The Alaska Baseline Erosion Assessment

Current Navigation Studies

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Baseline Erosion Assessment (BEA)

“The conference finds there is a need for an Alaska erosion baseline study to coordinate and plan the appropriate responses and assistance for Alaska villages in the most need and to provide an overall assessment on the priority of which villages should receive assistance. Therefore, the conference has provided the $2,000,000 for this study.”
BEA – Interagency Coordination

- **State**
  - Department of Community Advocacy
  - Department of Transportation and Public Facilities
  - Department of Homeland Security
  - Governor’s Office

- **Federal**
  - NWS, USGS, NRCS, FEMA, Denali Commission

- **Local**
  - All Boroughs
  - All Communities

- **Tribal**
  - All Federally Recognized Tribes
  - ANCSA Tribal Corporations and NFP Corporations
  - Alaska Federation of Natives

- **Congressional Delegation**
Erosion can occur at the interface of land and water.

Alaska has:
- 10,000 named and thousands more unnamed rivers, creeks, and streams
- About 44,000 miles of tidal shoreline
- More than 3 million lakes

Of the 392 communities in Alaska, 178 report erosion issues.
BEA – Erosion Assessments

- 9 Communities Had Sufficient Information
- 11 +1 Community Visits
- 158 Communities Erosion Information

Paper
- Four Pages: Two Text, One Photos, One Erosion Diagram
- OMB Approved Survey and Existing Information
- Administered by Contract
BEA - Products

Expedited Measures

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Prototype Solutions

Erosion Assessments
BEA - Prioritization Strategy

- What Are We Really Prioritizing?
- What Criteria and Factors Are Best?
- How Do We Address Uncertainty?

Preserving the Catch

Shishmaref Shoreline
Alaska District USACE
BEA - Prioritization Factors

- Critical Infrastructure
- Human Health and Safety
- Subsistence and Shoreline Use
- Community Setting
- Housing and Population Affected
- Housing in Parallel
- Environmental Hazard
- Cultural Importance
- Commercial/Non-Residential

Curing Seal Skins

Boat Construction
**BEA - Consensus Rating**

### Community Ranking Methodology

<table>
<thead>
<tr>
<th>Score</th>
<th>Bunchball</th>
<th>Cordova</th>
<th>Chiniak</th>
<th>Homer Bay</th>
<th>Kasilik</th>
<th>Kenai</th>
<th>Nenana</th>
<th>Portage</th>
<th>Saint Michael</th>
<th>Shaktoolik</th>
<th>Seward</th>
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</thead>
<tbody>
<tr>
<td>LOW IMPACT</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>MEDIUM IMPACT</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
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<tr>
<td>HIGH IMPACT</td>
<td>1</td>
<td>1</td>
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<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
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</tbody>
</table>

**Severity of Damage:**

1. **Critical Infrastructure (for example, School, Utilities, Transportation):**
   - LOW IMPACT: One item of critical infrastructure at risk.
   - MEDIUM IMPACT: More than one item of critical infrastructure at risk.
   - HIGH IMPACT: More than one item of critical infrastructure at risk.

2. **Human Health and Safety:**
   - LOW IMPACT: Situations that would cause life safety concerns or negatively affect ability to provide emergency services are not likely.
   - MEDIUM IMPACT: Only rare events would threaten life safety.
   - HIGH IMPACT: Erosion events are expected to result in human health and safety concerns.

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# BEA - Consensus Rating

<table>
<thead>
<tr>
<th>Commercial/Non-Residential</th>
<th>Low Impact</th>
<th>Medium Impact</th>
<th>High Impact</th>
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<tbody>
<tr>
<td>1 1 1 1 1 1 1 1 2 2 2 1</td>
<td>1 1 1 1 2 1</td>
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</tbody>
</table>

**DAMAGE SCORE:**

| 21 18 24 22 38 24 25 18 18 40 48 18 |

**TIME UNTIL DAMAGE:**

- **Enter One of Following Values or Select from Drop Down List:**
  - 3 for Short Term (1 to 10 years)
  - 2 for Mid Term (10 to 20 years)
  - 1 for Long Term (20 years and beyond)
- **Time Until Damage Rating:**
  - 2 1 3 3 3 3 3 1 3 3 3 1

**CONFIDENCE IN TIME UNTIL DAMAGE RATING**

- **Enter Closest of following Values or Select from Drop Down List:**
  - 75% Confidence Rating (Munch)
  - 50% Confidence Rating (Think so)
  - 25% Confidence Rating (Educated Guess)
  - 95% Confidence Rating (Sure)
- **Confidence Rating:**
  - 60% 75% 60% 75% 96% 60% 95% 26% 75% 60%

**COMMUNITY RANKING SCORES:**

| Community Ranking Score | 42 18 72 98 108 72 75 64 18 120 138 18 |

**Confidence Range Low:**

| 91.6 18.0 60.0 66.0 90.0 70.0 62.5 40.6 18.0 90.0 128.6 18.0 |

**Confidence Range High:**

| 62.5 22.6 72.0 66.0 108.0 72.0 75.0 64.0 18.9 120.0 138.0 27.0 |
BEA – Study Findings

- **26 Priority Action Communities**
  - Should be considered for immediate action by either initiating an evaluation of potential solutions or continuing with ongoing efforts to manage erosion

- **69 Monitor Conditions Communities**
  - Problems are present but not significant enough to require immediate action

- **84 Minimal Erosion Communities**
  - Minimal erosion-related damages were reported or would not be expected in the foreseeable future

- **Interesting Items**
  - Some Previously Identified Priorities Not Erosion Related
  - Flooding, Not Erosion, Primary Concern for Many
A Priority Action Community has reported erosion threatening the viability of the community and/or significant resources are being expended to minimize threats to the community’s viability. The erosion issue likely warrants immediate and substantial Federal, State, or other intervention. Priority Action Communities should be considered for immediate action in either initiating an investigation or continuing with ongoing efforts to manage erosion issues.
A Monitor Conditions Community generally has reported significant impacts related to erosion, but the impacts are not likely to affect the viability of the community. The erosion issue may warrant Federal, State, or other intervention. A Monitor Conditions Community should be watched. Taking action in a Monitor Conditions Community would be prudent to prevent a problem from becoming worse.
In general, a Minimal Erosion Community has reported erosion impacts that are not serious and are not affecting the viability of the community. The erosion issue does not appear to warrant Federal, State, or other intervention at this time. The community still should implement erosion protection practices, such as not allowing construction where it can be threatened by erosion.
Current Navigation Studies

- **Specifically Authorized Program**
  - Larger projects over $10 million

- **Small Project Program**
  - Up to $10 million

- **Program requirements**
  - Studies cost shared 50%-50%
  - Navigation Features cost shared 80%-20%
Current Navigation Studies

- Specifically Authorized
  - Anchorage Harbor
  - Homer
  - Little Diomede
  - Sitka
  - Valdez
  - Whittier
Current Navigation Studies

- Small Project Program
  - Auke Bay
  - Elim
  - Iliamna
  - Kasaan
  - Old Harbor
  - Savoonga
In Summary – AOOS Takeaway

- Addressing Alaska Erosion Important and Challenging
- Many Specific Navigation Needs Exist
- Projects tap into many data sources
- Projects develop detailed site specific information