

# 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**

# BEA - Communities With Erosion

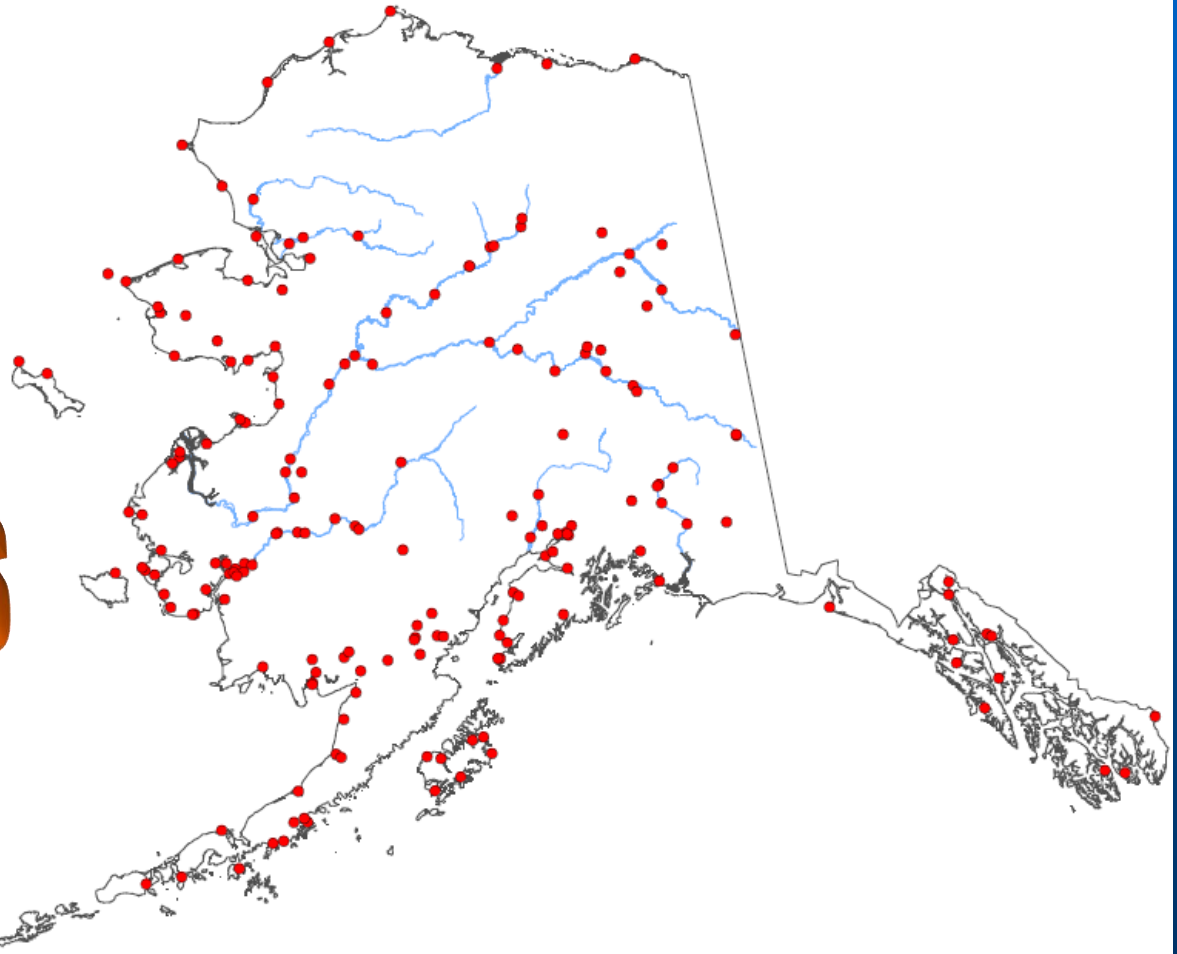
Erosion can occur at the interface of land and water.

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.

178 Communities



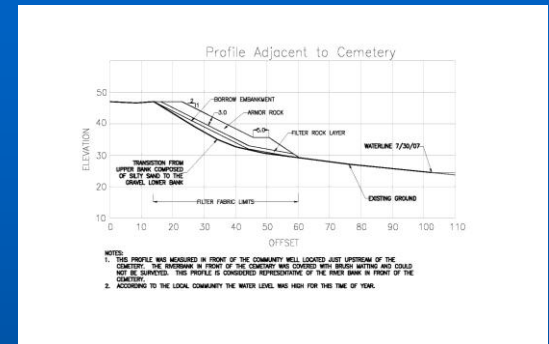
# BEA – Erosion Assessments

- **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



Prototype Solutions



Erosion Assessments



# BEA - Prioritization Strategy

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



Shishmaref Shoreline  
Alaska District USACE

Preserving the Catch



# 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													
SCORES FOR COMMUNITY RANKING CRITERIA BASED UPON INFORMATION IN EIPs		Buckland	Carrivell	Chinik	Hooper Bay	Huslia	Kenai	Nelson Lagoon	Nenana	Portage	Saint Michael	Shaktoolik	Swentna
SEVERITY OF DAMAGE:													
Critical Infrastructure (for example, School, Utilities, Transportation)	(1) LOW IMPACT: • One item of critical community infrastructure at risk • Loss of infrastructure would not result in loss of community sustainability • Damage could be repaired or alternative service restored in less than 1 month												
	(2) MEDIUM IMPACT: • More than one item of critical community infrastructure at risk • Loss would not result in loss of community sustainability • Damage could be repaired or alternative service restored between 1 and 6 months	1	1	2	2	3	1	3	1	1	3	3	1
	(3) HIGH IMPACT: • More than one item of critical community infrastructure at risk • Loss would impact community sustainability • Repair or establishment of alternative service would take more than 6 months												
Human Health and Safety	(1) LOW IMPACT: • Situations that would cause life safety concerns or negatively affect ability to provide emergency services are not likely • Ingress/egress to/from community not at risk • Community has ability to mitigate or avoid life safety concerns												
	(2) MEDIUM IMPACT: • Only rare events would threaten life safety • Access to or from community by land or airport threatened • Quick and easy access to emergency services is available	1	1	2	1	1	1	1	1	1	1	3	1
	(3) HIGH IMPACT: • Erosion damage is expected to result in human health and safety concerns • Critical health/safety services facility at risk • Portions or all of the population cut-off from emergency services • Air &/or road access at great risk or impassable to all or a portion of community												

# BEA - Consensus Rating

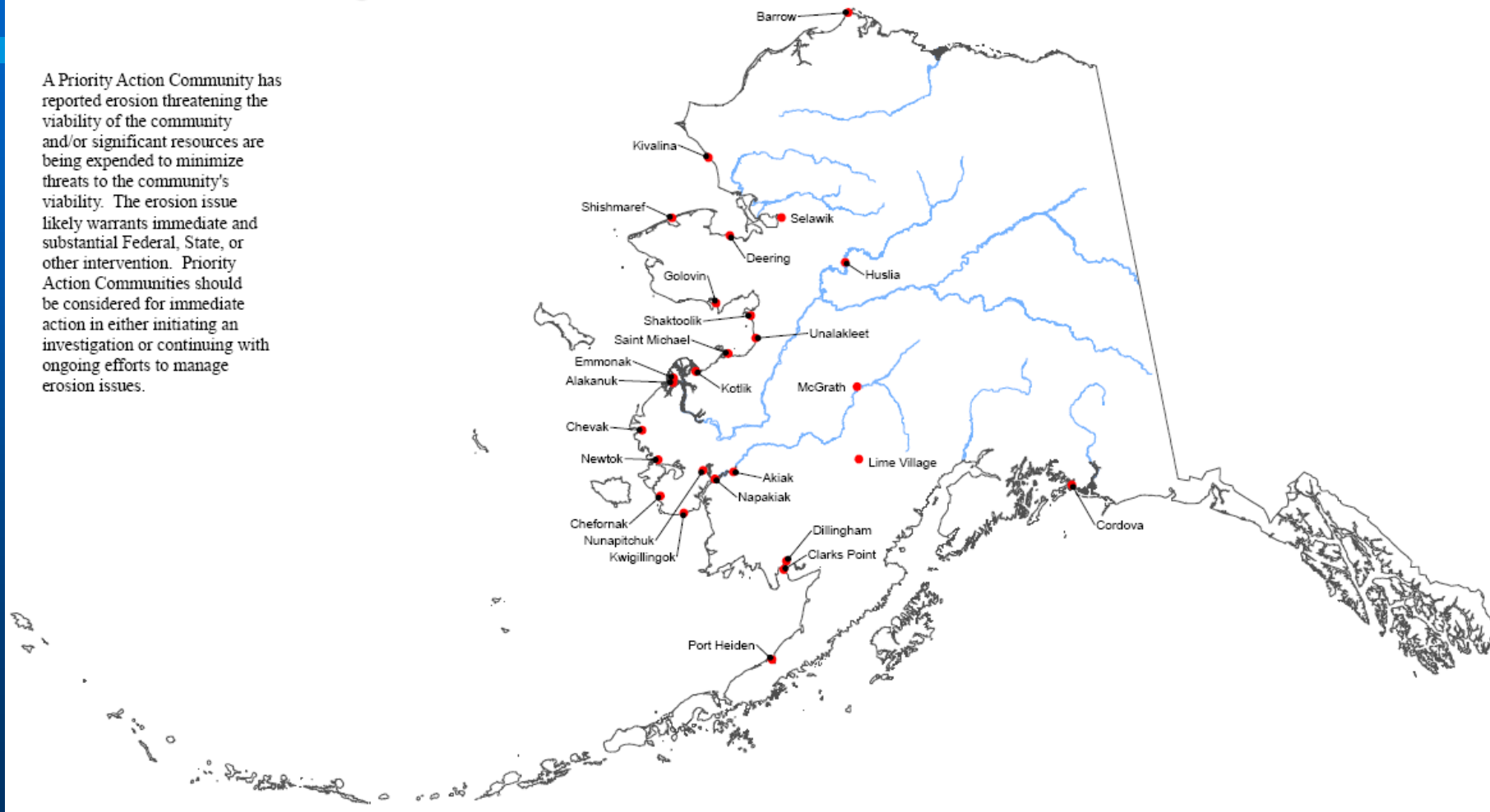
Commercial/ Non-Residential	(1) LOW IMPACT: • Impacts have no or little affect on overall community cash flow • Little and only temporary impact to a community's ability to operate their commercial facilities with minor interruptions • Little or no exterior financial support is necessary to re-establish full capacity												
	(2) MEDIUM IMPACT: • Impacts have moderate impact on overall community cash flow • Impacts to a community's commercial infrastructure will require significant external assistance to come back to full capacity • Loss of commercial infrastructure can be handled at an alternative site or location (such as a 2nd local store, or other commercial/public dock facilities)	1	1	1	1	2	1	1	1	1	2	2	1
	(3) HIGH IMPACT: • Impacts have severe, dramatic affect on cash flow of a community • The ability to operate the commercial sector for the community is severely impacted • Loss of commercial infrastructure will impact entire community (such as loss of a single store, with no replacement facilities); or ability to gather materials or have goods and services brought in is no longer possible (i.e. a commercial dock is destroyed with no replacement or alternate facilities)												
DAMAGE SCORE:		21	18	24	22	38	24	26	18	18	40	48	18
TIME UNTIL DAMAGE:													
TIME UNTIL DAMAGE RATING	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)	2	1	3	3	3	3	3	3	1	3	3	1
CONFIDENCE IN TIME UNTIL DAMAGE RATING	Enter Closest of following Values or Select from Drop Down List: 25% Confidence Rating (Hunch) 50% Confidence Rating (Think so) 75% Confidence Rating (Educated Guess) 95% Confidence Rating (Sure)	50%	75%	50%	60%	75%	86%	50%	26%	95%	26%	75%	60%
COMMUNITY RANKING SCORES:													
COMMUNITY RANKING SCORE:		42	18	72	88	108	72	75	64	18	120	138	18
CONFIDENCE RANGE LOW:		31.5	18.0	60.0	66.0	89.0	70.8	62.5	40.6	18.0	80.0	126.5	18.0
CONFIDENCE RANGE HIGH:		52.5	22.6	72.0	88.0	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

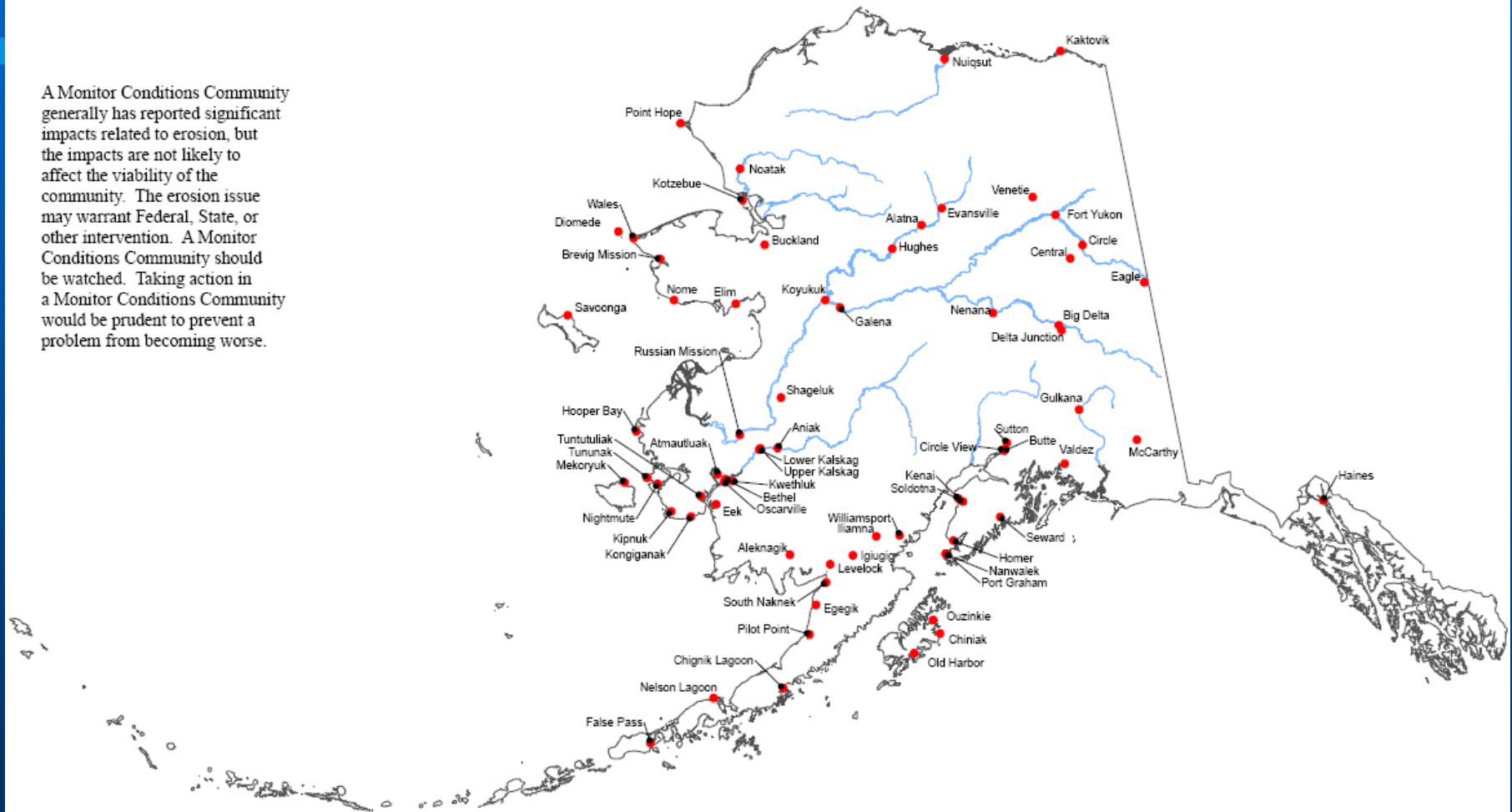
# Priority Action Communities

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.



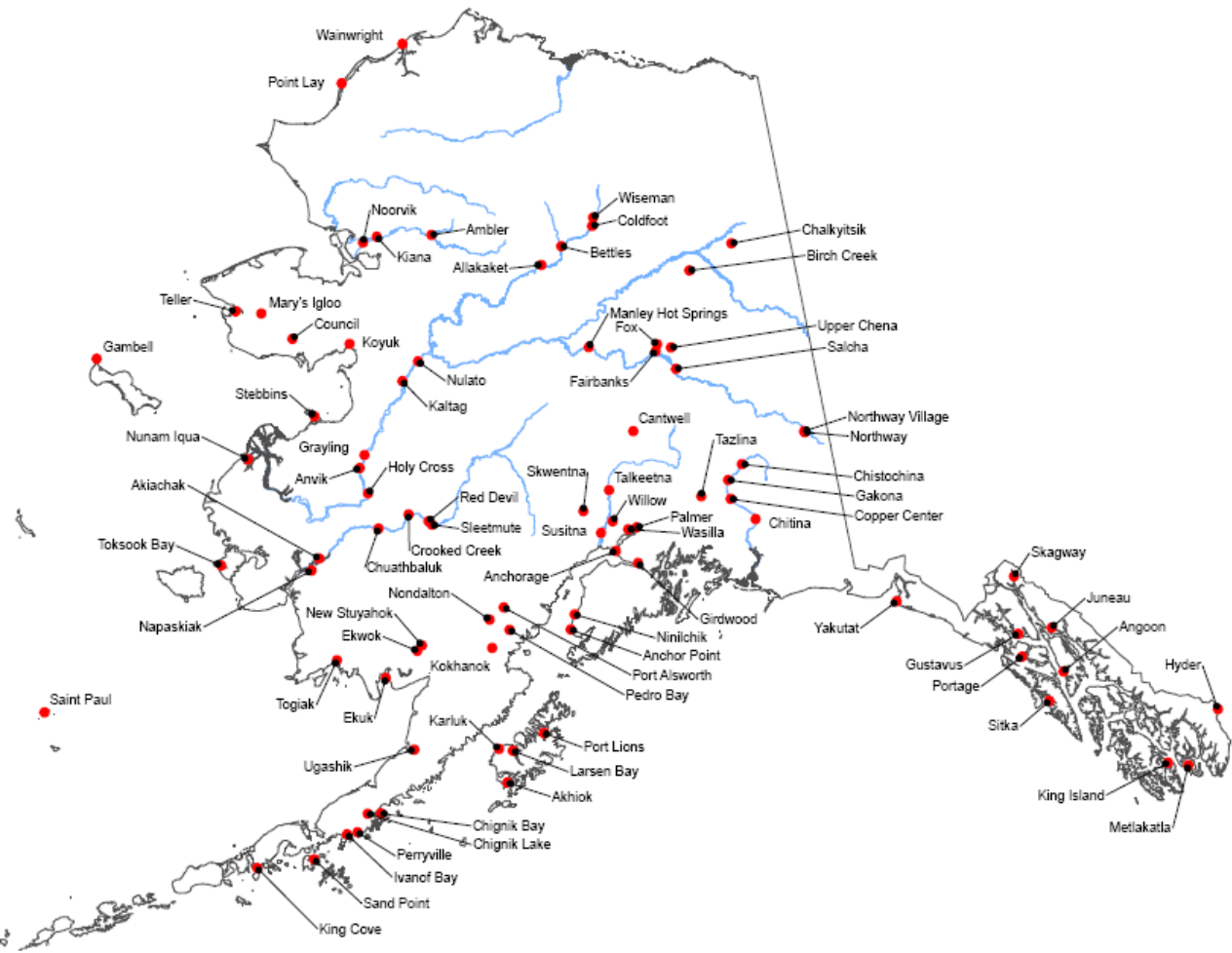
# Monitor Conditions Communities

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.



# Minimal Erosion Communities

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**