



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Golovin, Alaska

Current as of November 8, 2007

Community Information

Golovin (GOLL-uh-vin a.k.a. Chinik), population 154, is on a point of land between Golovnin Bay and Golovnin Lagoon on the Seward Peninsula. The local spelling for the bay and lagoon is "Golovnin". The community is 70 miles east of Nome, and is incorporated as a 2nd class city in the unorganized borough. Boat, snowmachine, ATV, barge access, boat storage, fishing, processing catch, beachcombing, cultural/social events, driftwood collection, community access ways, and a summer swimming and boat dock area use the coastal shoreline.

Description of Erosion Problem

Golovin reports both coastal and riverine erosion. Coastal erosion is caused by severe Bering Sea fall and winter storm surges, wind and waves, and high tides through Norton Sound that impact Golovnin Bay and Lagoon. Melting permafrost, removal of beach sand, and ivu events (ice overriding the land) are factors contributing to the severity of the coastal erosion. The estimated effects of four major erosion events were reported in the community erosion survey: (a) October 1992 an average loss of 15-20 feet inland along 7,800 linear feet of shoreline, (b) September 2003 an average loss of 5 feet inland along 7,800 linear feet of shoreline, (c) October 2004 an average loss of 5 feet inland along 7,800 feet of shoreline, and (d) September 2005 a loss of 5-10 feet inland along 7,800 linear feet of shoreline. The community survey respondent estimated an annual loss of 2-4 feet along 7,800 linear feet of the shoreline. The height of the eroding shoreline bank is reported by the community to be about 3 feet above the normal high tide line, and is eroding on both sides of downtown of the Golovnin Lagoon and Golovnin Bay. Riverine erosion is associated mostly with Chinik Creek. Over the past 20 years the Chinik Creek channel has moved east (aerial photos show a steady rate of easterly movement), reducing the natural sandbar which was part of the breakwater for storm surges. Community areas at lower elevations, including the old runway, are periodically flooded. In a 1984 report, the Alaska Department of Transportation and Public Facilities stated that the gravel mining that takes place at the mouth of Chinik Creek may increase erosion rates in Golovin. A 1994 reconnaissance study by the Corps reported that conditions had not changed.

Potential Damages

The community's local economic development plan for 2004–2009 revised and approved priority list on January 30, 2007 identifies erosion control of beach and hills as one of the priorities in a list of top priorities. The shore along the south side of the sand point is eroding toward the first row of buildings. Based on the survey, damages from erosion include downtown roads (repair costs of \$5,000+), an abandoned fish plant, the old Golovin dump, and several downtown house pads (repair cost per pad of \$5,000+). Outbuildings, sheds, water tanks and lines, fuel tanks,

drying racks and smoke houses, a retail store, a road, a boat launch, utility poles, power generators, sewer lines and sewage lagoon, old airport facilities, the old landfill, and beach access trails from dump road are at less than 100 feet from the eroding shoreline and at risk for erosion damage. The community is concerned that several structures on the south beach will soon be at risk from ongoing erosion including the old school building, the teacher's quarters, the old church, and many residences. In the 1960's, the barrels filled with sand were placed as a storm surge barrier along the Golovnin Bay shoreline have since rotted away and a pit run gravel road/berm was constructed along Antone Street for \$145,155 to help reduce community flooding impacts. No repair and maintenance costs were provided. According to the community survey, the road/berm project has been through 3 high water events and erosion has damaged the road slope. No further measures have been taken to protect from wave erosion. A 200-foot portion of the road/berm project on the north side of the GCI site has not been completed. The survey respondent defined the erosion as "gradual - taking place by almost imperceptible (so slight, gradual, subtle, as not easily perceived) steps or degrees; developing little by little, nor sharply or suddenly," except during severe Bering Sea Storms where substantial erosion events can occur in a short time during a storm event.

Photos and Diagrams

Photos of erosion and flooding provided by the community are attached. Also attached is a diagram depicting the linear extent of erosion in Golovin.

References

- Alaska DOT&PF. 1984.** *Task Force on Erosion Control Final Report.*
- NPGD. 2003.** *Local Economic Development Plan for Golovin, 2004-2009*, Prepared for community of Golovin & Kawerak by Northwest Planning and Grants Development.
- USACE. 1986.** *Golovin, Alaska, Coastal Erosion Study.* Alaska District U.S. Army Corps of Engineers.
- USACE. 1994.** *Flood Control Preliminary Reconnaissance Report, Section 205, Golovin, Alaska.* Alaska District U.S. Army Corps of Engineers.
- USACE. 2007.** *Alaska Community Erosion Survey, OMB approved number 07100001*, expires September 30, 2009 completed by Toby Anungazuk, Jr., Chinik Eskimo community on September 17, 2007 and provided by facsimile.

Additional Information

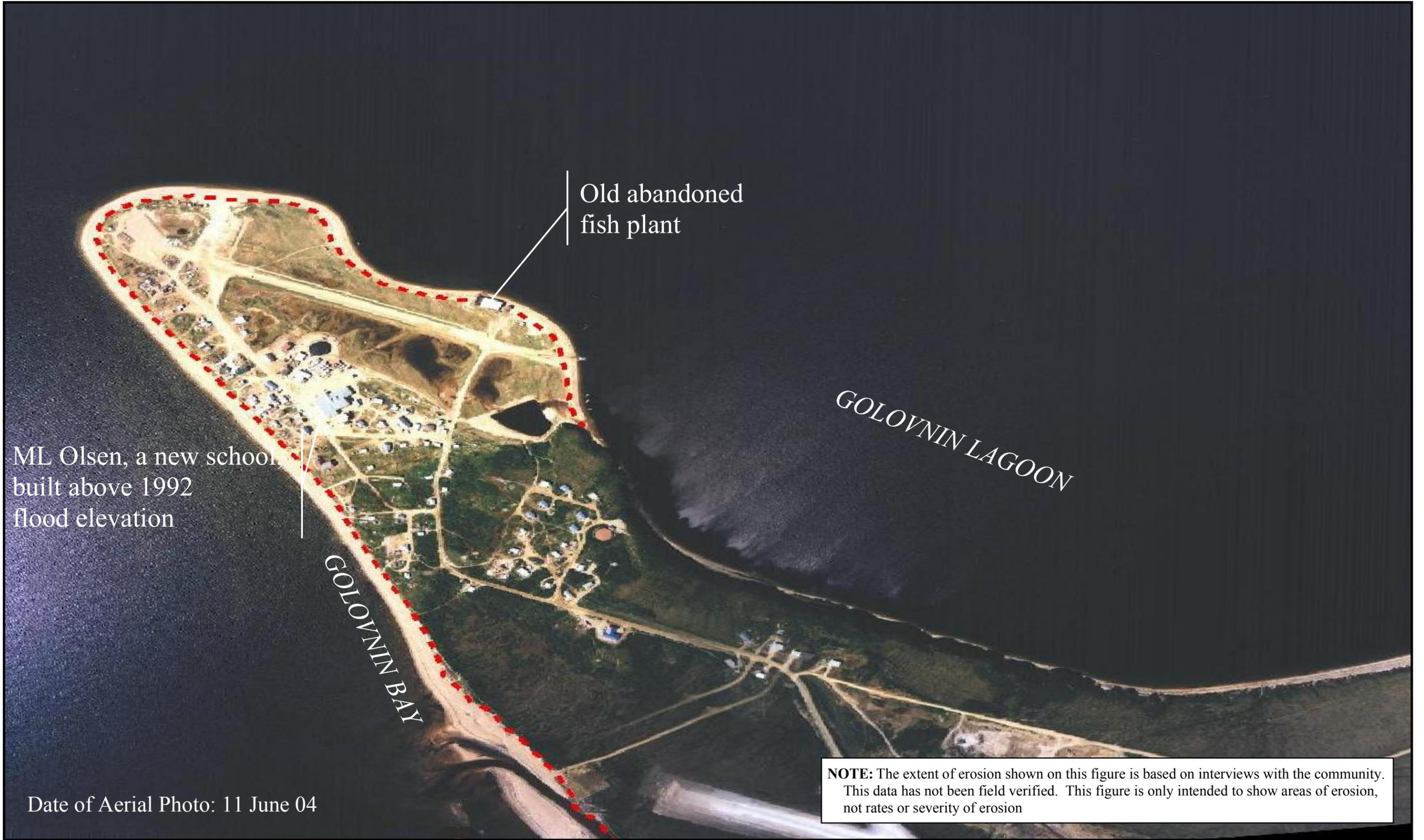
This information paper, as well as those for other communities, can be accessed on the internet at www.alaskaerosion.com. For more information please contact the Corps of Engineers, project manager at (907) 753-5694 or email Alaska.Erosion.POA@usace.army.mil



Photo 1: Most of the Golovin coastline is subject to erosion which increases during Bering Sea storms; this is Golovin during the September 23, 2005 Bering Sea storm.



Photo 2: Golovin from Amuktoolik & Punguk St. corner toward Baldy Hill, September 2003.



Date of Aerial Photo: 11 June 04



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- - - - Linear Extent of Erosion



Alaska Baseline Erosion
Golovin, Alaska