

CITY OF UNALASKA  
UNALASKA, ALASKA

RESOLUTION 2018-68

A RESOLUTION OF THE UNALASKA CITY COUNCIL SUPPORTING THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE) PROPOSED DREDGING OF THE ILIULIUK ENTRANCE CHANEL TO A DEPTH OF 58 FEET PLUS A MARGIN OF 2 ADDITIONAL FEET

WHEREAS, the City of Unalaska entered into an agreement with USACE to conduct a feasibility study to determine the benefits of deepening the Iliuliuk Entrance Channel; and

WHEREAS, the USACE studied the seafloor, reviewed marine mammal activity, reviewed currents and storm surge patterns and impacts to Front Beach as a result of increased depth, gathered geotechnical data for the location to be dredged, and conducted navigation simulations to determine benefits and impacts of dredging; and

WHEREAS, USACE presented the initial findings to the Unalaska City Council and to the public; and

WHEREAS, USACE solicited public input and review for the findings of the draft study; and

WHEREAS, the USACE is prepared to present the results of their feasibility study on December 5, 2018 to USACE Headquarters with the recommendation of dredging the Entrance Channel to 58 feet with a margin of 2 additional feet; and

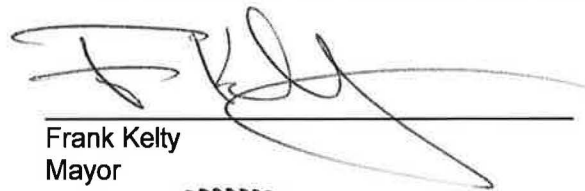
WHEREAS, the City of Unalaska target was a depth of no less than 55 feet at the Entrance Channel to accommodate deep draft vessels and benefit commerce; and

WHEREAS, the USACE proposed depth at the Iliuliuk Entrance Channel considers best practices of navigation and safety margins; and

WHEREAS, the City of Unalaska is confident that the 58 feet plus 2 additional feet will meet the needs of commerce and safety.

NOW THEREFORE BE IT RESOLVED that the Unalaska City Council fully supports the USACE recommendation of dredging the Iliuliuk Entrance Channel to a depth of 58 feet plus 2 additional feet.

PASSED AND ADOPTED by a duly constituted quorum of the Unalaska City Council on November 27, 2018.



Frank Kelly  
Mayor

ATTEST:



Marjie Veeder  
City Clerk



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## MEMORANDUM TO COUNCIL

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To: Mayor and City Council Members  
From: Peggy McLaughlin, Port Director  
Through: Thomas Thomas, City Manager  
Date: November 27, 2018  
Re: Resolution 2018-68 supporting the United States Army Corps of Engineers proposed dredging of the Iliuliuk Entrance Channel to a depth of 58 feet plus a margin of 2 additional feet

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**SUMMARY:** Resolution 2018-68 is a resolution of support. By passing this resolution, the City Council is supporting the USACE recommendation to dredge the Iliuliuk Entrance Channel to 58 feet plus a margin of an additional 2 feet. This does not commit the City of Unalaska to the design or construction of this project. This does not commit the City to additional funds. It simply provides an approval of the depth recommendation determined through the feasibility study. By supporting this resolution the City Council acknowledges that the depth recommended meets the needs of commerce and safety.

**PREVIOUS COUNCIL ACTION:** City Council funded 50% of the USACE Feasibility Study not to exceed \$1,500,000.

**BACKGROUND:** The USACE selected the Iliuliuk Entrance Channel Dredging as a new start-up project, and entered into a three-year feasibility study with the City of Unalaska. They have completed the study and are prepared to present the results to the USACE Headquarters. This presentation will recommend a dredging depth of 58 feet plus a margin of 2 additional feet. This resolution from the City of Unalaska supports the USACE's recommendation.

**DISCUSSION:** The City of Unalaska entered into a three-year feasibility study with the USACE to the research dredging of the Iliuliuk Entrance Channel. The USACE reviewed a long list of factors to determine if dredging the entrance channel was realistic, including marine mammal activity, the seafloor, potential areas for placement of dredging material, geotechnical information, currents and storm surge impacts. They also ran navigation simulations to determine the depth that would best meet the safety requirements for under keel clearance, and ran those simulations with varying storm surge, wind conditions, and squat calculations.

The Corps of Engineers is approaching the depth decision-making milestone which will be in the form of a presentation to the USACE Headquarters on December 5, 2018. During this presentation, they will review all of the findings of the feasibility study including the information gathered on impacts to front beach, navigation, methods of dredging, and cost of the project.

The USACE is seeking a formal submission of support for the recommended dredging depth of 58 feet plus a margin of 2 additional feet, which is made with consideration to all of the environmental data collected, geotechnical information, and best practices of navigation. This depth will reasonably accommodate transit of any commercial vessel that could realistically call in Iliuliuk Bay or Dutch Harbor proper.

The City of Unalaska began the feasibility study with a desired depth of 55 feet. The USACE was looking at 48 feet. The simulation study really brought home the benefit to the nation by proposing a dredging depth that would accommodate deep-draft vessels. The “sweet spot” is 58 feet. This provides an economic benefit both for vessels that call the port today and for companies with deep-draft vessels in their shipping fleet. This depth also allows the Marine Pilot Association to maintain under keel clearance that supports best practices and safety margins.

The recommendation of 58 feet represents the USACE recommended depth and the additional 2 feet provides a margin of error should the USACE exceed the 58 feet. The depth will not be less than 58 feet and should the additional 2 feet be necessary, would be at no additional cost to the Sponsor (City of Unalaska).

By supporting the recommended depth, the City Council is not committing to the design or the construction of this project. Those steps will come later and individually. The design agreement will come after the feasibility study is finalized and approved. Should the project go to design and is completed, another agreement will be required for construction. The Council is not committing any additional resources to this project by supporting the recommended depth of 58 feet.

The cost of the project is likely to change, but the project on the high end is estimated to be no more than \$30 million with the City’s portion to fall somewhere between \$12.5-15 million. This is just a look-ahead estimate and not an absolute.

**ALTERNATIVES:** Council may choose to support, or not to support, Resolution 2018-68; or may modify the proposed resolution.

**FINANCIAL IMPLICATIONS:** The passage of this resolution does not obligate the City of Unalaska to any payments.

**LEGAL:** Not applicable.

**STAFF RECOMMENDATION:** I recommend passage of Resolution 2018-68.

**PROPOSED MOTION:** I move to approve Resolution 2018-68

**CITY MANAGER COMMENTS:** I recommend passage of Resolution 2018-68.

**ATTACHMENTS:** Corps of Engineers presentation.

# UNALASKA (DUTCH HARBOR) CHANNELS NAVIGATION IMPROVEMENTS AGENCY DECISION MILESTONE MEETING

LTC Penny Bloedel and Cindy Upah, Chief of Planning  
U.S. Army Corps of Engineers – Alaska District  
December 5, 2018

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*

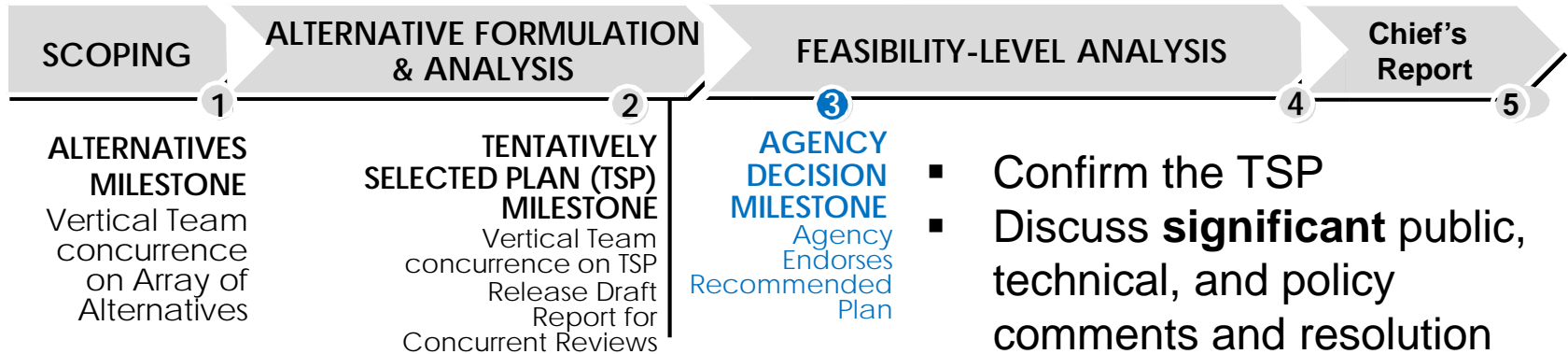


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# Agency Decision Milestone Purpose

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# Study Overview

## Authority:

This feasibility study is being conducted under authority granted by Section 204 of the Flood Control Act of 1948, Public Law 80-858, as amended:

“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.”

Non-Federal Partner: City of Unalaska

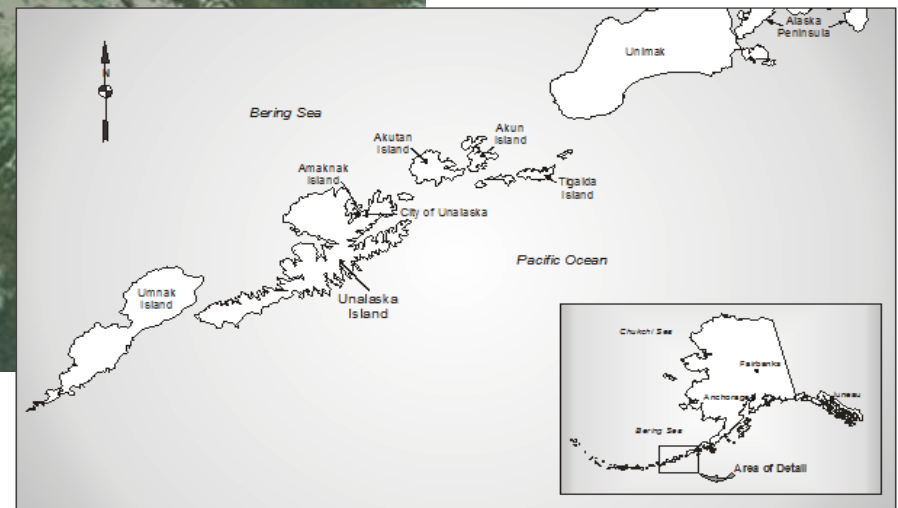
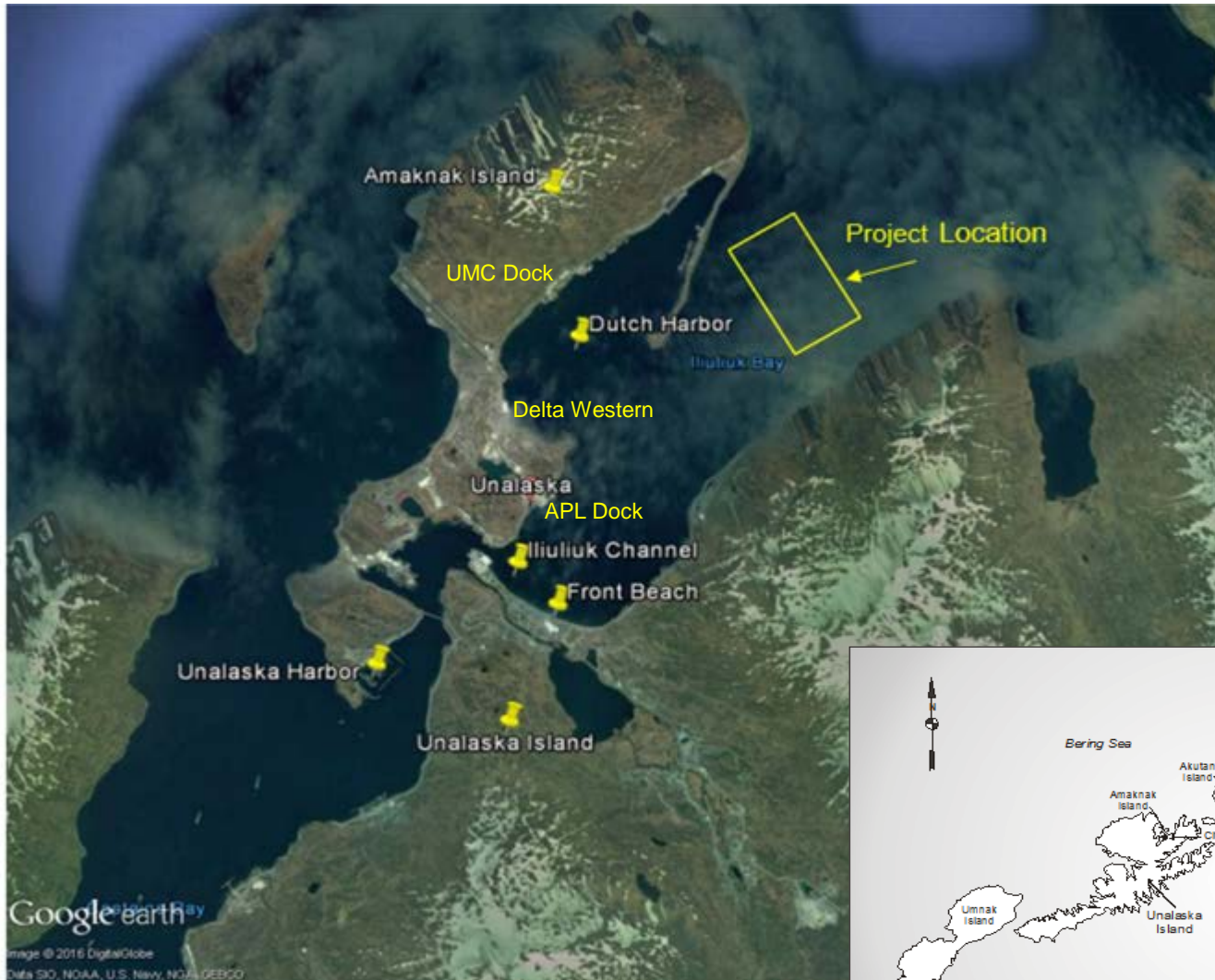


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# Project Location



# Unalaska/Dutch Harbor

- Population of 4,605
- Qawalangin Tribe of Unalaska – Federally recognized tribe
- #1 U.S. commercial fishing port by quantity of catch since 1997
- For more than 30 years, Unalaska's economy has been based on commercial fishing, seafood processing, fleet services, and marine transportation
- 2.2M short tons of total commodities transported through the port in 2015
- Contains numerous sites designated as a Potential Places of Refuge by Alaska Department of Environmental Conservation (ADEC)
- Only deep draft, year-round ice-free port along 1,200 mile Aleutian Islands, serving the North Pacific and Bering Sea



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# Objectives

- Improve access to Unalaska/Dutch Harbor to decrease transportation inefficiencies in the region
- Improve access to Unalaska/Dutch Harbor to increase safety in the region



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# Alternatives

Alternative 1: No Action

Alternative 2: Deepening the bar in two-foot increments beginning at 42-feet



Figures: APL Holland, example container ship that calls on Dutch Harbor. Design vessel static design draft of 44.0 feet



# Tentatively Selected Plan (TSP)

- TSP – Dredging the bar remains unchanged
- 44' Design vessel draft remains as basis for NED analysis
- Channel Depth – Revised based on modeling post-TSP



# Risks & Uncertainties Addressed Since TSP

- Underkeel clearance (ship sim & STWAVE results)
- Operations & maintenance (have - STWAVE/sand migration)
- Front Beach impacts (have – front beach)
- Marine mammal data (pull from posters)

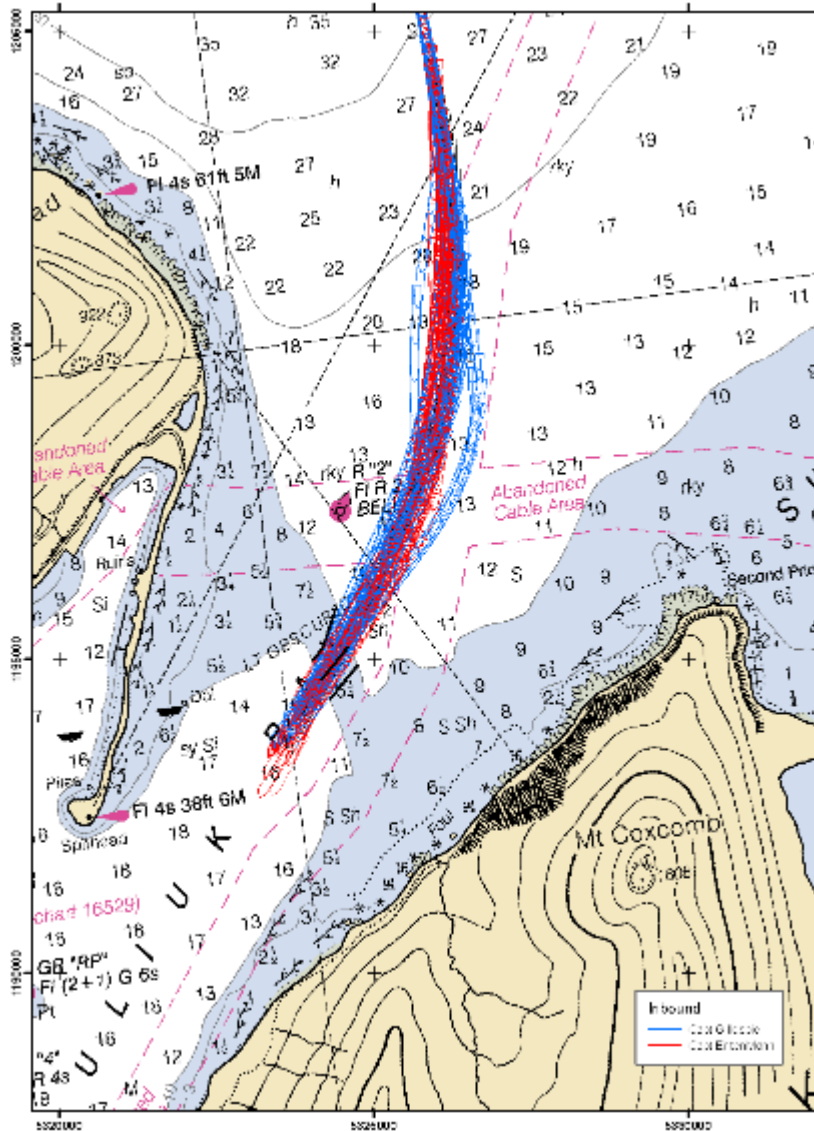


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# Ship Simulation (Post-TSP)



- 70 simulation runs made over 5 days
- Scenarios of 4 different vessels with winds of 0-35 knots from varying directions

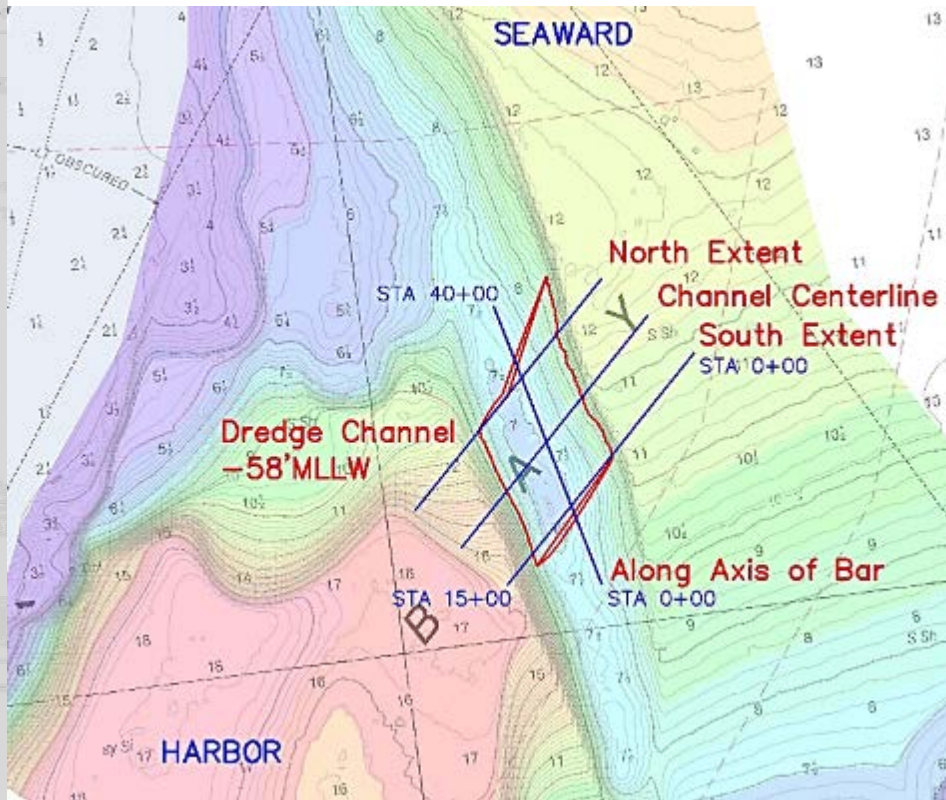


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# Channel Design (Post-TSP)

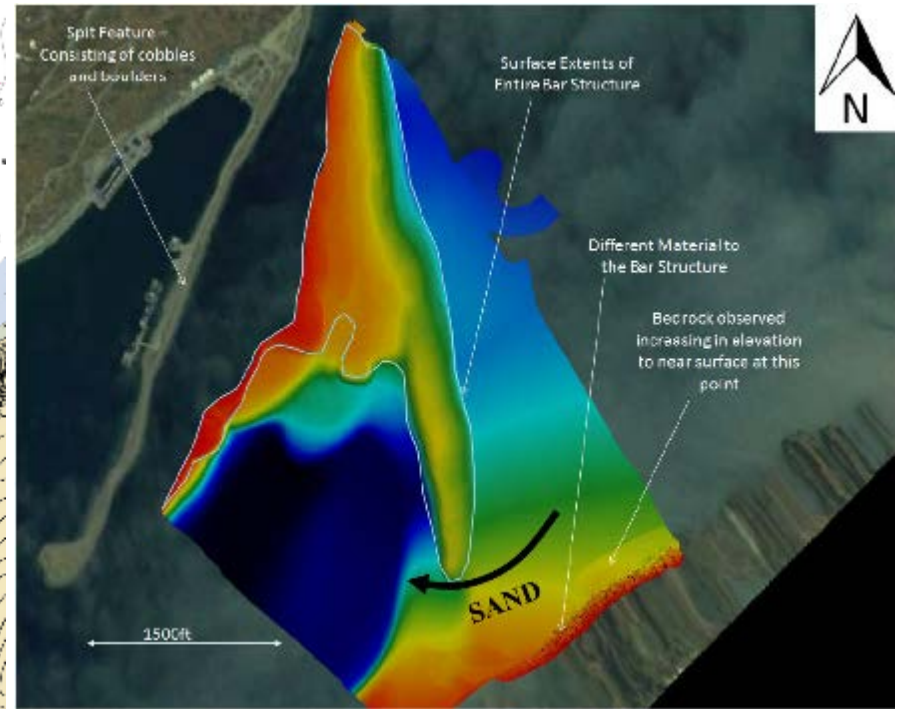
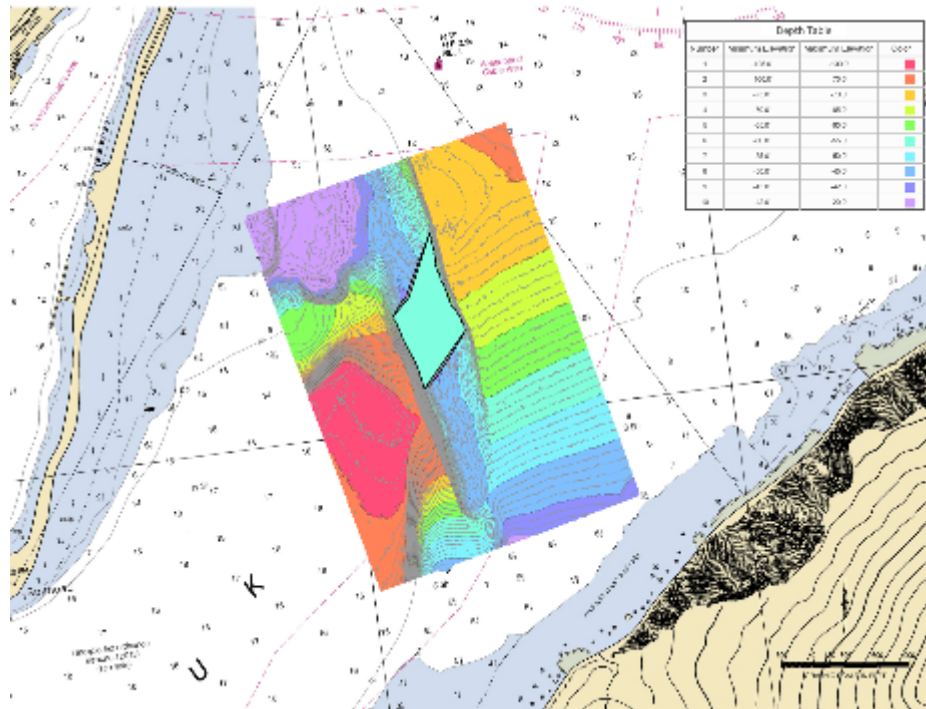


Channel dimensions:  
~600' long x 600' wide

Changes included adding a 22° flare to the north extent of the channel



# Risk Items Addressed - Sand Migration



Sand is not expected to migrate into channel due to 7' difference in depth of sand (-65') vs channel (-58')



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# Risk Items Addressed - Front Beach

	30 Year Wave - No Channel			
	270° - 0°		0° - 90°	
	<i>Feet</i>	<i>Period (s)</i>	<i>Feet</i>	<i>Period (s)</i>
<b>Wave at WIS Point</b>	51.8	16	37.5	14
<b>Wave at Entrance</b>	22.0	13	13.1	14
<b>Wave at Bar</b>	6.8	13	9.2	13
<b>Wave at Front Beach</b>	1.3	12	2.0	12

	30 Year Wave - Channel			
	270° - 0°		0° - 90°	
	<i>Feet</i>	<i>Period (s)</i>	<i>Feet</i>	<i>Period (s)</i>
<b>Wave at WIS Point</b>	51.8	16	37.5	14
<b>Wave at Entrance</b>	22.0	13	13.1	14
<b>Wave at Bar</b>	7.0	13	9.5	13
<b>Wave at Front Beach</b>	1.3	12	2.0	12

Wave heights at Front Beach increased by fractions of an inch in with project condition with 30 year wave

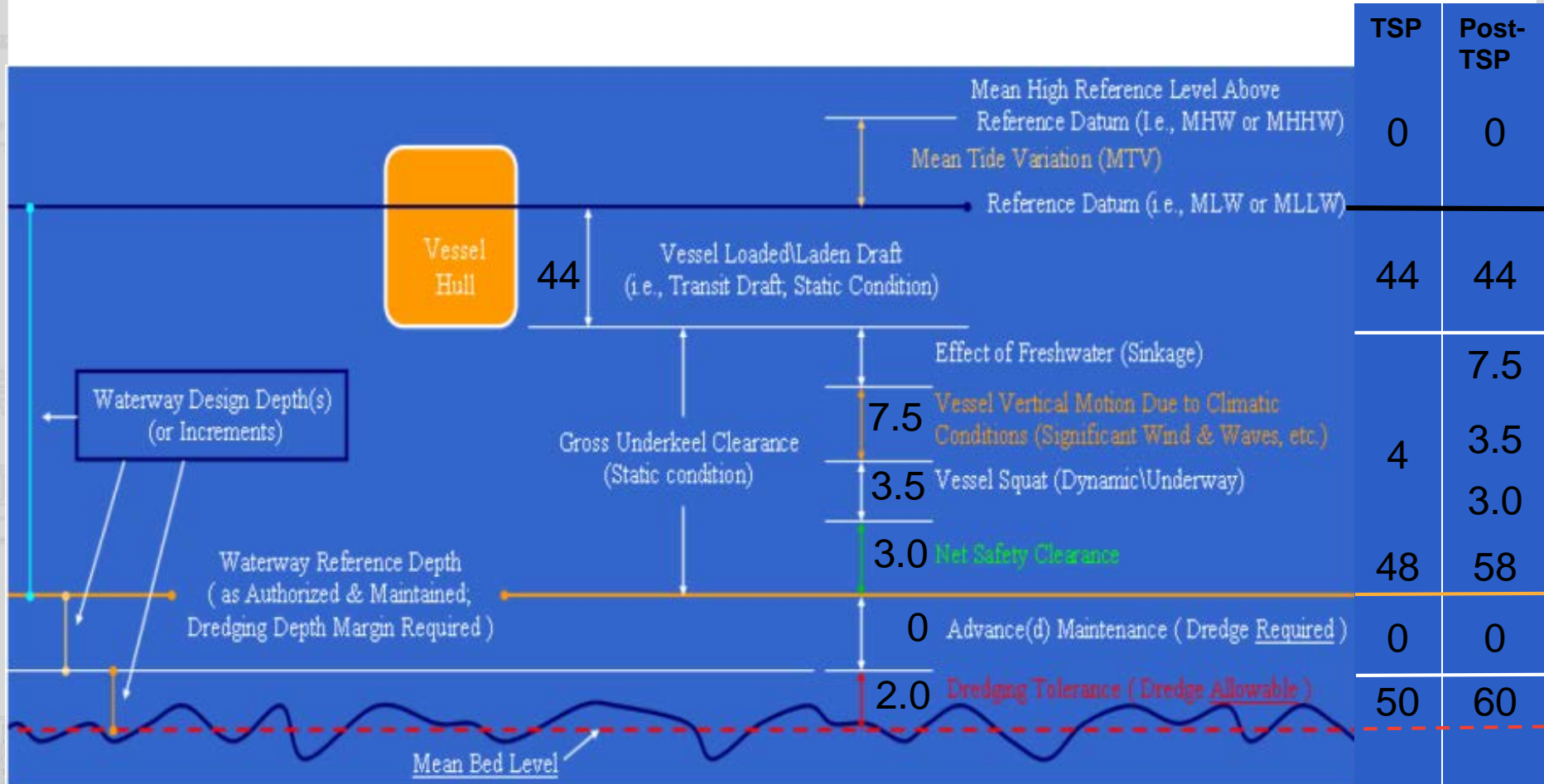


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# Channel Design



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# National Economic Development Analysis

## add in TSP vs post-TSP

Alternative	Total AAEQ Costs	Total AAEQ Benefits	Total Net Benefits	BCR
56ft Channel	\$1,550,377	\$2,157,811	\$607,434	1.4
58ft Channel	\$1,462,173	\$2,809,965	\$1,347,792	1.9

BCR = Benefit To Cost Ratio

Due to dock depth constraints, benefits will not increase at depths deeper than 58, only cost will.

Total benefits and BCR are maximized at -58 ft. MLLW.



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# Tentatively Selected Plan (TSP)

- add in TSP vs post-TSP
- Reasonably maximizes net NED benefits at 58ft depth: \$1,347,792
- BCR: 1.9
- First Costs: \$30.5M
- Initial dredge is approx. 182,000 CY; maintenance dredging at year 25 assumes 1ft sandy material (16,000 CY)





# Significant Comments: Public

- No formal public comments received during comment period, however, there was feedback from the public meeting
- Significant theme:
  - Erosion at Front Beach - resolved



# Significant Comments: ATR

- 103 total comments – All closed
- None change the TSP
- 1 Environmental comment was marked “high”- resolved
  - Dredged Material Disposal Site Discussion
- 1 H&H comment was marked “high”- resolved
  - Discrepancy in channel depth and underkeel clearance



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# Significant Comments: MSC QA Review

- POD involvement throughout the study starting with the Planning Charette in September 2016
- Review Plan approved in April 2017
- Signed IEPR Exclusion memo April 2018
- Legal Review – POA OC legal review signed on 24 May 2018
- Technical Reviews
  - District Quality Control in June 2018 – all comments resolved
  - Agency Technical Review Report August 2018 – all comments resolved
- HQUSACE Policy Review in July 2018 – responses provided for all comments



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# **Dutch Harbor (Unalaska) Feasibility Study Draft Feasibility Report/EA HQUSACE Policy Review**

HQUSACE Review Team:

Jeff Strahan – Review Manager & Economics

Fay Lachney – Plan Formulation

Lauren Diaz – Environmental & Cultural

Marcia DeVille – Real Estate

Scott Murphy, Mayely Boyce – Office of Counsel

Russ Weeks – Engineering

Hans Moritz – Climate Change



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# Significant HQ Comments

## ➤ 28 comments total

- 4 High: Environmental
  - EA Sufficiency
  - Environmental Compliance
  - Dredge Disposal (2 comments)
- 3 Medium-High: Engineering
  - Utility and Completeness of FWP
  - Underkeel Clearance (2 comments)



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# 1. EA Sufficiency

**Concern:** The level of environmental data and release of the EA separate from the Draft Report.

**Basis for Concern:** Unable to find policy, regulation, or guidance that would have prohibited issuance of a draft integrated feasibility report/EA on the basis that there was not enough detail on marine mammal impacts in the report.

**Path Forward:** POA has pursued additional data on marine mammal and blasting regimens to inform significance determination. Data is presented in a technical paper provided to the vertical team and agencies, and to the public at an October meeting. Integrated Report with updated environmental information will be released concurrent with 2<sup>nd</sup> ATR, and edits combined into Final Integrated Report.





### 3. Compliance with Environmental Statutes

**Concern:** The draft feasibility report does not include appropriate documentation of compliance, such as Section 404(b), SHPO, FWCA, EFH or ESA.

**Basis for Concern:** Compliance with other Federal environmental statutes is part of the P&G/water resources planning requirements, in addition to NEPA.

**Path Forward:** A 404(b)(1) analysis will be performed using best available information. Ongoing coordination has identified potential open water disposal sites inside existing closing lines and within the Corps' 404 authority. Correspondence will be provided to document Agency coordination.



# 9. Base Plan/Federal Standard & 15. Disposition of Dredged Material

**Concern:** The report does not clearly lay out the base plan for disposal of the dredged material. Present report does not appear to declare applicable authority under which the proposed in-water sites.

**Basis for Concern:** ER 1105-2-100 Para E-15a.(3) - "...policy to accomplish the disposal of dredged material associated with the construction or maintenance dredging of navigation projects in the least costly manner."

**Path Forward: Response:** Ongoing coordination has identified 5 potential open water disposal sites located inside of existing closing lines and lie within the Corps' 404 authority. These were sampled on a seasonal basis. All five are within a few miles of the dredge site and represented a variety of depths and bottom compositions. The closest site was selected since it was both the lowest cost (shortest distance) and appeared to have the lowest environmental impacts.



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# 14. Utility and Completeness of FWP

**Concern:** Is there a target wave threshold (height, period, direction) that is used to define “calm” conditions?

**Basis for Concern:** requirement for calm conditions appears to be misaligned with the expectation for improved project performance, based on existing condition bar crossing.

**Path Forward:** Calm conditions are seas with a wave height of 0 feet. The report is being updated for a channel depth of 58 feet; this will allow vessels to cross at speeds of up to 8 knots with a maximum wave over the bar of 5.6 feet.



## 23. Definition of UKC & 24. Operability of Design Vessel for FWPC

**Concern:** What is UKC based on? It is unclear how the conditions presented in the section of the report will affect the design vessel for FWP, as compared to the present condition.

**Basis for Concern:** The UKC discussion should address how FWP UKC was defined to address existing condition deficiency considerations and project objectives.

**Path Forward:** The UKC section of the report has been significantly reworked due to ship simulation and STWAVE modeling results. The 58 foot channel depth was reached by calculating 7.5 feet of vertical motion due to the 5.6 foot wave, 3.5 feet of squat, and 3 feet of safety clearance. Current practice dictates vessels wait until winds <25 knots and seas <6 feet to cross the bar. The 58 foot design channel will allow vessels with up to 6 additional feet of draft to travel with 35 knot winds and a 5.6 foot wave over the bar (the one-year wave).



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# Sponsor Views



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# Remaining Risks and Uncertainties

- Marine geophysical data collected shows shoal not likely to be dredged without blasting
- Marine geophysical data collected has identified several targets within the dredging area that could be Munitions and Explosives of Concern
- Timing to seek Incidental Harassment Authorization approval from National Marine Fisheries Service



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# Path Forward for Feasibility Level Analysis

- See slide from QUANA
- \Economic Analysis
  - Address technical questions from reviews
- Engineering
  - Obtain cost certification, address technical questions from reviews
- Environmental
  - Integrated Report will be out for public review 1 Feb 2019
  - Marine Mammal Protection Act and Endangered Species Act Coordination ongoing during PED for confined underwater blasting



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# INSERT ENVIRONMENTAL COMPLIANCE TABLE



# Project Funds Status

	Received	Expended	Total Remaining
Federal	\$1,650,000	\$900,220	\$749,780
Sponsor	\$1,141,103	\$900,220	\$240,883
<b>Total</b>			<b>\$990,663</b>

- Federal is fully funded to completion
- \$150K IEPR [Federal] will not be used
- PED phase funds requested in FY19 work plan



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# Study Milestones

Milestone Number	Title	Date
CW130	Execute Feasibility Cost Sharing Agreement	Aug 2016
CW261	Alternatives Milestone	Jan 2017
CW262	Tentatively-Selected Plan Milestone	Jan 2018
CW263	Agency Decision Milestone	Dec 2018
	2 <sup>ND</sup> ATR	Feb 2019
	Final Submittal	Apr 2019
	Senior Leader Brief	May 2019
CW270	Signed Chief's Report to Congress	Aug 2019

## Federal Funding Stream

This study is fully funded to \$1,650,000, including IEPR funds.



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# Lessons Learned

- Prioritized data collection to confirm characteristics of material to be dredged and presence of MECs. This data identified two of the major costs for this project: 1) the need to drill and blast and 2) the need to plan for MECs
- Coordination with environmental agencies should be documented, particularly when project conditions change



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# QUESTIONS?

**LTC Penny Bloedel and Cindy Upah**  
**Alaska District**  
**U.S. Army Corps of Engineers**



***“Building and Preserving Alaska’s Future”***