



U.S. Army Corps
of Engineers
Alaska District

ALASKA BASELINE EROSION ASSESSMENT

Erosion Information Paper - Valdez, Alaska

Current as of September 14, 2007

Community Information

Valdez (val-DEEZ), population 4,353, is on the north shore of Port Valdez, a deep-water fjord in Prince William Sound. Valdez is 305 road miles east of Anchorage and 364 road miles south of Fairbanks. Valdez is a home rule city in the unorganized borough; the City of Valdez being the local government. Three main waterways run through town: Valdez Glacier Stream, Mineral Creek, and Lowe River. Glacier Stream Road is on the northwest bank of Glacier Stream and serves as a dike to protect the bridge. Extracting gravel from the streambed and riding snowmachines are activities in this area. Gravel extraction, fishing, riding snowmachines and ATVs, walking and driving on the roads on top of the dikes at both sides of the creek are activities associated with the creek. Alyeska Pipeline Service Company and Ship Escort/Response Vessel Systems use Lowe River for oil spill response drills. Fishing, rafting, kayaking, and snowmachine use are activities involving the river.

Description of Erosion Problem

Valdez has no reported coastal erosion problems. Three waterways in the community area have erosion problems. Each of these is discussed below.

Valdez Glacier Stream. City staff estimates 2 feet per year is eroded from non-storm-related activities. The stream channel changes frequently because it carries a heavy bed load of glacial material which fills the stream bed and causes the channel to shift. Erosion caused by outburst flooding from Valdez Glacier in 2002 resulted in a channel change, and it flowed into gravel pits on the west side of the floodplain adjacent to the city landfill. The natural stream flow, as well as flooding, ice jams, and glacier lake outbursts contribute to erosion. Four storm events in the last 6 years resulted in considerable erosion along the stream. Glacier Stream Road was breached during a 2001 flood. A 2003 flood resulted in a channel shift and now the stream flows along the toe of Glacier Stream Road.

Mineral Creek. The banks along the creek range from 5 to 20 feet in height. Natural flow of the creek, flood events, ATV and snowmachine use, car and truck traffic along the dike, and walking and hiking cause or contribute to erosion along the creek. 3 storm events in the last 10 years have caused significant erosion along the creek. City staff estimates thousands of linear feet of creek bank may be washed out during these storm events.

Lowe River. Natural flow and flooding during storm events cause or contribute to erosion along the river. City staff estimates that erosion can occur along an 8-mile section of the

river, especially during a storm event. Two major storm events in the last 20 years have caused significant erosion along the river.

Potential Damages

Valdez Glacier Stream. Glacier Stream Road is the only infrastructure within 100 feet from the stream. It provides access to the city's landfill, which is between 100 and 500 feet from the stream. One residence in the area, and an associated junkyard, are about 500 feet from the stream. Rip rap, temporary dikes, gravel extraction, relocating material in the stream bed, and the dike protecting the highway bridge are protective measures being used along the stream. City staff estimates the city has spent approximately \$250,000 over the last 6 years to install riprap and remove gravel from the stream. Glacier Stream Road, the landfill, a residence, a historical cemetery, utility poles and lines, and the Richardson Highway Bridge are threatened structures. Flood events could erode the foundations of the Richardson Highway Bridge, causing bridge failure which would isolate the city and prevent access to the public landfill.

Mineral Creek. Homestead Road and Blueberry Hill Roads adjacent to the creek are at risk from erosion. Residences, outbuildings and sheds, residential fuel tanks, and utility poles and lines between 100 and 500 feet from the creek are at risk from erosion. Sewer lines adjacent to and crossing the creek are at risk from erosion. Riprap, extracting gravel from the streambed, and dikes on both sides of the creek are protective measures being used along the creek. City staff estimates the city has invested approximately \$750,000 for protective measures along the creek.

Lowe River. An 8-mile section of the Richardson Highway adjacent to the river and Alpine Woods Subdivision between 100 and 500 feet from the river are at risk from erosion. Facilities built by the State of Alaska, the city, and Alyeska that are less than 100 feet from the river are at risk of erosion. A dike was constructed to protect the Alpine Woods Subdivision from the river.

Photos and Diagrams

No photos have been provided by the community or other sources. A diagram depicting the linear extent of erosion along Mineral Creek is attached.

References

USACE. 1987. *City of Valdez: Flood Record.* Alaska District, U.S. Army Corps of Engineers.

USACE. 2003. *Valdez Glacier Stream Flood Control Section 208 Project Management Plan.* Alaska District, U.S. Army Corps of Engineers.

USACE. 2005. *Valdez Glacier Stream Section 14 Project Management Plan Emergency Stream Bank Protection.* Alaska District, U.S. Army Corps of Engineers.

USACE. 2007. *Alaska Community Erosion Survey,* OMB approved number 07100001, expires September 30, 2009 administered to Lisa Von Bargen, community & economic development director and Carol Smith, planner, City of Valdez, September 6, 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

Additional erosion-prone stream corridors
include Valdez Glacier Stream and Lowe River
Not shown on this map

Port Valdez

MINERAL CREEK

Flow

Extensive Dikes protect both
sides of Mineral Creek

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

Date of Aerial Photo: 5 September 99



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----- Linear Extent of Erosion



Alaska Baseline Erosion
Valdez, Alaska