

HOMER NAVIGATION IMPROVEMENT

Charette
May 17-19, 2023

Kim Graham: Facilitator
Curtis Lee: Project Manager
Robin Carr: Lead Planner
Megan Green: Note Taker
Erin Stockdale: Virtual Facilitator



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 **AGENDA****Day 1**

- Introduce Planning Team
- Overview of USACE Plan Formulation & Study Process
- City of Homer Presentation: History, Problems, Future
- USACE Study History
- Existing Conditions and Future Without Project Conditions
- Problems, Opportunities, Objectives, and Constraints.

Day 2

- Review Day 1
- Develop and Screen Measures
- Form and Present Alternatives

Day 3

- Review Day 1 & 2
- Evaluate and Screen Alternatives
- Outline Charette outcomes and Action Items



INTRODUCTIONS - HOMER



INTRODUCTIONS - USACE



Lauren Oliver
Civil Hydraulic Engineer



Twain Cacek
Geotechnical Engineer



Tyler Teese
Archaeologist



Robin Carr
Planner



Kim Graham
Facilitator



Kayla Campbell
Environmental Resources



GROUND RULES

- Everyone is encouraged to participate, this is a community workshop
- Be respectful of others and their opinions
- One person speaks at a time



PURPOSE AND OBJECTIVES

- Facilitate focused decision making, collaboration, and forward movement of the study
- Reach consensus on the study's problems, opportunities, objectives, and constraints
- Develop criteria & metrics for alternatives evaluation, comparison, and selection
- Identify data gaps and path forward to reach Alternatives Milestone Meeting



AGENDA – DAY 1

- Introductions, USACE planning process, study overview
- Historical and technical overview
- Problems, opportunities, objectives, constraints
 - Large group discussion
- Existing Conditions, Future Without Project Conditions
 - Large group discussion
- Conclusion
- Q&A



AUTHORITY

Section 204 of the Flood Control Act of 1948:

“The Secretary of the Army is hereby authorized and directed to cause preliminary examinations and surveys for flood controls and allied purposes ... to be made under the direction of the Chief of Engineers, in drainage areas of the United States and Territorial possessions, which include the following named localities: ... Harbors and Rivers in Alaska, with a view to determining the advisability of improvements in the interest of navigation, flood control, hydroelectric power, and related water uses.”



STUDY QUICK FACTS

- Cost sharing agreement signed 29 March 2023
- The City of Homer is the non-Federal sponsor
- Feasibility Study is cost-shared 50/50
- Sponsor can be credited for Work-In-Kind credit in lieu of cash



USACE STUDY PROCESS

SMART PLANNING OVERVIEW



SMART PLANNING PROCESS

Specific

Studies are completed in a reasonable amount of time

Measurable

Studies are more focused and efficient

Attainable

Decision documents are more collaborative and timely

Risk-Informed

Decisions are informed by managing risk and acknowledging uncertainty

Timely



A S.M.A.R.T. FEASIBILITY STUDY IS

- Collaborative Partnership
- Decision Focused
 - What information/analysis is necessary to make the next decision?
- Risk Based
 - What the risk, uncertainty, likelihood, and consequence?
- Scoped 3x3x3
 - Study timeline 3 years, study cost < \$3 Million

PLANNING PROCESS

Scoping

- *Problems, Objectives, Opportunities, and Constraints (POOC)*
- *Inventory and Forecasting*

Plan Formulation

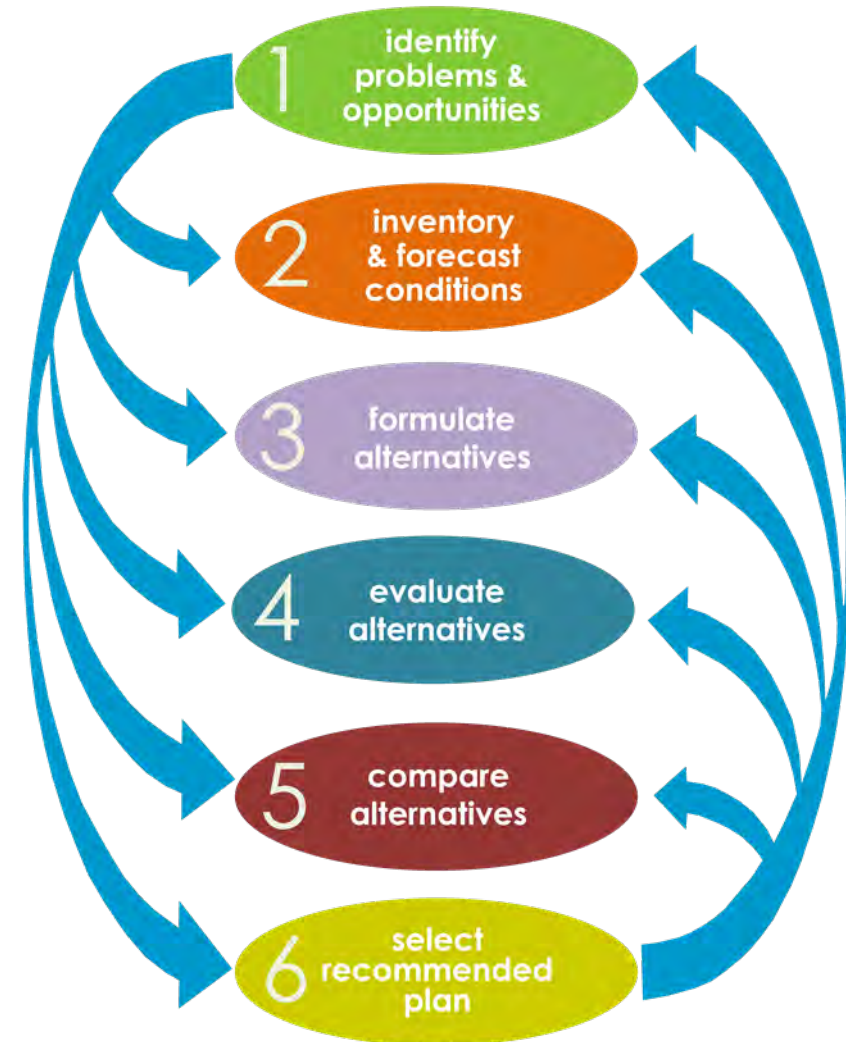
- *Identify & screen measures*
- *Develop plans*

Deciding

- *Evaluation of alternatives*
- *Comparison of alternatives*

Implementation

- *Selection of a recommended plan*



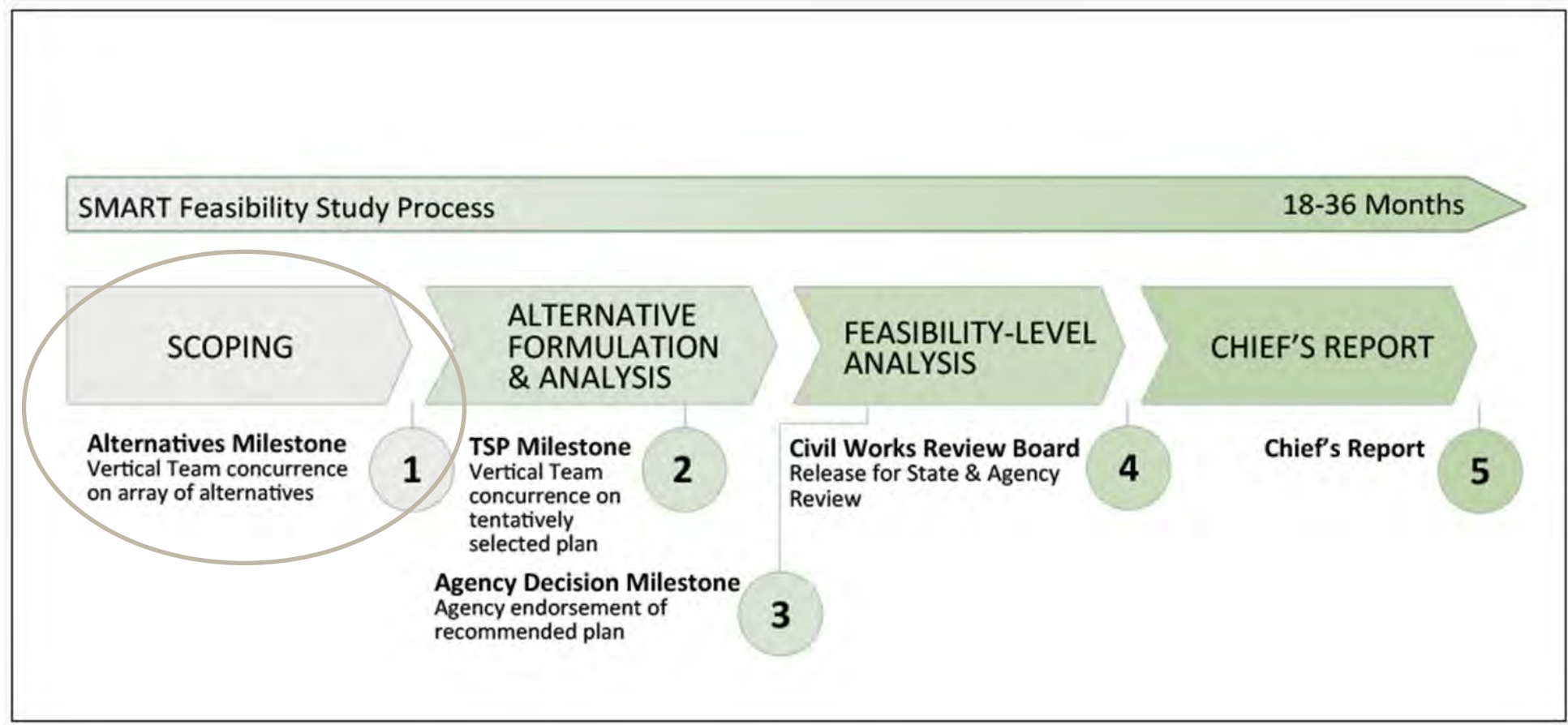


USACE STUDY PROCESS

- Iterative study process dictated by policy and guidance
- Must start with planning process before design or construction
 - Can rely on existing information to help inform study process
All reasonable alternatives must be evaluated (to some degree)



SMART FEASIBILITY STUDY PROCESS





DESIRED CHARETTE OUTCOMES

- Propagate discussion to:
 - Reach consensus on the study's problems, opportunities, objectives, and constraints
 - Confirm data we have
 - Obtain new data and public input on the project
 - Discuss proposed measures and alternatives



PROBLEM STATEMENT

Homer harbor is an essential but increasingly congested component of Homer's maritime economy. In 1977, there were 388 vessels with reserved stalls in the harbor. Today the harbor has 930 stalls for reserved vessels and over 6,000 linear feet of transient moorage. The existing harbor float system is working well beyond its capacity, and the harbor has over 415 vessels on a stall wait list.





HISTORY OF STUDY IN HOMER

The District has had a long history of partnership with the City of Homer studying harbor improvement for Homer Harbor, a 2007 Small Boat Harbor Feasibility Study and most recently in 2019 through the Planning Assistance to States program.





SMALL BOAT HARBOR FEASIBILITY STUDY

- This study was originally conducted by the Corps between 2007 and 2010.
- At the time, economic and engineering analyses indicated that the national economic development benefits of a harbor expansion did not exceed anticipated construction costs. The Benefit to Cost Ratio (BCR) was 0.5-0.7.
- The Alaska District did not recommend a Federal project to Congress, and the study was suspended.



PLANNING ASSISTANCE TO STATES STUDY

In 2019 the District completed a PAS study that reevaluated the economic benefit of harbor improvements for Homer Harbor. The study performed a preliminary assessment of the benefits and costs of implementing navigation improvements to build a large vessel harbor in the vicinity of Homer's existing harbor.



PAS STUDY FINDINGS

The analysis brought price level updates from the 2008 Homer Small Boat Harbor feasibility study up to 2018 prices and applied the discount rate for fiscal year 2019. The re-evaluation of these price levels resulted in a positive preliminary Benefit-Cost-Ratio (BCR) of 0.89-1.0.

The positive outcomes of the PAS study made possible the General Investigation we are kicking off today.





CITY PRESENTATION



Homer's
Port is
bustling!





HISTORY OF HOMER PORT & HARBOR

Taking a look back helps us to
set our course ahead...

Homer Spit,
circa 1950s





1960-64



↑ First dredging of the harbor basin and entrance

Boats moored → on buoys before float construction





1960-1964

Construction of the Homer Harbor as we know it today began around 1960. After the Good Friday Earthquake in 1964, Homer was established as a first class municipality and access to federal funding allowed for the harbor to be rebuilt after being damaged by the Good Friday Earthquake.

The harbor consisted of:

- Three ramps
- Floats B through K
- Fish Dock with two cranes
- 1-lane Load & Launch Ram
- Fuel Dock
- Main Dock
- Wood Repair Grid





1984 - Homer Harbor's first expansion project



Aerial view during excavation & dredging



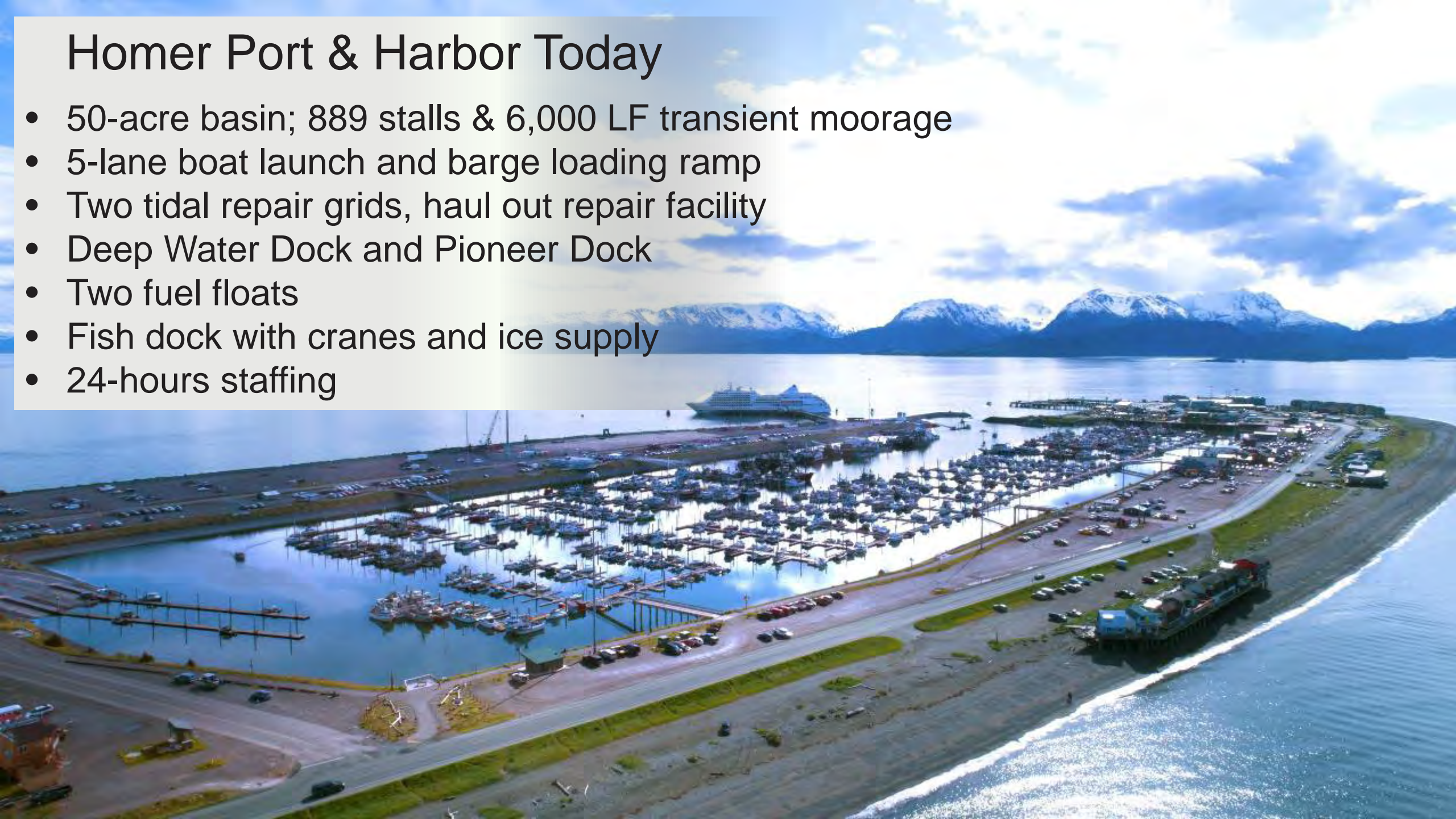
1986-87 - Expansion continued

Aerial view after basin enlarged to 50 acres, construction of four additional ramps, Floats L through W, and System 5 for large vessels.



Homer Port & Harbor Today

- 50-acre basin; 889 stalls & 6,000 LF transient moorage
- 5-lane boat launch and barge loading ramp
- Two tidal repair grids, haul out repair facility
- Deep Water Dock and Pioneer Dock
- Two fuel floats
- Fish dock with cranes and ice supply
- 24-hours staffing





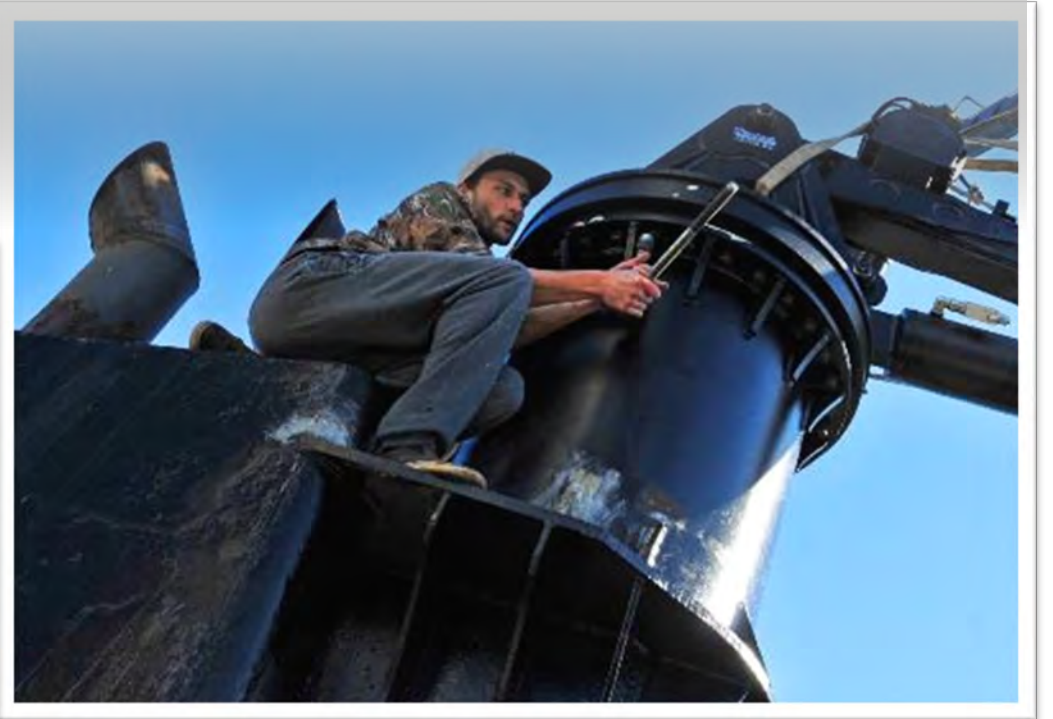
Objectives:

1. Support safe, efficient regional transportation
2. Facilitate local access to / enjoyment of the harbor and Kachemak Bay
3. Support a healthy, diverse local economy
commercial maritime transportation industry,
commercial fishing and tourism

Creates year-round indirect jobs in marine support services

Adequate permanent, short-term, and transient dockage supports the marine trade and service sectors

- availability of supplies such as ice, fuel, gear, bait, and crew provisions
- vessel fabrication
- haul out repair and storage facilities
- skilled Marines trades

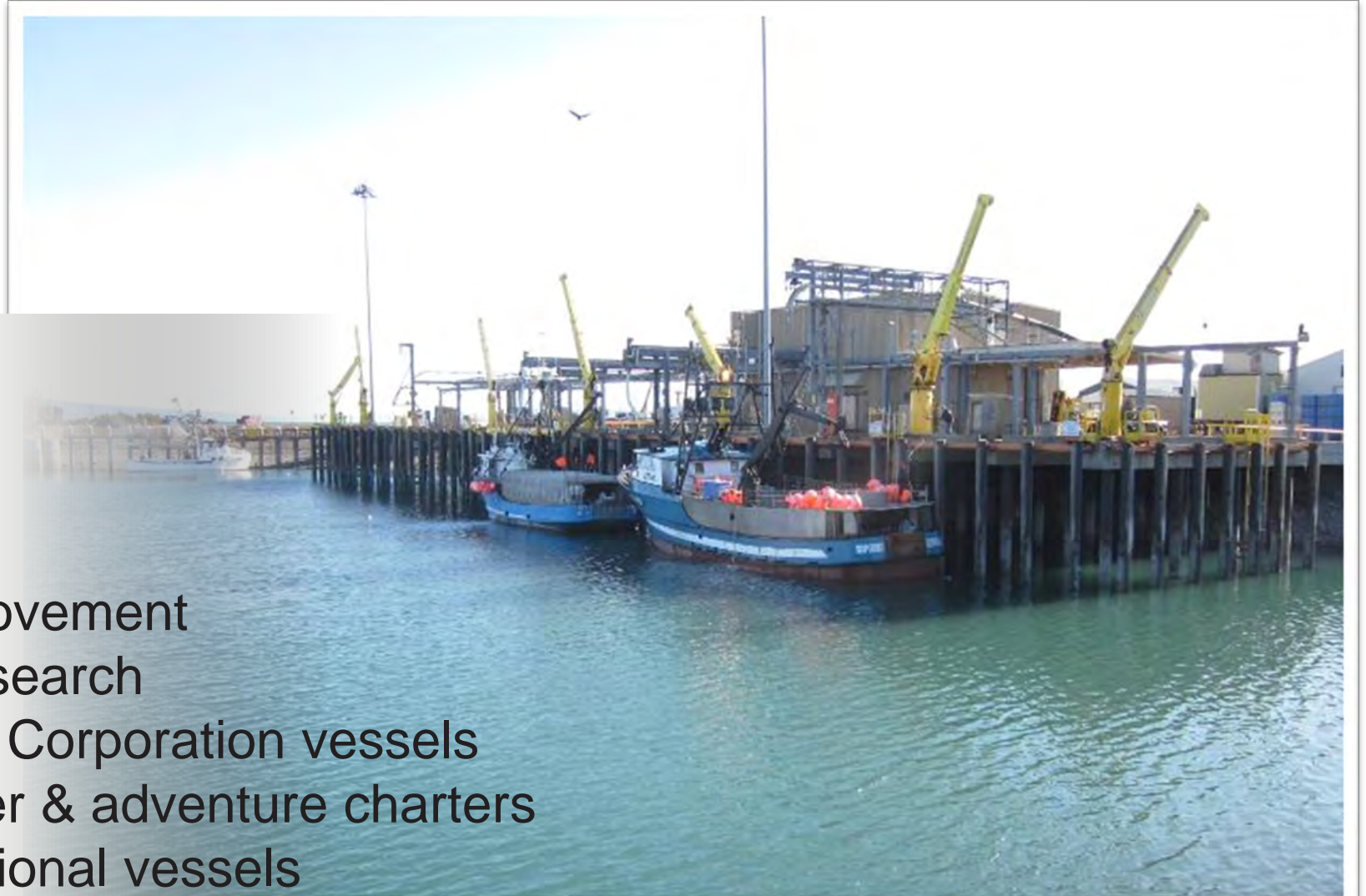




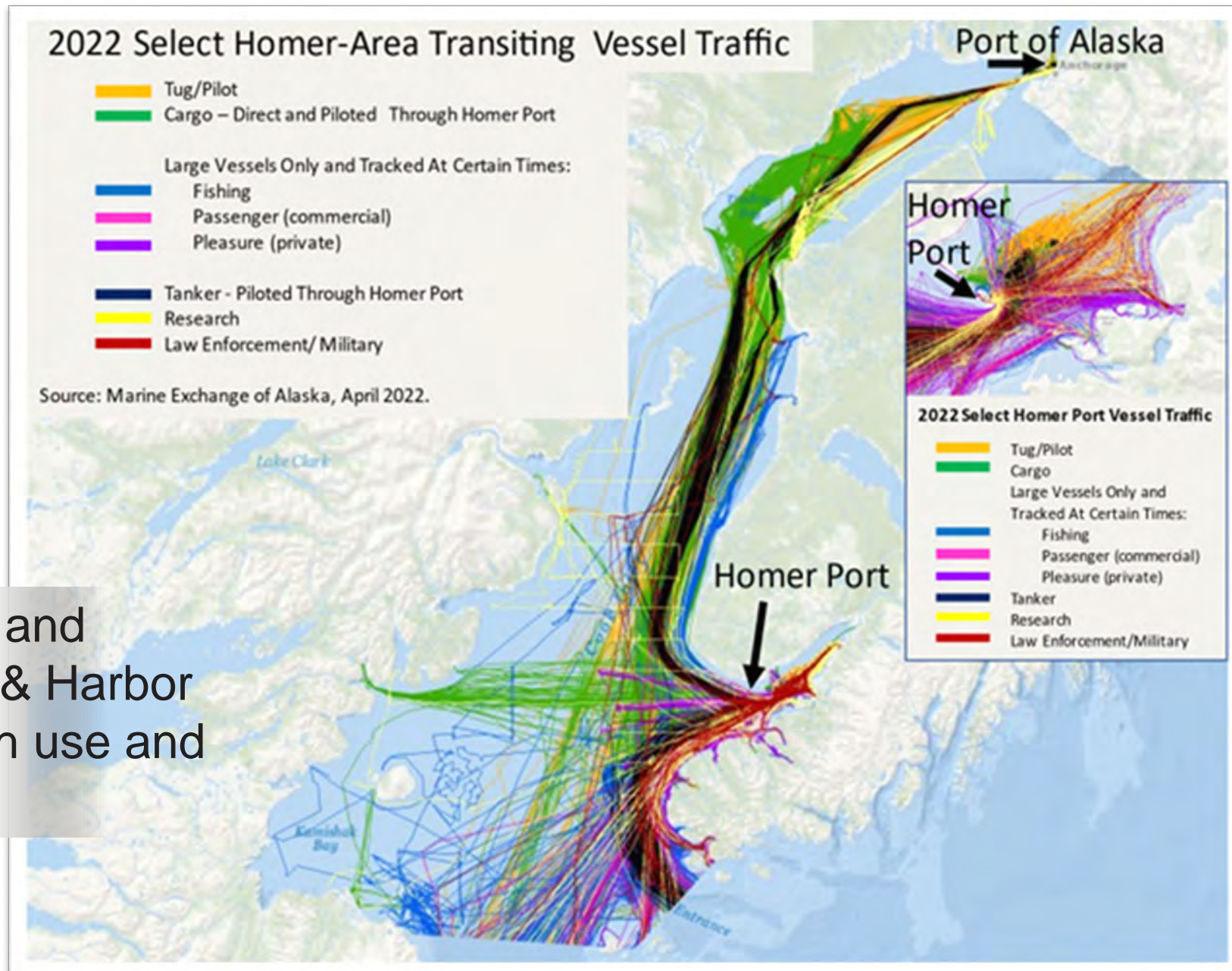
Diversity is key to a healthy local economy

Harbor directly supports:

- Commercial fishing
- Local aquaculture
- Commercial freight movement
- Ocean and coastal research
- Federal, State, Native Corporation vessels
- Commercial passenger & adventure charters
- Private owned recreational vessels



Commercial vessel movements tracked by the Marine Exchange of Alaska of Alaska 2022



Vessel movement through and supported by Homer Port & Harbor illustrates the Harbor's high use and statewide connections.



Freight activity

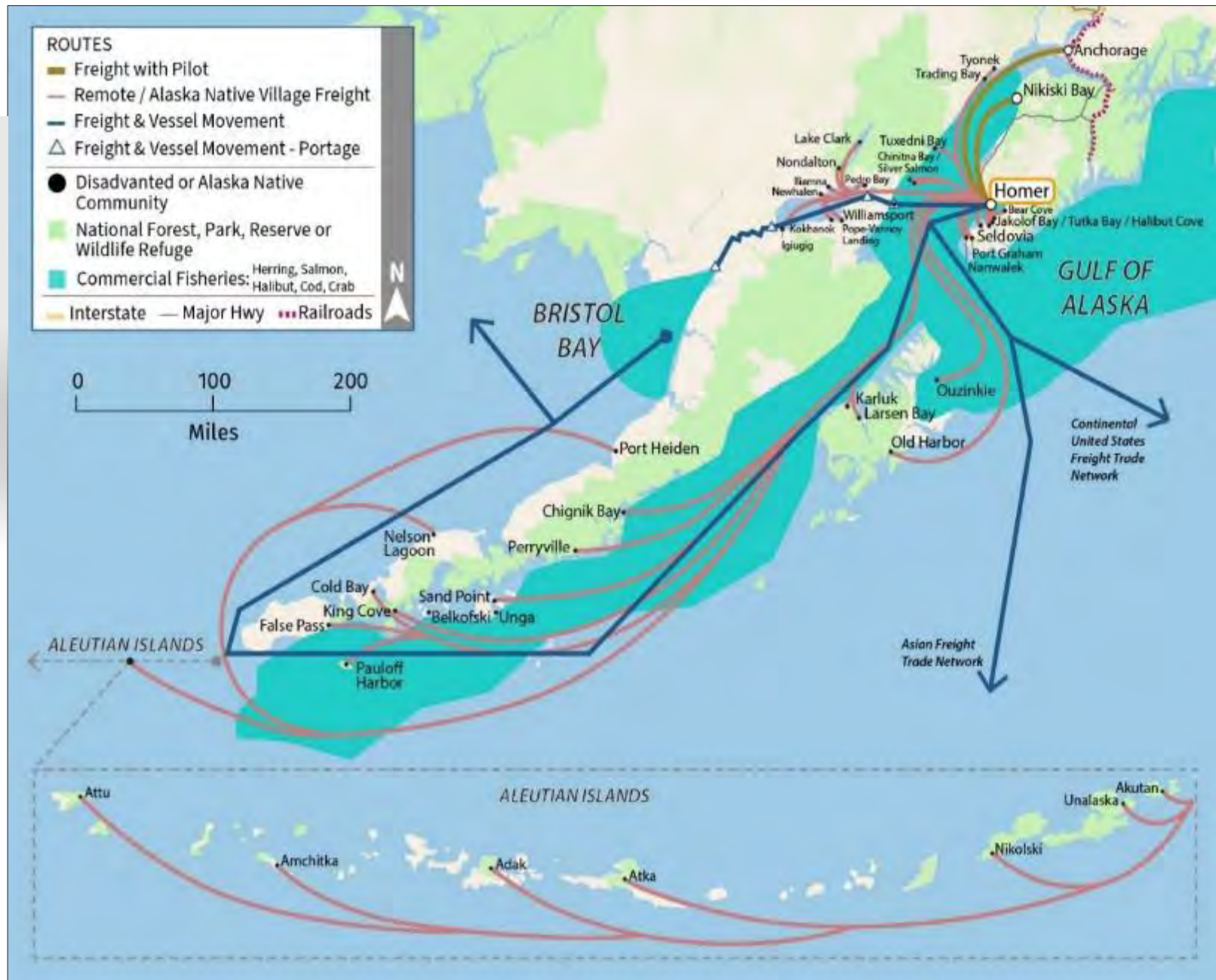
Alaska's harbors are transportation hubs connecting communities and villages all across this great state with goods, materials and services.

152' landing craft
Polar Bear loading
construction materials
at Homer's barge ramp
facility.





47 non-road connected communities, villages and work sites in Southcentral and Western Alaska depend on essential freight and cargo services from vessels that moor in Homer Harbor.





Commercial Fishing



Millions of pounds of fish are bought and sold at Homer Fish Dock every year, supporting our regional commercial fishing fleet.

What led the City to approach the US Army Corps of Engineers?

Overcrowding issues in Homer harbor.

- Navigational safety concerns
- Trip delays
- Overuse of the float systems = shortened facility lifespan.





Navigational Safety

Due to lack of space, vessels are moored in rafts, which narrow travel lanes in the harbor



Rafted vessels on E float ↑

← Large vessels rafted on System 5



Navigational Safety and Trip Delays

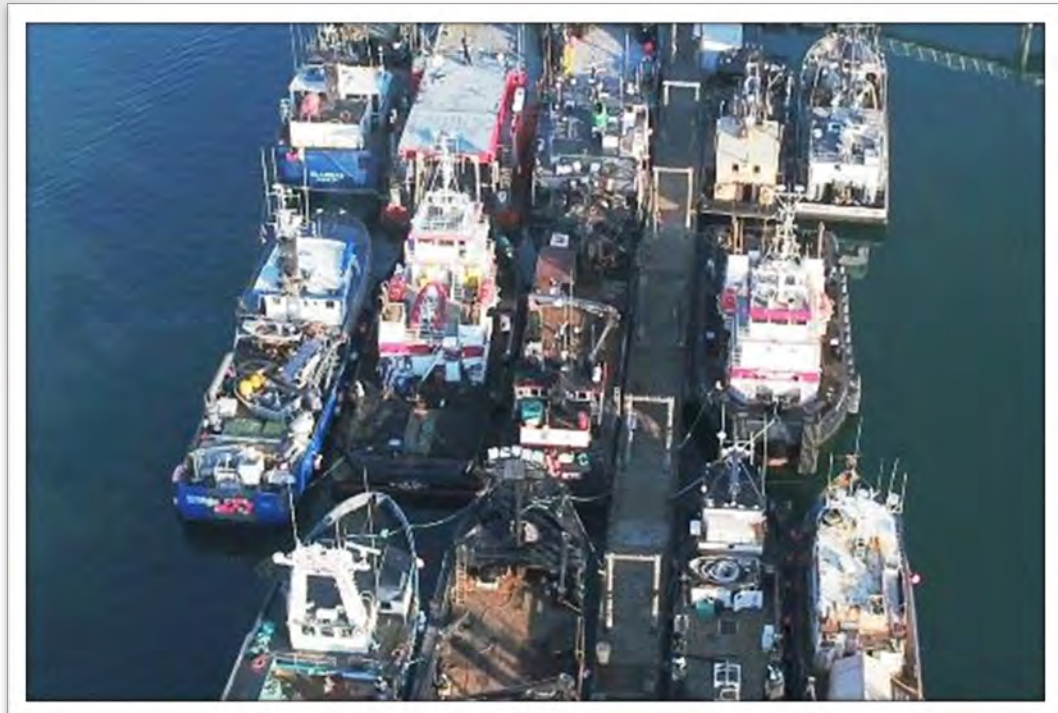
Rafting introduces low tide limitations on travel times



Navigational safety issues ↑



Trip Delays



Caused by vessel rafting



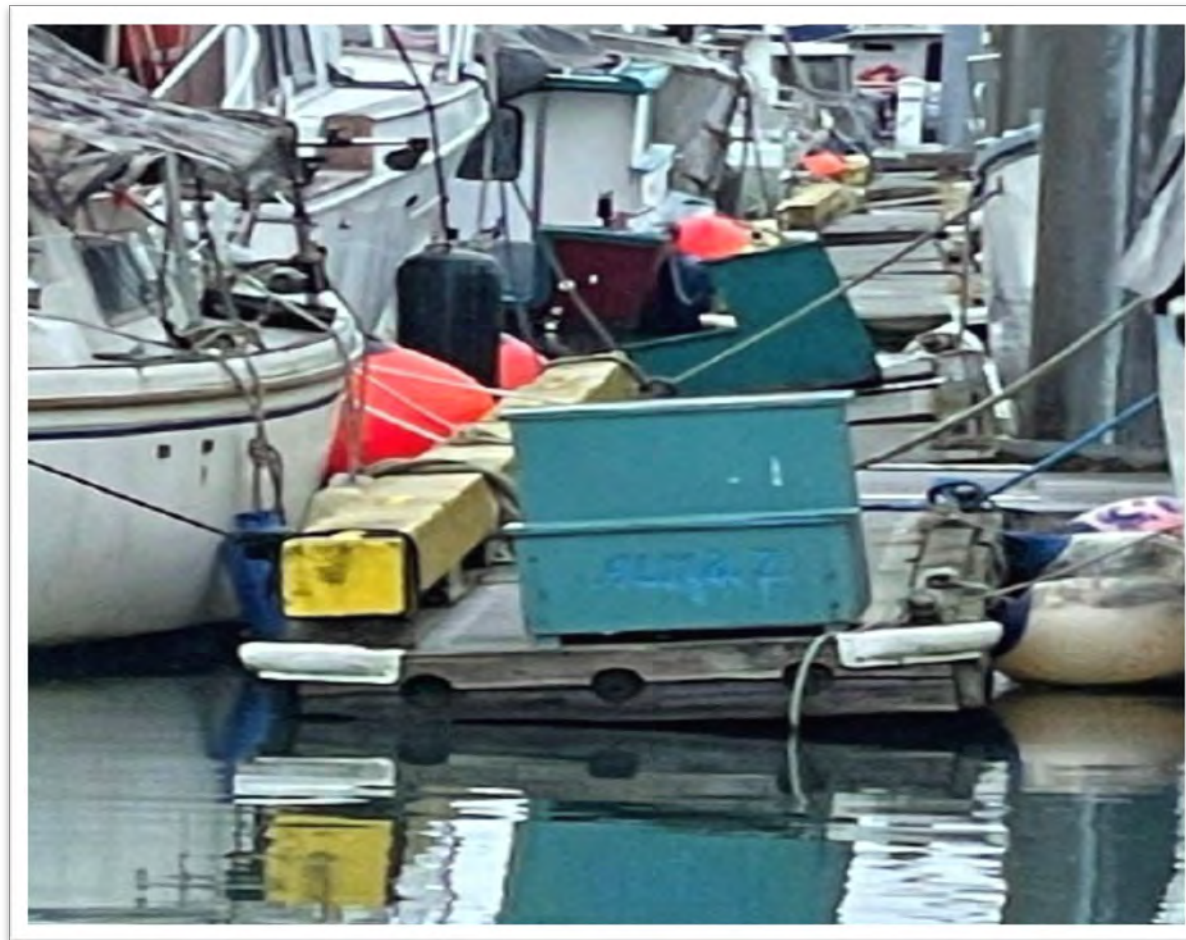


Harbor Congestion





Accelerated depreciation of harbor float systems

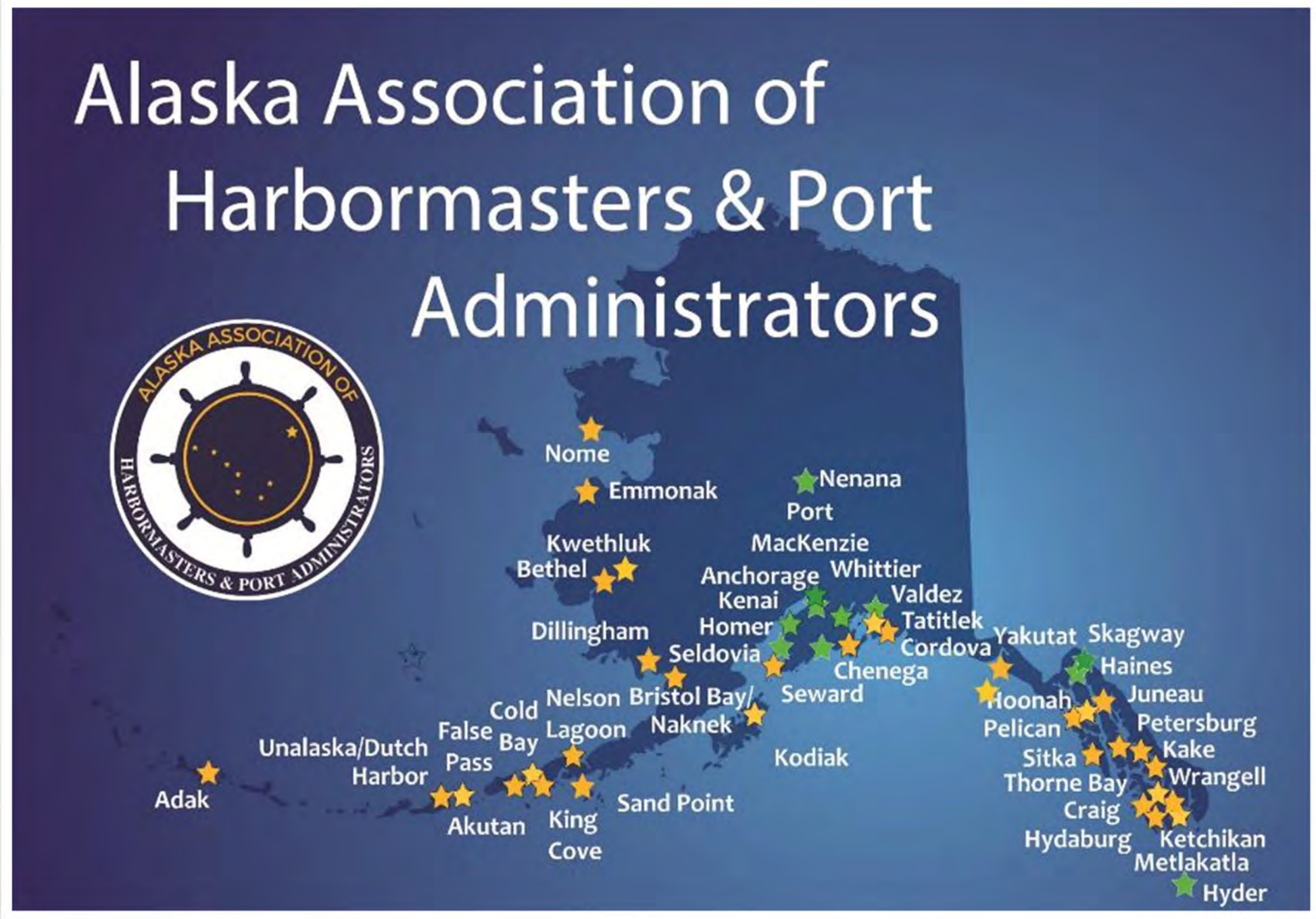




Alaska is Different than the lower 48

According to NOAA coastal mapping, there are 95,471 miles of coastline in the U.S. and 33,904 of those miles are in Alaska. There are 47 municipal Ports and harbors in Alaska.

Alaska Association of Harbormasters & Port Administrators





Opportunity





END CITY PRESENTATION

HYDROLOGY AND HYDRAULICS



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LIST OF MEASURES (FEATURES)

STRUCTURAL

- Protected moorage
- Rock breakwater
- Jetties to protect channel
- Dredging
- Road access
- Harbor support facilities- ramp, fish cleaning station
- Docks
- Others?

NON-STRUCTURAL

- Meteorological equipment
- Procedural Control for harbor accessibility/limitation
- ADA Compliance
- Lightering (lighter vessel takes in goods when load is too heavy)
- Navigation Aids - coordinated with USCG (usually 100% federally funded)
- Others?

LOCAL SERVICE FACILITIES

- Local Service Facilities (LSF) are things needed to attain the benefits for the project or make the project usable that are fully funded by the Sponsor. Examples would include docks, floats, onshore equipment, and roads.
- What LSF is needed to realize the benefits of a new harbor?
- Connect to existing harbor utilities?





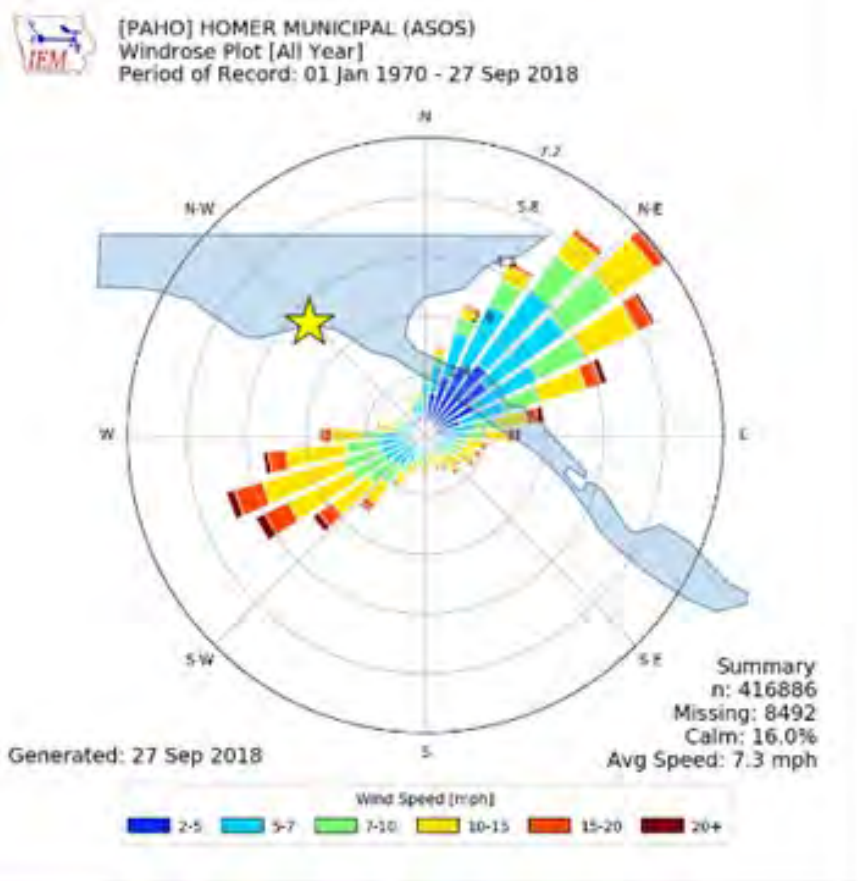
COST SHARING REQUIREMENTS FOR CONSTRUCTION OF A NAVIGATION PROJECT

The Non-Federal Sponsor shall provide 10 percent of construction costs allocated by the Government to that portion of the Project with a channel depth not in excess of 20 feet; 25 percent of construction costs allocated by the Government to that portion of the Project with a channel depth in excess of 20 feet but not greater than 50 feet; and 50 percent of construction costs allocated by the Government to that portion of the Project with a channel depth in excess of 50 feet.

Cost Sharing Requirements were Authorized in Section 101 of the Water Resources Development Act (WRDA) of 1986, as amended (33 U.S.C. 2211)

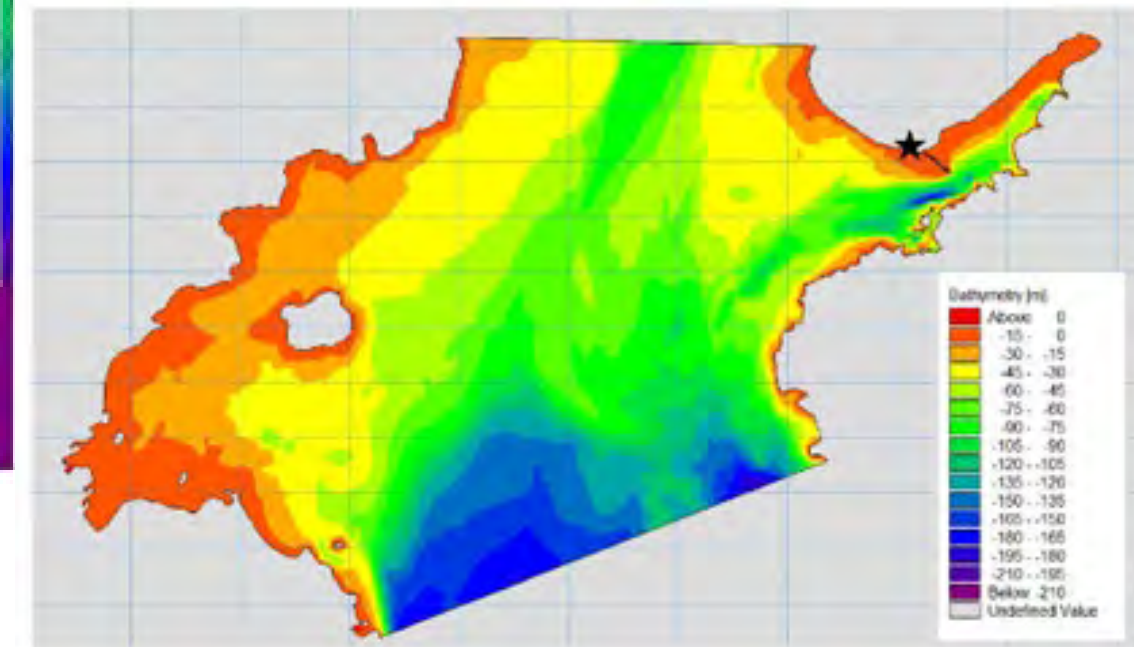
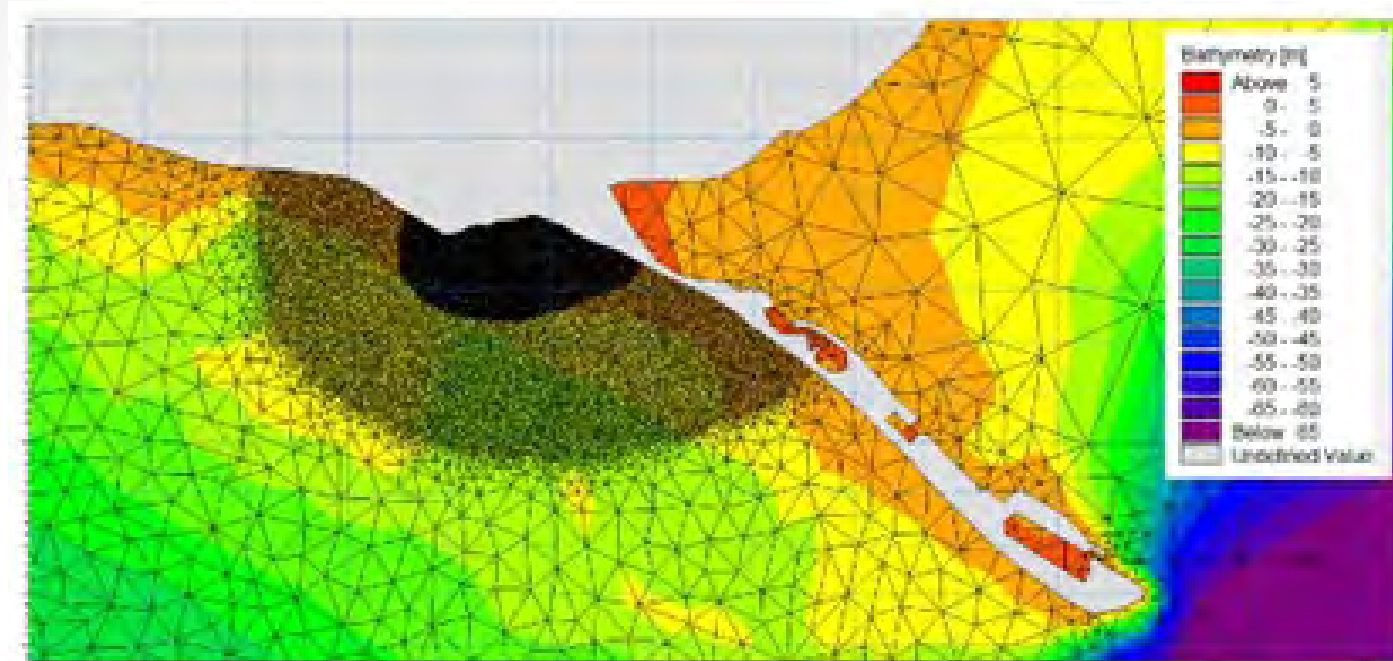
WAVE CLIMATE AND LOCAL OBSERVATION

- Available wind and wave data in the area
- Design wave for Harbor



MODELING

- HDR to perform wave & sediment transport modeling
- Build upon models already established in the area
- Evaluate future without project & future with-project conditions

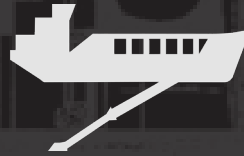


SHIP SIMULATION

- Ship simulation to test harbor design anticipated to be performed at ERDC



ECONOMICS



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THE 4 ACCOUNTS: WHAT DO WE CONSIDER?

National Economic Development (NED)

- creation of new business opportunities
- growth in existing business activities
- increased efficiency in existing business activities
- reduced costs to existing business activities (e.g., travel costs)
- reduced damages to infrastructure and property

Regional Economic Development (RED)

- distribution of regional economic activity
- income and employment shifts

Other Social Effects (O.S.E)

- population at risk
- critical infrastructure
- health and safety impacts

Environmental Quality (E.Q.)

- ecological, cultural, and aesthetic resources
- positive and negative effects
- non-monetary

PLANNING PROCESS

Scoping

- *Problems, Objectives, Opportunities, and Constraints (POOC)*
- *Inventory and Forecasting*

Plan Formulation

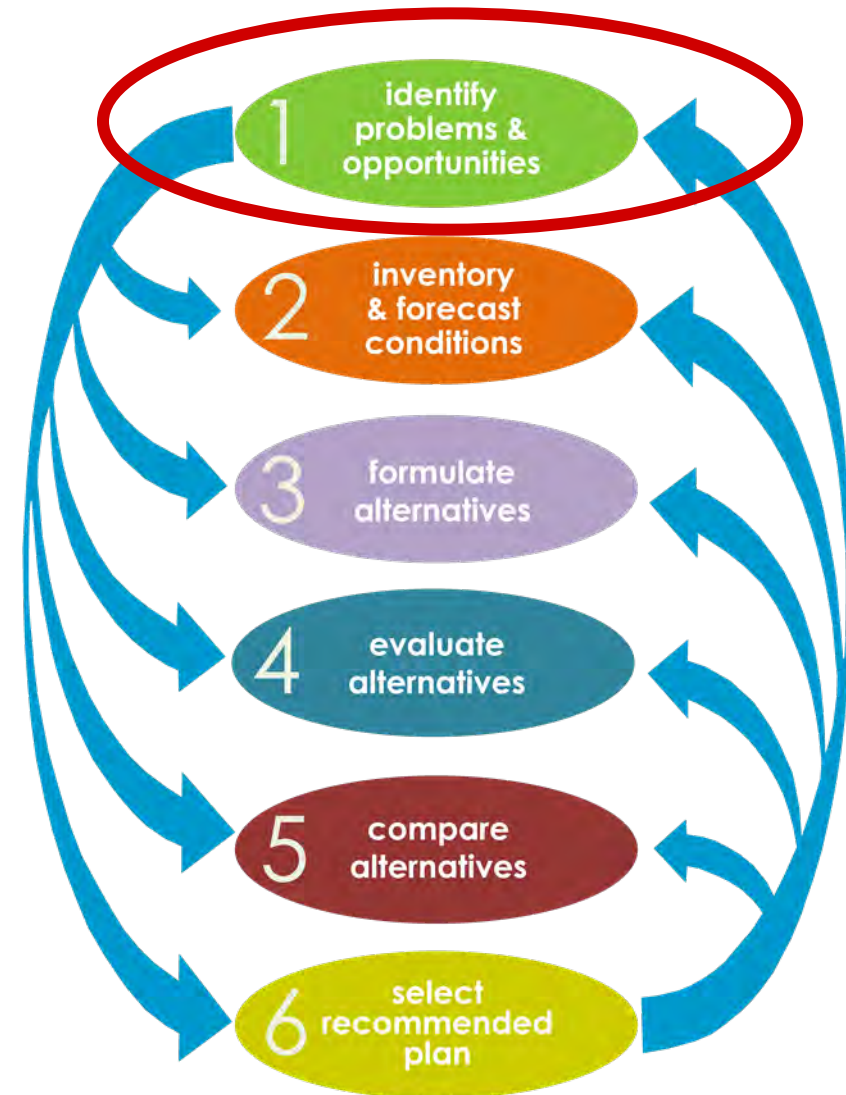
- *Identify & screen measures*
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Deciding

- *Evaluation of alternatives*
- *Comparison of alternatives*

Implementation

- *Selection of a recommended plan*





SUMMARY OF PLANNING STEP #1

Define:

- Problem Statement
- Objectives

Refine:

- Opportunities
- Constraints



STEP 1: PROBLEM STATEMENT, OBJECTIVES, OPPORTUNITIES & CONSTRAINTS

Problem Statement: A simple assertion of the basic problem

Objectives: The minimum acceptable outcomes of an alternative

Opportunities: Future desirable conditions; additional improvements to the project area

Constraints: Statements of things that alternatives should avoid



EXAMPLE PROBLEM STATEMENT

- Homer Harbor's demand exceed harbor's capacity to serve fleet safely and efficiently.
- Certain sizes of commercial vessels can't access the port and harbor due to depth limits and configuration of harbor entrance.



PROBLEM STATEMENT DEVELOPMENT

Small Group activity: Build a list

- What are the key problems?
- What are the drivers of the problems?
- Why are these problems?



OBJECTIVES

The minimum acceptable outcomes of an alternative



EXAMPLE OBJECTIVES

For the 50-year period of analysis:

- Meet future and current vessel demand
- Support diverse fleet of commercial, research, fishing, and freight vessels



OPPORTUNITIES

Future desirable conditions

Additional improvements to the project area



EXAMPLE OPPORTUNITIES

- Improve access for commercial and subsistence vessels
- Reduce transportation costs related to vessels required to travel to other ports
- Increase moorage facilities for large vessels
- Reduce damages to floats and docks
- Reduce vessel damages due to collisions and congestion in the small boat harbor
- Increase regional economic activities
- Improved access for recreational activities
- Provide support for arctic vessels
- Serve needs of disadvantaged communities



CONSTRAINTS

Environmental –

- Must follow and be compliant with applicable environmental laws and regulations.
- Avoid and minimize environmental impacts as much as practicable.



EXAMPLE CONSTRAINTS

- Must follow and be compliant with applicable environmental laws and regulations.
- Avoid and minimize environmental impacts as much as practicable
- Minimize adverse impacts to threatened and endangered species
- Avoid or minimize impacts to cultural resources
- Construction material source limitations (e.g., rock & gravel)
- Disposal of dredged material



PLACEHOLDER: DRAFT PROBLEM STATEMENT(S)

- Lack of infrastructure to support larger harbor (roads, housing, etc.), freight
- Availability of power
- Overloading of dock/stress on current infrastructure



PLACEHOLDER: DRAFT PROBLEM STATEMENT(S)



PUBLIC COMMENT OBJECTIVES DRAFT

- Haul out/repair facility
- Better accommodations for local fleet
- Enough uplands to support fleet/increased uses
- Adequate support facilities
- Maintain quality of life
- Efficiency in cargo handling for regional shipping and barge/tug support
- Support aquaculture and growing industries
- Hybrid vessels/ clean vessels in expectation of 50 years of growth
- Reduce congestion
- Scalability for long term growth and expansion
- Increased capacity for Coast Guard
- Decrease likelihood of oil spill



PUBLIC COMMENT OPPORTUNITIES DRAFT

- House more vessels,
- Creation more space for large vessels (maneuverability)
- Expand the fleet- Homer is desirable!
- Increase jobs in Homer over 50 years
- Modernize port for future (clean energy/operations)
- Expand opportunity for marine trade
- Larger working waterfront= mitigate natural disasters/ increased response
- Environmental protection of Kachemak Bay
- Attract businesses from Seattle
- Savings with no longer needing USCG dredging
- Better utilization of current land/better efficiency



PUBLIC COMMENT CONSTRAINTS DRAFT

- Scientific data
- Archaeological resources
- Rip rap must come from Seldovia
- Blasting (noise, marine mammal impacts, etc.)
- Real estate and staging areas limited
- Marine mammal concerns
- City/community budget
- Transportation (no railroad)
- Sea level rise/climate change
- Critical habitat/essential fish habitat/species important to community
- Support of large vessels
- Earthquakes/ natural disasters
- Lack of skilled labor to maintain infrastructure and vessels
- Beneficial use of dredged material?
- Data gap re: how many slips? Concerns that existing data reflects less slips than needed
- Ice, winter freezing

PLANNING PROCESS

Scoping

- *Problems, Objectives, Opportunities, and Constraints (POOC)*
- *Inventory and Forecasting*

Plan Formulation

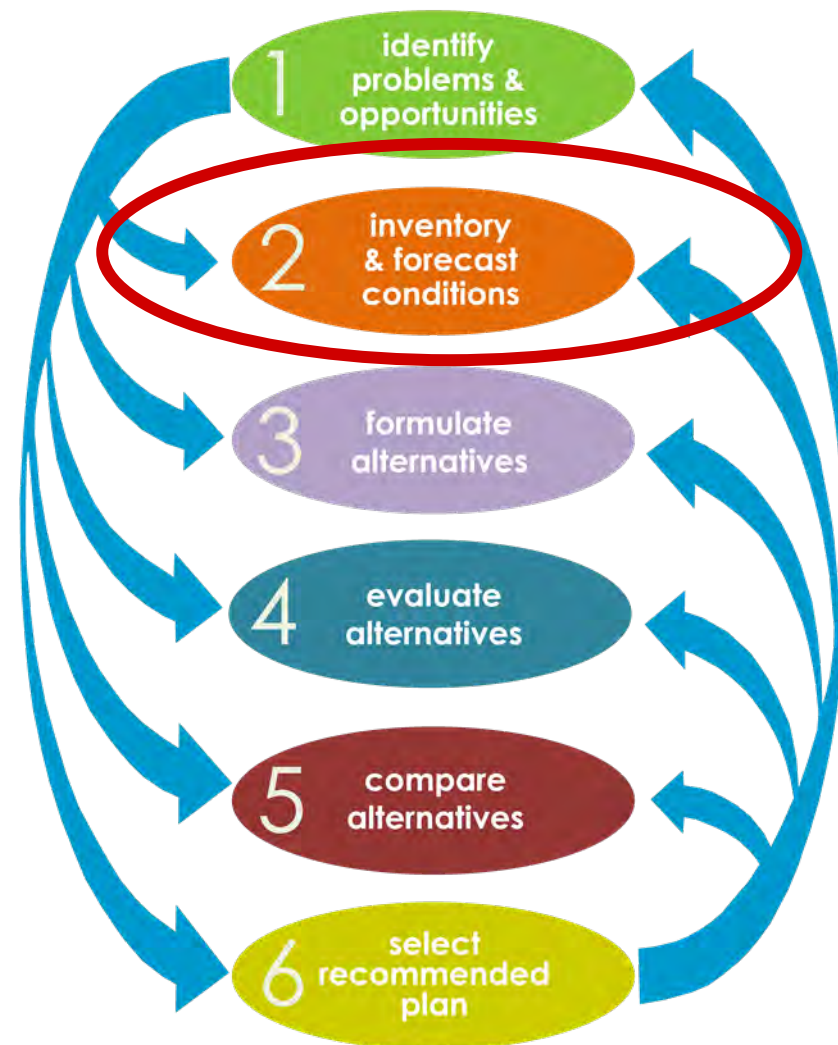
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Implementation

- *Selection of a recommended plan*



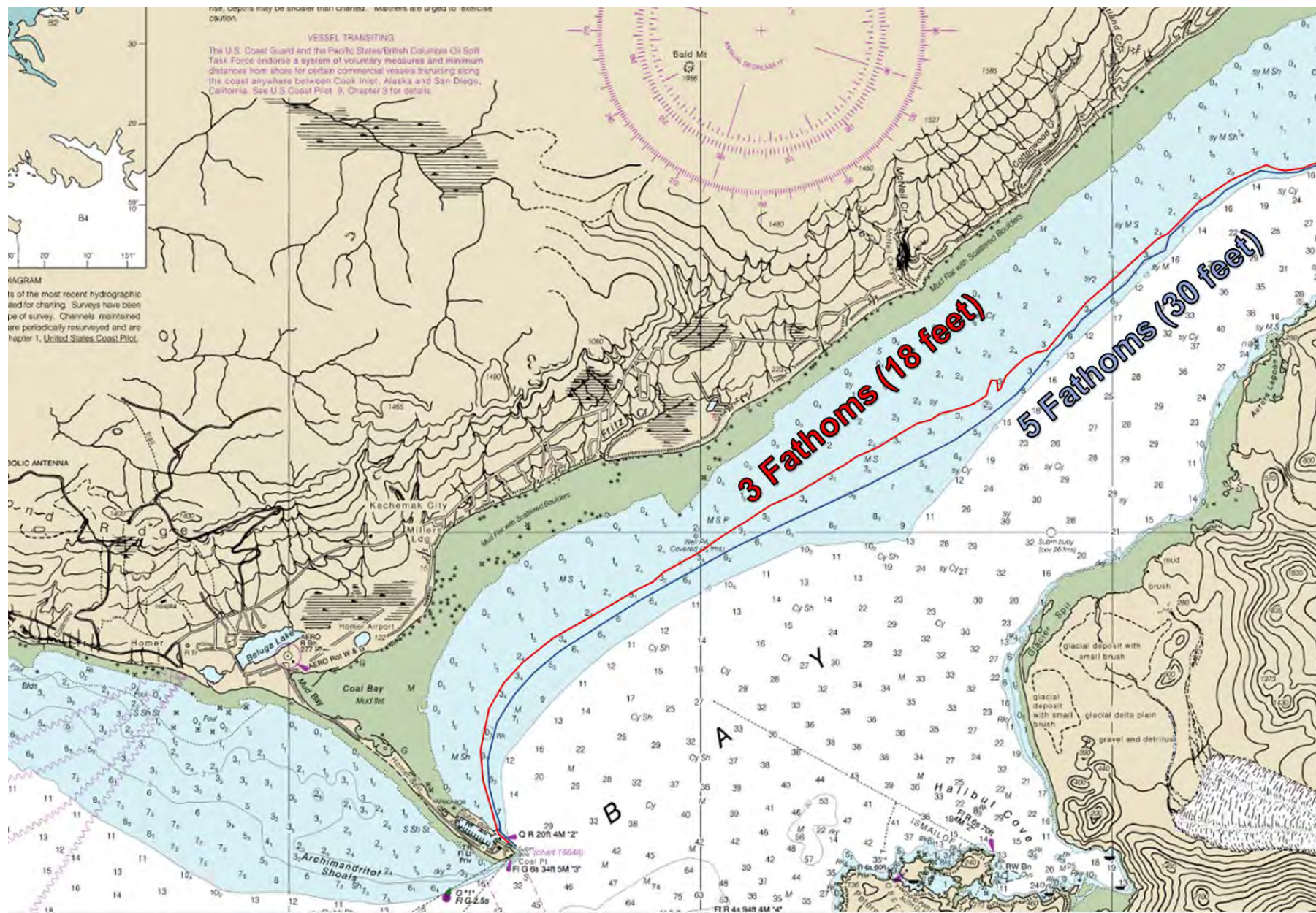
SUMMARY OF STEP 2

Future with Project vs. Future without Project Conditions

- Establish existing conditions to project the Future-Without-Project-Condition
- Forecast conditions can be quantitative and qualitative
- What will conditions be within the project area without action over the next 50 years
- Alternatives are evaluated based on the future without project conditions

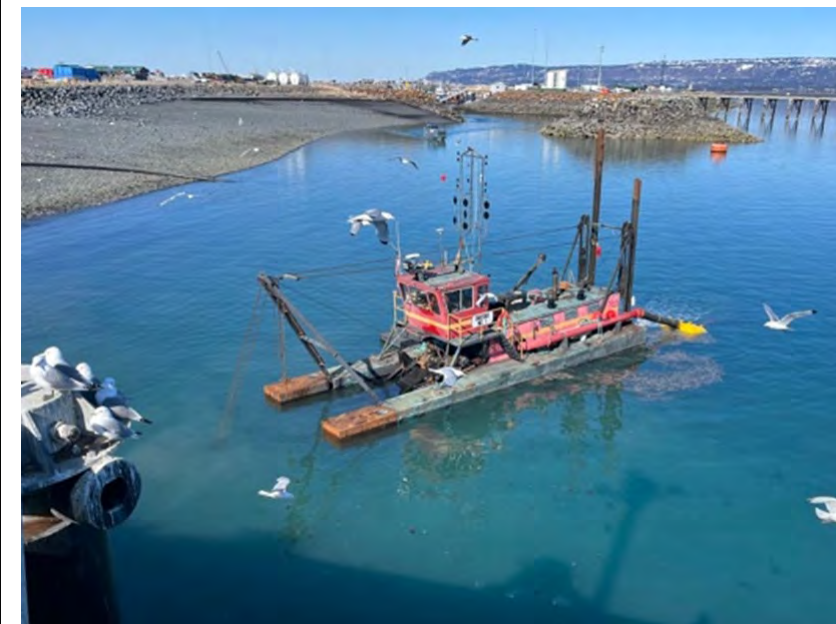
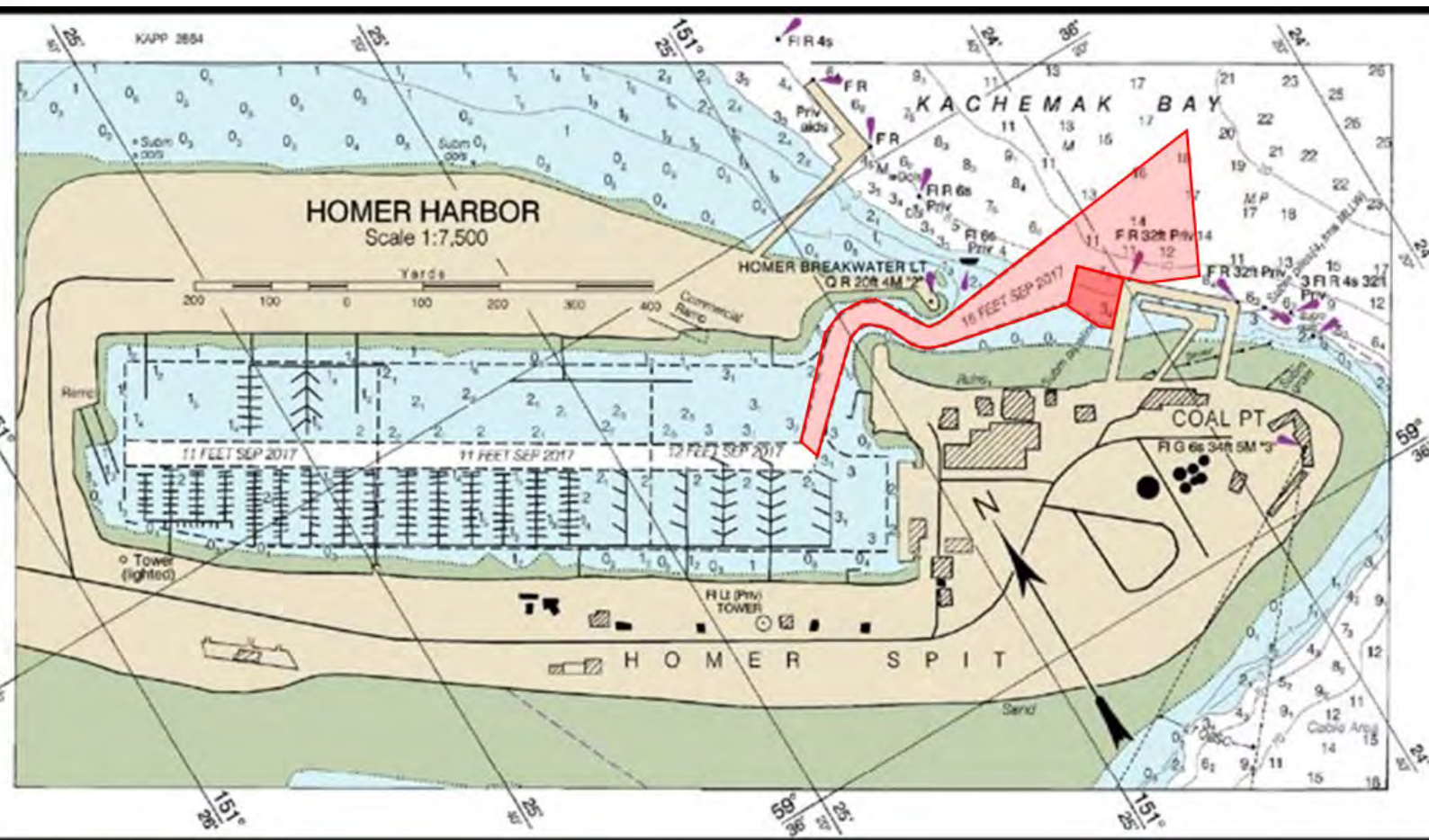


NOAA CHART



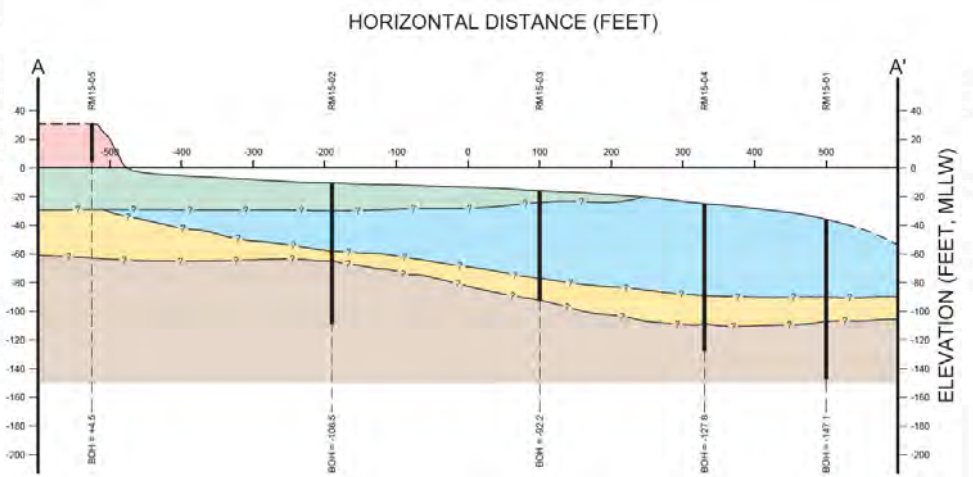
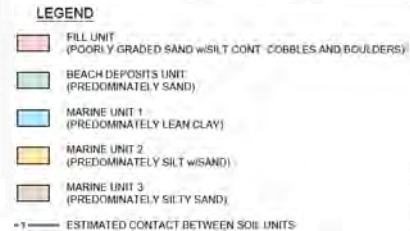
HOMER DREDGING

- USACE Maintenance Dredging
- Entrance Channel & Coast Guard Berth



EXISTING CONDITIONS - GEOTECHNICAL

- Several borings in the vicinity
- We have a general idea of the soil stratigraphy
- We will need to conduct investigation to confirm subsurface conditions



EXISTING CONDITIONS - ENVIRONMENTAL

ANNUAL MAINTENANCE DREDGING –

- Annual maintenance dredging of the Homer Harbor Federal project
 - Authorized by Rivers and Harbors Act, 3 July 1958 (House Document No. 34, 85th Congress, 1st Session) and Amendments to the Alaska Omnibus Act, 19 August 1964 (Public Law 88-451).
 - Dredging occurs approximately 1 September – 11 October
 - Approximately 7,000 cubic yards dredged from the harbor entrance channel/outer maneuvering channel, varies year to year.
 - Inner Harbor dredged as needed and amount varies.
- Bi-annual, as needed, maintenance dredging of the U.S. Coast Guard (USCG) *Hickory* Berth under a Memorandum of Understanding with USACE
 - Dredging occurs approximately upon ice-out (around early April) and 1 September – 11 October
 - Approximately 10,000 cubic yards dredged, varies year to year.
- Dredged material is dewatered and temporarily located on Lot 49 prior to either placement as beach nourishment or beneficially used by the City of Homer.



ENVIRONMENTAL – WETLANDS & FLOODPLAIN

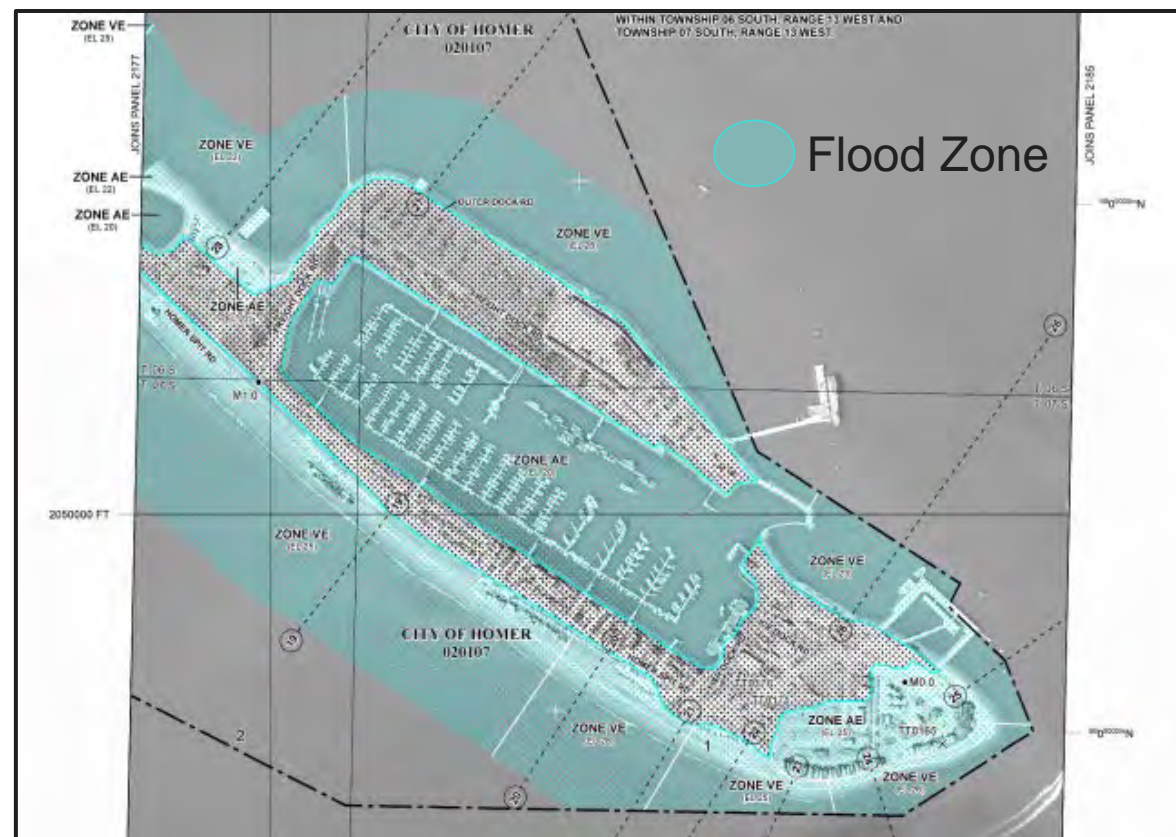


 Estuarine and Marine Deepwater Habitat

 Estuarine and Marine Wetland Habitat

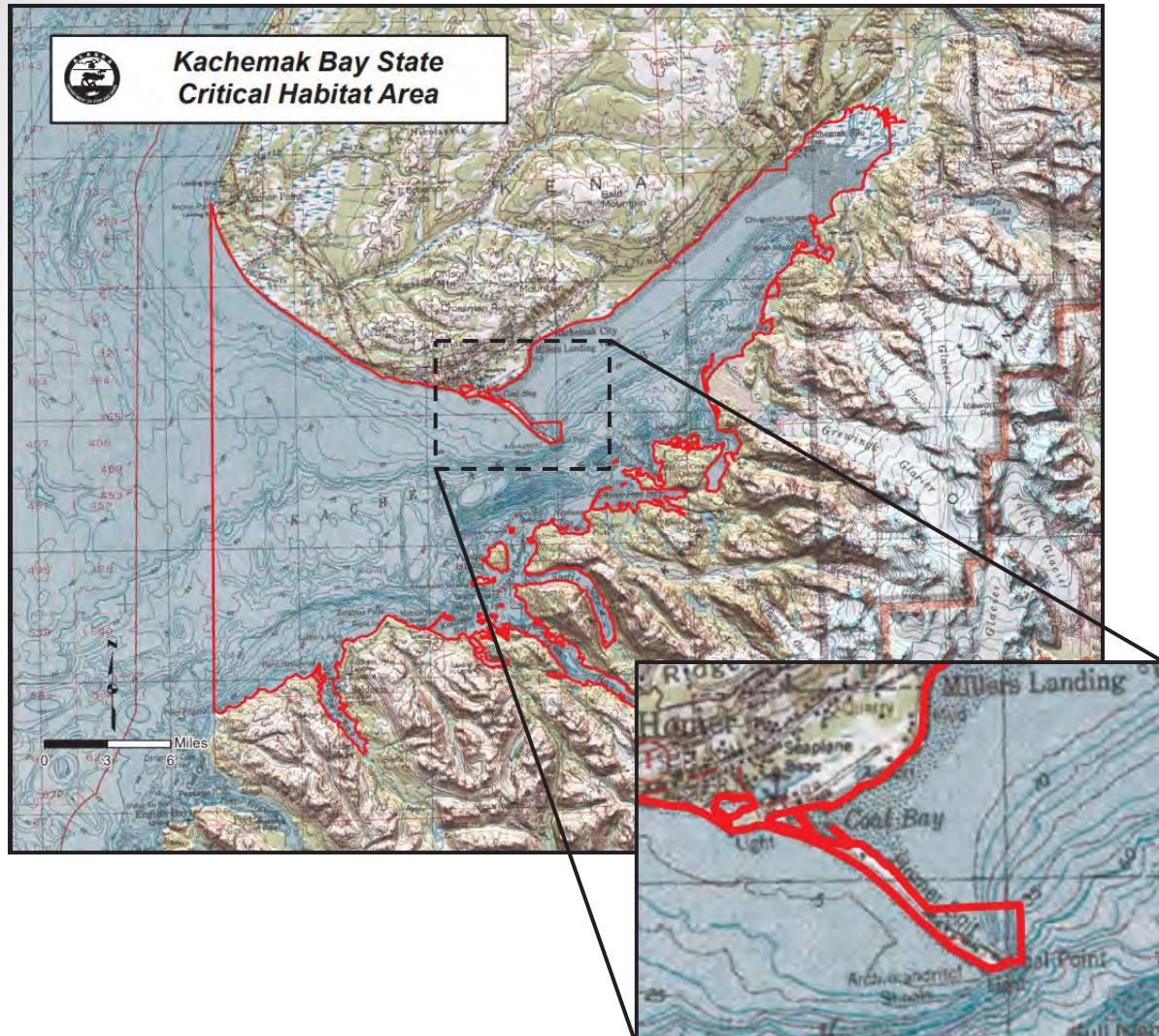
Figures from:
<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>
<https://www.cityofhomer-ak.gov/planning/flood-maps-permits-and-flood-protection-information>

- Wetland – see figure to the left
- Floodplain – see figure below for the floodplain at the end of the spit. Floodplain maps for the rest of the spit can be reviewed at the provided link in the footnote.





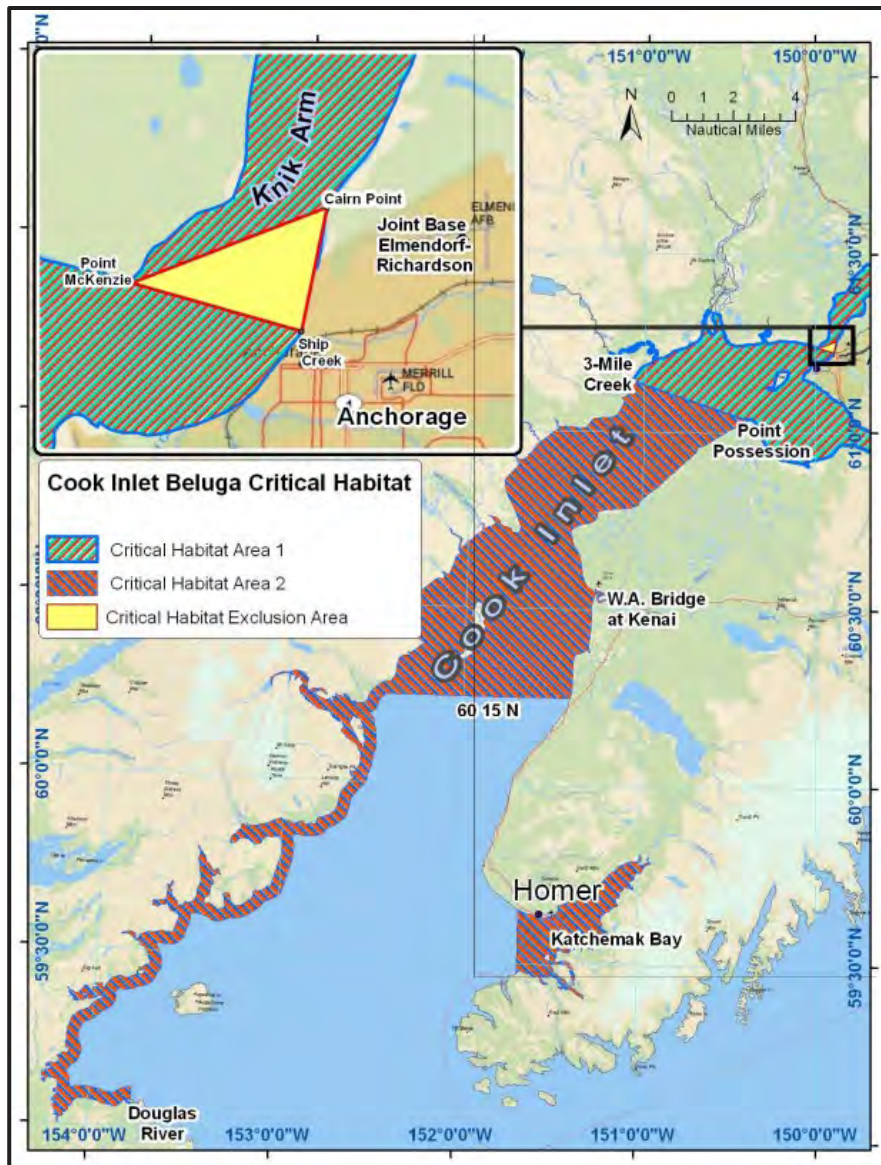
ENVIRONMENTAL - CRITICAL HABITAT



- Kachemak Bay State Critical Habitat Area:
 - Purpose to protect and preserve habitat crucial to the perpetuation of fish and wildlife and restrict other non-compatible uses.
 - Part of an International Reserve of the Western Hemisphere Shorebird Reserve Network and The Kachemak Bay National Estuarine Research Reserve
 - Current Homer Harbor and the USCG *Hickory* Berth are outside the Kachemak Bay State Critical Habitat Area boundaries.



ENVIRONMENTAL – CRITICAL HABITAT

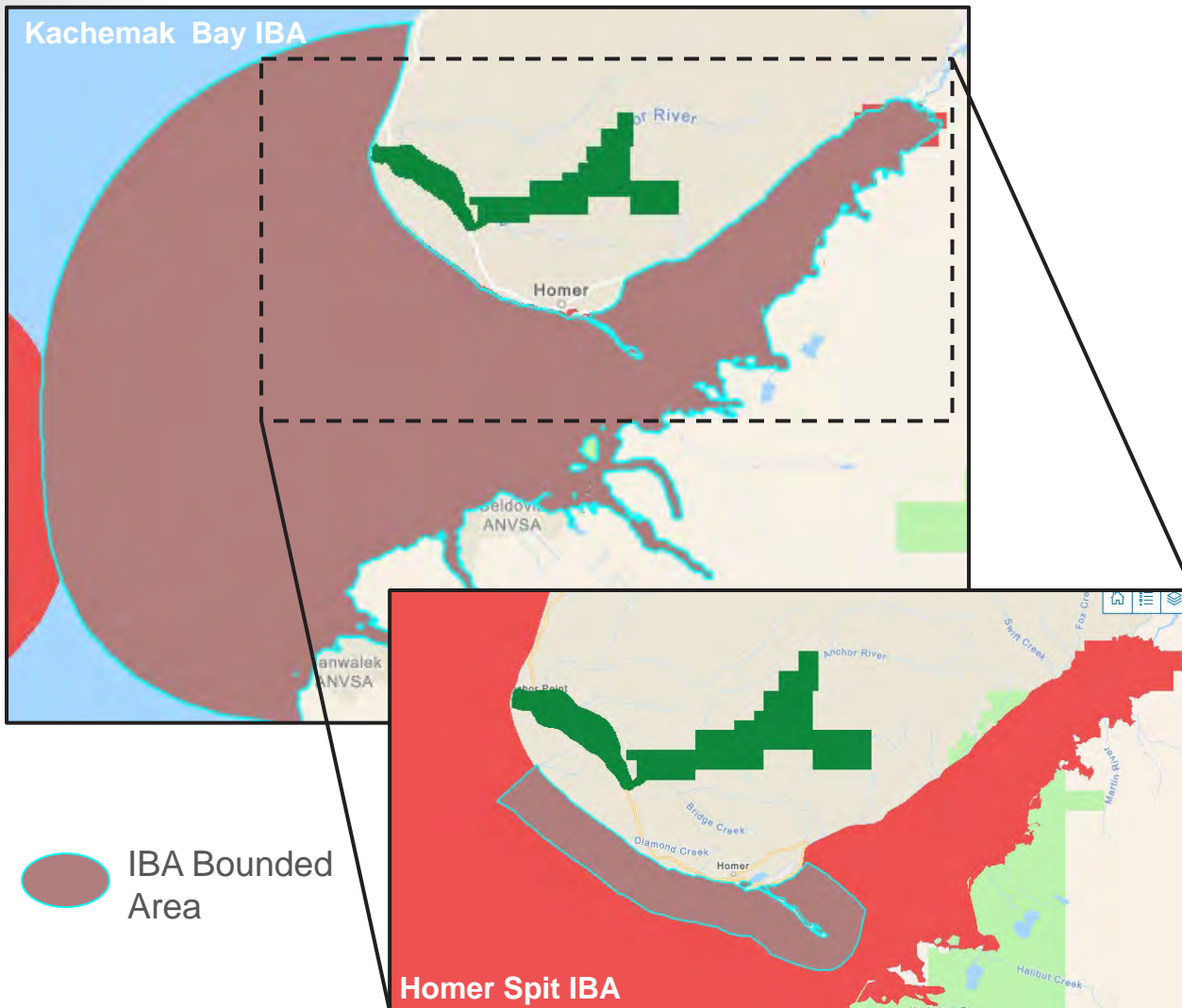


- Various marine mammals, to include endangered species, may occur within the Kachemak Bay.
- Cook Inlet Beluga Whale (CIBW) Critical Habitat - designated in Kachemak Bay by Endangered Species Act Final Rule 76 FR 20179
 - Kachemak Bay is part of CIBW Critical Habitat Area 2:

Consists of 5,891 square kilometers (2,275 square miles) of less concentrated spring and summer beluga whale use but known fall and winter use areas. It is located south of Area 1 and includes nearshore areas along the west side of the Inlet and Kachemak Bay on the east side of the lower inlet.



ENVIRONMENTAL – IMPORTANT BIRD AREA



- Globally Significant Important Bird Area (IBA): An area that is globally important for the conservations of bird populations is qualified by one of more of the following four criteria:
 1. Globally Threatened Species
 2. Restricted Range Species
 3. Biome-restricted Assemblages
 4. Congregations
- Kachemak Bay IBA – A Globally Significant Marine IBA
 - 257,137 acres of pelagic open water habitat
 - Relevant Species:
 - Kittlitz's murrelet – Breeding
 - White-winged Scoter – Non-breeding
 - Black Scoter – Non-breeding
 - Pelagic Cormorant – Non-breeding
 - Marbled Murrelet - Breeding
- Homer Spit IBA – A Globally Significant Marine IBA
 - A small but persistent population of Steller's Eiders (ESA-listed; Threatened) occur offshore end of Homer Spit.



Steller's Eider

- A flock (about 1000 rock sandpipers) equating 5% of the global population over-winters on Homer Spit.

ENVIRONMENTAL – INVASIVE SPECIES

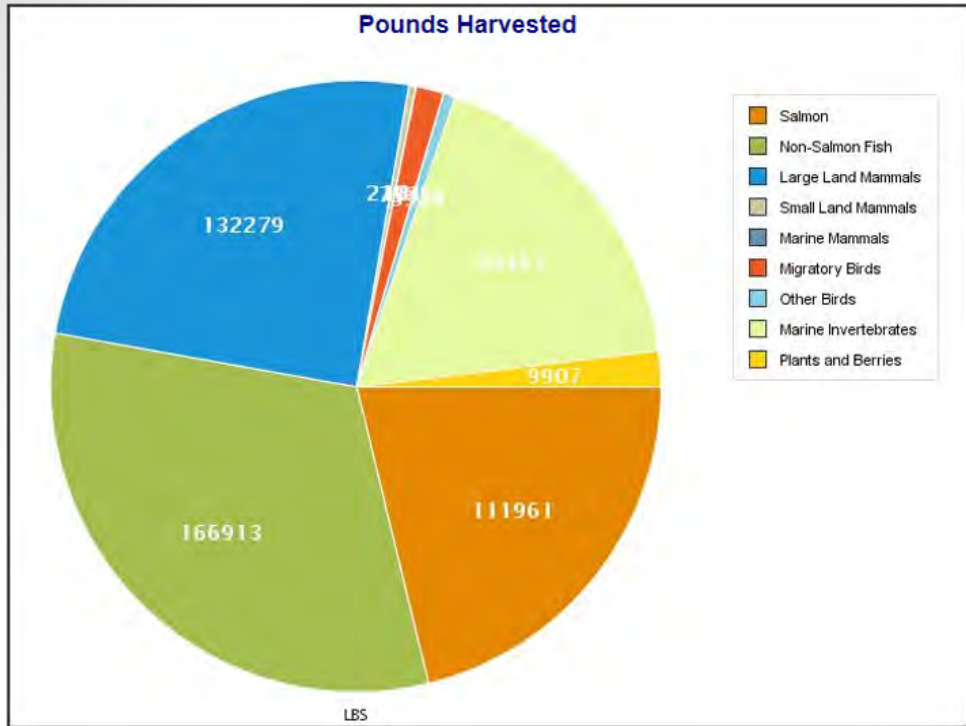


Credit: Emily Grason/ Washington Seagrant

European Green Crab – A known non-indigenous aquatic species present in Kachemak Bay
***Post-Charette Clarification: There is extensive monitoring in Kachemak Bay due to the range of this species starting to extend northward where it is currently present. However, this species has not been identified/observed in Kachemak Bay.



ENVIRONMENTAL – SUBSISTENCE



- ADFG Representative Year: 1982

- Total Pound Harvested: **528,558**

~52.8% Fish

(Salmon was ~40.1% of total fish harvested)

~25.4% Land Mammals

~2.1% Migratory Birds / Other Birds

~17.9% Marine Invertebrates

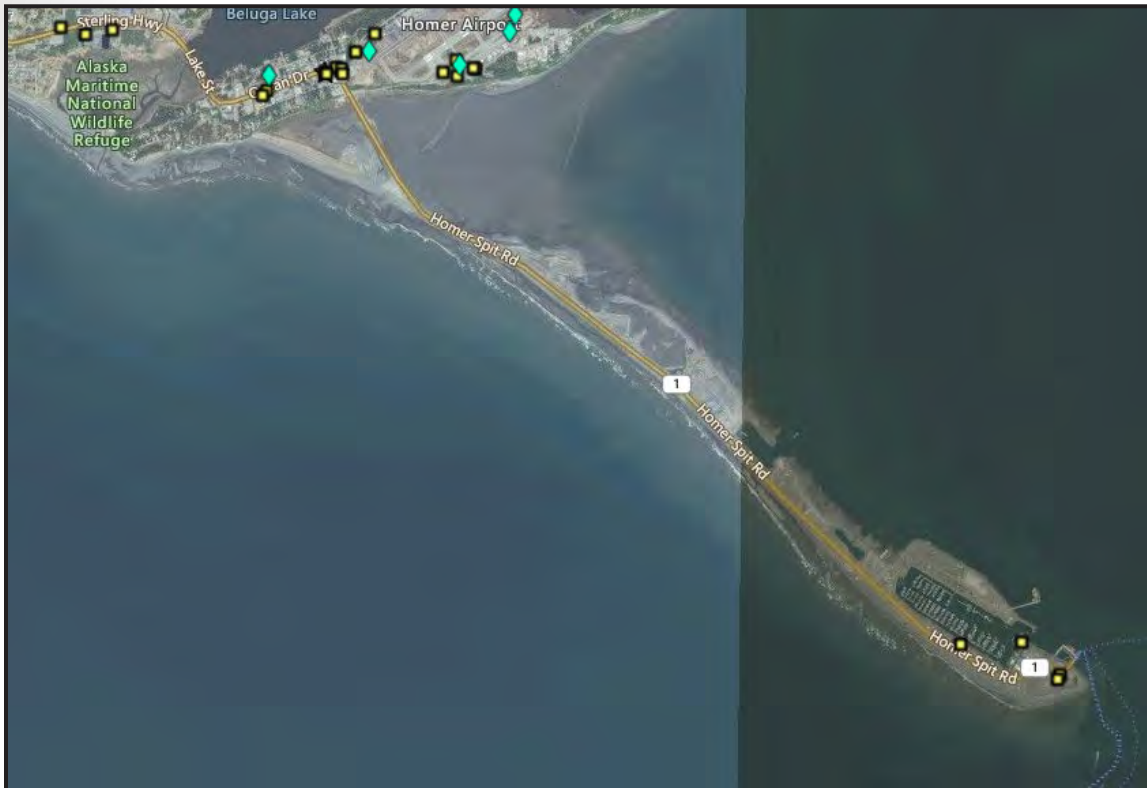
~0.0% Marine Mammals

~1.9% Vegetation

***Post-Charette Clarification: The Alaska National Interest Lands Conservation Act (ANLICA) will be the definition the project impacts will be assessed under for the NEPA analysis/document that will be developed for this study. That definition is as follows in ANLICA Title VIII, Section 803:

"...the term "subsistence uses" means the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption, for barter, or sharing for personal or family consumption; and for customary trade."

ENVIRONMENTAL – CONTAMINATED SITES



 Clean-up Complete Site

 Active Site

- End of the Homer Spit has four registered clean-up complete contaminated sites relating to fuel and oil related contaminants.
 - Homer Small Boat Harbor – Hazard ID 2026
 - Homer Port and Harbor – Hazard ID 22948
 - Terminal Oil Sales – Hazard ID 1839
 - Chevron Tank Farm – Hazard ID 123



EXISTING CONDITIONS – CULTURAL RESOURCES

The National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.) requires Federal agencies to take into account the effects on their actions on historic properties and afford the Advisory Council of Historic Properties a reasonable opportunity to comment.

- “Historic Properties” = cultural resources that have been determined to be eligible for or are listed in the National Register of Historic Places.
- Eligibility determinations and assessments of effect are conducted by the Federal agency in consultation with the Alaska State Historic Preservation Officer, Federally-recognized Tribes, and other Stakeholders.
- Effect on historic properties is assessed separately from NEPA; however, it is included in the NEPA documentation.

The undertaking’s potential effect on historic properties considers physical effects but also:

- Visual effects
- Atmospheric effects
- Auditory effects



CULTURAL RESOURCES (CONT.)

Known cultural resources within the proposed project vicinity: 7 identified sites

- 0 on the National Register of Historic Places (NRHP);
- 0 eligible for listing in the National Register of Historic Places (NRHP);
- 3 properties found *not* eligible for listing in the NRHP;
- 4 not yet evaluated for the NRHP.

Sites were identified from the Alaska Historic Resources Survey. This is not all sites in the area, only those reported to the SHPO.

EXISTING CONDITIONS - ECONOMICS

What's Happening Now?

Harbor Overcrowding

- Causes delays entering and exiting harbor, additional operating costs, delays to loading and unloading goods
- Absorbs time of harbor and boat staff that could be used on other tasks
- Increases damage to boats and harbor infrastructure
- Impacts access to subsistence and commercial fisheries
- Safety concerns

Unmet Demand

- Boats which could use the harbor are turned away due to overcrowding
- Waitlists for moorage
- Large vessels are turned away because they are too big for the current harbor

DATA & UNCERTAINTIES - ECONOMICS

- What aren't we sure about?
- What is the risk of what we don't know?
- Are there any data gaps that can be readily filled?

Examples

- How many boats experience delays entering or exiting the harbor? Frequency and length of delays?
- How much time does managing overcrowding take from harbor staff?
- Do all sizes/types of boats experience similar impact, or are some impacted more severely or more frequently by overcrowding?



FUTURE-WITHOUT-PROJECT CONDITIONS ECONOMICS

What happens if we don't act?

The Future Without Project (FWOP) condition forms the basis from which alternative plans are formulated and impacts are assessed.

- Forecast conditions can be quantitative and qualitative
- What will conditions be within the project area without any action over the next 50 year period of analysis?
- What will harbor conditions be in Homer over the next 50 years without any improvements?
- How are those likely to be different from what is happening now? What stays the same, what gets worse? Does anything improve?
- What is known about the future of marine traffic in Homer?



FUTURE WITHOUT PROJECT CONDITIONS UNCERTAINTY

What aren't we sure about?

What is the risk of what we don't know?

Are there any data gaps that can be readily filled?



FUTURE-WITHOUT-PROJECT CONDITIONS DRAFT



DAY 1 WRAP UP

Summary of today's key decisions & outcomes:

- Identified Problems, Opportunities, Objectives, and Constraints
- Summarized existing conditions and likely future conditions

 **PUBLIC Q & A**

- USACE Public Email DLL-CEPOA-Homer-Harbor-Navigation@usace.army.mil



AGENDA DAY 2

- Review of Day 1
- Develop Measures
Large Group Discussion
- Screen Measures
Large Group Discussion
- Formulation of Alternatives Round 1 – Location and measures to be considered
Small Group Exercise
- Break
- Formulation of Alternatives Round 2 – Develop Alternatives
Small Group Exercise
- Q&A

PLANNING PROCESS

Scoping

- *Problems, Objectives, Opportunities, and Constraints (POOC)*
- *Inventory and Forecasting*

Plan Formulation

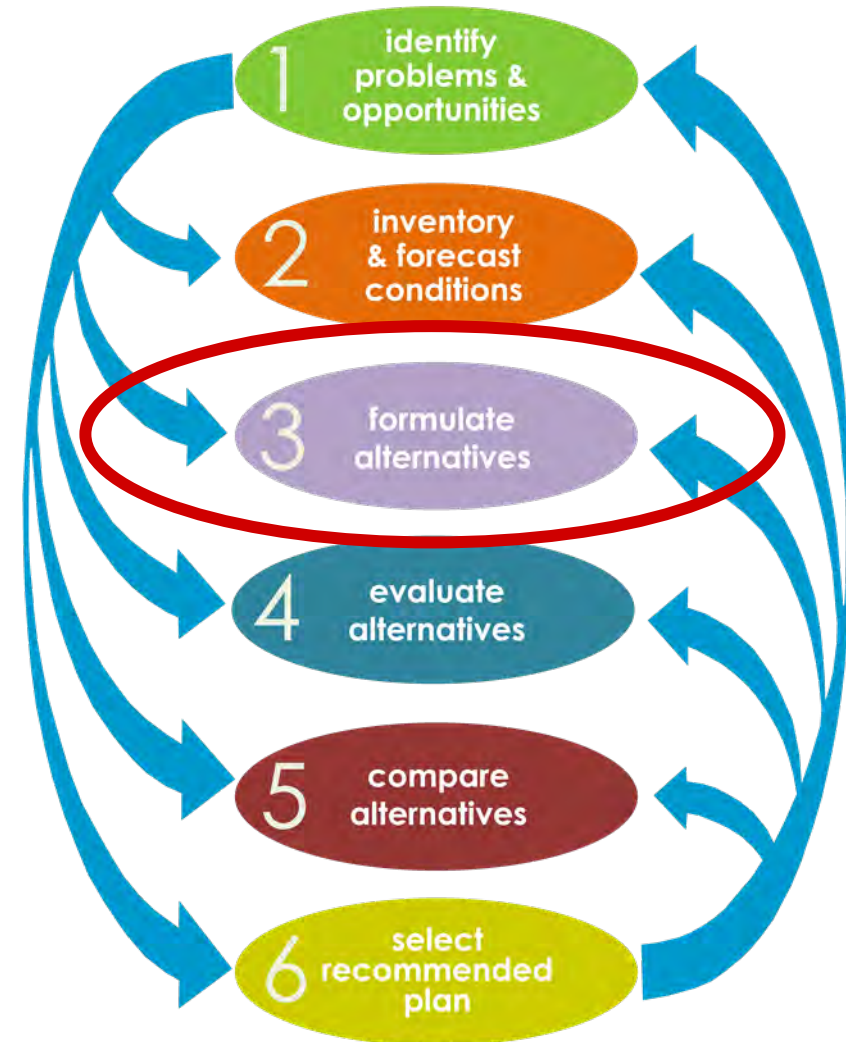
- *Identify & screen measures*
- *Develop plans*

Deciding

- *Evaluation of alternatives*
- *Comparison of alternatives*

Implementation

- *Selection of a recommended plan*





MEASURES

What is a measure?

- Structural vs. non-structural measures
- A feature or activity that works towards improving existing conditions
- Meets an objective
- The building blocks of alternatives



PUBLIC COMMENT DRAFT OBJECTIVES

1. **Better accommodations for local fleet**
2. **Enough uplands to support fleet/increased uses**
3. **Adequate support facilities**
4. Maintain quality of life in Homer
5. **Efficiency in cargo handling for regional shipping and barge/tug support**
6. Support aquaculture and growing industries
7. Support hybrid vessels/ clean vessels in expectation of 50 years of growth
8. Reduce harbor congestion
9. Accommodate and plan for long term growth and expansion
10. Increased capacity for Coast Guard
11. Decrease likelihood and impact of oil spill
12. Minimize cost of dredging (with design)
13. Increase health and safety
14. Maximize environmental protection and ecology of kachemak bay



DRAFT OBJECTIVES

1. Support Homer's current and future fleet with adequate harbor space, moorage, support facilities and uplands.
2. Provide safe, reliable, and efficient waterborne transportation systems for movement of commerce, cargo, and marine emergency response



PUBLIC COMMENT: DRAFT CONSTRAINTS

- Scientific data
- Archaeological resources
- Blasting (noise, marine mammal impacts, etc.)
- Real estate and staging areas limited
- Marine mammal concerns
- City/community budget
- Transportation (no railroad)
- Sea level rise/climate change
- Critical habitat/essential fish habitat/species important to community
- Support of large vessels
- Earthquakes/ natural disasters
- Lack of skilled labor to maintain infrastructure and vessels
- Beneficial use of dredged material?
- Data gap re: how many slips? Concerns that existing data reflects less slips than needed



LIST OF EXAMPLE MEASURES

STRUCTURAL

- Protected moorage
- Rock breakwater
- Jetties to protect channel
- Dredging
- Road access
- Harbor support facilities- Ramp, fish cleaning station
- Docks

NON-STRUCTURAL

- Meteorological equipment
- Procedural Control for harbor accessibility/limitation
- ADA Compliance
- Lightering (lighter vessel takes in goods when load is too heavy)
- Navigation Aids - coordinated with USCG (usually 100% federally funded)



MEASURES: EXAMPLE SCREENING CRITERIA

Criteria	Definition	Metric
Effectiveness	Does this measure work towards addressing at least one of the planning objectives? Does it meet ALL objectives? If so, it's an alternative! 😊	High/Medium/Low
Constructability	Can it be built from a technical standpoint given existing site conditions?	Y/N
Acceptability	Is it socially acceptable and legal?	High/Medium/Low
Avoids Constraints	Does the measure avoid or minimize the impacts outlined in the planning constraints?	High/Medium/Low

*The screening can be qualitative at this point;
we will get more precise in the next screening iteration



MEASURES BRAINSTORM

- **Protected Moorage** to support existing fleet
- **Turning Basin** to support existing fleet
- **Breakwaters**
- **Jetties**
- Docks
- Design for less dredging
- Storage during winter
- Travel lift
- Haul out/maintenance
- Cranes (larger than current)
- Angled parking
- Boat wastewater (diesel) disposal facility
- Upland development
- Drive down float
- Investment in existing infrastructure
- Erosion control
- Public transportation improvements
- Natural disaster response/evacuation
- Support marine services
- Non-motorized accessibility
- Business plan/Market research
- Greening the harbor (Green energy)
- Efficient fueling
- Climate change resiliency and adaptability
- Environmental protection (unique existing environment, light pollution)



INITIAL ALTERNATIVES CONSIDERED

- Alternative 0: No Action
- Alternative 1: Detached breakwater,
- Alternative 2: enclosed basin
- Alternative 3: floating breakwater
- Alternative 4: Causeway
- Alternative 5: Mooring buoys (non-structural)
- Alternative 6: New Harbor location (up bay,)
- Alternative 7: modify existing harbor

Measures to consider with alternatives

- dredging inside of harbor and entrance channel, adding LSF (docks, etc)



DAY 2 WRAP UP

Summary of today's key decisions & outcomes:

- Identified potential measures
- Created initial array of alternatives

 **PUBLIC Q & A**

- USACE Public Email DLL-CEPOA-Homer-Harbor-Navigation@usace.army.mil

 **AGENDA DAY 3**

- Review of Day 1 & 2
- Evaluation & Screening of Alternatives
Large Group Discussion
- Path Forward: Risk Register
Large Group Discussion

Lunch

- Conclusion
- Q&A



ARRAY OF ALTERNATIVES & VOTES

- 0 – No Action (2)
- 1 – L-shaped w/ breakwater (6)
- 2 – L-shaped w/ extended uplands and sheetpile dock face (15)
- 3 – T-shaped basin (15)
- 4 – Large clamshell basin (8)
- 5 – Combined breakwater and floating breakwater (7)
- 6 – Modify ramp 8 with piers (2)
- 7 – Remove material inside spit, inside harbor modification (2)
- 8 – Diamond Creek (1)
- 9 – Alternative harbor location, east (3)
- 10 – Seldovia (0)
- 11– Entrance relocation (4)
- 12– Detached breakwater (10)
- 13- Tranquil environment (Breakwater) (8)



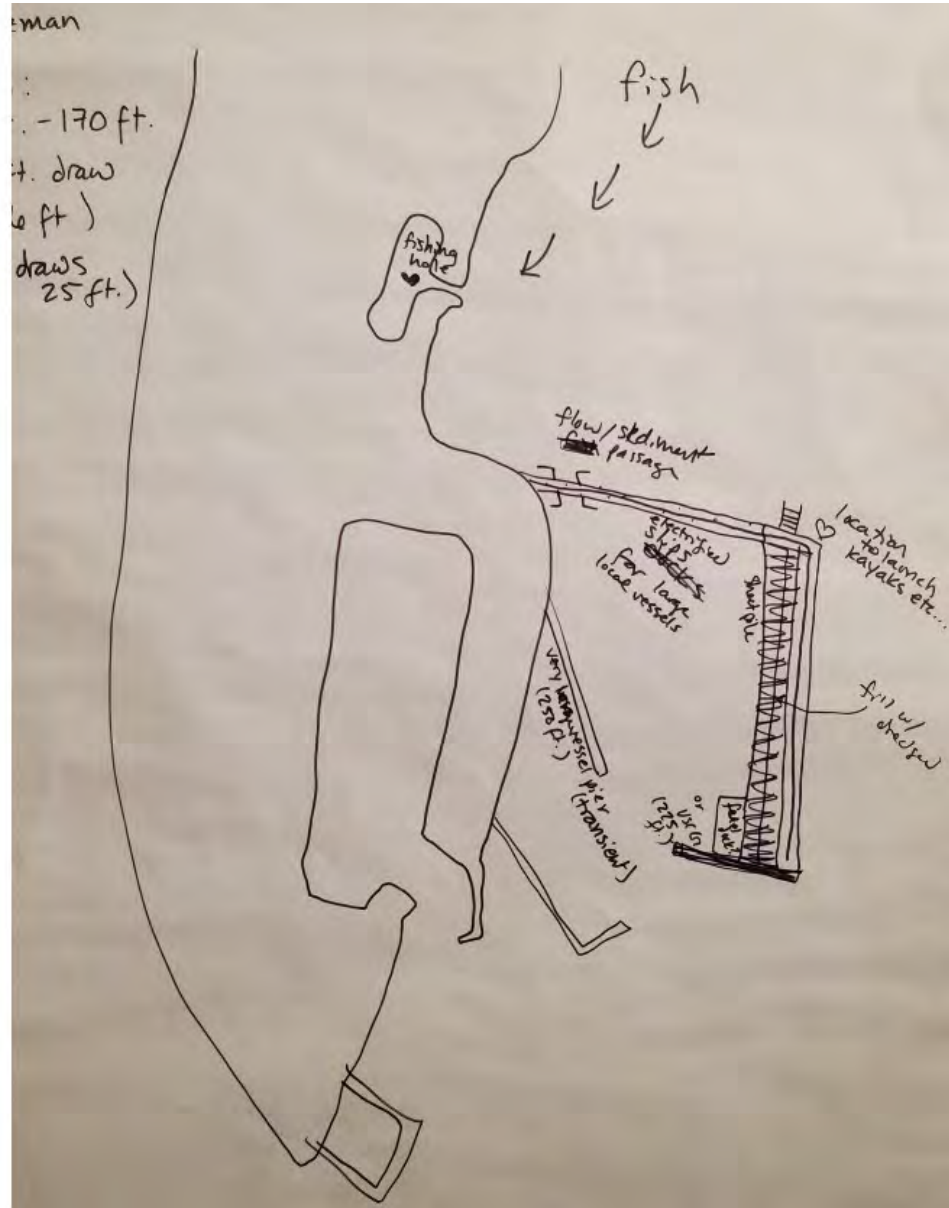
ALTERNATIVE 0 (2 VOTES)

No Action

Standard for
Baseline Conditions

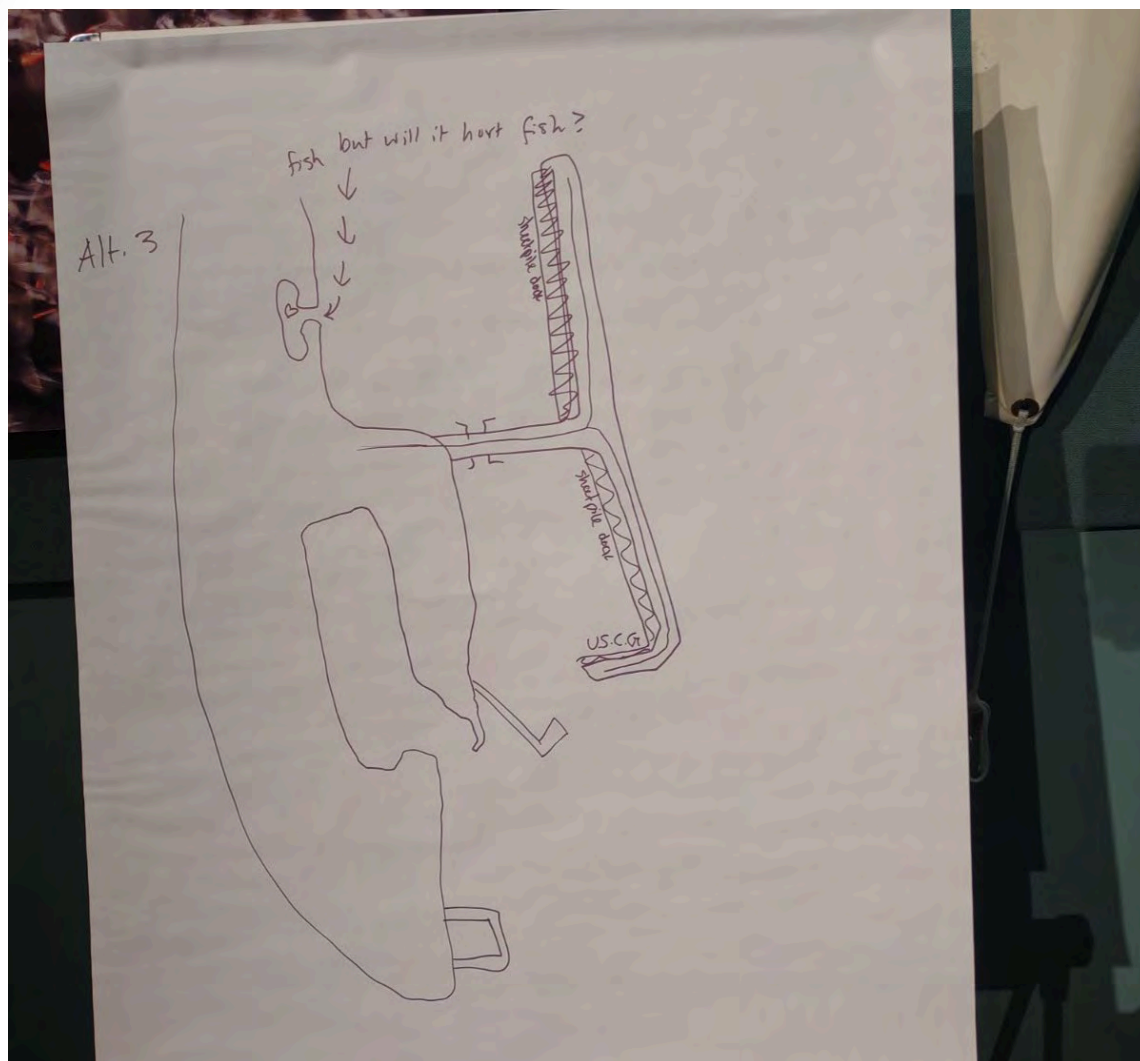


ALTERNATIVE 2 (15 VOTES)



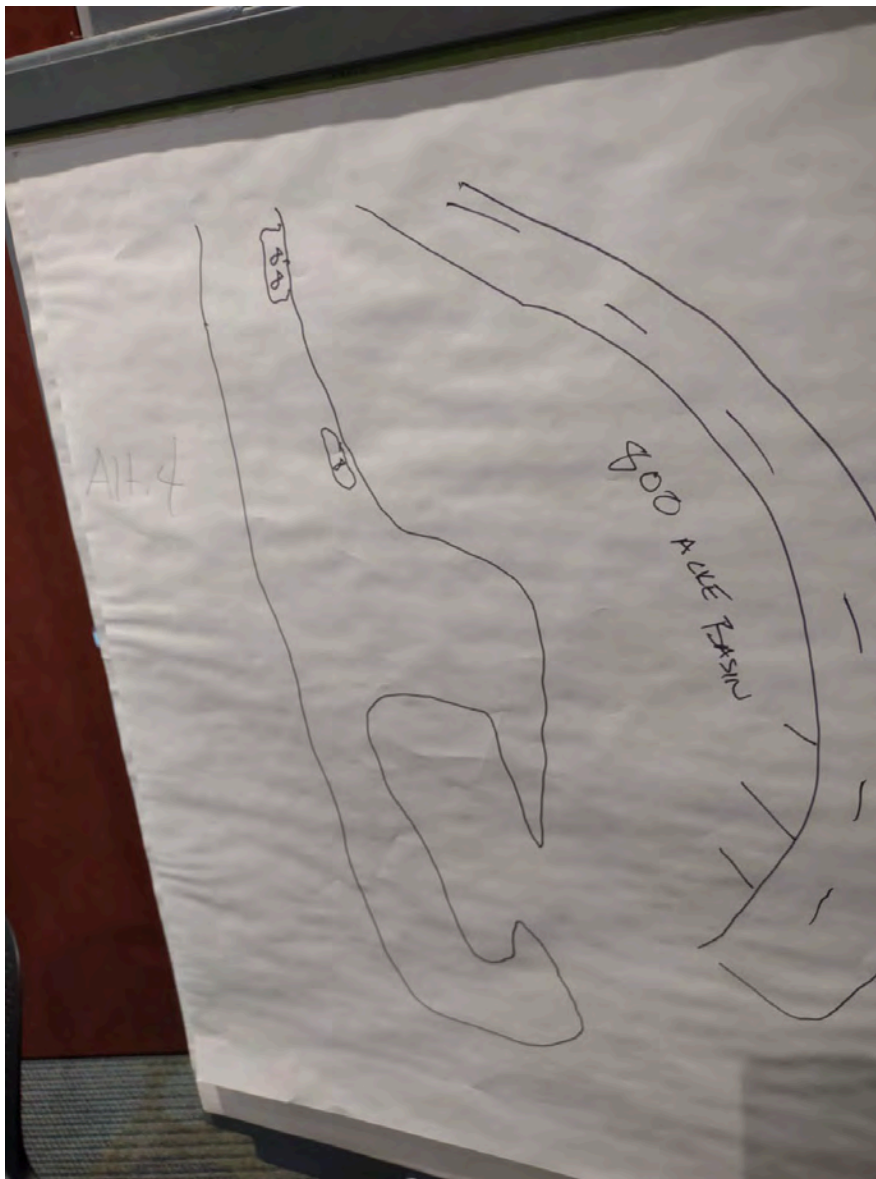
L-shaped with
extended uplands
and

ALTERNATIVE 3 (15 VOTES)



T Shaped Basin

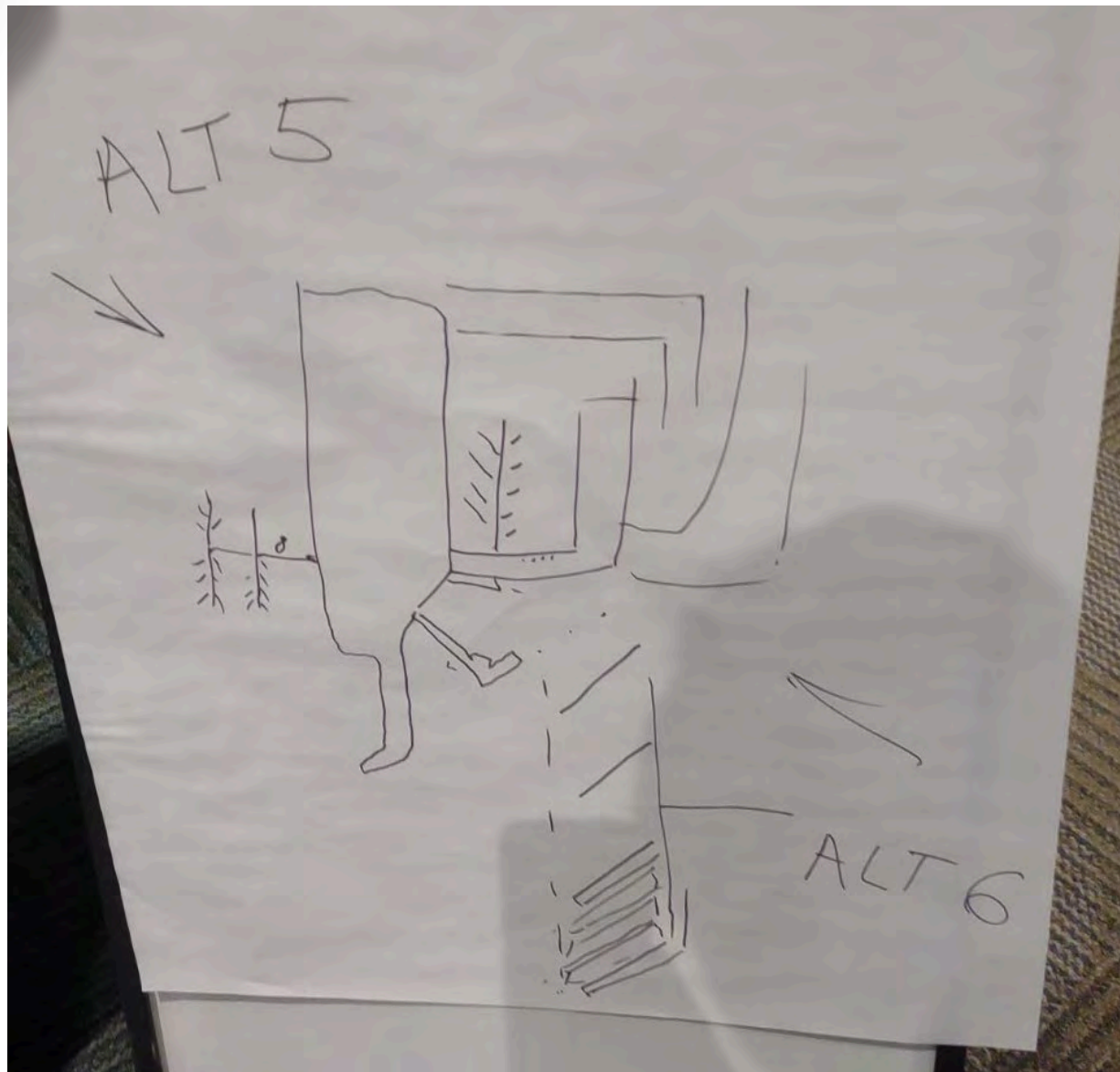
ALTERNATIVE 4 (8 VOTES)



Large clamshell basin

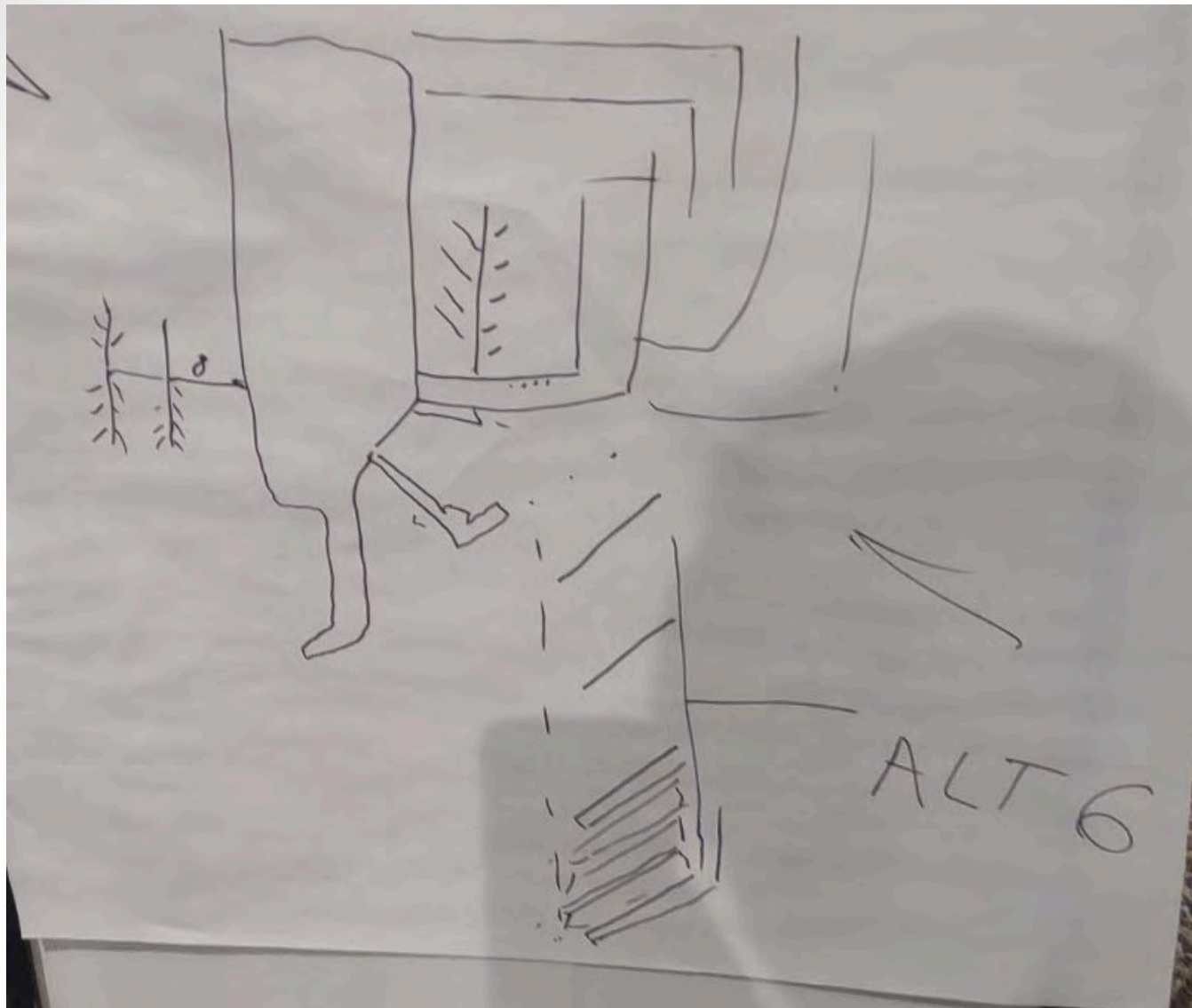


ALTERNATIVE 5 (7 VOTES)



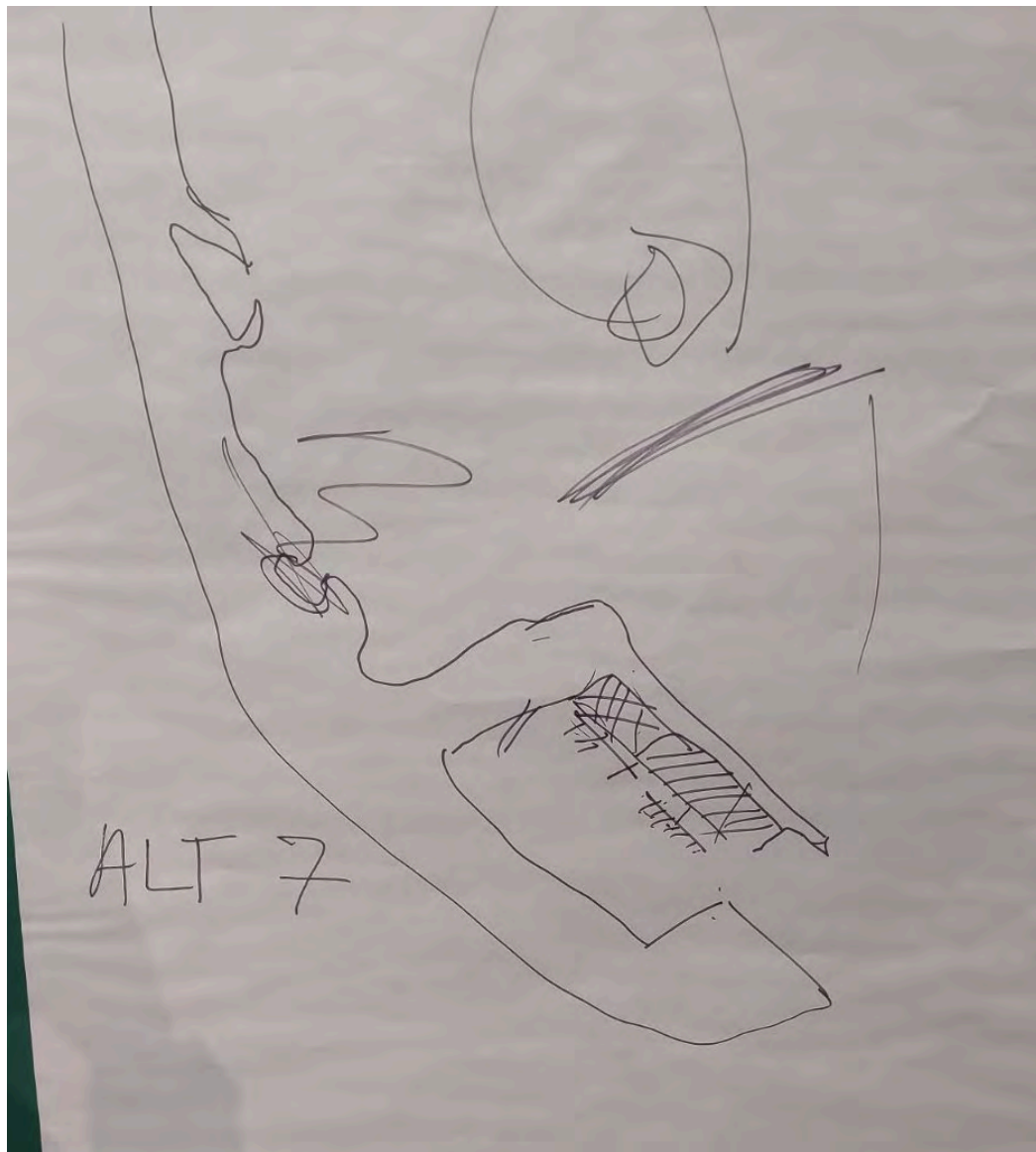
Combined
breakwater
and floating
breakwater

ALTERNATIVE 6 (2 VOTES)



Modify
Ramp 8
(modify existing harbor)

ALTERNATIVE 7 (2 VOTES)



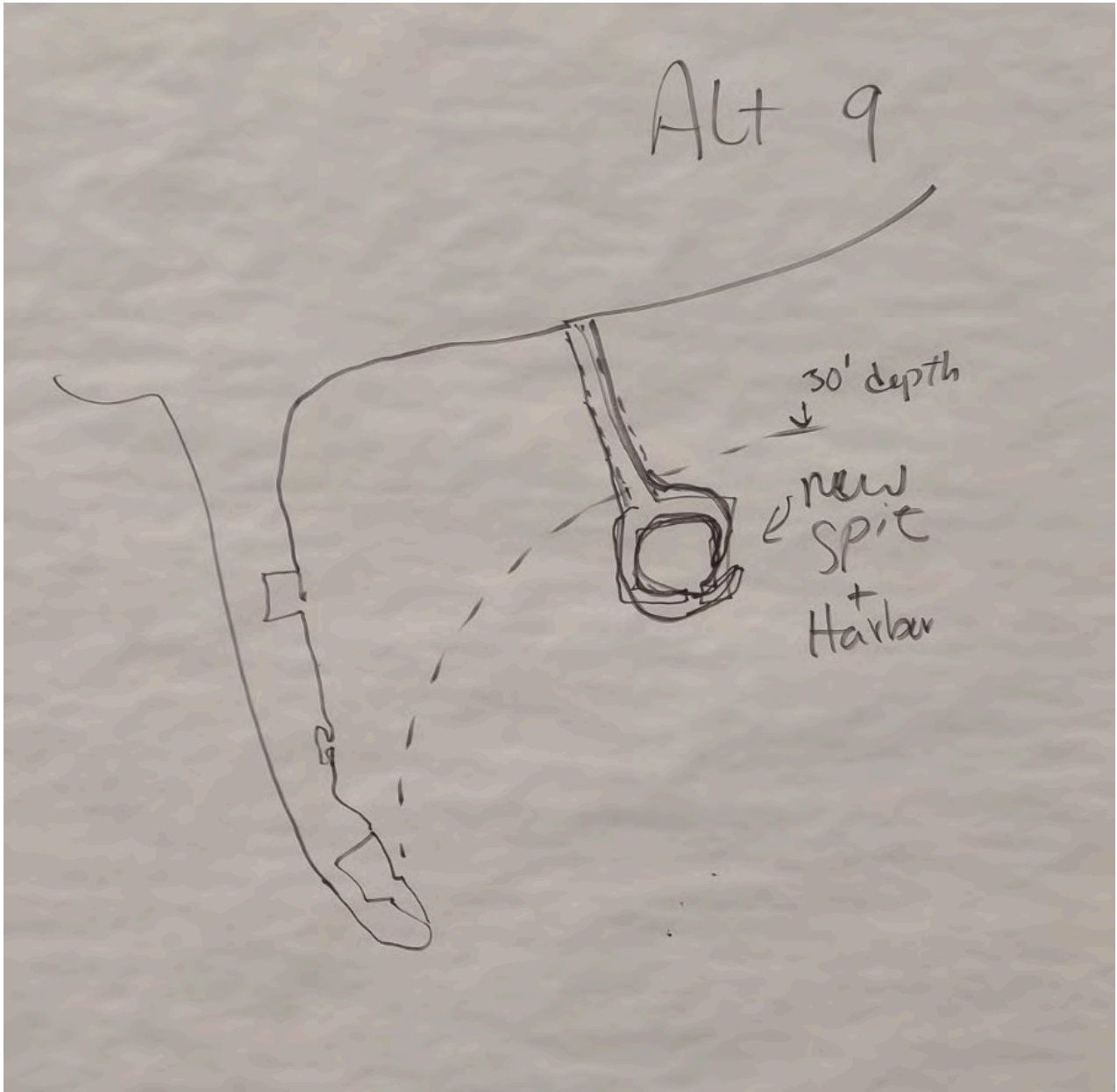
Remove
material
inside spit

 **ALTERNATIVE 8 (1 VOTE)**



Diamond
Creek

ALTERNATIVE 9 (3 VOTES)



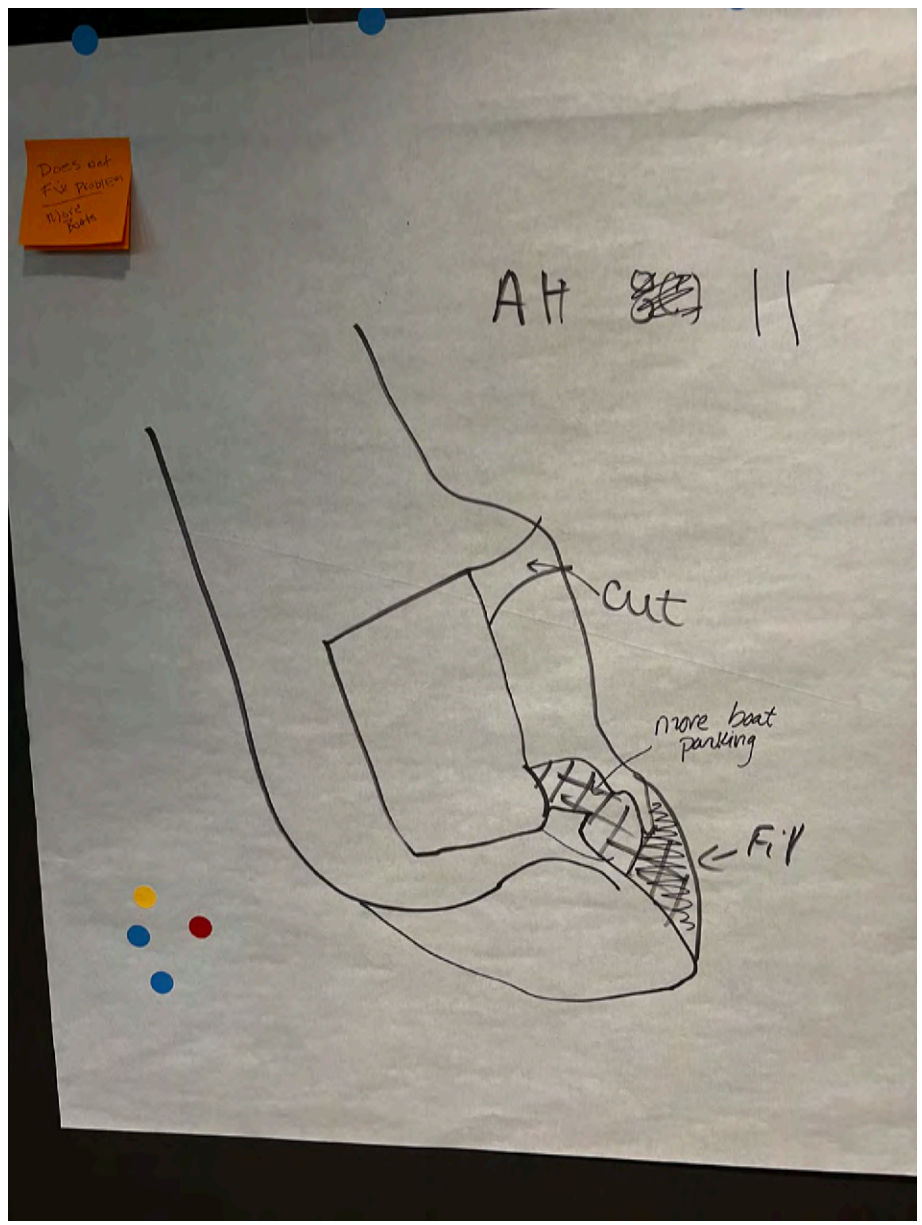
Alternative location

ALTERNATIVE 10 (0 VOTES)



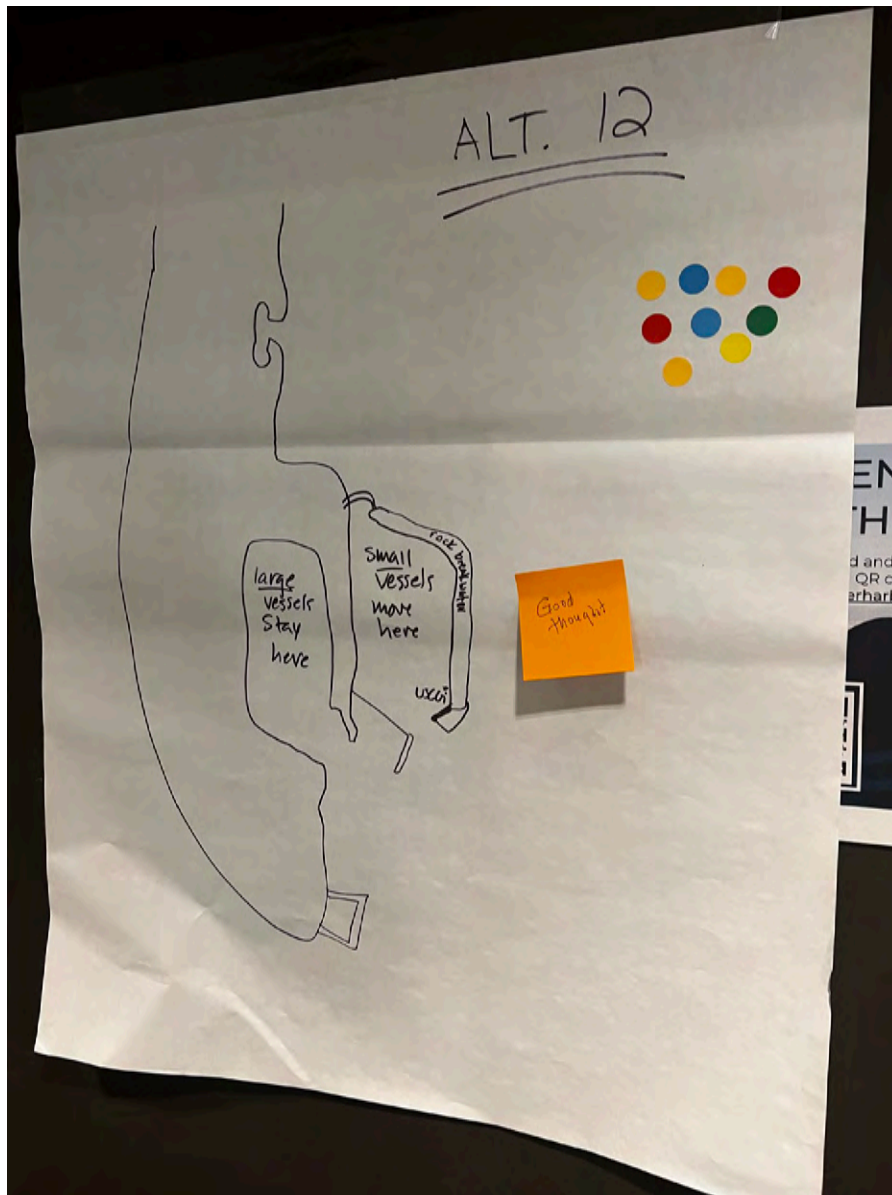
Seldovia

ALTERNATIVE 11 (4 VOTES)



Entrance relocation

ALTERNATIVE 12 (10 VOTES)

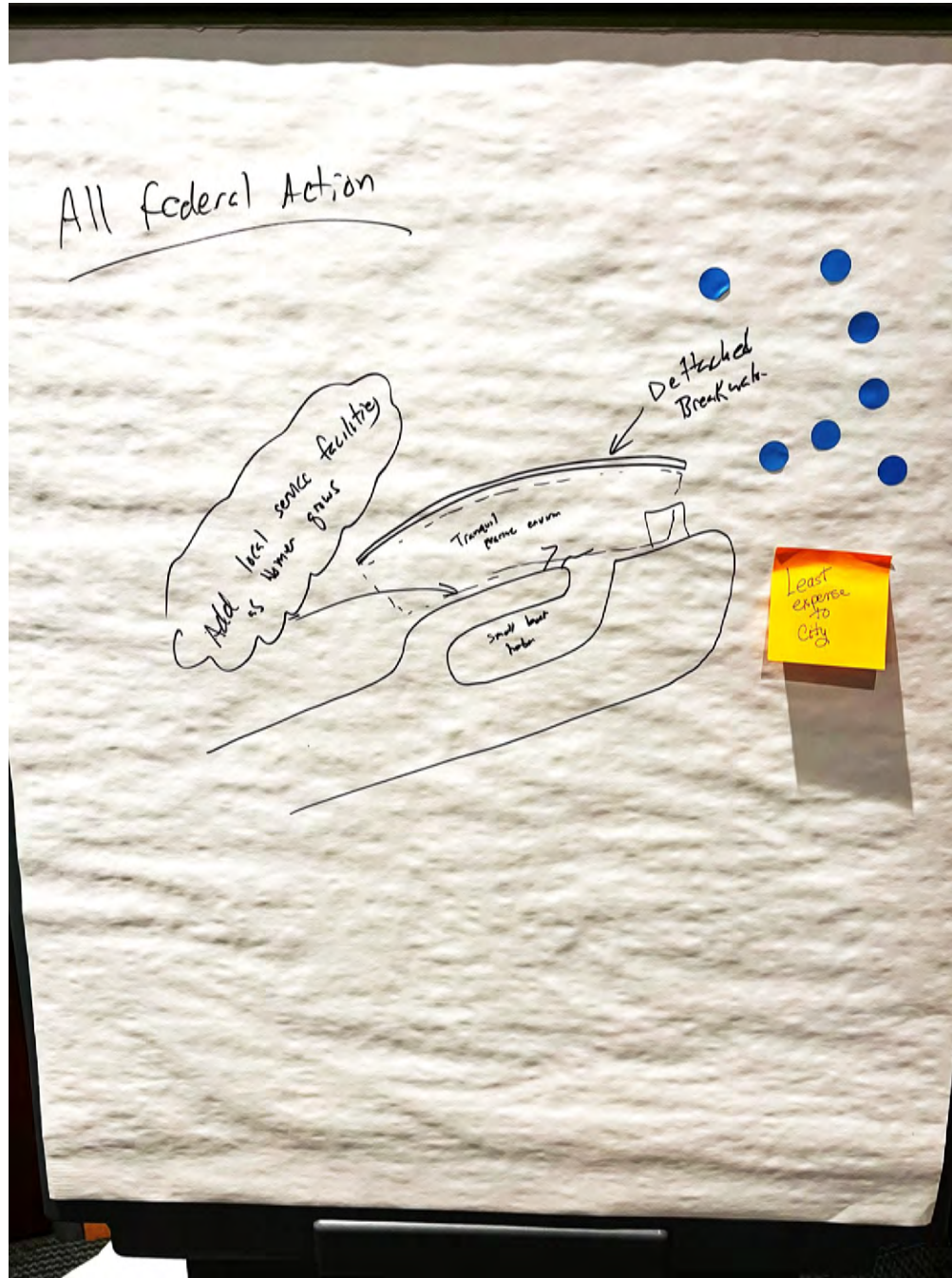


Detached
Breakwater



ALTERNATIVE 13 (8 VOTES)

Tranquil
Environment
(Breakwater)



PLANNING PROCESS

Scoping

- *Problems, Objectives, Opportunities, and Constraints (POOC)*
- *Inventory and Forecasting*

Plan Formulation

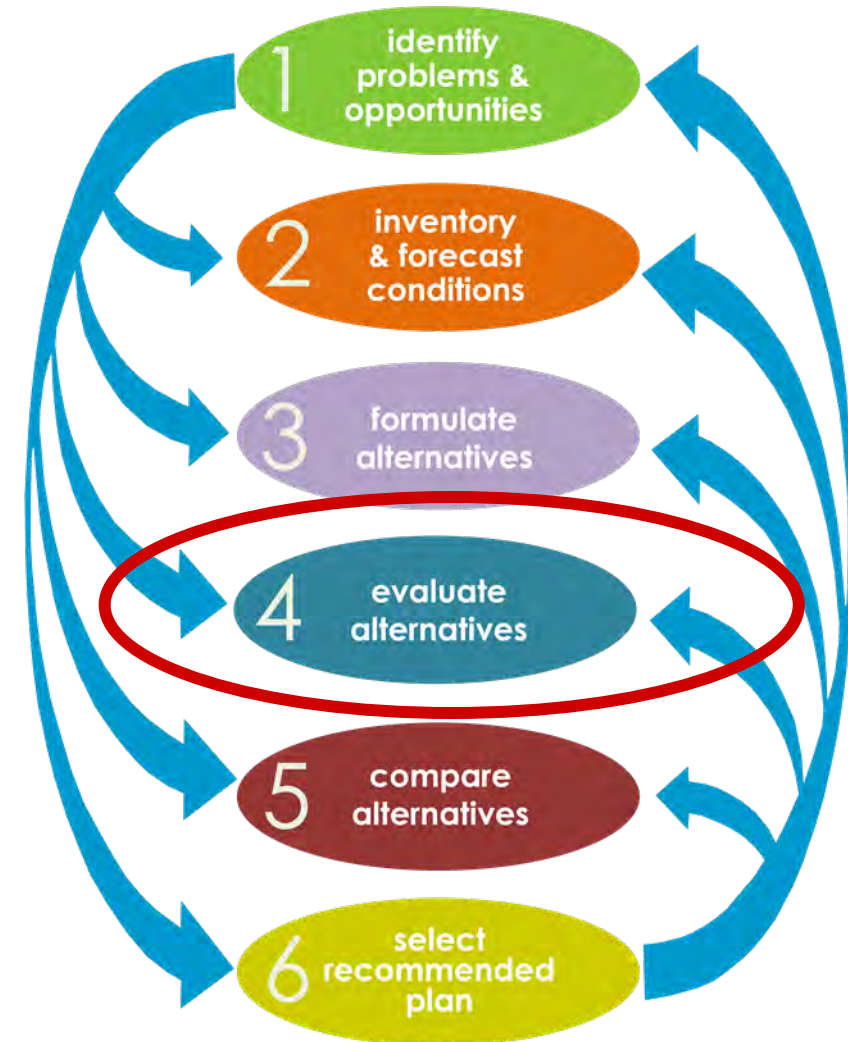
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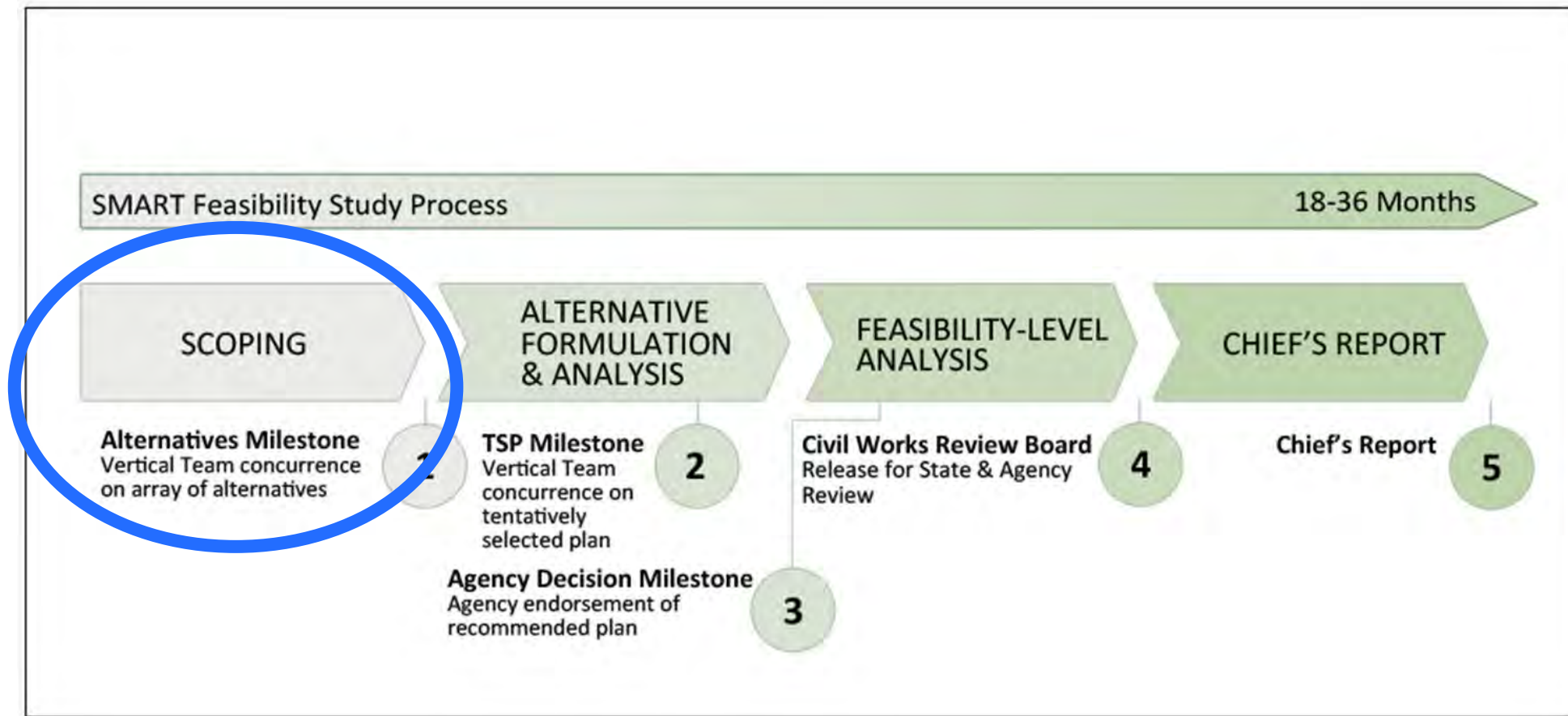
SCREENING CRITERIA DEFINITIONS

Criteria	Definition	Metric
Completeness	Will the plan work? Is it implementable, does it depend on outside action?	H/M/L
Effectiveness	Does the alternative measurably meet the planning objectives?	H/M/L
Efficiency	How cost-effective is the alternative?	H/M/L
Acceptability	Acceptance by state, local, and public entities	
Implementability	How feasible is it from a technical, financial, and legal perspective	Y/N
Satisfaction	How welcome is the plan to the various stakeholders in the community	H/M/L



NEXT STEPS

Steps required to reach the Alternatives Milestone (AM) and Tentatively Selected Plan (TSP)





CHARETTE WRAP-UP

Day 1 outcomes

- Introduction of the team

- Outline of the planning process within the Corps of Engineers

- Technical investigations

- Problems, Objectives, Opportunities, and Constraints

Day 2 outcomes

- Features & Alternatives

Day 3 outcomes

- Review alternatives



PUBLIC Q & A



THANK YOU!

Thank you for your participation in the
Homer Navigation Improvements
Design Charette!