



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Big Delta, Alaska

Current as of November 15, 2007

Community Information

Big Delta, population 728, is on the south bank of the Tanana River, a short distance upstream of the confluence of the Tanana and Delta Rivers. It is 73 miles southeast of Fairbanks on the Richardson Highway. The area is unincorporated within the unorganized borough. Big Delta State Historical Park, administered by the Alaska Department of Natural Resources contains Rika's Roadhouse. The roadhouse is listed on the National Register of Historic Places. The park and roadhouse have been a gathering place for Alaskan travelers since 1904.

Description of Erosion Problem

Big Delta reports that bank erosion along the Tanana River is primarily caused by natural river flow. The Delta River and the Tanana River are glacially fed with on-going bank erosion that increases during hot weather or storms. The Deltana Community Corporation president indicates that bank erosion also increased during winter when water veers around an island in the Tanana River upstream of the confluence with the Delta River.

A 2000 Corps Section 14 emergency stream bank protection report states erosion rates increased dramatically during the late 1990s, causing the bank-line to recede up to 8 feet in several locations. The city reported that unusually high flows in the Tanana River during the fall of 1997 and 1998 had accelerated the erosion problems. According to the community survey, approximately 1,150 linear feet of riverbank fronting the community is subject to erosion. The river bank ranges between 4 and 7 feet high during winter. The corporation president also indicated that there do not appear to be annual uniform erosion rates along the river, but over a 5-year period he had seen 100 feet of erosion in one area.

The Deltana Community Corporation president estimates that the main bank is eroding along a 1 to 1.5-mile stretch of the Tanana River upstream from Rika's Roadhouse. The 2005 *Big Delta State Historical Park Riverbank Restoration Feasibility Study* reports that bank erosion in the area of the roadhouse is influenced by periodic vegetation clearing associated with ongoing vegetation maintenance practices and by pedestrian (visitor) traffic along the bank.

Potential Damages

Rika's Roadhouse is threatened by river bank erosion along the Tanana River. The U.S. Fish and Wildlife Service and Natural Resources Conservation Service (NRCS) completed an erosion protection project in this area during 2007. The project included treating (a) a 200-foot section with toe rock, rootwads, and burritos; (b) a 110-foot section with brush layering/burritos; and (c) an additional 110 feet of riverbank with live stakes. "Burritos" are willow cuttings, native soil,

and straw mulch rolled up in a high-strength erosion control blanket. The NRCS state conservation engineer said the total NRCS project cost was \$300,000.

According to the community survey, approximately 6 homes upstream from the State Park are threatened by erosion. The majority of these homes are estimated to be between 100 and 500 feet from the river bank. In 2003, homeowners along the Tanana River and Deltana Community Corporation discussed applying for U.S. Department of Agriculture (USDA), NRCS Wildlife Habitat Improvement Program (WHIP) funds for a possible erosion protection project. It is not known if they applied. The community survey reported that in 2004 one of the property owners installed logs along the riverbank on their property.

The community survey also reported that erosion along the Delta River has put Spangler Road and residences between the road and the river at risk (no specific structures identified). Although no erosion problems were reported behind the Tanana Trading Post and Tanana Adventure Sports, some of the wells and septic tanks in this vicinity are estimated to be less than 500 feet from the river bank.

Photos and Diagrams

Photos of erosion provided by USDA, NRCS state conservation engineer and the city of Delta Junction. Also, attached is a diagram depicting the linear extent of erosion in the Big Delta community area.

References

Christopher Roach, P.E. 2005. *Big Delta State Historical Park Riverbank Restoration Feasibility Study*, prepared for ECI / Hyer, Inc.

USACE. 2000. *Emergency Streambank Erosion Protection Section 14 Project Report Big Delta*. Alaska District, U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 administered to Paul Knopp, president of the Deltana Community Corporation, on December 7 and 10, 2007. Also interviewed: Brett Nelson, USDA, NRCS, state conservation engineer, and Steve Selvaggio, president Whitestone Community Association on December 11, 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: Toe rock & root wad erosion protection during installation along Tanana River at Rika's Roadhouse. Pipeline crossing is in background, USDA, NRCS photo, 2007.



Photo 2: Willow burritos along Tanana River, looking upstream adjacent to Rika's Roadhouse, USDA, NRCS photo, 2007.



Photo 3: Big Delta area during the May 10, 2004 flood.



Date of Aerial Photo: 20 July 06

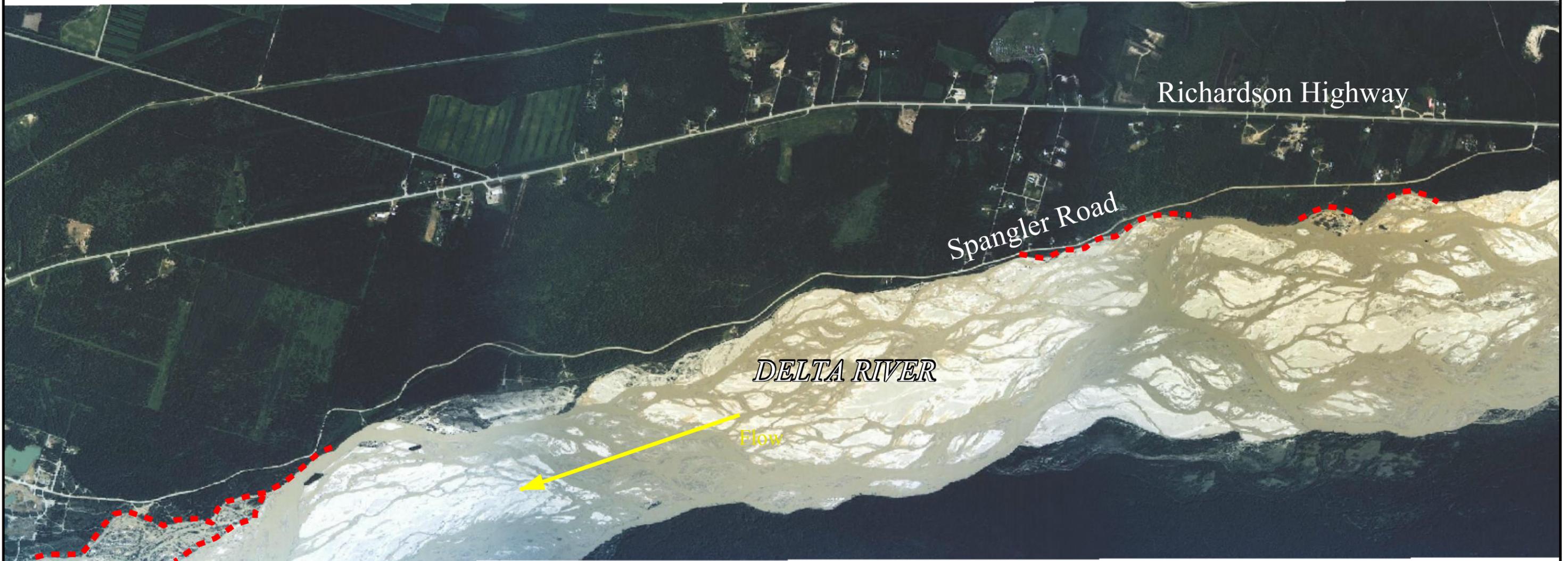


Alaska District
Corps of Engineers
Civil Works Branch

--- Linear Extent of Erosion
Part 1



Alaska Baseline Erosion
Big Delta, Alaska



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