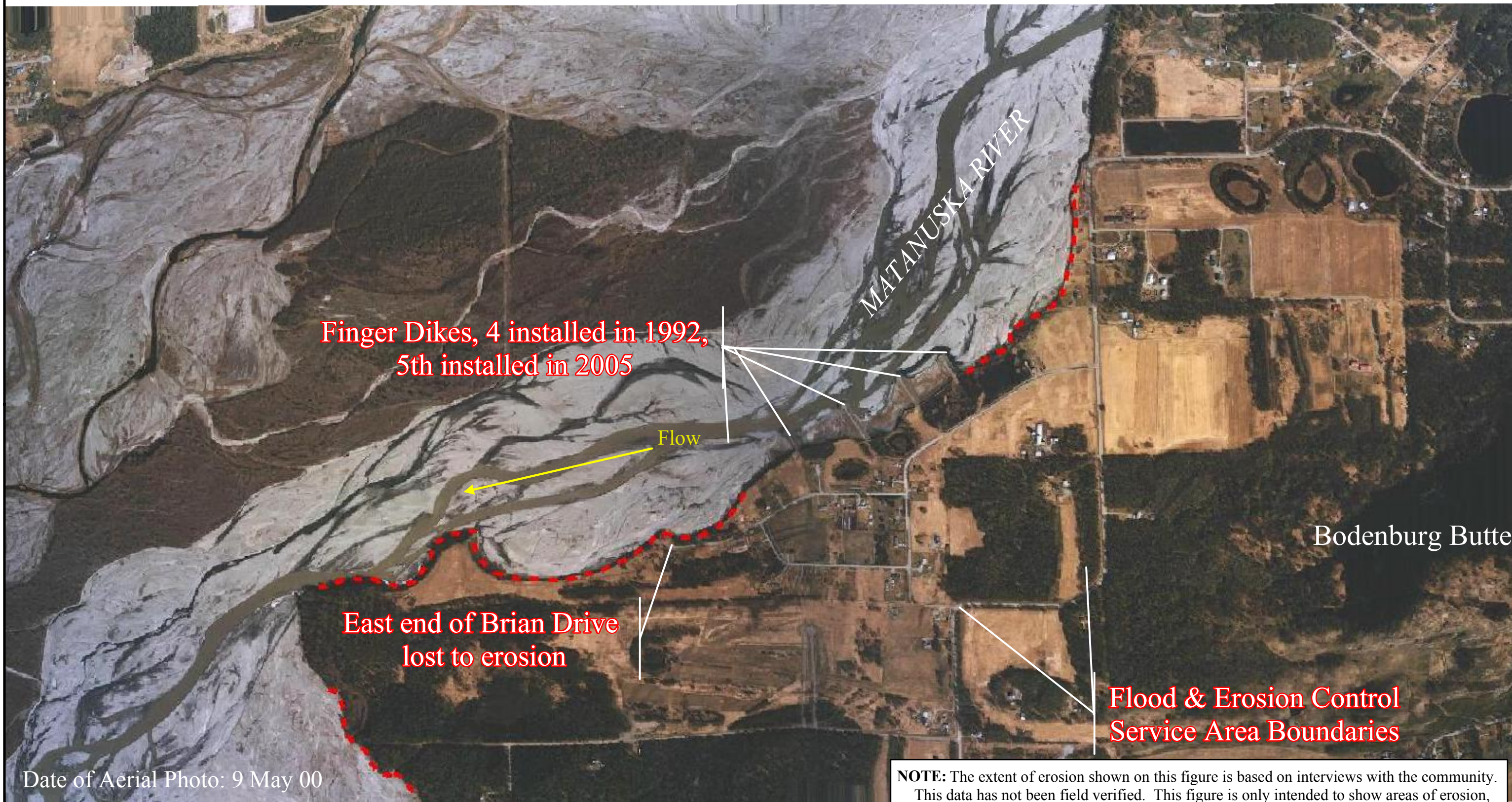
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MATANUSKA - SUSITNA BOROUGH
OFFICE OF INFORMATION TECHNOLOGY
GEOGRAPHIC INFORMATION SYSTEMS DIVISION
NOVEMBER 1, 2005

DATA SOURCES
MATANUSKA - SUSITNA BOROUGH
AIRCRAFT U.S.



Matanuska River Erosion at Circle View Subdivision from 1949 through 2005 provided by Matanuska-Susitna Borough



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----- Linear Extent of Erosion



Alaska Baseline Erosion
Circle View & Stampede
Estates SD, Butte, Alaska