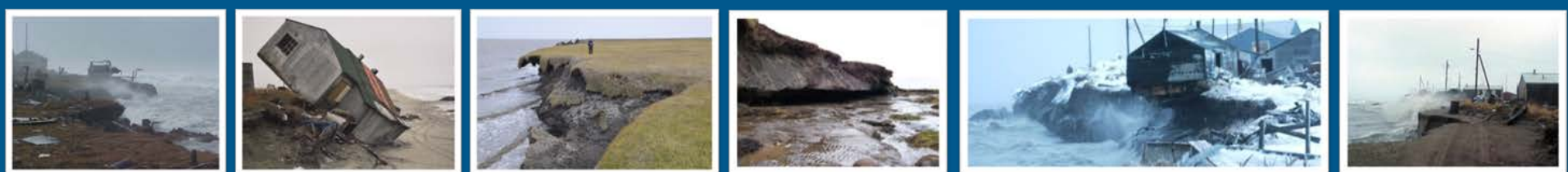


Risk Mapping, Assessment and Planning (Risk MAP)

Assisting Imminently-Threatened Alaska Native Villages



Sally Russell Cox

Alaska Dept. of Commerce, Community, and Economic Development, Division of Community and Regional Affairs
U.S. Arctic Research Commission • October 10, 2017

Adaptation Responses to Climate-Related Hazards



Protection-in-Place

- Shoreline protection measures and other controls to prevent/minimize the effects of coastal or riverine threats
- Allows the community to remain in its current location



Migration

- Gradually moving property and development away from hazard-prone areas
- Community must have suitable, developable land nearby



Relocation

- Moving entire community to entirely different location not vulnerable to natural hazards
- Usually considered only after determination that other methods of dealing with hazard threats would not be feasible

Assisting Community Understanding of Risk + Local Decisions to Respond/Adapt to Risk

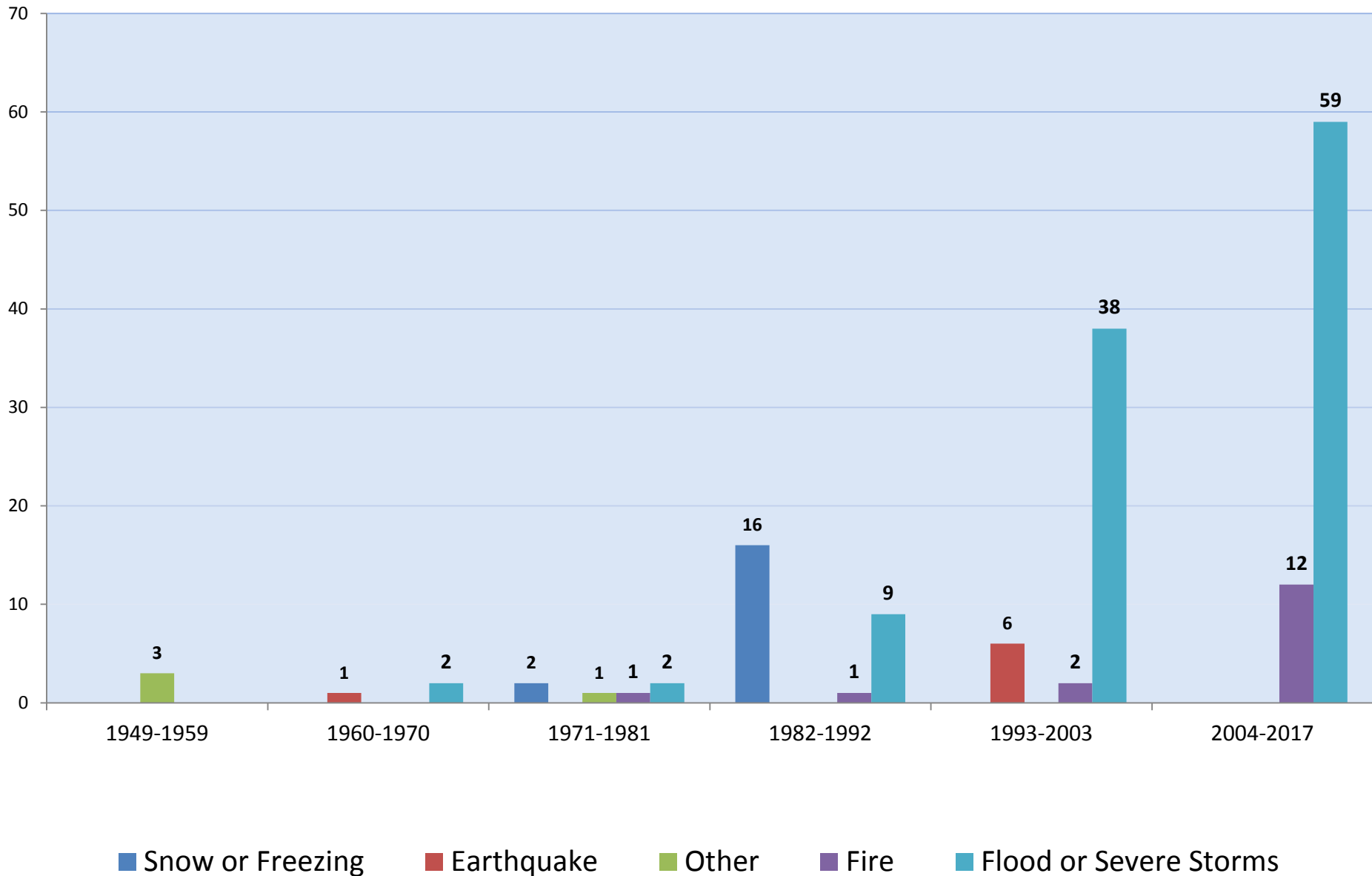
2008-11: Alaska Climate Change Impact Mitigation Program

- Established during Alaska Climate Change Subcabinet
- Helped communities develop planned approach to shoreline protection, building relocation and/or eventual relocation of village.
 - *Hazard Impact Assessment*: Risk Identification and Analysis
 - *Community Planning Grant*: Local Decision-Making, Risk Reduction + Action

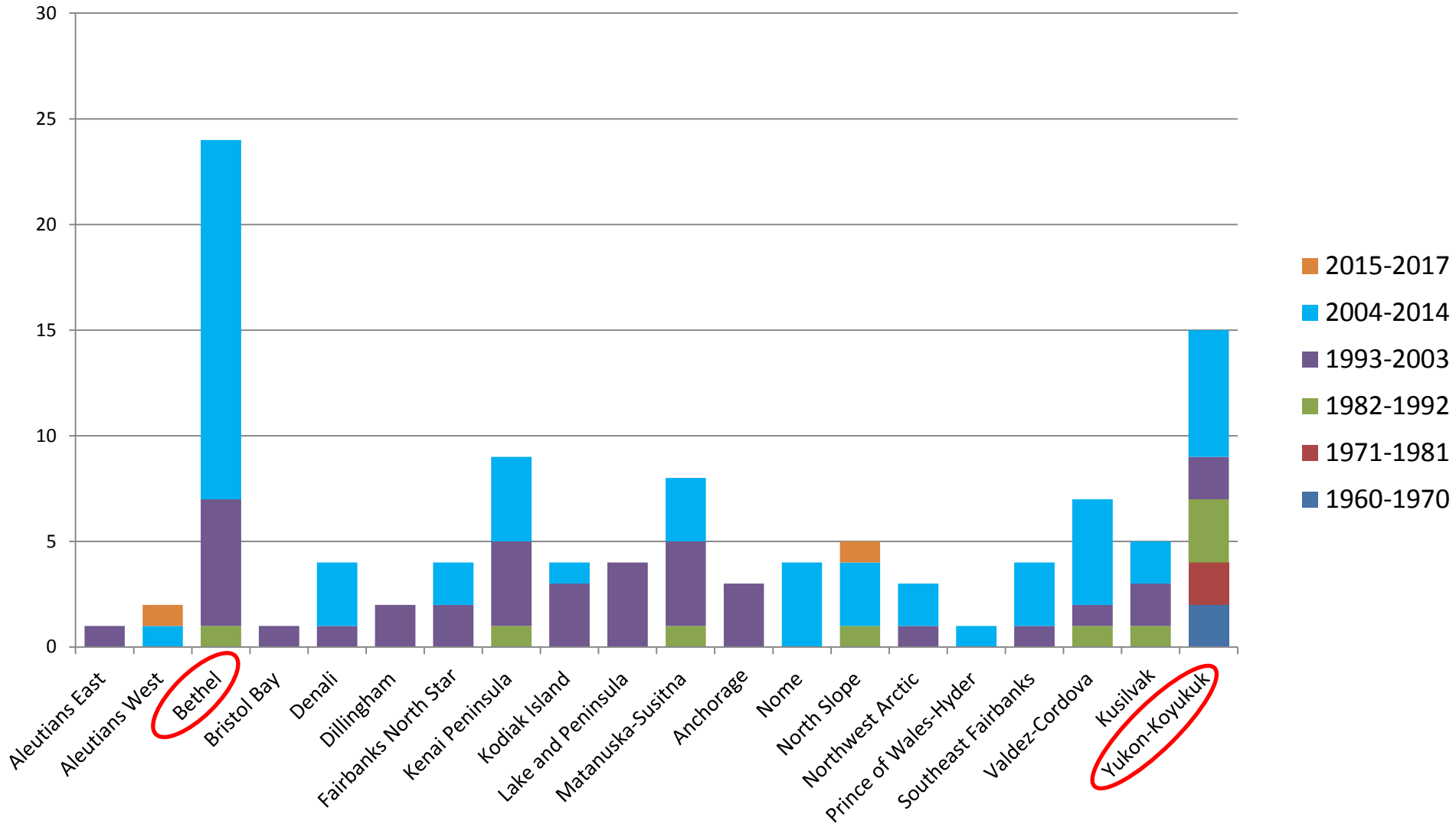
2009: Risk Mapping, Assessment and Planning (Risk MAP) Program

- Focus: communities that participate in [National Flood Insurance Program](#)
- Key products: [Flood Insurance Studies](#) and [Flood Insurance Rate Maps](#)
- Intended to provide a more holistic approach to risk reduction, focusing on all hazards + *integrating floodplain management and hazard mitigation planning into seamless effort*

Alaska Federally-Declared Disasters, 1953-2017



Alaska Federally-Declared Disasters, Floods or Storms, By Borough/Census Area 1953-2017

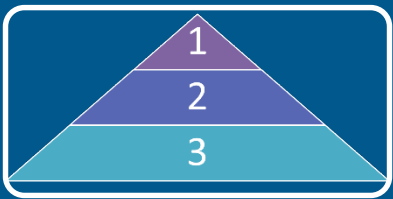




Risk MAP: Assisting Imminently-Threatened Alaska Native Villages

In 2016, FEMA Region 10 clarified:

- Risk MAP studies do not have to result in Flood Insurance Studies and Flood Insurance Rate Maps
- Communities do not have to participate in the National Flood Insurance Program
- State of Alaska can set as priority a focus on imminently-threatened Alaska Native Villages
- Risk MAP non-regulatory products and tools can be tailored to be most useful to communities:
 - Translated into Native Language
 - Report formats more useful to community to maximize risk communication



Prioritization

FEMA asks States to prioritize communities to determine where new Risk MAP studies will take place

- Denali Commission's ***Statewide Threat Assessment Project*** will inform Alaska Risk MAP prioritization methodology
- Process and methodology presented to tribes + stakeholders at:
 - Bureau of Indian Affairs Provider's Conference
 - Alaska Tribal Conference on Environmental Management
 - Alaska Forum on Environment



Discovery

- Identification of community needs
- Collection of new/available data
- Summarize in Discovery Report

Risk Assessment + Analysis

- Conduct risk and vulnerability assessments
- Analyze results and document in Risk Report for community

Risk Reduction

- Share results of risk assessments + draft Risk Report with community
- Identify strategies for risk reduction

Resilience

- Integrate Risk MAP information into local plans
- Seek funding + implement mitigation/adaptation projects



Partnership + Collaboration

Partnership and collaboration are critical to the Risk MAP process.

- Important because FEMA doesn't directly address many of the hazards (or other resilience needs) impacting Alaska Native villages:
 - Erosion
 - Permafrost Degradation
 - Food security
 - Human health impacts
 - Changing weather conditions
 - Community capacity



FEMA

Cooperating Technical
Partnerships

State of Alaska

DCCED/DCRA

- Coordinates Alaska Risk MAP Program
- Sets priorities for Risk MAP Studies
- Establishes collaborative relationships with other state, federal agencies, NGOs
- Works directly with communities

DMVA/DHS&EM

- Supports DCRA
- Helps integrate Risk MAP with new/updated *Hazard Mitigation Plans*
- Helps identify mitigation projects for *Hazard Mitigation Grant Program*

DNR/DGGS

- Conducts hazard assessments as needed



Post-Discovery Data Collection and Analysis

A collaborative effort between a number of stakeholders in order to meet community's resilience needs:

- Integrate local indigenous knowledge with science
- Incorporate local observation as part of the process. A number of community-based monitoring efforts are taking place in Alaska; see: <http://www.aos.org/alaska-community-based-monitoring/what-are-we-observing/>



Risk MAP Products and Tools

- Risk Report informs communities of natural hazard risks; enables communities to act to reduce risk
- Can be used to update local plans, identify mitigation/adaptation projects, communicate and ultimately take action to reduce risk
- Collaboration with other agencies can produce the following tools:
 - Flood inundation maps (USGS, DGGS)
 - Erosion Risk Assessments
 - Permafrost Risk Assessments

Executive Summary

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

3. Community Risk MAP Overview

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

5. Flood Risk Assessment

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

10. Plan Integration

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

1. Introduction

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

4. Socio-Economic Vulnerability

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

6. Erosion Risk Assessment

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

11. Areas of Mitigation Interest

A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce these risks. This report discusses the risks and needs identified during the Kuskokwim Delta Discovery process.

Tribal, State, and local officials can use the data provided in this report to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with communities to help them through this process.

PROJECT AREA

FLOOD DEPTH GRIDS

COASTAL EROSION

WINDWAVE HOURS BY YEAR (HOURS)



Next Steps

Risk MAP
Tools and
Products can
inform/lead
to:

Hazard Mitigation Plan Update

Climate Adaptation Plan

Mitigation/Adaptation Projects

Local Land Use Plan

Community Comprehensive Plan

Protect-in-Place/Relocation Analysis

Village Planning Group

Alaska Arctic Policy Commission Implementation Plan, 2015

RECOMMENDATION 3D

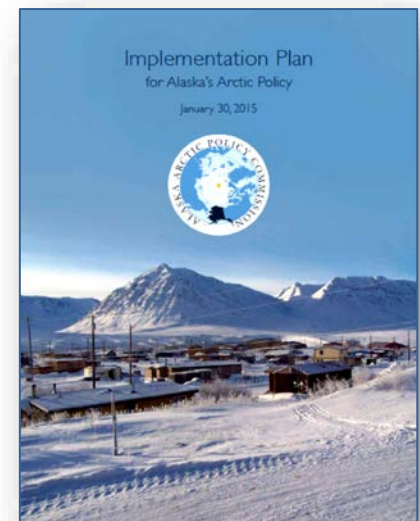
Anticipate, evaluate and respond to risks from climate change related to land erosion and deterioration of community infrastructure and services and support community efforts to adapt and relocate when necessary.

Execution

“DCCED’s Risk MAP program is a good start to identifying and prioritizing risk, though as a FEMA-funded project it is very specific in the communities it can include.”

Legislative Actions

“1. Expand DCCED Risk MAP program and partner with communities who are ready to take action.”



Contact:

Sally Russell Cox

Community Resilience and Climate Adaptation Programs
State of Alaska

Department of Commerce, Community, and Economic Development
Division of Community and Regional Affairs

Email: sally.cox@alaska.gov

Phone: 907.269.4588

