A presentation by the Native Village of Kivalina and the City of Kivalina to the Alaska Climate Impact Assessment Commission

June 28, 2007 Kivalina Relocation Project Colleen E. Swan, Tribal Administrator Enoch Adams, Jr., Chairman-KRPC/Vice-Mayor

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GEOGRAPHY

- Location: Northwest Arctic Borough, Alaska
- Approximately 80 miles above the Arctic Circle
- Barrier reef island eight (8) miles long (south end)
- Mainland Terrain: Wetlands and floodplains per ACoE, Delong Mountain Range
- Predominantly populated by the Inupiaq people of Kivalina (Approximately 98%)



Northwest Arctic Borough

Map Source: Northwest Arctic Borough via email communication from Wesley Goodwin as authorized by

Mayor Whiting, January 2007

GEOGRAPHY con't

(Land and Water Resources)

KIVALINA



 Local land use: Subsistence hunting and berry picking, camping, and recreational.

- Commercial Land Use: Mining (Lead/Zinc), sport hunting
- Watersheds: Wulik (Ualliik) and Kivalina (Kivalliik) Rivers, Kivalina Lagoon, Chukchi Sea
- Local use of watersheds: Fresh water source, subsistence fishing and hunting, recreational (swimming-boating)
 - Commercial Water Usage: Sport fishing (world class) and hunting, mixing zone ([Aqalukruaq] Creek-mine waste water discharge).

LOCAL ECONOMY

- Subsistence Resources is the economic base of Kivalina
- Supplemented by local job providers
 - School District
 - City of Kivalina
 - Native Village of Kivalina
 - Red Dog Mine
 - Others (Maniilaq Association, NANA, Airlines)



Fish drying rack in Kivalina Photo Courtesy of Austin Swan June 2007

HAZARDS

- Historical Natural Hazards: High tides, fall sea storm surges, encroachment of sea ice on land, erosion
- Current Hazards: Wulik River bank landslide, severe erosion, unstable ice floe, over-crowded living conditions
- Other: Earlier than usual hunting seasons



Photos courtesy of James Kulas, Environmental Director, Red Dog Mine, August 2006

IMPACTS

- Early 1900s: Kivalina population was between 350-400 but starvation and disease decimated the community
- 1952: Moderate erosion problem becomes an issue and Kivalina wants to move
- 1963: People of Kivalina vote to move but the vote was 50/50
- Early 1970s: Population topped 200
- Current Population: 388

IMPACTS TO SUBSISTENCE

- Ice Floe Conditions: Shorefast ice does not build up anymore to usual thickness
- Is building up later than usual
- Whaling is becoming more dangerous because of the lack of thick ice
- Ugruk hunting season occurs earlier and ends sooner



Photo: Captain Austin Swan, Whaling Crew Photo courtesy of Austin Swan, 2007

IMPACTS TO FRESH WATER



Photo location: Wulik River 30 miles upriver from Kivalina

Photos courtesy of James Kulas, Environmental Director, Red Dog Mine, August 2006 (Used by permission) Wulik River: Fresh water source

- What is the make-up of the material seeping out of the landslide?
- What are the potential impacts to the health of the people of Kivalina?
- What is the potential for more landslides?

IMPACTS OF CLIMATE CHANGE DISCUSSION

- KIVALINA RELOCATION PROJECT> ORIGINAL PURPOSE
- To address over-crowding
- Providing water/sewer services to Kivalina residents
- Economic Development opportunities
- Erosion

IMPACTS OF CLIMATE CHANGE DISCUSSION con't



PURPOSE HAS CHANGED

- Erosion has become the primary purpose for relocation
- 2004: Leach field Project Supervisors took gravel from the area in front of the school, which caused severe erosion.
- 2005: Significant erosion continued along the shoreline to the point where a project had to be put in place.

Continued

- 2006: The Denali Commission and the State of Alaska appropriated 2.95m dollars to build a project to protect Kivalina
- People of Kivalina warned them against taking fill material from the beach.
- Because their warnings were not heeded, this resulted in endangering the lives of the people of Kivalina.

Kivalina Leaderships' Proposal

- Kivalina is willing to compromise by moving any existing infrastructure that is movable with minimum damage as opposed to getting everything all new.
- Any public infrastructure such as school, clinic, utility plant, and airport will be taken care of by their respective agencies.
- Individuals homes that are movable will be moved.
- Let us move to Kinjiktuuraq because it's what the majority of the people voted for.
- The Northwest Arctic Borough's proposed evacuation road can go from Kinjiktuuraq to Kisimigiuqtuq as opposed to the proposed road going from Kivalina, our existing site, to the same, which is an excellent source of gravel.

BENEFITS OF THIS PROPOSAL

- We can only hope that the village is moved before it is flooded and lives are saved as a result.
- Village move is more immediate than what the Corps proposes.
- Cost of project is brought down considerably.
- Economic Development is possible closer to shore.
- Cost of living is kept at a minimum in order for the village to support itself.
- Due to accessibility by barge, fuel cost is kept at a minimum.
- The Northwest Arctic Borough's proposed evacuation road is still useful for it's intended purpose with an added benefit of providing access to a gravel source.
- Access to subsistence resources provided by the ocean is preserved, which is important because according to a study conducted by the Department of Fish and Wildlife, 79% of our people's diet consists of marine mammals.