



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Circle, Alaska

Current as of February 20, 2008

Community Information

Circle, population 95, is on the south bank of the Yukon River at the eastern end of the Steese Highway, 50 miles below the Arctic Circle, and 160 miles northeast of Fairbanks. Circle is at the edge of the 9-million-acre Yukon Flats National Wildlife Refuge. The community is unincorporated in the unorganized borough.

Description of Erosion Problem

Circle is on the east bank of a channel and slough associated with the Yukon River. Past major flooding-erosion events in 1945, 1979, 1985, and 1989 were caused by rapid snowmelt and summer storms. The 1984 Alaska Department of Transportation and Public Facilities (DOT/PF) *Task Force on Erosion Control Final Report* stated that river ice piling up in the downstream area of the community contributed to erosion.

Potential Damages

Property below the central part of the community was lost to considerable erosion in 1989. Some residents lost 25 feet of property with erosion periodically accelerated by seasonally high river levels. A steel sheet-pile retaining wall, funded by a state legislative grant, was constructed along the front of the community in 1989. The wall was redesigned after an ice-jam sheered off many of the anchor bolts. The costs for the sheet pile projects were estimated at hundreds of thousands of dollars with the State's *Capital Projects Database* indicating \$149,461 spent by DOT/PF in Circle for flooding and erosion in 1990. The retaining wall has prevented further erosion.

Milepost 147 of the Steese Highway is a chronic problem area where for the last 20 years an estimated 6 feet of bank erodes annually. Loss of the Steese Highway would limit access to both Circle and Fort Yukon. Many Fort Yukon residents and business representatives travel to Circle before taking a boat to Ft. Yukon. The state has been applying for permits to correct the problem for the past 4 years.

Photos and Diagrams

Photos of the sheet-pile wall in Circle provided by Division of Homeland Security and Emergency Management, Birch Creek at Steese Highway milepost 144 provided by the DOT/PF Maintenance Foreman in Central, and a diagram of Circle are attached.

References

SOA, DCRA. *Capital Projects Database.* State of Alaska, Division of Community and Regional Affairs.
http://www.commerce.state.ak.us/dca/commdb/CF_RAPIDS.cfm

Alaska DOT/PF. 1984. *Task Force on Erosion Control Final Report.* State of Alaska, Department of Transportation and Public Facilities.

USACE. 2008. *Alaska Community Erosion Survey, OMB approved number 07100001,* expires September 30, 2009 administered to Earla Hutchinson, Circle civic community association president on February 20, and Richard E. Tyrrell, foreman Central DOTPF maintenance, on February 11, 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: Circle and the Circle airfield during spring breakup



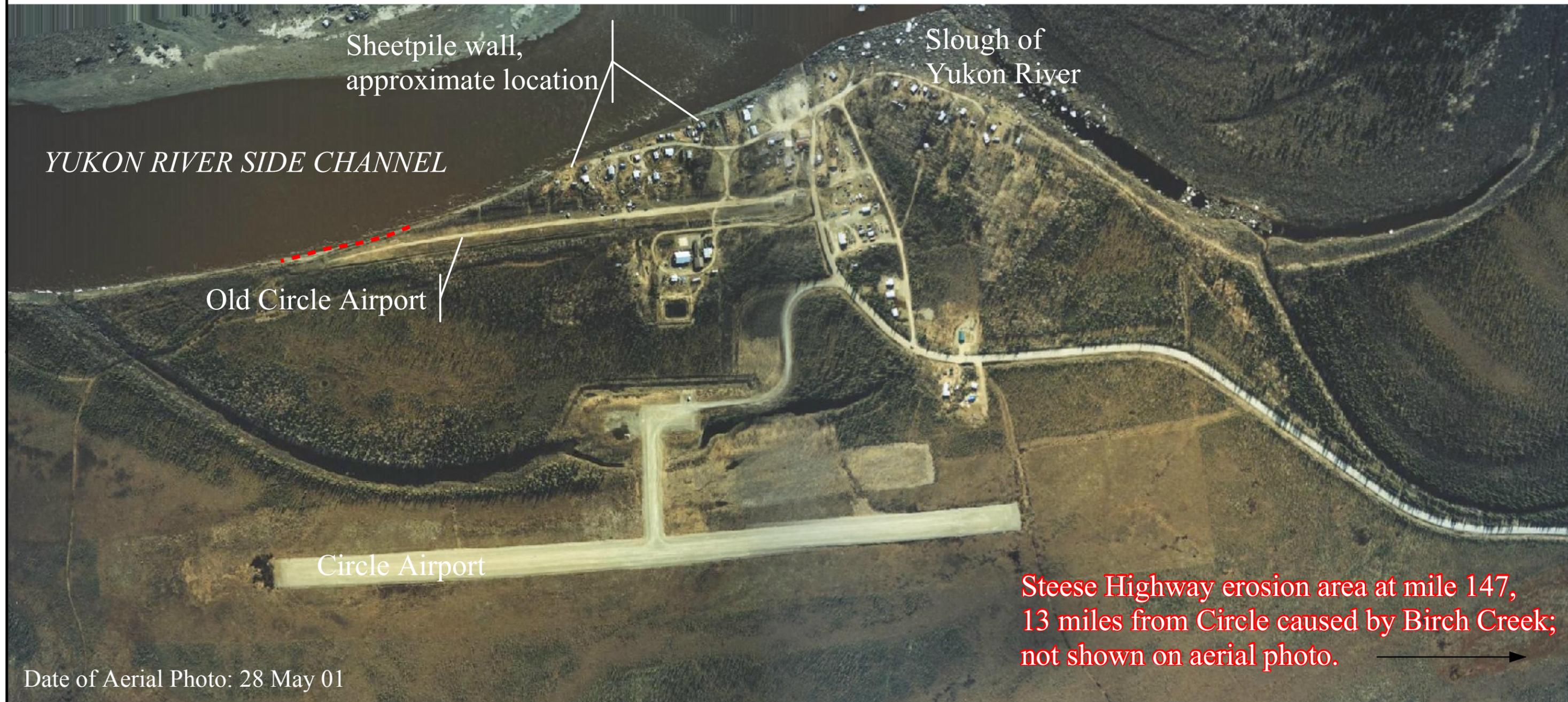
Photo 2: Sheet pile erosion protection in Circle Flooding, photo courtesy of Michael L. Bird, 1997. photo courtesy of Michael L. Bird, 2001.



Photo 3: Steese Highway 13 miles before it ends at Circle is cut down to 1 lane by Birch Creek, photo courtesy of DOT/PF Central Maintenance, 2006.



Photo 4: Birch Creek at Steese Highway, Mile 147, photo courtesy of DOT/PF Central Maintenance, 2006.



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



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--- Linear Extent of Erosion



Alaska Baseline Erosion
Circle, Alaska