U.S. Army Corps of Engineers
Alaska District

Erosion Information Paper - Delta Junction, Alaska

Current as of December 10, 2007

Community Information

Delta Junction, population 1,039, is at the junction of the Richardson and Alaska Highways, approximately 95 miles southeast of Fairbanks. The city developed along the east bank of the Delta River upstream of its junction with the Tanana River. Delta Junction is bordered on the south by the Jarvis Creek and on the north and west by Delta River. The community is incorporated as a 2nd class city in the unorganized borough.

Description of Erosion Problem

Both Delta River and Jarvis Creek have broad, braided-channels through glacial moraine deposits and both are fed by snow and glacier melt. Upstream of Delta Junction, Jarvis Creek flows through the U.S. Army's Fort Greely, about 5 miles southeast of Delta Junction. Large accumulations of winter aufeis (sheet-like ice mass) can almost completely block sections of the Jarvis Creek channel. Spring snowmelt sends water out of the channel into the floodplain, northward to the Alaska Highway, and through Delta Junction. In May 2004, the combination of aufeis, melt-induced surface runoff, and high rainfall led to considerable flooding in the city.

The Delta River Riverbank also erodes Delta Junction. Causes of the erosion are primarily natural river flow and water level fluctuations, exacerbated by ice-massing and spring and summer snowmelt. The 1983 Alaska Department of Transportation and Public Facilities *Task Force on Erosion Control* report states that during the summer of 1983, the riverbank eroded several feet a day in some locations. The community survey estimates 2 to 5 feet of bank erodes per year along the Delta River near its intersection with the Tanana River. The river has moved inland from 30 to 50 feet in some locations. Flooding and erosion in some areas can occur annually. One location on Emmaus road and two locations on Nistler road was washed out during a flood event in May 2004.

Potential Damages

The city administrator indicated in the community survey that at least 11 spur/finger dikes have been installed in the Delta River to protect the city center from erosion. The city does not do maintenance on the dike system and the agency responsible for maintenance was not indicated. The city administrator reported that the finger dikes seem to work well, however recently the city was told that along the Spengler Road “Old Rich” part of the Delta River, there are several spots being eaten away without dikes. The city is concerned that the city center buildings would be at

risk should the finger dike system fail. No specific distances or the numbers of structures were provided in the community survey.

Photos and Diagrams

Photos of erosion provided by the city of Delta Junction are attached. Also, attached is a diagram depicting the linear extent of erosion.

References

NPC. 1980. *Delta Junction: Northwest Alaskan Pipeline Company*. Prepared by Northwest Pipeline Company.

AK DOT&PF. 1984. *Task Force on Erosion Control Final Report.* Prepared by the Department of Transportation and Public Facilities.

The Delta Paper. **1982.** *Jarvis Creek chooses path through Delta*.

USAK. 2006. *Supplemental Draft Environmental Impact Statement for the construction and operation of a Battle Area Complex and a Combined Arms Collective Training Facility.* Prepared by U.S. Army Alaska.

USACE. 1997. *Inspection Report.* Alaska District, U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 administered to Mike Tvenge, Delta Junction city administrator, on December 10, 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

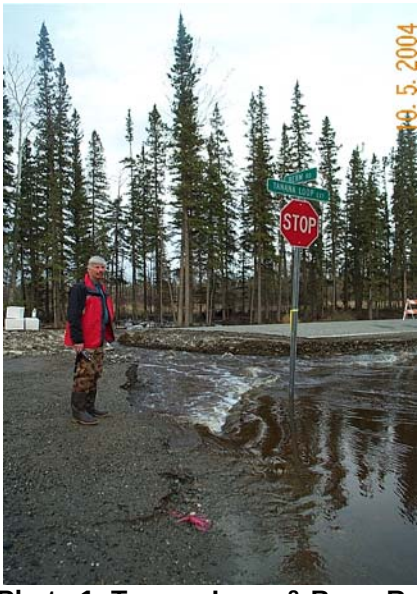


Photo 1: Tanana Loop & Berm Road in Delta Junction, May 2004.

Photo 2: Aerial view of road breach to release flooding, May 2004.

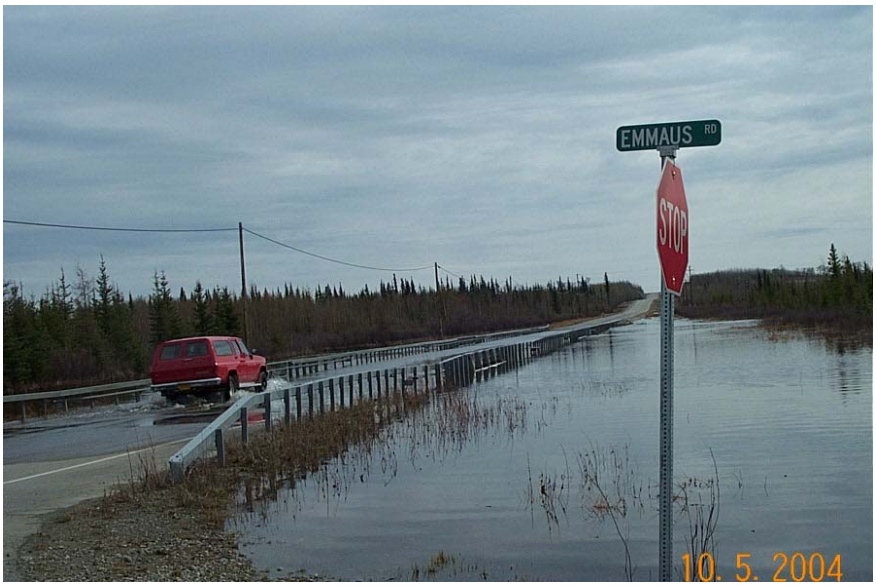
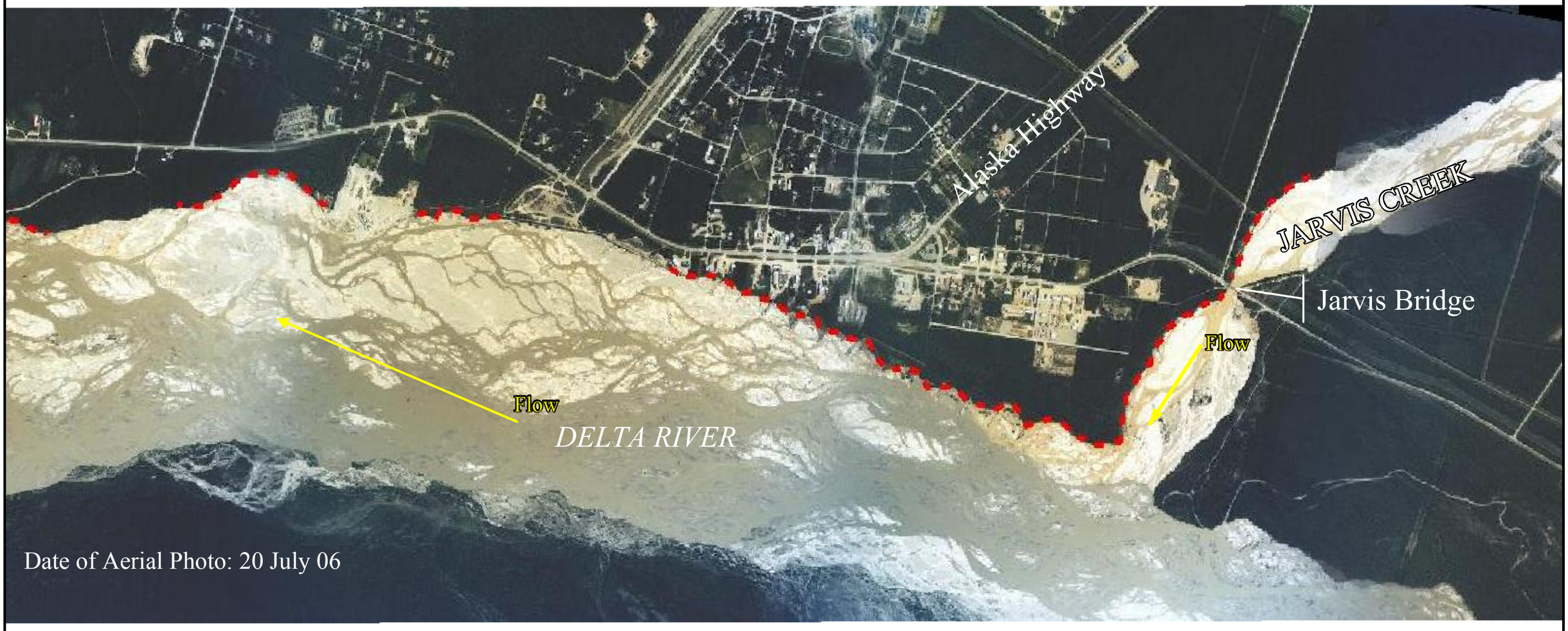


Photo 3: Emmaus Road at Nistler Road, May 2004.



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

	Alaska District Corps of Engineers Civil Works Branch	--- Linear Extent of Erosion	DELTA JUNCTION		N	Alaska Baseline Erosion Delta Junction, Alaska