

Kivalina Consensus Building Project
Door-to-Door Survey
Final Summary – July 2010

Prepared by Glenn Gray and Associates

1.0 Summary

The consultant for the Kivalina Consensus Building Project completed a door-to-door survey in Kivalina September 29 - October 1, 2009. Residents were asked questions about topics related to immediate actions needed to respond to storms, flooding and erosion. About one-fourth of the adult population of Kivalina participated in the survey (56 individuals from 47 households).

Recommended priorities for immediate action included continuation of the revetment, evacuation planning, and improved communications with the community. Although no questions addressed long-term priorities, many of those interviewed offered suggestions for improving water and sewer, providing more areas for housing and relocating the community.

All but two of the people interviewed supported construction of a relocation road. Most of those interviewed supported construction of an evacuation shelter, although some people thought an area for tent camping would be sufficient. The most popular preferred route for an evacuation route crossed the lagoon towards Simik.¹

The interviews revealed that some community members were aware of areas where permafrost melting is a problem. Most of the areas with the most visible impacts were located outside the village including slumping up the Wulik River and areas along the coast. Some people noted that permafrost used to be found when digging holes in the community, but now it is gone. A few people indicated that community roads are sinking and that the school is settling.

Everyone interviewed supported improvements to the dump site. Many people suggested daily management of the site, implementation of a collection system and moving the site to a new location in conjunction with construction of an evacuation road.

The interviews revealed significant social impacts to the community from the threat of natural hazards and the lack of progress towards finding a long-term solution. Although the survey only addressed immediate actions, almost everyone interviewed offered comments on relocation options and needed improvements to water, sewer and housing. There is considerable mistrust among community members of government, including local, tribal, state, and federal agencies. Many people expressed a concern that they did not have access to relevant information.

¹ The evacuation site to the east is spelled “Simik” at the suggestion of a community resident. This site is spelled “Simiq”, however, in a number of government reports and studies.

The common interests among the community members will be useful when working toward a consensus on short- and long-term planning. Everyone agrees that the community needs to be protected from natural hazards, that areas need to be available for community expansion, and that basic services need to be provided, including water, sewer and solid waste (garbage) systems.

Considering the basic common interests shared by the community, there are ample opportunities to build consensus on future options. The assessment of existing studies being completed by the consultant will provide an opportunity to inform the community on the findings of agency studies and what information is the most current. In conjunction with the assessment of existing studies, next steps for this project include facilitated community discussions about common interests, areas where more information is needed, and long-term planning options.

1.2 Introduction

The request for proposals for the Kivalina Consensus Building project addressed both short- and long-term responses to natural hazards such as storms, flooding and erosion. The City Council directed the consultant to complete a door-to-door survey to obtain community opinion about immediate actions that need to be taken in response to natural hazards including short-term priorities, a relocation road and shelter, melting permafrost, and the dump site. In addition, a question was asked about what topics should be included in the assessment of state and federal studies that will be completed by the consultant.

This survey is one component of the Kivalina Consensus Building Project. A public meeting was held at the community center for this project on the evening of October 1 to discuss the survey and other aspects of the project. The next step for the project includes an assessment of studies related to natural hazards in Kivalina. Additional public meetings will be held with community residents to explain the results of the assessment and determine areas of consensus.

The remainder of this document provides a description of the survey methodology (Section 1.3), findings of the survey (Section 1.4), comments related to long-term planning (Section 1.5), and recommended next steps (Section 1.6).

1.3 Methodology

A door-to-door survey was selected because this approach would likely reach the most people. The original plan proposed by the consultant would only have involved meetings with

community leaders. Since generally only a small number of people attend public meetings, the door-to-door survey provided an effective way to obtain public input.²

The consultant conducted the door-to-door survey of Kivalina residents September 29 - October 1, 2009. The City Council expressed interest in obtaining public opinion about what priorities it should place on immediate actions to respond to the threats of storms, flooding and erosion. During a meeting with the City Council on September 29, the consultant finalized the following list of questions to be included in the survey. The method included asking open ended questions with follow up questions to obtain additional information.

- What immediate actions should the City Council take in response to the threats of storms, flooding and erosion?
- Do you support construction of an evacuation road out of the community?
 - Which route do you prefer?³
 - Do you support construction of an evacuation shelter?
- Some people have expressed a concern about melting permafrost. Are you aware of any areas where melting permafrost is a problem?
- There is a possibility that flooding and erosion at the dump site could result in pollution to the waters around Kivalina. Should this be a priority for the City Council?
 - Do you have any ideas of what could be done to address this issue?
- In addition to this survey and public meetings, the consultant will review of state and federal studies related to the effects of climate change in Kivalina. Do you have any suggestions about what topics should be included when assessing these studies?

Asking general, open ended questions followed by more specific questions assured the questions did not influence the answers. This approach resulted in constructive comments on priorities for immediate action as well as comments on long-term planning issues.

1.4 Findings

Twenty-six percent of the adult population of Kivalina participated in the survey, including 56 individuals from 47 households.⁴ The consultant knocked on the door of every residence at least once, and in some case several times if no one answered the door. In addition to the interviews

² There are no house numbers in Kivalina. To locate households, the City Administrator provided an aerial photograph which indicated which houses were residences.

³ If the person interviewed did not clearly identify a route, a map of the alternatives considered in the 2005 evacuation road report (ASCG 2005) was provided for them to identify their preferred route.

⁴ Applying the population trends from the 2000 census, 52% of Kivalina's population (212 people) is over the age of 20. The 2008 population estimate by the Alaska Division of Community and Regional Affairs for Kivalina is 408. Although not everyone was home during the survey, there appears to be 78 households (not counting teacher housing, vacant houses or houses rented to outside workers).

conducted in homes, a few interviews were conducted on the streets, in the school and by telephone. The results of the survey are provided below under the topics of the questions.

1.4.1 Priorities for Immediate Action

The first question asked residents what immediate actions the City Council should take in response to the threats of storms, flooding and erosion. The answers to this question fell into four general categories: Continuation of the revetment, evacuation planning, communication, and priorities not directly related to immediate actions. It should be noted that the respondents addressed many some of these topics in more detail when answering the other questions.

Revetment: Thirteen people recommended continuation of the revetment. Three people identified continuation of the rock wall towards the airport as a priority, seven people recommended continuation of a revetment along the lagoon, and three people recommended continuation of the revetment on both sides of town. Several people suggested that the revetment along the lagoon be “boat friendly” by using sandbags or some other non-rock material. One person said that high tides are eroding the sandbags closest to Singauk Entrance.

Evacuation Planning: Nine people responded to this question by recommending more emphasis on evacuation planning and training. Some people offered solutions to reduce panic including better training, a procedure to gather at the school, and having a stockpile of gas ready for a sudden escape. One person recommended designating a single person to track the names of those evacuated and establishing an evacuation team of 5 – 10 individuals to oversee an evacuation. The interviewees provided additional information about the 2007 evacuation.

- Elders and children were supposed to be evacuated by plane, but many were left behind.
- Children had to be evacuated by 4-wheelers towards the port.
- Elders were confused.
- “I couldn’t find my son - names weren’t taken.”
- The Borough made a mistake by initiating an evacuation.

Communication: Three people answered this question by suggesting the City Council improve communications with the public by holding public meetings to provide information about studies and to address funding questions.

Other Priorities: Although the question focused on immediate action, a number of people identified long-term priorities for the City Council.

- **Relocation:** A number of people recommended the City Council place a higher priority on relocation. Two people said the main priority should be relocation, even above creating an evacuation route (see Section 1.5 for additional comments about relocation).

- **Water and Sewer:** Six people identified improvements to water and sewer systems as their major priority. Some of the responses included the following information.
 - “We’ve been waiting for water and sewer for 40 years.”
 - Water tanks are too small; Water has to be rationed.
 - Get rid of the honey bucket system.
 - Implement a honey bucket pick up service.
 - Water and sewer is a health issue: “One person get sick, everyone gets sick.”
- **Housing:** One person suggested building a road across the lagoon, moving the airport, and using the current airport site for housing.
- **Funding:** Another person recommended the city seek more funding and grants.

1.4.2 Evacuation Road and Shelter

The second question asked residents if they supported construction of an evacuation road. If they answered yes, a follow up question was asked about their preferred route. If the answer was not clear to the follow-up question, they were asked to point out their preferred route on a map of evacuation routes evaluated in 2005 by the consulting firm ASCG Inc.

There was widespread support for construction of an evacuation route. Only two people opposed construction of an evacuation road, instead preferring immediate efforts to relocate. One person said a road is needed because 50% - 75% of residents do not have a boat. The majority of those interviewed expressed support for either an evacuation road to the south towards Kiniktuuraq or to the east towards Simik. The preferred routes are discussed more in the following bullets.

- **Anywhere:** Fifteen people supported an evacuation road without identifying a preferred route. Several people said the road should end in an area with high ground.
- **Kiniktuuraq or Simik:** Three people said the route should go to either Kiniktuuraq or across the lagoon towards Simik.
- **Lagoon:** Twenty-six people identified a route across the lagoon either from the center of the city (17 people) or from an area north of the airport (9 people) because this route would be the most direct and closest route to high ground. A few people said that a road along the coast would not be feasible because it would be dangerous during a storm. Four people who preferred crossing the lagoon suggested it should terminate at the Red Dog road or port site. One person suggested the road terminate at Imnakuk Bluff because of the high elevation at this site. A number of people added that a road across the lagoon would provide access to berry picking areas and a potential site for a new dump. Several people explained why they preferred a road across the lagoon north of the airport.
 - The area of the lagoon area nearest to town floods and the channel moves around.
 - The lagoon area north of the airport is safer because it leads to a higher elevation.
 - The lagoon area north of town is shallower.

- **Kiniktuuraq:** Ten people identified an evacuation route across Singauk Entrance. Three of these people suggested the road continue to the port site. One person expressed a preference for this route because it would terminate at a permanent site for relocation.

Most people supported construction of a shelter, although a few people thought an area for tents would be sufficient. Others thought a shelter would be necessary because many elders and children do not have tents. Additional comments on this topic are summarized below.

- A road is more important than shelter (several comments).
- Need a big building.
- Build army huts (Quonset huts).
- Provide a Conex with provisions at the evacuation site.
- If an evacuation road is built, people will move regardless of what the state or Corps says.
- Build a shelter either at Kiniktuuraq or Simik (via road to Kiniktuuraq).

1.4.3 Permafrost Melting

Residents were asked if they were aware of any problems with melting permafrost. Not everyone was aware of problems with melting permafrost, but a number of people identified specific areas where it was a problem. One person suggested monitoring of melting permafrost.

- **Current Village Site:** A number of people did not think there was a melting permafrost problem at the current townsite, but other noted that:
 - Ground is getting soft, and roads are sinking – ground used to be stronger.
 - The big Volvo trucks sink in the ground.
 - School is getting cockeyed from melting permafrost.
 - Area behind school has problems.
 - Problems are all over town.
 - Gravel use form from beach led to erosion and resulted in melting permafrost.
 - Dug a hole for a fence about 14 years ago and hit permafrost a few feet down – now you hit water when you dig.
 - When dug a hole for siphons, hit permafrost 13' down.
 - Not a problem – nothing but sand and saltwater.
- **Ice Cellars:** Several people mentioned that ice cellars have filled with water.
- **Wulik River:** Nine people mentioned that areas up the river are melting. A few people mentioned that this melting permafrost resulted in slumping into boat channels and that the resulting siltation affects the drinking water supply.
- **Other Areas:** Several people noted problems with melting permafrost in the region.
 - All along the coast: Coastal erosion exposes frozen ground to melting.
 - A mudslide happened a few years ago toward Pt. Hope.
 - Other side of the channel toward Kiniktuuraq,

1.4.4 Dump Site

All of the people interviewed expressed concern about community's dump site (landfill). One person indicated the dump has been a long-standing issue: "How many years do we talk about it?" The biggest problems identified during the survey are summarized in the bullets below.

- **Garbage Not Contained:** A number of people noted that trash is spread outside of the dumpsite by floods, wave action and wind.
- **Airport:** Several people noted that the current dump site is too close to the airport and that it poses a hazard to planes by attracting birds.
- **Pollution:** A number of people expressed concern about pollution from the dump which includes an area for household waste and an area for dumping human waste from "honey buckets." Two people mentioned monitoring by Maniilaq that found fecal coliform bacteria in the lagoon that likely seeped from the honey bucket storage area.

Many of the people interviewed provided suggestions for dealing with the dump. In addition, one person suggested reviewing a report on the dump prepared for the IRA on this subject.

- **Maintenance:** Many of the people interviewed recommended that the city provide daily maintenance of the dump site.
- **Containment:** Many people had suggestions for how the garbage could be contained at the existing site:
 - Make a stronger, higher fence.
 - Install sheet pile to protect dump site from flooding.
 - Dig trench and cover it (like what was done to the dump site near the airport).
 - Construct a dike around current site.
 - Get an incinerator or a burn box.
 - Build a cement wall and cover top.
 - Control four wheelers and "snow gos".
 - Secure garbage like Noatak does.
- **Collection Service:** A number of people recommended the city implement a garbage collection system. Several people recommended a fee-based system and said that this would be a good way to provide a job for someone. One person noted that not everyone has a way to bring their garbage to the dump. Another person suggested that collection sites be established in the town rather than collecting trash from each residence. Another person suggested using the black tubs they said were purchased for this purpose.
- **Clean Up:** Some people recommended that the area around the dump be cleaned up.
- **Reduce Garbage:** Several people suggested implementation of a means to reduce the volume of garbage through recycling, compaction and burning. Four people suggested enforcement of the requirement that individuals burn their trash at the dumpsite.

- **Relocation:** A number of people recommended relocation of the dump site, and a few people noted it could be done in conjunction with construction of an evacuation road.
- **Regulations:** Two people suggested implementation of existing or new regulations to address the garbage problem.

1.4.5 Assessment of Studies

The last question asked residents what subjects should be included in the assessment of state and federal studies that will be completed by the consultant. The responses are summarized below.

- Investigate problems with evacuation plan (babies got left behind).
- Study options for the evacuation road.
- Investigate the stability of gravel.
- Compile a list of all references.
- Compare conclusions of studies and note date prepared.
- Investigate the question of scientific data: “Can’t say this.”
- Evaluate statements in Corps documents (e.g., cost figures for Kiniktuuraq and requirement for 15’ gravel pad).
- Ask for an audit of findings that Kiniktuuraq is flood prone.
- Look at studies for evacuation, airport and permafrost.
- Look at ANTHC impact assessment.
- Look at notes from climate change teleconference.
- Look into options for improving the sewage system.
- Talk to city clerk, mayor: “They know how to talk English.”

1.5 Other Comments and Suggestions

Although the survey questions only addressed immediate actions, most people offered additional comments on a number of subjects. Comments related to long-term options to respond to natural hazards are summarized below.

Psychological and Social Impacts: One person emphasized the need to address psychological and social impacts facing the community as a result of natural hazards. This person said there were more mental health problems and that the anxiety level of children has increased, especially after the evacuation. This person also noted the need for a health impact assessment.

Relocation: Many people offered comments about relocation of the community. These comments are summarized in the following bullets for information purposes only. Since no questions were asked about relocation, the survey responses for this topic are incomplete. The comments, however, indicate that relocation is a high priority for many community members.

- **General Comments:**
 - Relocation is a lost cause.

- If there is a move there would be two communities - some people will not move.
- A move won't happen in our lifetime.
- Relocation sites keep getting changed.
- Stay at current location.
- There have been numerous feasibility studies: "We've been studied to death."
- **Unspecified Location:** Eight people said they wanted to relocate the community, although they did not indicate a specific site. Comments indicated a relocation site should be in a safe area with high ground and enough land for future generations.
- **Kiniktuuraq:** Six people said they supported relocation to Kiniktuuraq and offered the following comments.
 - Relocation to this site should be a priority.
 - Gravel borrowed from beach for airport (3' deep x 200') accreted back.
 - In the 1880's, Kiniktuuraq was the only place in the area that didn't flood.
 - There is a good source for gravel and water at this site.
 - Cost figures should be reevaluated.
 - Young people don't know about Kiniktuuraq.
- **Innakuk Bluffs:** Four people recommended the community be relocated at Innachuk Bluffs, an area of high ground north of the Kivalina River. One person liked this area because the bluff was high. Another person said this area is not as stormy as some people say and when it was nice there, it was stormy in Kivalina. Another person preferred this location because they thought federal agencies would not approve the Kiniktuuraq site.
- **Tatchim Isua:** One person recommended moving to this site without offering any additional comments. This site is located at the north end of Kivalina Lagoon.
- **Igrugaivik:** One person recommended moving to this site but did not explain why.
- **Imaguk:** One person recommended moving to this site which they said is located in the south lagoon. They noted this site could be connected to the port site, and that soil studies would need to be completed.
- **Rabbit Creek:** One person discussed this site as a possible location and said "it is a jewel." This person continued by saying it was proposed in the past, but the National Park Service indicated it would not support relocation to this site.

Current Village Site: Some people interviewed provided comments about the existing site that were not directly related to immediate actions in response to natural hazards.

- **Housing:**
 - It's too crowded here - no room for additional housing for future generations.
 - Use state land near airport for housing.
 - 12 of the newer houses are movable and could be relocated.
 - Move airport to other side of dump – expand town on current airstrip.
- **Hazards:**
 - Floods are an issue when there is a south wind.

- “I have seen the lagoon flooded all over.”
- Northeast wind leads to collapse of banks.
- Filling the wire bags with sand from the ocean accelerated erosion.
- Raise areas of the existing town, including homes and roads above the flood level.
- **Erosion Control:**
 - Feel safer with revetment.
 - Happy with rock revetment: “They’re doing a good job.”
 - Seawall is good – but will it hold?
 - Bags were a waste; equipment used was “3rd hand.”
 - “All the money for the wall, why?”
 - ATV use is adding to erosion problem - Need to manage their use.
- **Water System:**
 - Need year round water source without the need to ration water.
 - Have to wait until silt settles in spring before getting water from the Wulik River.
 - Health concern – some people bathe only once/month and can’t clean house
- **Streets:** Build a defined street system if the community decides to remain at current site.

Communication: Several people expressed concerns or suggestions about communication with the city, presumably about natural hazards and relocation.

- **Meetings:** Seven people said they do not go to public meetings because they wished to avoid arguments. Others said there were not enough public meetings.
- **Relocation Committee:** Several people said committee meetings should be resumed.
- **Surveys:** Several people supported door-to-door surveys: “It’s better than voting.”
- **Reports:** A number of people requested that government reports about natural hazards, evacuation, and relocation options be made available to the community.

1.6 Next Steps

The common interests among the community members will be useful when working toward a consensus on short- and long-term planning. Everyone agrees that the community needs to be safe from the threats of natural hazards and that basic services need to be provided, including adequate water, sewer and garbage disposal systems. In addition, everyone appears to agree on a need for more land for community expansion.

The consultant is preparing an assessment of existing studies about Kivalina. In response to information needs expressed by the community, the consultant will be available to meet with community members to explain the results of the assessment. In addition, facilitated community discussions will help build consensus on common interests, outstanding information needs and long-term planning options that should be considered further.