

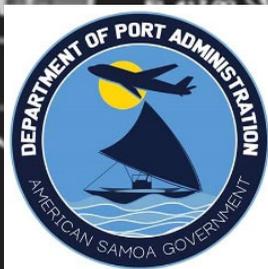
# OFU COASTAL STORM DAMAGE REDUCTION, SECTION 14

Public Meeting  
31 May 2023

Natalia Palamo, Engineer (DPA)  
Cindy Acpal, Project Manager (POH)  
Nick Emilio, Planner (POH)  
Lauren Molina, Engineer (POH)



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# AGENDA: PUBLIC MEETING



1. Study Overview and Background
2. Existing and Future-Without-Project Conditions
3. Alternatives Analysis
4. Description of the Tentatively Selected Plan
5. How to Participate



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# STUDY OVERVIEW



**Authority:** Section 14 of the Flood Control Act of 1946, as amended

**Non-Federal Sponsor:** American Samoa Government, represented by the Department of Port Administration

**Plan Selection** (EP 1105-2-58, Para. 10.d.):

*“Formulation and Justification. Following a finding of eligibility, and given the narrow geographic focus, low cost of these projects, and the imminent threat to the facilities, the formulation and evaluation will focus on the least-cost alternative solution. The least-cost alternative plan is considered to be justified if the total cost of the proposed alternative is less than the costs to relocate the threatened facility.”*





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# CAP PLANNING AND IMPLEMENTATION TIMELINE

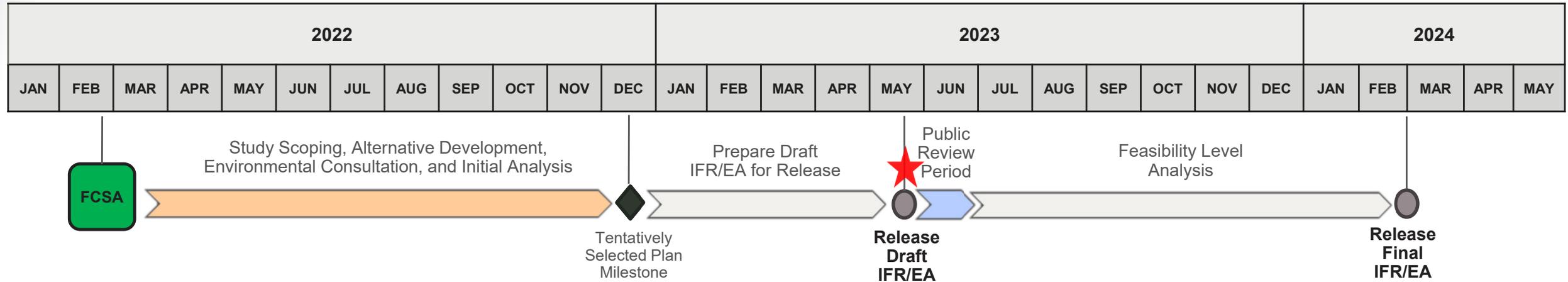


1. Letter of interest (LOI) from non-federal sponsor
2. Federal Interest Determination
3. Feasibility Cost Share Agreement (FCSA)
4. Prepare Feasibility Report with NEPA document

5. Project Partnership Agreement (PPA)
6. Design
7. Construction
8. Operations & Maintenance (O&M)



# FEASIBILITY STUDY PROCESS



- The Draft Integrated Feasibility Report and Environmental Assessment (IFR/EA) was released for public and agency review on May 22, 2023. The public review and comment period will end on June 21, 2023.
- Comments from the public will be considered as we move into the last phase of the feasibility study where we will refine our analyses and prepare a final report.



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# STUDY AREA: OFU AIRPORT, AMERICAN SAMOA



- American Samoa: U.S. Territory located roughly 2,300 miles southwest of Hawaii
- Ofu and Olosega islands: Manu'a Island group located about 66 miles east of Tutuila
- Ofu Airport (study area) is located on the southern coast of Ofu Island

- Population (2020 Census):
  - Ofu: 132
  - Olosega: 147





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# STUDY AREA: OFU AIRPORT, AMERICAN SAMOA





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# PROBLEMS IDENTIFIED IN STUDY AREA



- Shoreline along the west bank of Ofu airport runway is experiencing erosion due to wave attack and storm surge.
- Without emergency shoreline protection, the runway will continue to sustain damage during high wave and storm events, leading to the imminent closure of the runway
- Disruption of airport operations will affect the primary means of transporting people and essential goods and supplies to and from both Ofu and Olosega islands.
- Due to the isolation of the Manu'a Islands, air travel is especially important in the event of an emergency when transport of food, supplies, and medical evacuation are needed urgently. Closure of the airport due to damage following a storm will result in detrimental impacts to health and safety as well as a significant delay in travel and transport of vital resources to the island.



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# EXISTING CONDITIONS



- Waves: Seas and swell waves of up to 13 feet predominantly from the southeast. Less frequent, more energetic tropical cyclone wave energy typically approaches from the north, waves up to 16 feet.
- Winds: Prevailing winds throughout year are southeasterly trades. Winds tend to approach Samoa more directly from east during December through March, but during remainder of the year, they originate predominantly from east-southeast and southeast.
- Tropical Storms: Exacerbating coastal erosion in project area
  - Notable Storms (Damages and fatalities are for all affected areas):
    - Cyclone Val (1991): 17 fatalities; \$368 million in damages
    - Cyclone Heta (2004): 1 fatality; \$110 –150 million in damages
    - Cyclone Gita (2018) 2 fatalities; over \$200 million in damages
- Sea Level Change: Rising sea levels globally and locally exacerbate existing problem. 2009 earthquake caused rapid land subsidence resulting in accelerated RSLC rates.
- Environmental Condition: Diverse coastal habitat in close proximity to project area
  - Notable Species: Coral, Hawksbill Sea Turtle, Green Sea Turtle



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# EXISTING CONDITIONS – KING TIDES



Prior to king tides  
July 13, 2022



Post king tides damage  
July 14, 2022





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# FUTURE WITHOUT PROJECT CONDITIONS

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- Threat of storm damage in American Samoa will become more frequent and severe over time
- Long-term sea level rise will increase damage to runway
- Ofu Airport and runway will continue to sustain significant damage, leading to imminent risk of airport closure and/or relocation
- Loss of sandy beach habitat in the project area is expected due to climate change impacts
- Impacts of sea level rise to hawksbill and green sea turtles:
  - Loss of nesting beaches and increased nest "wash out" due to rising sea levels can lead to overall decreases in nesting success
- Climate change stressors to coral reefs:
  - Enhanced reef sedimentation due to increased coastal erosion from wave action
  - Warmer sea temperatures may lead to more frequent and intense coral bleaching events
  - More frequent and intense tropical storms can damage coral and alter nutrient delivery processes to affect viability

# ALTERNATIVES: INITIAL ARRAY



Alternative	Carried Forward to Final Array?
Alt 0: No Action	Yes
Alt 1: Rock Revetment	Yes
Alt 2: Tribar Revetment	Yes
Alt 3: CRM Seawall	No; concerns with constructability, performance, and maintenance
Alt 4: Sheetpile Wall	No; highest cost alternative and not environmentally acceptable
Alt 5: Precast Concrete Seawall	No; concerns with constructability, performance, and maintenance





# ALTERNATIVES: FINAL ARRAY



## Final Array of Alternatives:

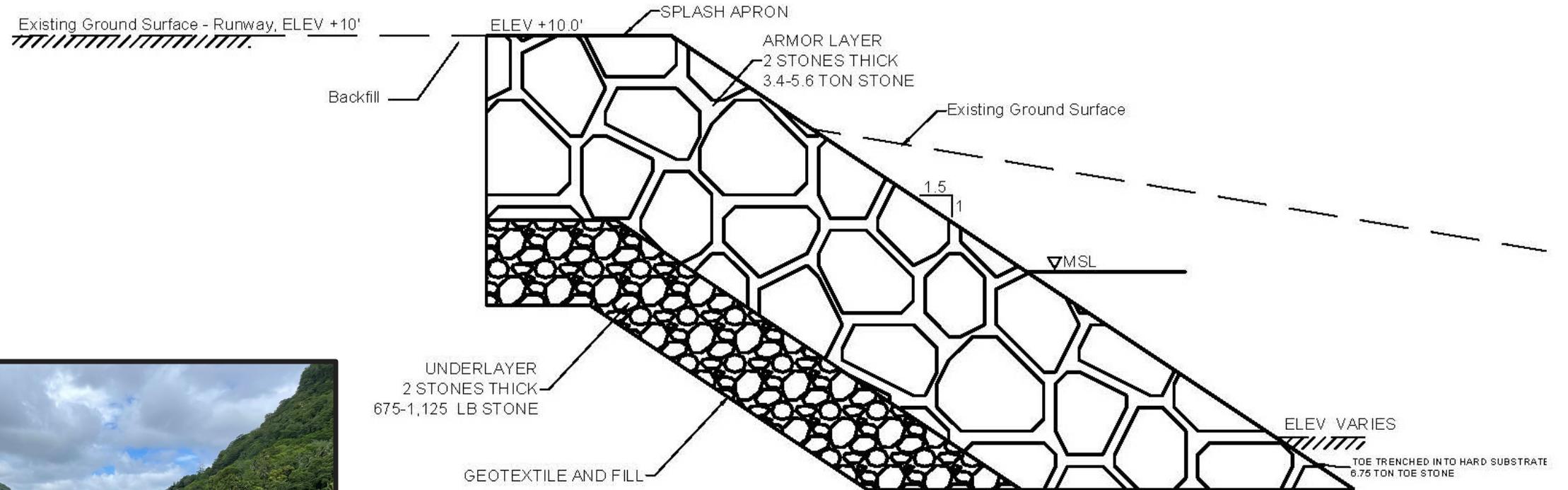
**Alt. 0: No Action**

**Alt. 1: Rock Revetment**

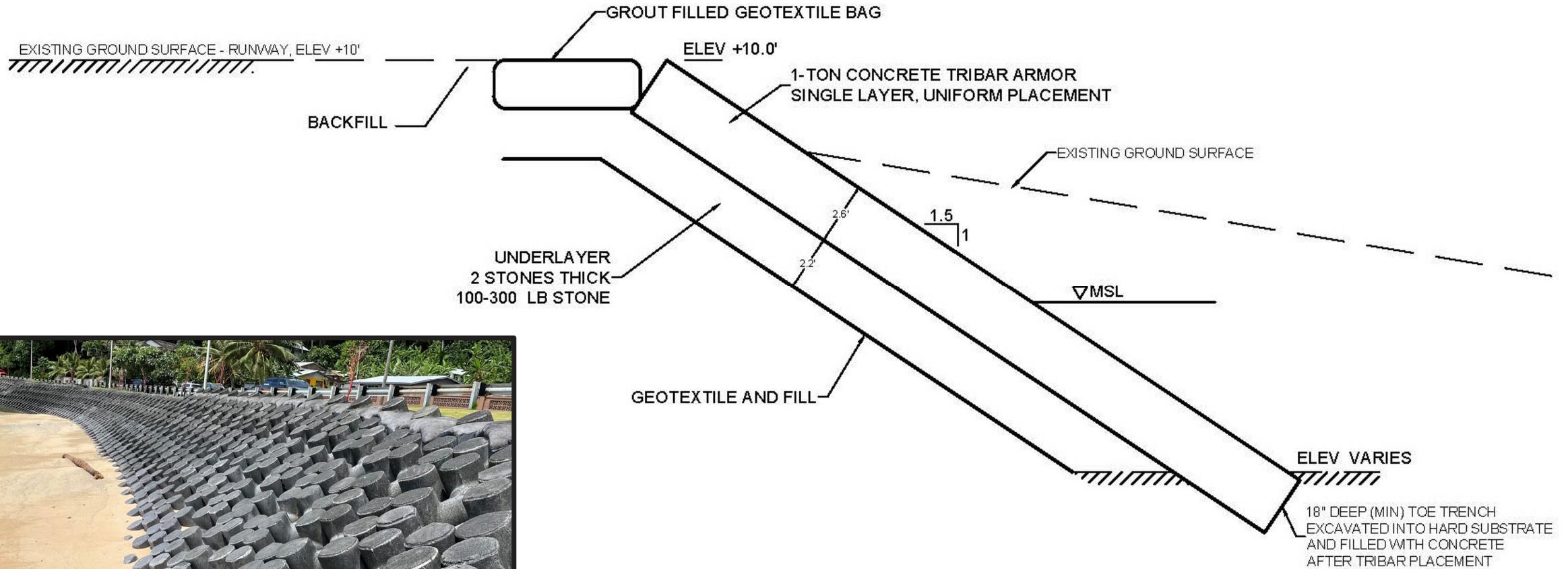
**Alt. 2: Tribar Revetment**



# ALTERNATIVE 1 DESIGN: ROCK REVETMENT



# ALTERNATIVE 2 DESIGN: TRIBAR REVETMENT





# COST TABLE: FINAL ARRAY

Alternative	Project First Cost (FY23 Q1)	Federal Share	Non-Federal Share	Meets Participation Limits*
Airport Relocation	\$91,000,000	N/A	N/A	N/A
0. No Action	N/A	N/A	N/A	N/A
1. Rock Revetment	\$11,700,000	\$8,300,000	\$3,400,000	Yes
<b>2. Tribar Revetment</b>	<b>\$8,200,000</b>	<b>\$6,000,000</b>	<b>\$2,200,000</b>	<b>Yes</b>

*Note: Numbers may not add due to rounding*

*\*Section 14 has a Federal per-project limit of \$10M.*



# TENTATIVELY SELECTED PLAN



*EP 1105-2-58: “The least-cost alternative plan is considered to be justified if the **total cost** of the proposed alternative is **less than the costs to relocate the threatened facility.**”*

## TSP Identified: TRIBAR REVETMENT (Alternative 2)

- Estimated Construction Cost: \$8.2M
  - Less than the cost of facility relocation (\$91M)
- Supported by the Non-Federal Sponsor
- Meets Project Design Requirements
- Environmentally acceptable
- Estimated Construction Time: 12-18 months





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# HOW TO PARTICIPATE



Visit the study website at <https://www.poh.usace.army.mil/Missions/Civil-Works/Civil-Works-Projects/Ofu-Section-14/>

- Download the Draft Integrated Feasibility Report and Environmental Assessment (Draft IFR/EA)
- Provide comment by **June 21, 2023**:
  - Verbally: Provide **verbal comment** here at this meeting
  - Written:
    - Provide comment in the **chat** (for those online)
    - Provide written comment on **comment card** (for those attending in-person meetings)
    - **Email** your comment to [CEPOH-Planning@usace.army.mil](mailto:CEPOH-Planning@usace.army.mil) (subject line: Ofu Draft Report)
    - **Mail** your comment to: U.S. Army Corps of Engineers, Honolulu District  
Attn: CEPOH-PPC (Ofu)  
230 Otake St.  
Fort Shafter, HI 96858-5440



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**QUESTIONS?**