



Background Planning Report

Shishmaref Strategic Management Plan

Shishmaref, AK

August 4, 2015

DRAFT

Strategic Management Plan: Background Report

DRAFT issued for review by the Native Village of Shishmaref and the Shishmaref Interagency Working Group. Prepared by HDR with RIM First People for the State of Alaska
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Abbreviations

ACS	American Community Survey
ADF&G	Alaska Department of Fish and Game
ATV	All-Terrain Vehicle
AVEC	Alaska Village Electric Cooperative
AVETAP	Alaska Village Erosion Technical Assistance Program
BIA	Bureau of Indian Affairs
DCCED	Department of Commerce, Community, and Economic Development
DOT&PF	Alaska Department of Transportation and Public Facilities
DPS	Distinct Population Segment
ESA	Endangered Species Act
GAO	Government Accounting Office
NMFS	National Marine Fisheries Service
SMP	Strategic Management Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1 Introduction

Shishmaref is a traditional Inupiat village with a fishing and subsistence lifestyle. The community is located on Sarichef Island, a barrier island approximately one quarter mile wide and about three miles long. The island was formed by frozen sandy soils, which are susceptible to significant erosion. The primary erosion hazards are wave and slough erosion, sea ice gouging, and slumping resulting from melting permafrost. The entire community is susceptible to erosion, and the underlying permafrost is melting. According to the local hazard mitigation plan, “the effects of climate change are expected to add to natural hazards including flooding in coastal areas. As sea level rises and the offshore ice pack retreats, more coastal flooding can be expected.”

The Government Accountability Office (GAO) found that at least 184 of Alaska’s 214 villages have experienced some degree of erosion or flooding (GAO 2003).¹ Government agencies consider Shishmaref to be one of 4 communities in immediate need of relocation (GAO 2009), and the State of Alaska Immediate Action Workgroup included it in the 6 top-priority communities referenced in this document as “at-risk communities.”² A clear plan of action with widespread community and agency support will increase Shishmaref’s chances of receiving future funding to relocate the community.

We need to relocate soon so we don’t have to leave our children responsible for moving the village. They need somewhere some to live with no worries of falling in to the ocean.

- Community survey

The community voted to relocate in May 1973 and again in July 2002. While the community has pursued relocation since then, there have been several events that caused the relocation efforts to lose momentum (NRCS 2003). The relocation site proposed in the 1970s was determined to be on permafrost-rich ground and unsuitable for development. A school built in 1977 was an important infrastructure investment in the community that they did not want to abandon. The community is currently undertaking a study to identify a suitable site for relocation. Pending the results of the study, the community will be deciding if they will continue to pursue relocation or adopt a defend in place approach.

Over the past 20 years, Shishmaref has also experienced several erosive storms. For example, during a storm in October 1997, 30 feet of the north shore was eroded. As a result,



¹ The General Accounting Office (GAO) is an investigative arm of Congress that requested to study erosion and flooding in Alaska villages.

² The Immediate Action Workgroup is a workgroup of the Alaska Governor’s Sub-cabinet on Climate Change.

14 homes and the National Guard Armory were forced to relocate. After additional storms forced the relocation of 5 other homes, the community voted again in July 2002 to relocate the entire community.

This *Background Planning Report* is the first product of an 18-month Alaska Community Coastal Protection Project with the Alaska Department of Commerce, Community, and Economic Development (DCCED) and the community of Shishmaref to make Shishmaref more resilient. The objective of the project is to increase community sustainability and resilience to the impacts of natural hazards while protecting the natural coastal environment. The project is based on the premise that careful planning, agency collaboration, and strong community leadership are essential to successfully address the needs of imperiled communities. The process is shown in Figure 1.

This *Background Planning Report* includes:

- Community Background
- Reasons for Developing a Strategic Management Plan
- Summary of Previous Projects
- Summary of Environmental Considerations
- Identification of Issues
- Mission Statement and Guiding Principles
- Goals and Objectives
- Next Steps



The second product will be a *Strategic Management Plan* (SMP) for Shishmaref that will provide the “blueprint” for how the community and agencies will proceed over the next 20 years to help Shishmaref become a more resilient community. The process used to develop the *Background Planning Report* and *Strategic Management Plan* is shown in Figure 1.

Figure 1-1. Planning Process



There is no universal definition of resilience. The term “resilience” has emerged from the field of ecology. It describes the capacity of a system to maintain or recover functionality after a disruption or disturbance. For the purposes of the SMP, the following definition is used (DCCED 2012):

Resilience is the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change. A resilient community is not only prepared to help prevent or minimize the loss or damage to life, property and the environment, but also it has the ability to “bounce back,” i.e., quickly return citizens to work, reopen businesses, and restore other essential services needed for a full and swift economic recovery.

Creating a resilient community is not following a series of defined action items; rather, it requires developing a new way of approaching issues. It requires engaging a diverse range of stakeholders, integrating the planning process across disciplines and levels of government, and coordinating available funding with resilience needs (see Figure 2).

Figure 1-2. Resiliency Relationships



2 Community Background

2.1 Location

Shishmaref is located on Sarichef Island in the Chukchi Sea, approximately 5 miles from the mainland. Shishmaref is located approximately 30 miles south of the Arctic Circle, 50 miles northeast of the Bering Straits, 126 miles north of Nome, and 100 miles southwest of Kotzebue (see Figure 3). Shishmaref

encompasses 2.8 square miles of land and 4.5 square miles of water. Shishmaref is surrounded by the 2.6-million-acre Bering Land Bridge National Preserve.

Figure 2-1. Location and Vicinity Map



2.2 Access

Shishmaref's primary link to the rest of Alaska is by air. A State-owned 5,000-foot paved runway is available for charter and freight services from Nome. Barge service is available from early July through September when the water is ice free.

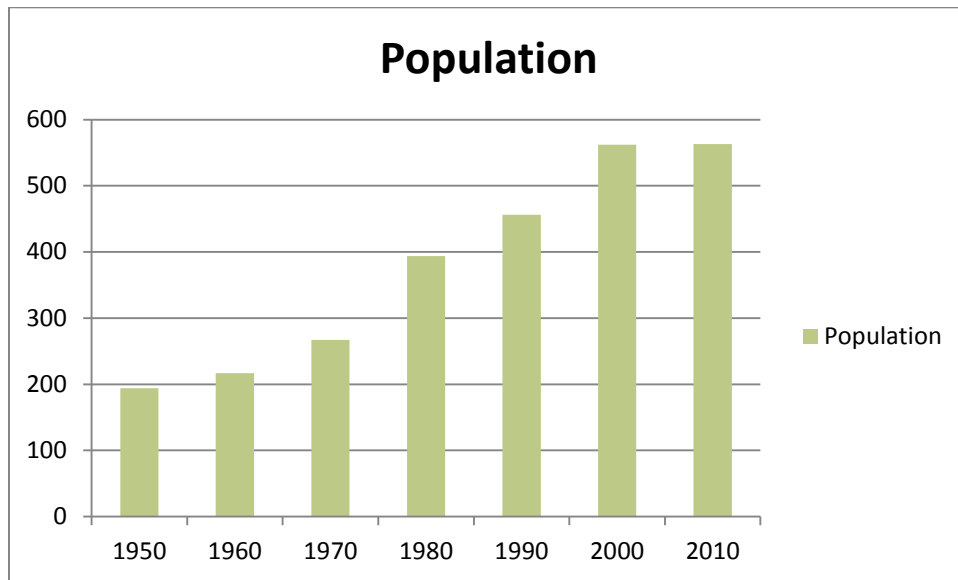
2.3 Government

The City of Shishmaref is a second-class city organized in 1969. The community has a “strong mayor” form of government. Under Alaska Statute Title 29, the City of Shishmaref assumes powers including the ability to tax and to administer transportation, police, fire protection, and various other services. The City Council has seven members who meet the first and third Thursday of every month. Regular elections are held on the first Tuesday in October. The city imposes a 2 percent sales tax.

2.4 Population and Economy

According to the 2010 U.S. Census, Shishmaref has a population of 563 residents; approximately 95 percent of residents are all or part Alaska Native.

Figure 2-2. Historical Population, 1950-2010



Shishmaref has a significant Iñupiat Eskimo population. Subsistence hunting and fishing are important to the community's culture. In 1995, approximately 88,216 pounds of fish (salmon, herring, smelt, etc.) and 224,977 pounds of seal were harvested by Shishmaref residents (ADF&G 1995). They also harvested approximately 83,466 pounds of large land mammals. In 2009, the harvest of large land mammals dropped to approximately 64,172 pounds. Harvest information for fish and seal were not available. Shishmaref's economy is supplemented by part-time work but consists primarily of subsistence activities. One resident holds a commercial fishing permit.

According to the 2009–2013 American Community Survey (ACS) 5-year estimate, the civilian labor force was 176 with 147 people being employed and 29 being unemployed (U.S. Census Bureau 2013). According to the 2009–2013 ACS 5-year estimate, 29.2 percent of residents are below the poverty line. The per capita income is \$10,651, with a median household income of \$36,750.

Saving our racks from eroding

- Community survey



2.5 Infrastructure – Housing, Utilities, and Services

The community has a total of 151 housing units, and 141 units are occupied. A total of 10 housing units are vacant, and one of those is vacant due to seasonal use. Eighty-four are owner-occupied and 57 are renter-occupied.

Currently, public facilities in Shishmaref include the Shishmaref School, one church, friendship center, U. S. Post Office, city hall, and the Katherine Miksruaq Olanna Health Clinic, operated by the Norton Sound Health Corporation.

Shishmaref has a volunteer fire department. There is one Village Public Safety Officer assigned to the community. Additional law enforcement is provided through the Alaska State Trooper post in Nome.



Shishmaref's main water supply is a catch basin on the east side of the island. The water is filtered, chlorinated, and stored in two tanks. In the winter, drinking water is also obtained by ice chopped from ponds. Other sources of water include rainwater and water hauled from the Serpentine River.

There is no complete piped water and sewage system in Shishmaref other than at the school, teachers' housing, washeteria, and clinic. Some homes have internal flush/haul systems. Most residents haul water, and the City operates a delivery service for residents without plumbed housing. The city also operates three sewage lagoons and provides honeybucket hauling.

The landfill is a Class III unpermitted landfill.

The Alaska Village Electric Cooperative (AVEC) provides electricity with diesel-powered generators. Telephone and internet services are provided by TelAlaska and GCI.



2.6 Climate

The area experiences a transitional climate between the frozen arctic and the continental Interior. Winter temperatures average from -12 to 2 degrees Fahrenheit.

Summer temperatures average from 47 to 54 degrees Fahrenheit. Average annual precipitation is about 8 inches, including 33 inches of snow. The Chukchi Sea is frozen from mid-November through mid-June.

3 Why Develop a Strategic Management Plan?

The reasons for producing a SMP include:

1. Establish a Unified Vision

With ongoing threats to the community and the length of time required to implement solutions, it is important to focus community and partner resources on a cohesive vision.

2. Create a Framework for Future Activities

The SMP will function as an overarching framework for resiliency activities. Other planning efforts, policies, strategies, and projects must fit into this framework in order to be effective in the efforts to achieve the community's goals. Implementation of the SMP recommendations will likely be done by different project sponsors over many years. As time progresses and individual projects evolve, it is easy for their purposes, goals, deliverables, and timelines to change. The SMP and its future updates will provide the touchstone to ensure all activities implement Shishmaref's vision and goals.

3. Communication

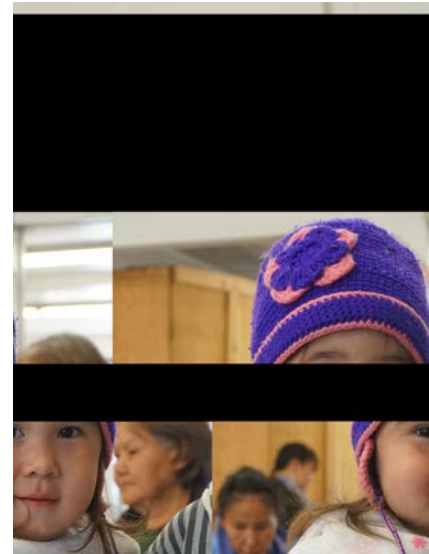
The SMP will document and communicate the community's vision, guiding principals, and strategic actions, and will be used by the community, government entities, and other stakeholders. It provides a centralized reference that shares the same information with all interested parties.

4. Relationship Building

It would be challenging for Shishmaref to fully implement the SMP recommendations using solely its own resources. Building relationships with other organizations will help Shishmaref realize its vision and goals. Potential partners will participate in the SMP development process, creating a foundation from which to build as activities progress.

4 Summary of Previous Projects

This section provides an overview of previous projects that address the risks of flooding, erosion, thawing permafrost, and severe storms.



4.1 Erosion Control Structures

Over the past 20 years, there have been several attempts at developing erosion control structures in Shishmaref. In 2001, in response to a storm, the State spent approximately \$100,000 to install sand-filled gabions along the worst hit shoreline (Shishmaref Erosion and Relocation Coalition 2006). Also in 2001, Kawarek funded the Nayokput Stores' beachfront protection program. It installed approximately 101 feet of gabions at a cost of approximately \$36,000 (Shishmaref Erosion and Relocation Coalition 2006).



In 2004, the Bureau of Indian Affairs (BIA) installed 200 feet of shoreline protection near the Native store. In 2005, the U.S. Army Corps of Engineers (USACE) installed 230 feet of shoreline protection. This started at the end of the BIA protection and continued east to protect the school. Also in 2005, the community installed approximately 250 feet of shoreline protection extending east from the USACE project (USACE 2006).

In 2006, the USACE was planning a new shoreline protection project that would protect the remaining sections of the shoreline as well upgrade the other portions to the same standard of protection. This project would have protected the community waterfront, but did not include the airport. The estimate for this project, which was to be built in phases, was approximately \$25 million. . Phases 1 and 2, which installed 1,350 feet of rock revetment, have been completed. The remaining two phases have not been constructed.

4.2 Relocation

Relocation efforts have been underway in Shishmaref since 2001, when a strategic relocation plan was developed by the Shishmaref Erosion and Relocation Coalition. This plan was funded by the Alaska Division of Emergency Services and cost approximately \$50,000 (Shishmaref Erosion and Relocation Commission 2006).

The relocation strategic plan identified series of action items that needed to be completed in order to relocate the community, but did not identify or recommend a new village site (Shishmaref Erosion and Relocation Coalition 2002).

In 2004, the USACE conducted a cost analysis for relocating Shishmaref. The alternatives studies and cost estimates included: Staying in place (\$110 million), relocating to a new site (\$180 million), colocating to Nome (\$94 million), and colocating to Kotzebue (\$141 million; Shishmaref Erosion and

Relocation Coalition 2006). Based on this information, the Shishmaref Erosion and Relocation Coalition decided to continue pursuing their relocation efforts (Gregg 2010).

Also in 2004, the Shishmaref Erosion and Relocation Coalition, which later dissolved as an organization, selected Tin Creek as the community's preferred relocation site. Between 2004 and 2008, the NRCS, USACE, and Alaska Department of Transportation and Public Facilities (DOT&PF) conducted approximately six separate studies to evaluate Tin Creek's suitability as a relocation site. The DOT&PF determined that the Tin Creek site was unsuitable because of the presence of ice-rich permafrost that could thaw as a result of climate change and create future problems for community habitability.

During this time, the community obtained an earmark to perform a reconnaissance study to identify a road alignment to access gravel needed for relocation of the community (Bronen and Chapin 2013).

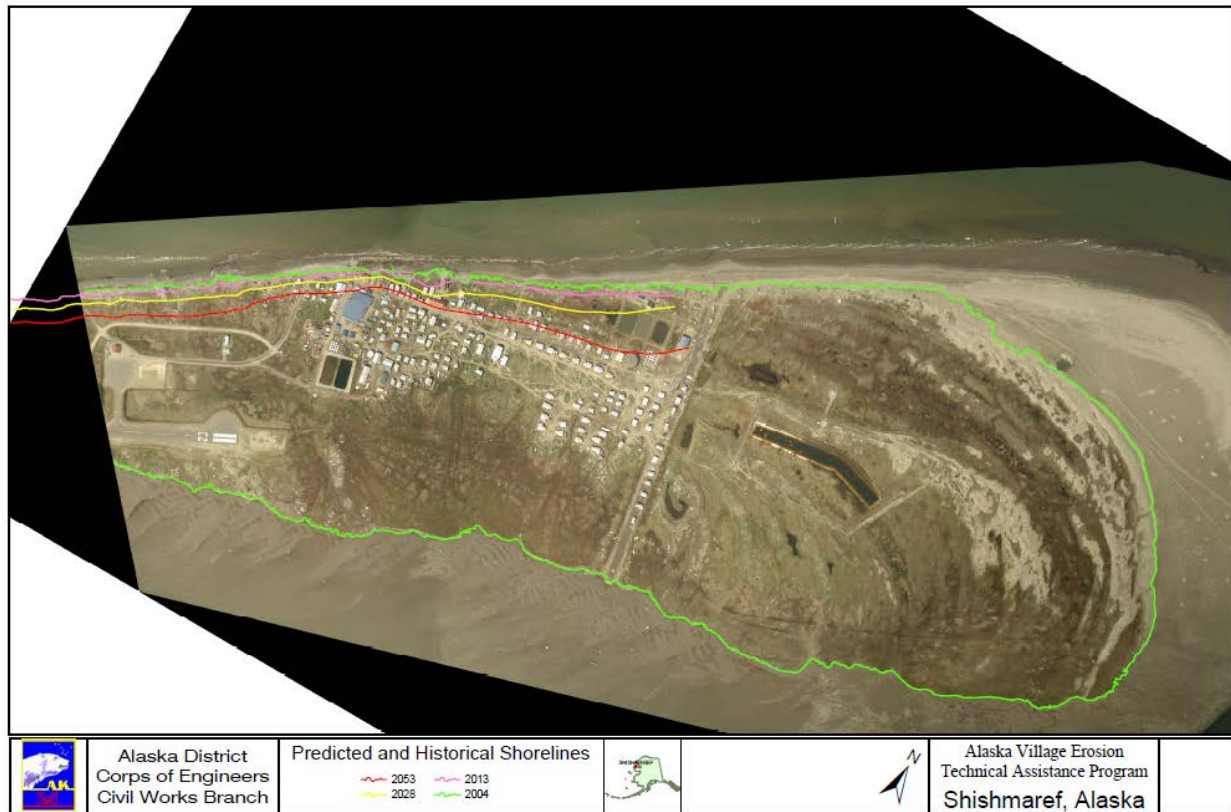
In June 2009, the City of Shishmaref received a grant through the Alaska Climate Change Impact Mitigation Program to conduct a Shishmaref Relocation Plan Update. The update included summaries of previously evaluated relocation sites, reviews of future evaluations and required studies for potential relocation sites, and reviews of future infrastructure development. The report indicated that in 2010, the cost of relocation could exceed \$214 million over a projected 15-year-plus timeframe. The report acknowledged that the costs could be reduced by using local labor, utilizing pre-fabricated buildings, and developing on a site that does not have ice-rich soils. The cost to not relocate could exceed \$112 million. As of July 2015, the City of Shishmaref, using Community Planning Grant funding, is working on a Site Selection Feasibility Study that will allow the community to identify a new village location that is safe, stable, and sustainable. The study is still in progress and the new site has not been selected by the community.

4.3 Alaska Village Erosion Technical Assistance Program

The Alaska Village Erosion Technical Assistance Program (AVETAP) report was prepared by the USACE in 2006. This report examined erosion conditions at seven Alaska communities: Bethel, Dillingham, Kaktovik, Kivalina, Newtok, Shishmaref, and Unalakleet. For each location, the report examined the costs of ongoing erosion, the cost to relocate, and the amount of time left before erosion would destroy the community. Based on historical shoreline information, the report identified a predicted Shishmaref shoreline in 2030 (see Figure 4-1).

The report indicated that most residential structures and critical infrastructure would be lost in the next 10-15 years. The report also estimated that over the next 50 years, the cost of erosion in Shishmaref would be between \$47 and \$130 million (AVETAP).

Figure 4-1: Shishmaref Predicted and Historical Shorelines, 2004–2053



4.4 Immediate Action Workgroup

The Immediate Action Workgroup of the Governor’s Executive Sub-cabinet on Climate Change was established in 2008 to address known threats to communities caused by coastal erosion, thawing permafrost, flooding, and fires. The workgroup developed a series of policy recommendations to help create a strategic approach for addressing climate change in Alaska (Immediate Action Workgroup 2009). The policy recommendations included:

- Establish a statewide system to document, assess, and analyze current and planned public infrastructure in order to protect existing and future investments and prevent threats to life in an uncertain environment.
- Sunset the immediate action workgroup and direct the relevant State agencies to establish an interagency collaboration with each other, along with relevant federal agencies and communities. This collaboration requires regularly scheduled meetings to coordinate information, planning, evaluation, and decisions on public infrastructure for those communities impacted by climate change phenomena.

- Assistance to communities in peril must utilize comprehensive integrated planning and viable, future-oriented solutions with funding that allows for sustainability regardless of whether the community remains in place, uses a migration strategy, or needs to relocate.
- The State of Alaska will lead a coordinating effort to develop a comprehensive statewide data collection and evaluation system that provides foundational information for community and business decisions and solutions leading to effective responses and adaptation strategies to address climate change impacts.

4.5 Other Climate-Related Planning Efforts

A number of other planning efforts that relate to climate change impacts to Shishmaref are summarized in the following bullets.

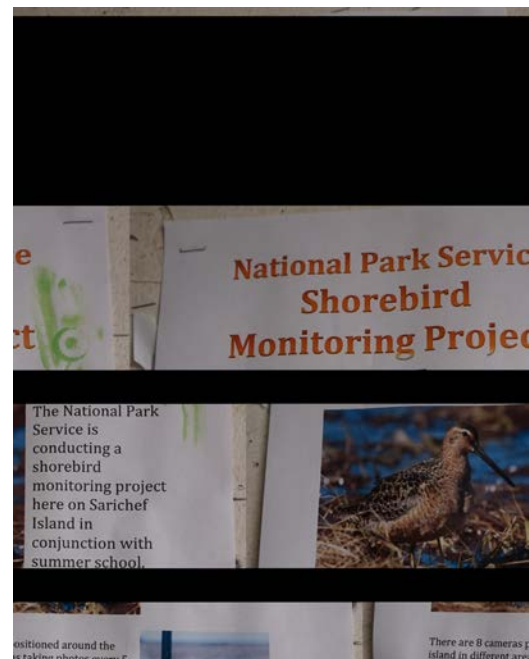
- **Local Hazard Mitigation Plan:** This plan identifies local hazards facing the community (WHPacific 2009). Recommended mitigation projects include relocation of the sewage treatment plant, relocation of fuel lines to the school, removal of sewage bunkers on the shoreline, replacement of damaged water tank skins, lagoon erosion control project, evacuation road, structure elevation, assessment of integrity of public buildings, and installation of a siren to warn of a disaster event or severe storm.
- **Emergency Plans:** Two plans completed in 2010 address community responses to emergencies, including storm-related events: *Emergency Operations Plan* and *Evacuation Plan*.
- **Continuity of Operations (Plan)** – The Continuity of Operations Plan describes how the community would continue to operate in the event of an emergency or disruptions such as the loss of the City office building.
- **Airport Master Plan** – DOT&PF is developing an airport master plan based on the existing and potential relocation site.

5 Summary of Environmental Considerations

The following summary identified known key important natural resources in Shishmaref as documented in previous studies and reports.

5.1 Fish and Wildlife

Ringed, ribbon, bearded, and spotted seals and walrus can be found 40–70 miles offshore. Herring, tomcod, whitefish, grayling, Arctic char, flounder, salmon, and sculpin are fish found closer in, along with waterfowl.



5.1.1 Birds and Waterfowl

Birds and waterfowl that can be found in the Shishmaref area include:

- American wigeon
- Brant
- Canada geese
- Common eider
- Cormorants
- Emperor geese
- Green-winged teal
- Grouse
- King eider
- Loons
- Mallard
- Northern pintail
- Northern shoveler
- Pintail
- Ptarmigan
- Puffins
- Sandhill cranes
- Scaups
- Scoters
- Snow geese
- Snow geese
- Snowy owl
- Spectacled eider
- Steller's eider
- Swan
- Teal
- Tundra swan
- White-fronted geese
- Wigeon

5.1.2 Terrestrial and Marine mammals

While large land mammals are typically not found on the island, the following terrestrial and marine mammals can be found in the Shishmaref area:

- Arctic fox
- Arctic ground squirrel
- Arctic hare
- Bearded seal
- Beaver
- Belukha whale
- Bowhead whale
- Brown bear
- Caribou
- Dall sheep
- Fin whale
- Grey whale
- Humpback whale
- Lemmings
- Mink
- Moose
- Musk ox
- Muskrat
- Polar bear
- Porcupine
- Rabbit
- Red fox
- Reindeer
- Ribbon seal
- Ringed seal
- Snowshoe hare
- Sperm whale
- Spotted seal
- Squirrel
- Steller sea lion
- Voles
- Walrus
- Weasel
- Wolf
- Wolverine

5.1.3 Threatened and Endangered Species

Species listed under the Endangered Species Act (ESA) that may occur in the terrestrial or marine environment near Shishmaref are managed by either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS). The species managed by the USFWS include:

- Short-tailed albatross
- Polar bear
- Steller's eider
- Spectacled eider
- Pacific walrus (candidate for listing)

Short-tailed albatross are found in the Bering Sea, but are typically far from shore and would not likely be affected.

The NMFS-managed species that may be found in the waters around Shishmaref include:

- Steller sea lion - Western Distinct Population Segment (DPS)
- Bowhead whale
- Fin whale
- Humpback whale
- Sperm whale
- Bearded seal - Beringia DPS
- Ringed seal, Arctic subspecies

Blue whales, North Pacific right whales, and gray whales may be found in the Bering Sea region, but are rare.

5.1.4 Fish

According to the Alaska Department of Fish and Game Fish Distribution Database, fish that can be found near Shishmaref include Dolly Varden, whitefish, sheefish, chum salmon, Alaska blackfish, and arctic grayling. Other fish that are reported in the area include tomcod, herring, smelt, burbot/lingcod, scuplin, coho salmon, Chinook salmon, pink salmon, sockeye salmon, cod, char, Arctic cod, saffron cod, flounder, broad whitefish, cisco, Bering cisco, least cisco, and round whitefish.

5.2 Wetlands, Vegetation, and Water Quality

Shishmaref is located on a barrier island composed of sand soils.. Permafrost encompasses the entire island and the active layer typically ranges from 1 to 5 feet. Local groundwater perched on the permafrost is found in the active layer. Shishmaref also has exceptional berry patches.

According to the local economic development plan, the subsurface drainage is very poor in the organic-covered lowlands but good in elevated areas. The lowlands are typically only 3 or 4 feet above sea level and are typically filled with water or ice. The area also has sand dunes that rise approximately 15 to 20 feet above sea level.

5.3 Historical and Cultural Resources

There are three previously documented cultural resources within 1 mile of Shishmaref. Two sites have yet to be evaluated for the National Register of Historic Places, and one site, SHF-00049, has been determined Not Eligible. The



historic site of Shishmaref was noted by Otto von Kotzebue, in 1816, and subsequently investigated by the Czech physical anthropologist Ales Hrdlicka in 1926. The modern village of Shishmaref has also been documented as a cultural site and reportedly contains a variety of historic midden deposits.

There are also archaeological and cultural sites located west of the village near the fresh water source.

6 Summary of Community Issues

The SMP is intended to address matters of concern to the community that are directly or, in some cases, indirectly related to the climate change. These community issues were identified through a literature review, community survey results, and input from community residents at a community gathering.

6.1 Lack of/Inadequate Community Infrastructure

Shishmaref lacks much of the basic community infrastructure found in other communities. One reason is that agencies have been reluctant to make infrastructure improvements out of concern that the investment will be lost due to climate-change-related erosion and flooding.

Only the school, clinic, washeteria, and teacher housing have piped water and sewer service. While some homes have internal flush/haul systems, most residents haul water and use honey bucket bins.

The water tank does not always have enough water for personal use and emergencies. The community sometimes has to conserve water.



The road to the landfill and airport are vulnerable to erosion. The landfill road serves as a seawall for the airport. The landfill is too close to the airport to meet Federal Aviation Administration standards (USACE 2004).

Paving the road to the airport and providing an airline terminal have been mentioned as concerns. Community residents have indicated that better roads are needed throughout the community.

Other improvements that have been previously identified as concerns include street lighting; erosion control; run-off; and dust control; improving the existing seawall to include drainage; and street, speed, and stop signs.

The school was renovated in 2002 (USACE 2004). However, the school may need to be enlarged to accommodate a



growing student population. Student transportation is another concern due to the threat of bears and wolves; they are not always visible in the winter due to darkness and storms.

The Learning Center provides a place for adult learners to attend University of Alaska classes or prepare for their General Education Diploma. Needed improvements to that facility that have been previously identified include:

- Install outdoor lighting
- Repair cracks in ceiling
- Replace flooring
- Repair cracks in windows
- Improve insulation
- Additional room for supplies and equipment
- Renovate storage room so it can be used as an office space or testing area.

I will drown in my sleep.

- Community survey

The Health Clinic was built in the 1980s and renovated in 1990s (USACE 2004). The clinic's size makes it difficult for health care providers to comply with the privacy requirements identified in the 2003 Health Insurance Portability and Accountability Act. An expansion that would have added two new rooms and a morgue was planned for the summer of 2013, but has not yet been constructed. Housing for visiting medical professionals is also needed.

City Hall was built in 1981 and is considered to be near the end of its service life; some residents considered the building to be a fire hazard (USACE 2004). The Fire/Rescue building, which also houses the City's heavy equipment shop, is also likely at the end of its useful life and is considered by some to be a fire hazard (USACE 2004).

Shishmaref's local economic development plan identified the following additional infrastructure/facilities that residents would like to have in the community:

- Multi-purpose building
- Cultural center
- Community and regional technical training center
- Day care center
- Traditional healing center
- Hospice/shelter
- Quyanna senior center
- Additional snow removal equipment

At the July 2015 public meeting, residents also indicated they would like a youth center and a larger washeteria.

6.2 Inadequate Housing

Shishmaref does not have enough housing to meet its needs.

Overcrowding³ is quite common in the community. Many housing units contain multi-generational extended families. The scale of overcrowding is not clearly defined, as not all households apply for assistance or renew the related paperwork. Other barriers to housing assistance and construction include inadequate employment and ineligibility for housing assistance.



Much of the community's existing housing is in need of repair. Many units have issues related to flooring, electrical wiring, water, sewer, and mold. There is also little or no room for expansion to meet the needs of the growing population.

According to their local economic development plan, Shishmaref needs 100 additional housing units.

Desire for a relocation site where we will be comfortable with. Continued seawall till be completely move, with local hire.

- Community survey

6.3 Jobs and Economic Development

Shishmaref has a shortage of jobs and economic development opportunities. Residents have indicated there is a shortage of jobs for both adults and youth. Many residents make and sell carved and sewn crafts. They would like more opportunities to sell their crafts, such as a co-op or e-commerce. Some residents would like more regular employment with an established pay schedule. Some residents are also interested in expanded technical training for adults as this would provide residents with skills needed for a variety of jobs.

Other potential economic development opportunities in which the community is interested include:

³ The Alaska Housing Assessment defines overcrowding as less than 300 square feet per person in a home.

- Hotel
- Restaurant
- Gift shop
- Local maintenance shop
- Eco-tourism
- Developing a Community Development Quota program
- Re-opening the tannery

6.4 Extend and Maintain Seawall

Community residents have indicated the seawall needs to be extended so that it protects the airport, drying racks, and landfill. These areas are more vulnerable to erosion because they are not protected by the seawall. The seawall also needs to be maintained in order to keep its effectiveness.



6.5 Lack of Evacuation Shelter/Place of Refuge

Evacuation is a problem for Shishmaref. There is no road access, and poor weather can limit air service. The only other way off the island is by boat. There is no adequate evacuation shelter in the community, and there are limited options for evacuation. The school and church serve as evacuation shelters; however, they may not be large enough to house everyone. They may also be impacted during extreme storms. The church also does not have running water, emergency supplies, and other necessities, which limits its usefulness as an emergency shelter. Elders, and others without transportation, may need assistance from others in the community to get to an evacuation shelter.

Community residents have indicated they would like a safe place to go to during storms. They also indicated they would like a way to communicate during an emergency and know everyone is accounted for. Residents indicated they need an evacuation/emergency plan so people know what to do during a disaster.

Need a meeting place when the storm is real bad, and everyone is accounted for.

- Community survey

6.6 Funding

Most solutions to erosion and flooding problems require a substantial capital investment. This is challenging because of limited State and federal funding. There is also increasing competition for these funds as more communities face flooding and erosion problems. Even when State or federal funds are available, the local community may have to provide some of the funding itself. For example, since October 2009, the USACE has used Section 116 funding, which requires a 35 percent match on erosion and relocation projects. Previously, the USACE was able to use Section 117 funding, which did not require a local match. In response to competing demands for scarce funding, communities with well-thought-out plans supported by residents and funding agencies are more likely to obtain funding.

6.7 Other

Other issues raised by community residents include:

- Easier to contact Village Public Safety Officer
- Substance abuse
- More activities for children and adults
- Need Inupiaq tradition and language classes
- Need ways to keep youth living and working in Shishmaref after they complete their education
- Interest in alternative energy
- Meal program for elders/help elders
- Maintain and expand existing and future youth programs
- Improved government-to-government relations
- Cost of living
- Need more heavy equipment
- Need elder transportation
- Need port

7 Mission Statement and Guiding Principles

7.1 Community Values

Community values reveal what is important to the community. Together with the guiding principals, goals, and objectives, community values provide the basis for decision making. Community values were identified during a July 2015 community meeting and through value surveys completed by residents in April and May 2015.

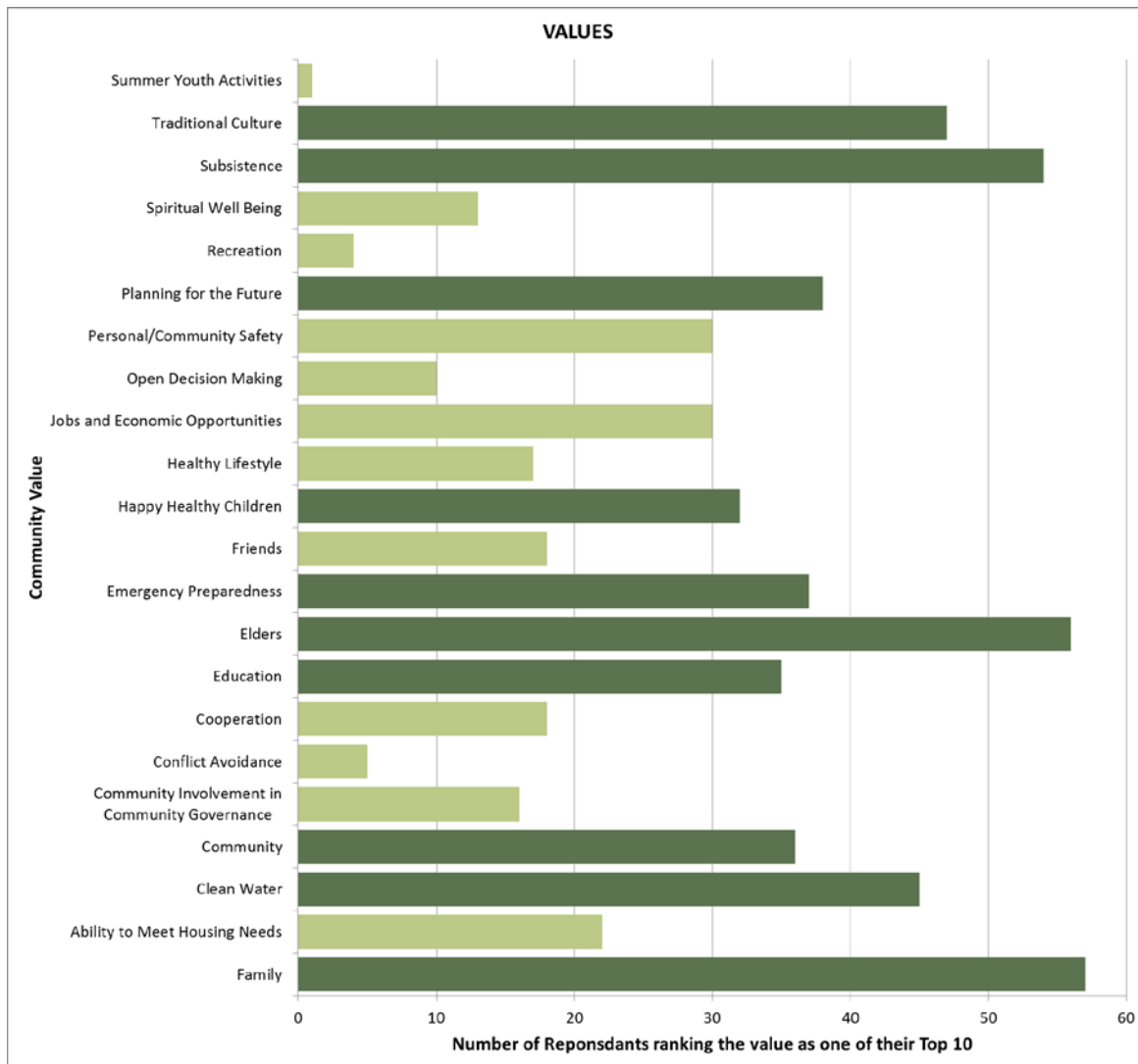
This section summarizes value-related input received from the values survey and during the community gathering. Both exercises listed values based on background information, but people were allowed to add their own values if they did not see them on the list. The survey allowed people to vote for their top 10 values. As of May 28, 2105, the survey was completed by 61 residents. The top 10 values (in order) identified by residents were:

- Family
- Elders
- Subsistence
- Traditional culture
- Clean water
- Planning for the future
- Emergency preparedness
- Community
- Education
- Happy, healthy children

Figure 7-1 shows how all the values were ranked.



Figure 7-1: Community Values



At the community gathering, people were able to indicate their top values. The top value three values identified at the meeting were (1) respect for elders and land, followed by (2) traditional culture/language and (3) clean/running water. Each of these values had more than 40 votes. The next closest value was subsistence, which had 22 votes.

7.2 Vision Statement

The vision statement for the SMP has been developed by the community and the SMP project team based on the results of the community's May 2015 vision survey and community input during the July 2015 community meeting. The result of that process is the following SMP vision statement:

Shishmaref is a safe and resilient community. We want to be a viable community that respects and honors our Inupiaq culture and traditional values. We will work together and with partners to develop projects and policies to protect our residents, infrastructure, natural environment, and subsistence resources. We will preserve and enhance our community for us and future generations.

7.3 Guiding Principles

Guiding principles provide the overall direction for the Shishmaref SMP. The guiding principles, combined with the vision statement, should be a foundation for the SMP and provide a context for decision making so that limited capital resources can be maximized. The guiding principles were developed based on previous publications and information provided by participants during a July 2015 community meeting.

It is the hope and intent of the planning team that residents and partners working to make Shishmaref more resilient will respect and promote these principles⁴. The Strategic Management Plan guiding principles are:

- Residents must be safe from natural hazards and growing threats of flooding and erosion
- Respect and honor each person's views and ideas
- Make decisions openly and as a community. Everyone's participation is valuable as each person brings a different insight, perspective, and knowledge
- Include local input in the process
- Protect the natural environment
- Respect our traditional culture
- Use funds wisely
- Develop in a manner that strengthens the community
- Encourage local hire

Save Shishmaref

- Community survey



Working together as a community process of starting relocation

- Community survey

⁴ As part of their overall resiliency efforts, the City of Shishmaref and the Native Village of Shishmaref should work together to refine these guiding principles and develop new ones if appropriate to guide their long-term efforts. Both organizations should formally adopt the guiding principles and use them to guide decision making in terms of community resiliency activities.

8 Next Steps

Based on the information presented in this *Background Planning Report*, the next step is to work with the community to develop an SMP designed to address the issues presented here. The SMP will focus on responses to climate-change-related impacts and will provide a blueprint for how the community and agencies will proceed over the next 5 to 20 years to make Shishmaref more resilient in the short and long terms.

I want my great, great grandchildren to be like their ancestors and be proud of who they are, to do things that make them proud.

- Elder Interview

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