Risk Mapping, Assessment and Planning (Risk MAP)

Assisting Imminently-Threatened Alaska Native Villages

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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

Data Source: https://www.fema.gov/media-library-data/1513867417228-09e848c72d31138cc869758ddfa5c19f/data.gov.FEMADeclarations.12.21.17.xlsx
Alaska Federally-Declared Disasters, Floods and Severe Storms, By Borough/Census Area 1953-2017

Data Source: https://www.fema.gov/media-library-data/1513867417228-09e848c72d31138cc869758ddfa5c19f/data.gov.FEMADeclarations.12.21.17.xlsx
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
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
Process

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 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
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
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.aoos.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
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
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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