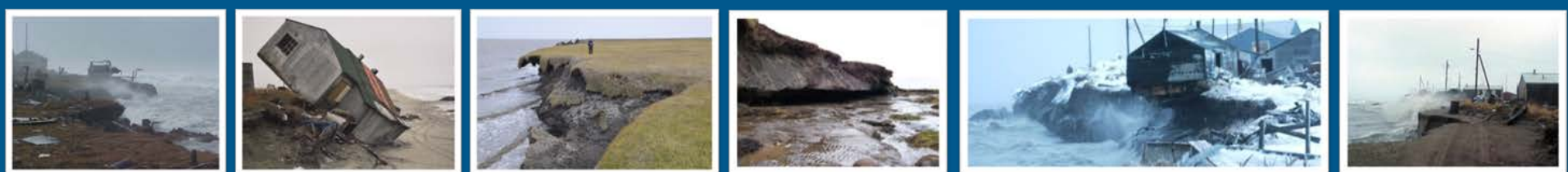


Risk Mapping, Assessment and Planning (Risk MAP)

Assisting Imminently-Threatened Alaska Native Villages



Sally Russell Cox

Alaska Dept. of Commerce, Community, and Economic Development, Division of Community and Regional Affairs
Climate Action Leadership Team • Working Group on Adaptation • February 27, 2018

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



Community Adaptation Decision-Making Needs

- Assistance to imperiled communities should be based on fair and defensible methodology which prioritizes communities by level of threat and need
- Community must be key player in decision-making process
- Imperiled communities (and agencies assisting them) need quantifiable data from which to make informed decisions
- A coordinated, interdisciplinary approach to address community threats is essential to increasing community resilience



Community Decision-Making Continuum



Community Understanding of Risk

- Hazard Identification
- Science/Engineering Studies + Local Observation
- Risk Assessments
- Recommendations



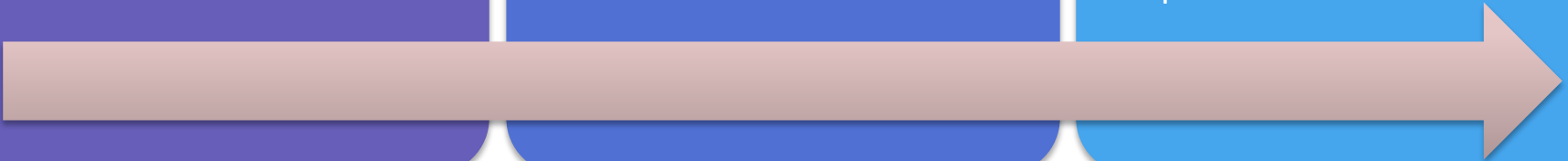
Planning: Local Decisions + Actions to Reduce Risk

- Strategic Community Planning
- Inter-Agency Planning Groups
- Identification + Prioritization of Strategic Actions
- Identification of Resources



Implementation: Working toward Resilience

- Implementation of Strategic Actions (*Protect-in-Place, Migrate Infrastructure, Relocation*)
- Continuation of Inter-Agency Planning Groups to support implementation



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

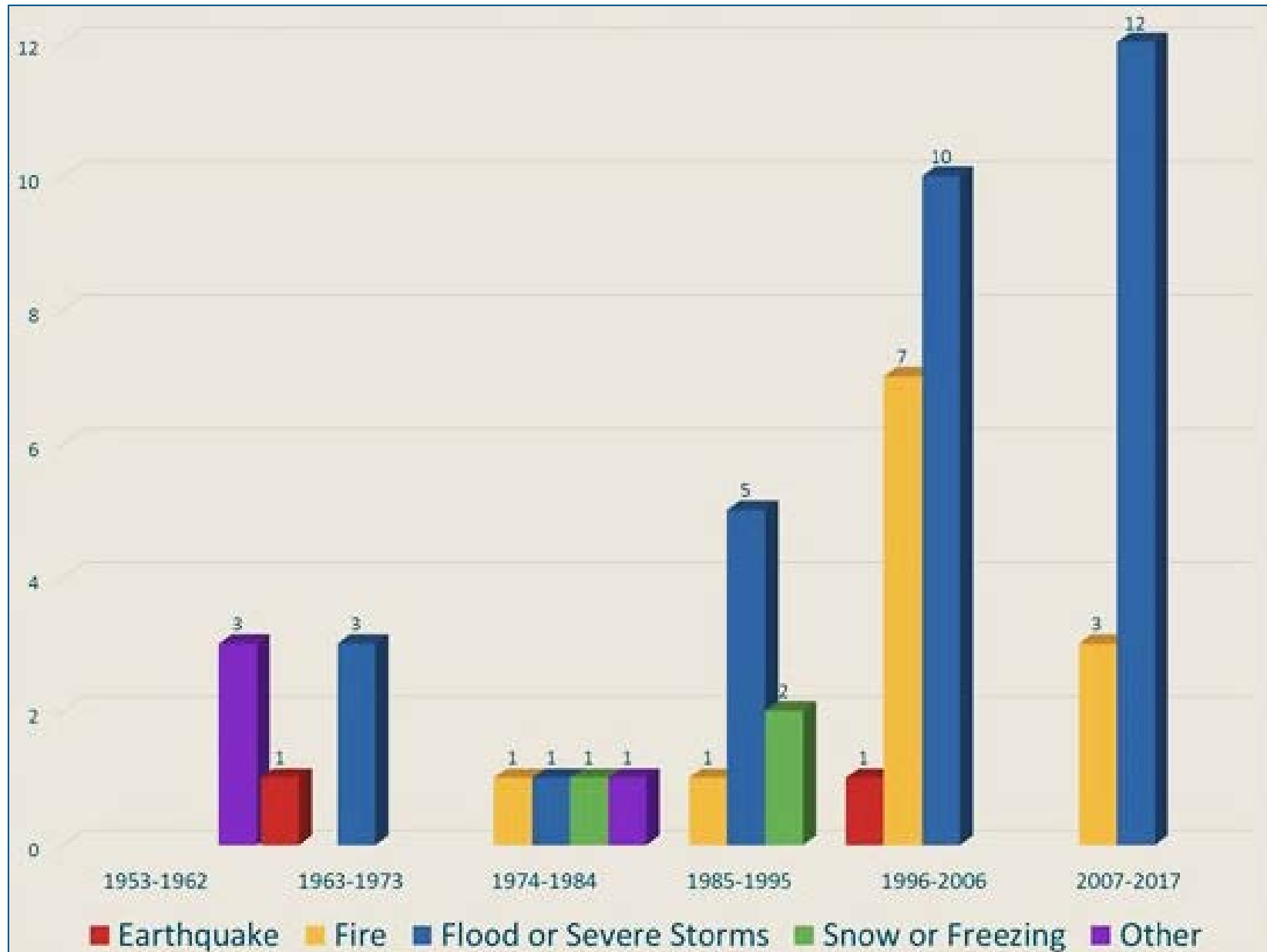
2008-11: Alaska Climate Change Impact Mitigation Program

- 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

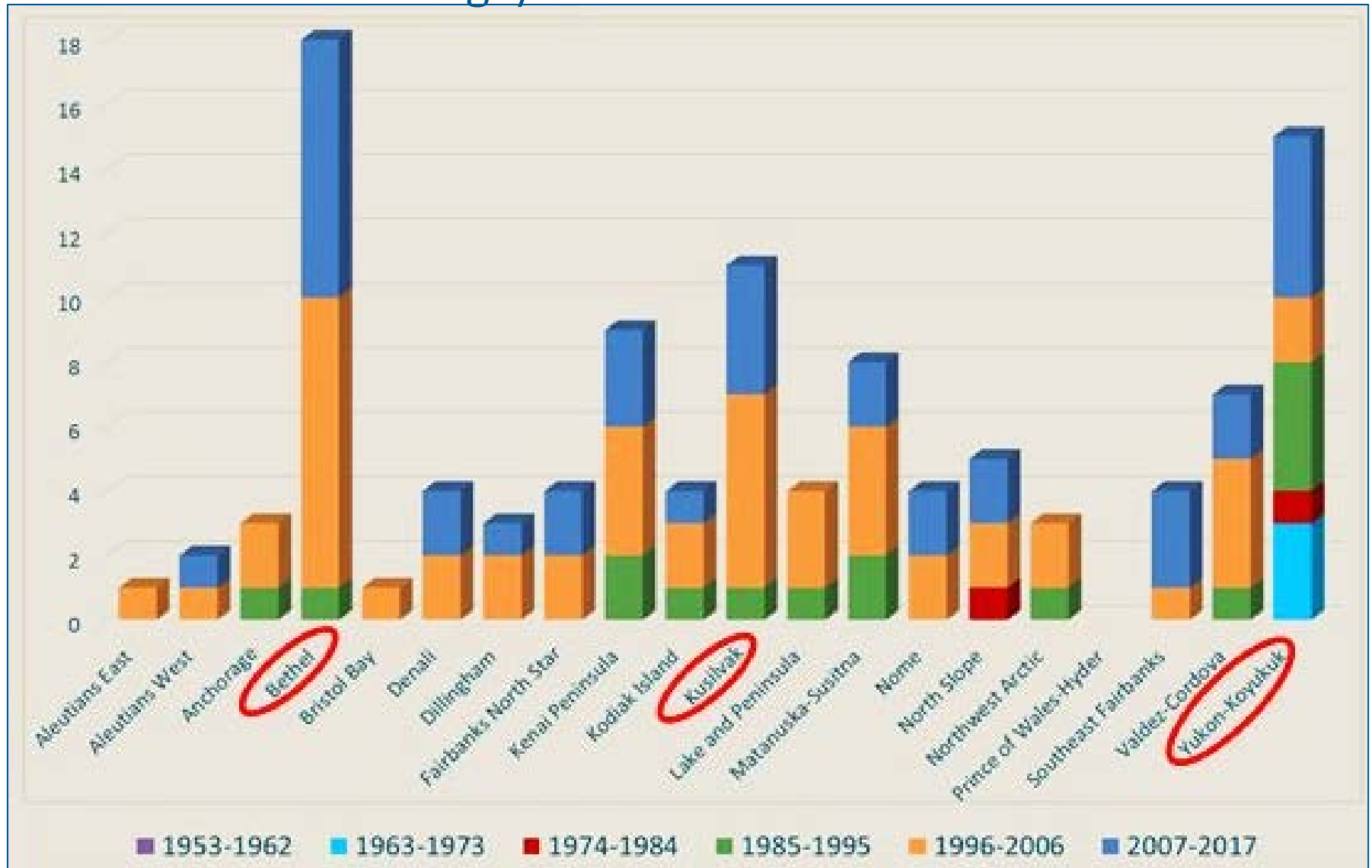
2009: Risk Mapping, Assessment and Planning (Risk MAP) Program

- 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 and Severe Storms, By Borough/Census Area 1953-2017

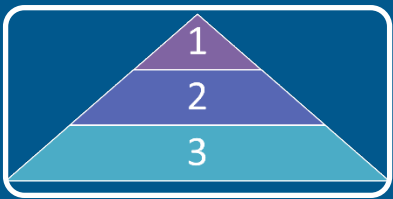




Risk MAP: Assisting Imminently-Threatened Alaska Native Villages

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 local venues including Bureau of Indian Affairs Provider's Conference



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



Community Engagement + Technical Assistance

Risk MAP Meetings:

- Held in village
- Interpreter for meetings in communities where English is the second language
- Community gathering/potluck
- Culturally-appropriate ways to present information
- Reports translated into Native Language and presented in useful format to community

Discovery Report

I. Executive Summary

II. Discovery and Risk MAP

III. Watershed Description

IV. Project Description and Methodology

V. Risk MAP Needs

VI. Conclusion

The report includes sections for Executive Summary, Discovery and Risk MAP, Watershed Description, Project Description and Methodology, Risk MAP Needs, and Conclusion. It features a map of the watershed and a table of findings.

Location	Risk	Discovery Report Findings	Risk MAP Needs
Location A	Risk A	Discovery Report findings for Location A, Risk A	Need for Planning
Location B	Risk B	Discovery Report findings for Location B, Risk B	Need for Assessment
Location C	Risk C	Discovery Report findings for Location C, Risk C	Need for Mitigation
Location D	Risk D	Discovery Report findings for Location D, Risk D	Need for Monitoring
Location E	Risk E	Discovery Report findings for Location E, Risk E	Need for Education
Location F	Risk F	Discovery Report findings for Location F, Risk F	Need for Enforcement
Location G	Risk G	Discovery Report findings for Location G, Risk G	Need for Evaluation
Location H	Risk H	Discovery Report findings for Location H, Risk H	Need for Emergency Response





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

Risk Report

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.

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.

2. 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.

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.

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.

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.

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.

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.

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.



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

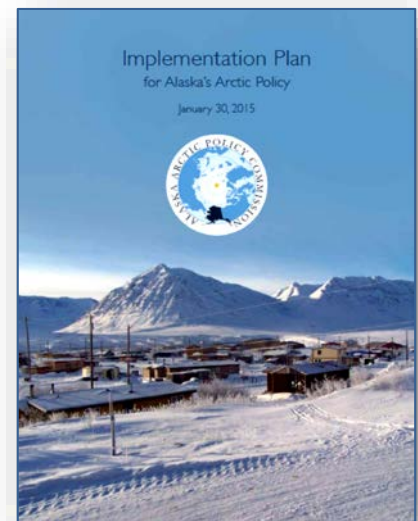
Anticipate, evaluate and respond to risks from climate change related to land erosion and deterioration of community infrastructure and services and support community efforts to adapt and relocate when necessary.

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.”



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