

Kauai Regional Sediment Management Plan

Kim Garvey
Moffatt & Nichol

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US Army Corps of Engineers, Honolulu District



Kauai Regional Sediment Management Plan

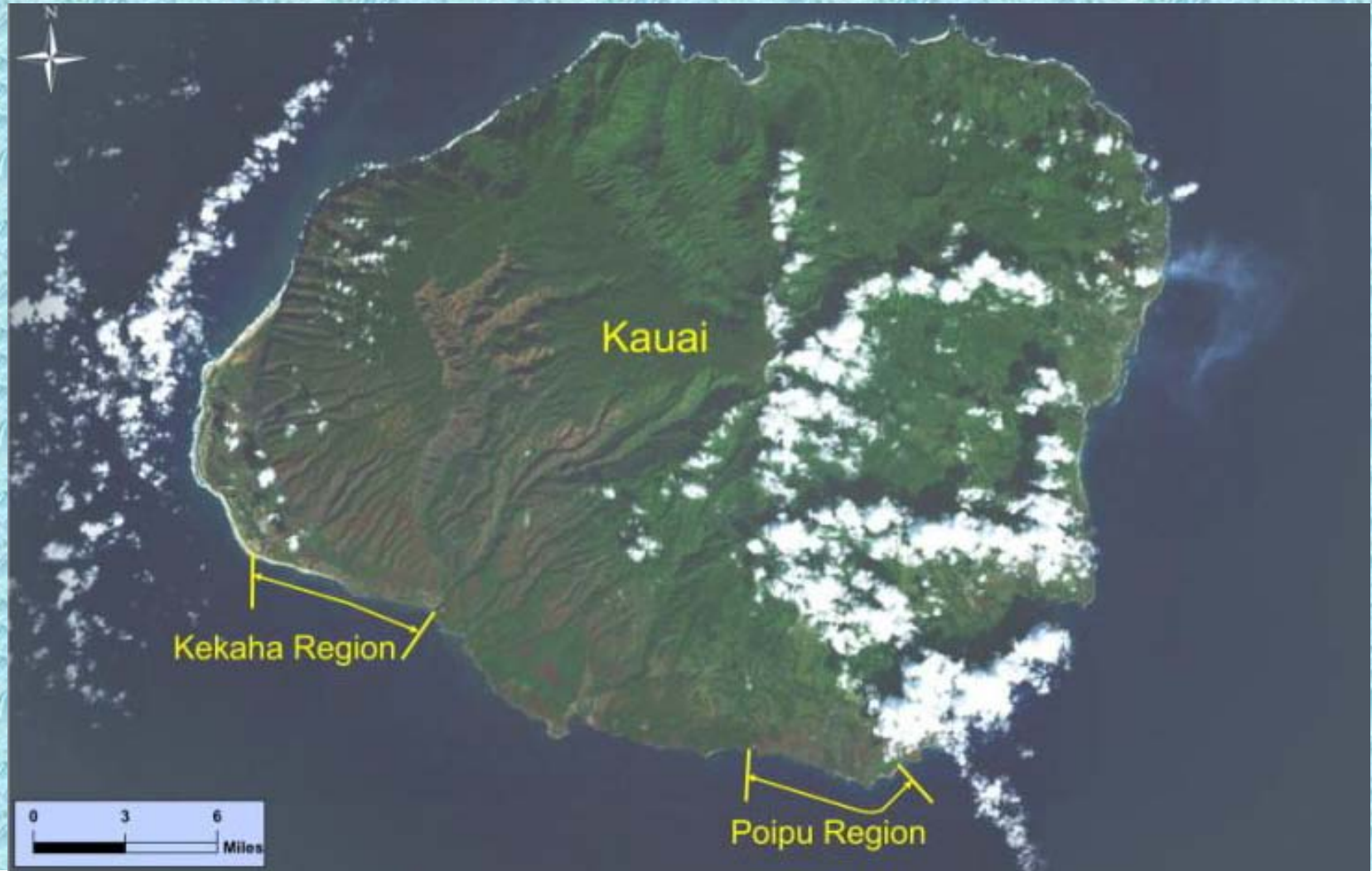
- Study Regions
- Results from Technical Studies
- Potential RSM Projects
- Regulatory and Coordination Issues
- RSM Plan Contents / Conclusions

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Kauai Study Regions

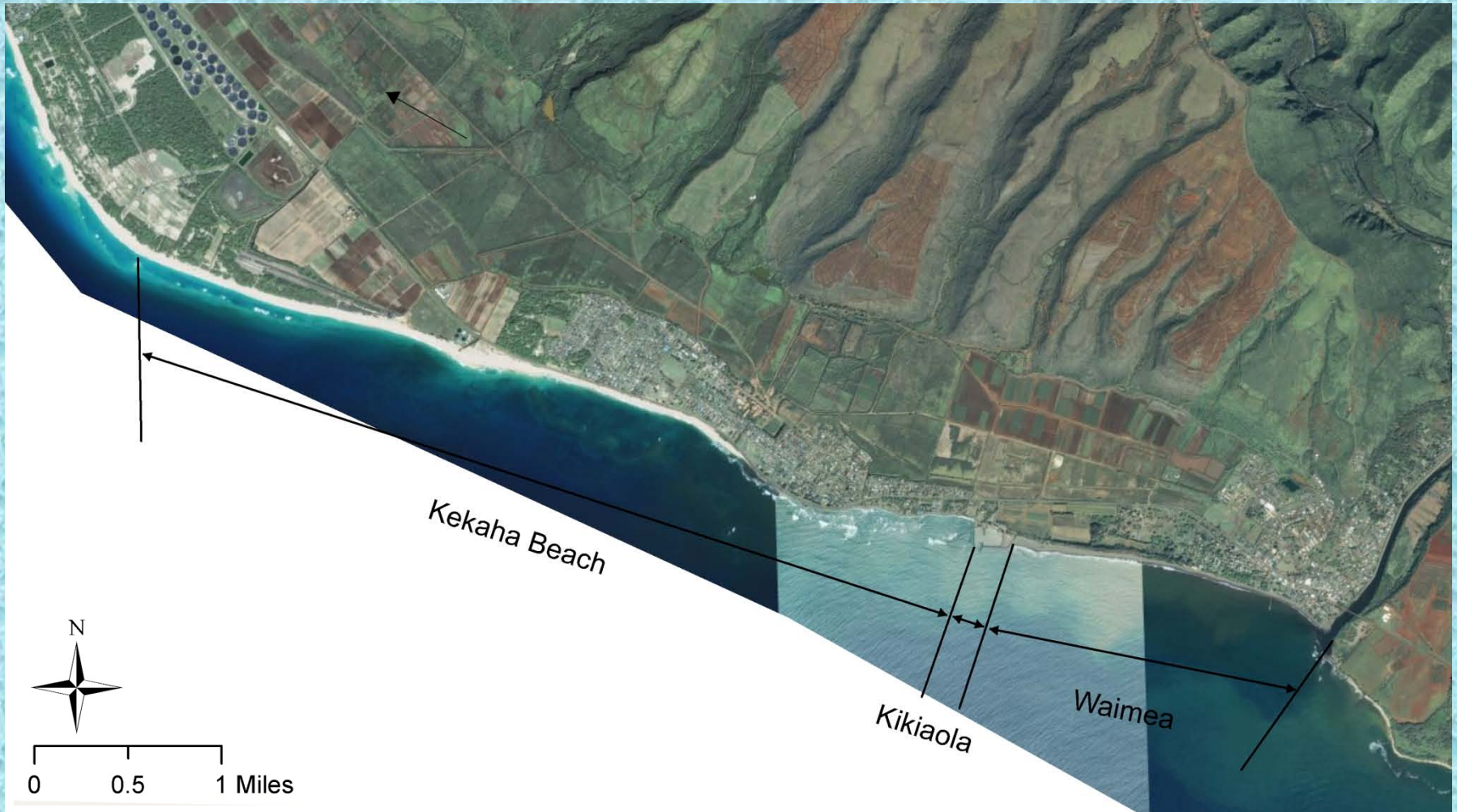


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Littoral Cells in Kekaha Region



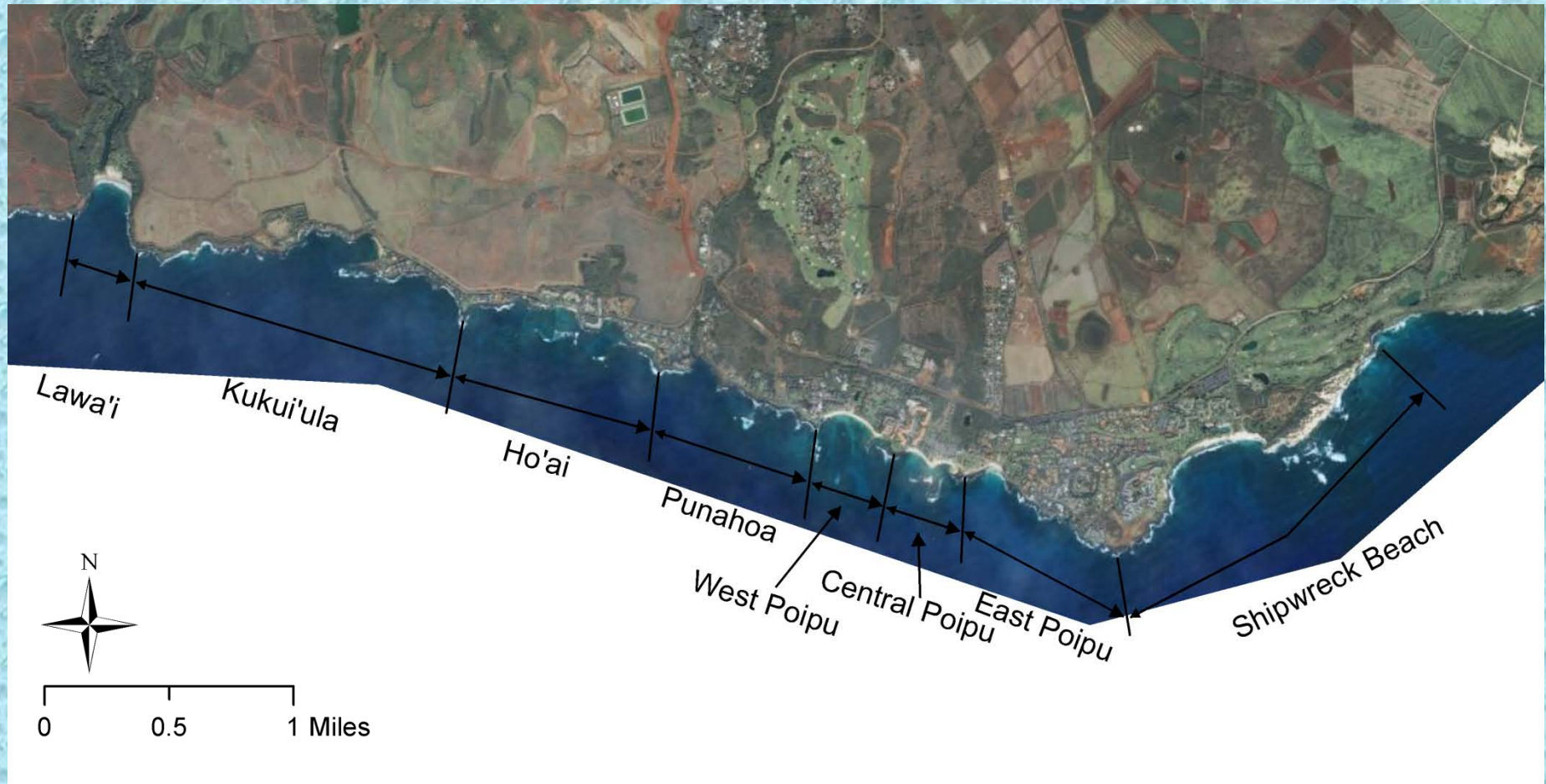
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Littoral Cells in Poipu Region

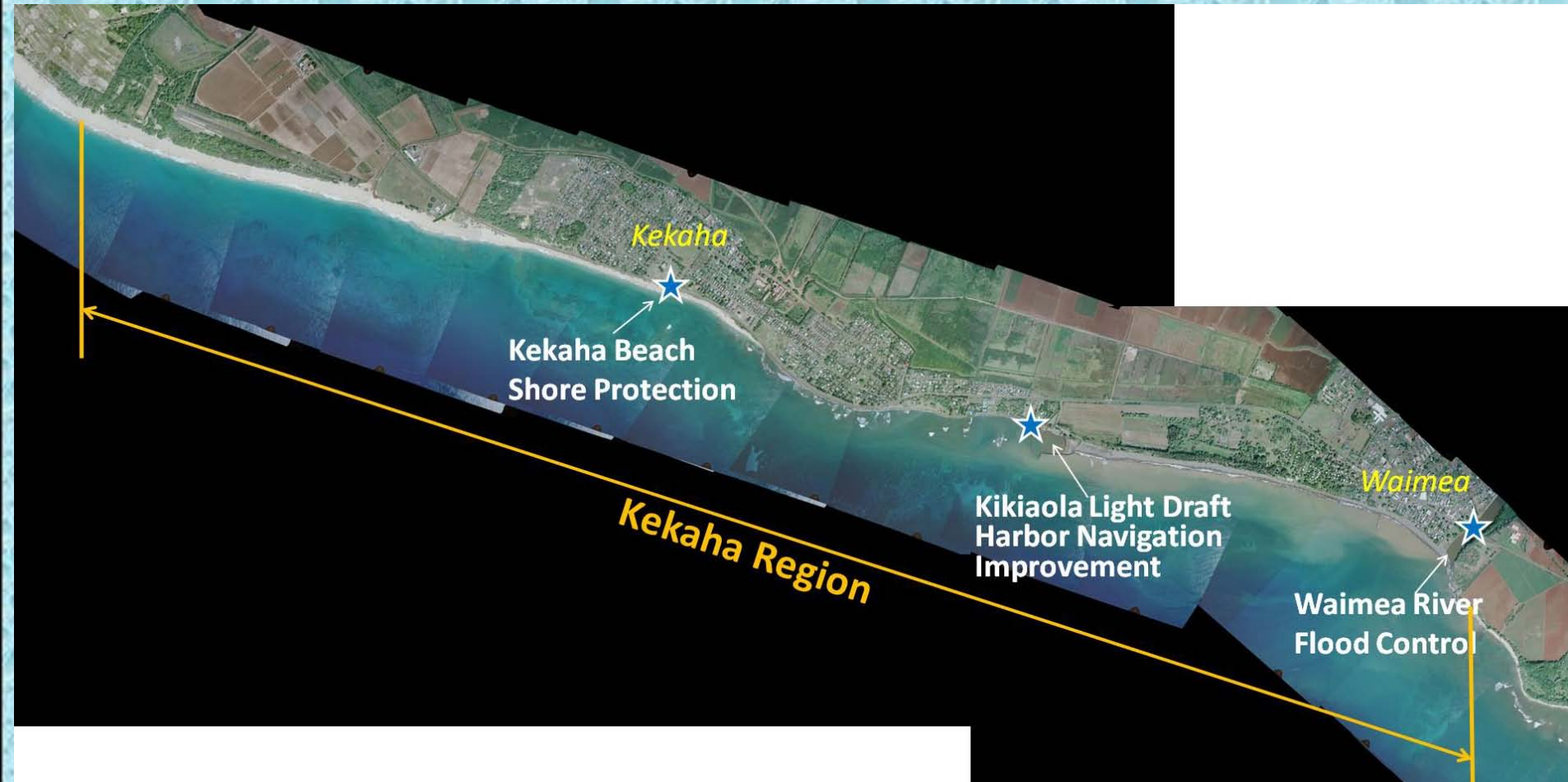


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Existing Federal Projects – Kekaha Region



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Existing Federal Projects – Poipu Region

Currently there are no Federal Projects in the region.

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Technical Study Results

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Sediment Budget – Kekaha Region

- Long lengths of sandy beaches result in high volumetric rates (in comparison to D2P rates)

Kekaha Region Littoral Cell	<u>Current</u> Accretion (+) / Erosion (-) Rate, cubic yards per year
Waimea	+10,650
Kikiaola Harbor (since 1959)	+600 to +3,000
Kekaha Beach	-25,550

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Sediment Budget – Poipu Region

- West and Central Poipu cells have experienced similar (erosional) trends.
- East Poipu cell experienced significant erosion episode between 1972-75 and has not recovered since.
- Erosion rates are relatively small; good opportunities for beach nourishment.

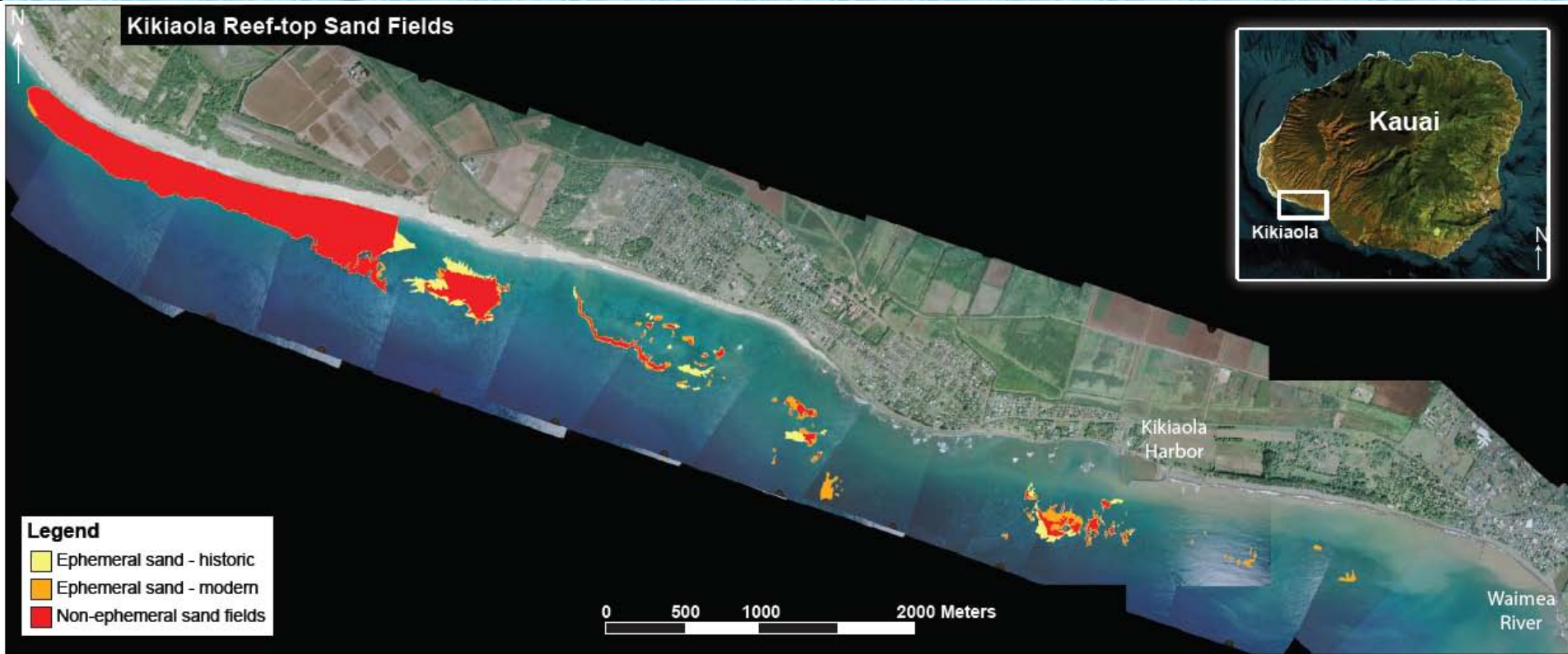
Poipu Region Littoral Cell	<u>Current</u> Accretion (+) / Erosion (-) Rate, cubic yards per year
Lawai	-200
Kukuiula	-200
Hoai	-250
Punahoa	0
West Poipu	-400
Central Poipu	-800
East Poipu	+50
Shipwreck Beach	0



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UH Sand Investigation Results

Kekaha Region Offshore Sand Sources: ~189.4 acres



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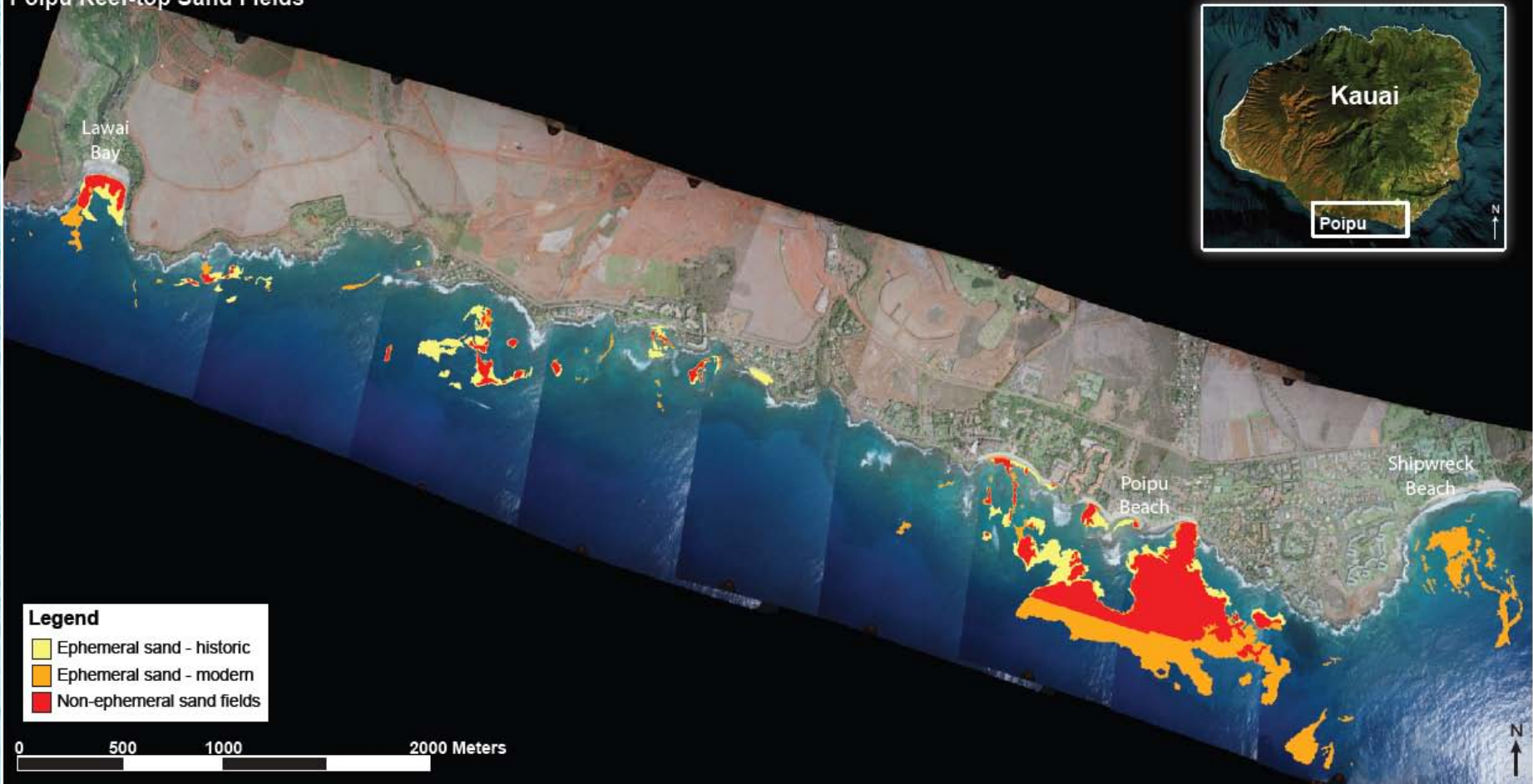
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UH Sand Investigation Results

Poipu Region Offshore Sand Sources: ~72.2 acre

Poipu Reef-top Sand Fields



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Regulatory and Coordination Issues



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Regulatory and Coordination Issues

- **Bodies Regulating Beach Nourishment**
 - Federal: USACE (Clean Water Act, River and Harbor Act), USFWS, NMFS
 - State: DLNR (Coastal Zone Management Act, work offshore of certified shoreline), Dept of Health (Clean Water Act), Historic Preservation Office, Office of Hawaiian Affairs, Dept of Transportation - Highways Division, Harbors Division
 - Local: County of Kauai- Public Works, Planning Dept, Planning Commission
- **Inter-Agency Coordination is Critical to Efficient Permitting**

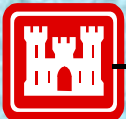


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Regulatory and Coordination Issues

- **2005: DLNR and USACE issued a State Programmatic General Permit (SPGP)**
 - Streamlined small scale beach nourishment (< 10,000 cy) in the State of Hawai'i
 - State Dept of Health Section 401 Water Quality Certification component has lapsed
- **Consolidated permits within DLNR**
 - Department of the Army, SPGP
 - State Dept of Health Section 401 Water Quality Certification
 - State CZM Federal Consistency Review
 - DLNR Conservation District Use Permit.



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Conclusions



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Kauai RSM Plan Contents For Each Region

- Existing Federal Projects
- Coastal Processes
- Wave Climate
- UH Shoreline Erosion Maps
- Beach Profiles
- Shoreline Features (Maps and Descriptions)
- Beach Volume Graphs
- Beach Volume Change Rates
- Historical Events Chronology
- Ocean Sand Sources
- Potential RSM Projects



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Summary

- Beach Nourishment may be Viable
- Potential RSM Projects Identified

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THANK YOU



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MAUI REGIONAL SEDIMENT MANAGEMENT

POTENTIAL RSM PROJECTS POIPU

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Potential RSM Projects

- Poipu Region
 - Poipu Beach Park Restoration

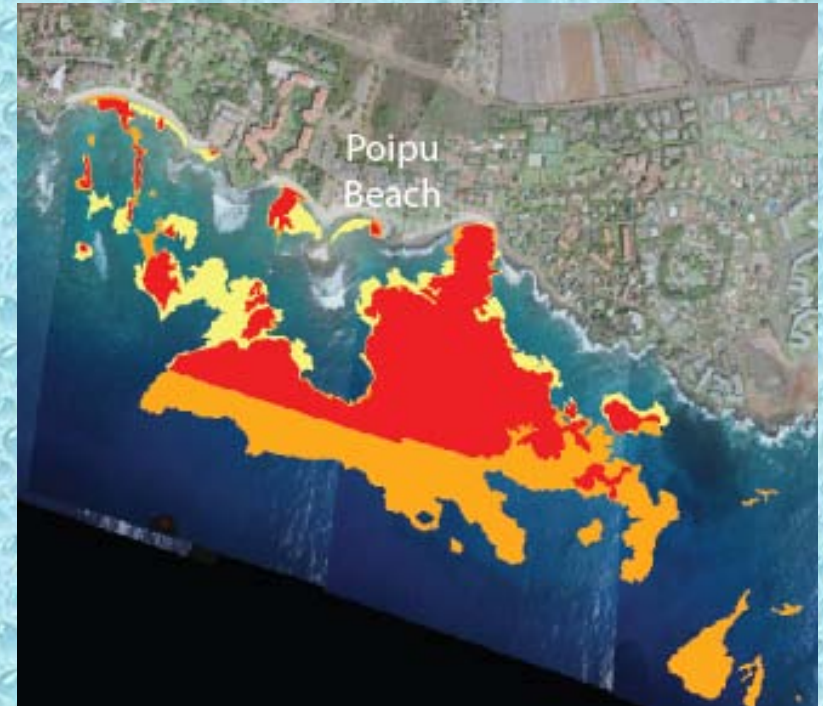
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Poipu Beach Potential RSM Project

- Beach nourishment of 6,000 cy on popular Poipu Beach Park
- Potential sand sources:
 - Kekaha Landfill
 - Offshore Sand Source
- Proponent Agency:
County of Kauai Parks and Recreation



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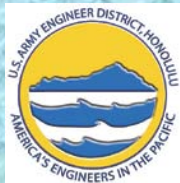


FEDERAL PERSPECTIVE

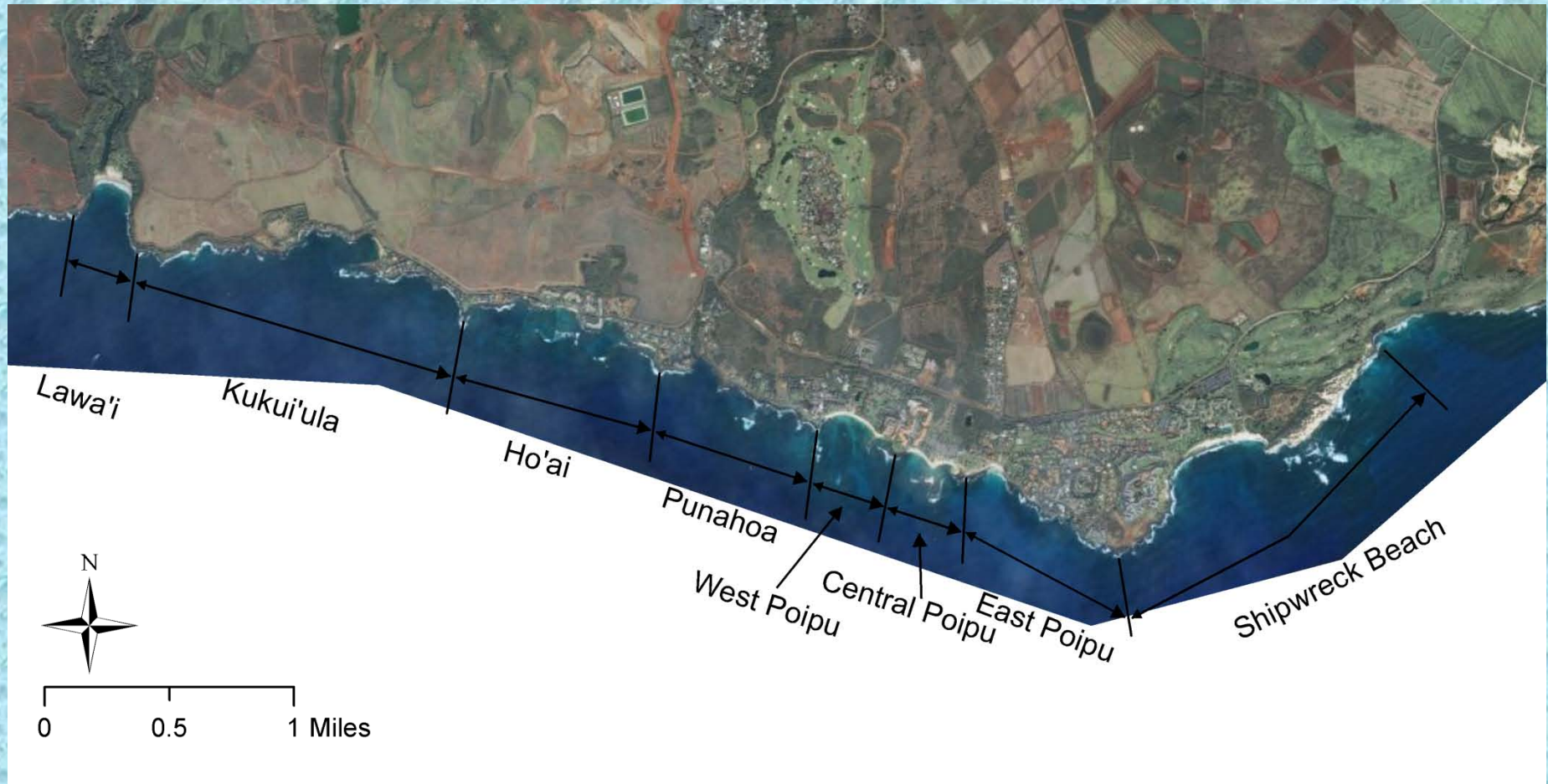


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Littoral Cells in Poipu Region



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STATE PERSPECTIVE



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DISCUSSION



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MAUI
REGIONAL SEDIMENT MANAGEMENT
POTENTIAL RSM PROJECTS
KEKAHA

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Potential RSM Projects

- **Kekaha Region**
 - **Kikiaola Sand Bypassing**

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Kikiaola Bypassing Potential RSM Project

- Kikiaola Harbor and offshore sand sink appear to block littoral sand transport
- Initial by-pass project of 80,000 cy
- Maintenance by-passing of 6,000 cy per year

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Kikiaola Bypassing Potential RSM Project (DLNR/DOBOR)

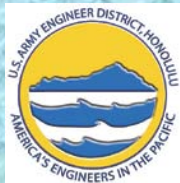


FEDERAL PERSPECTIVE

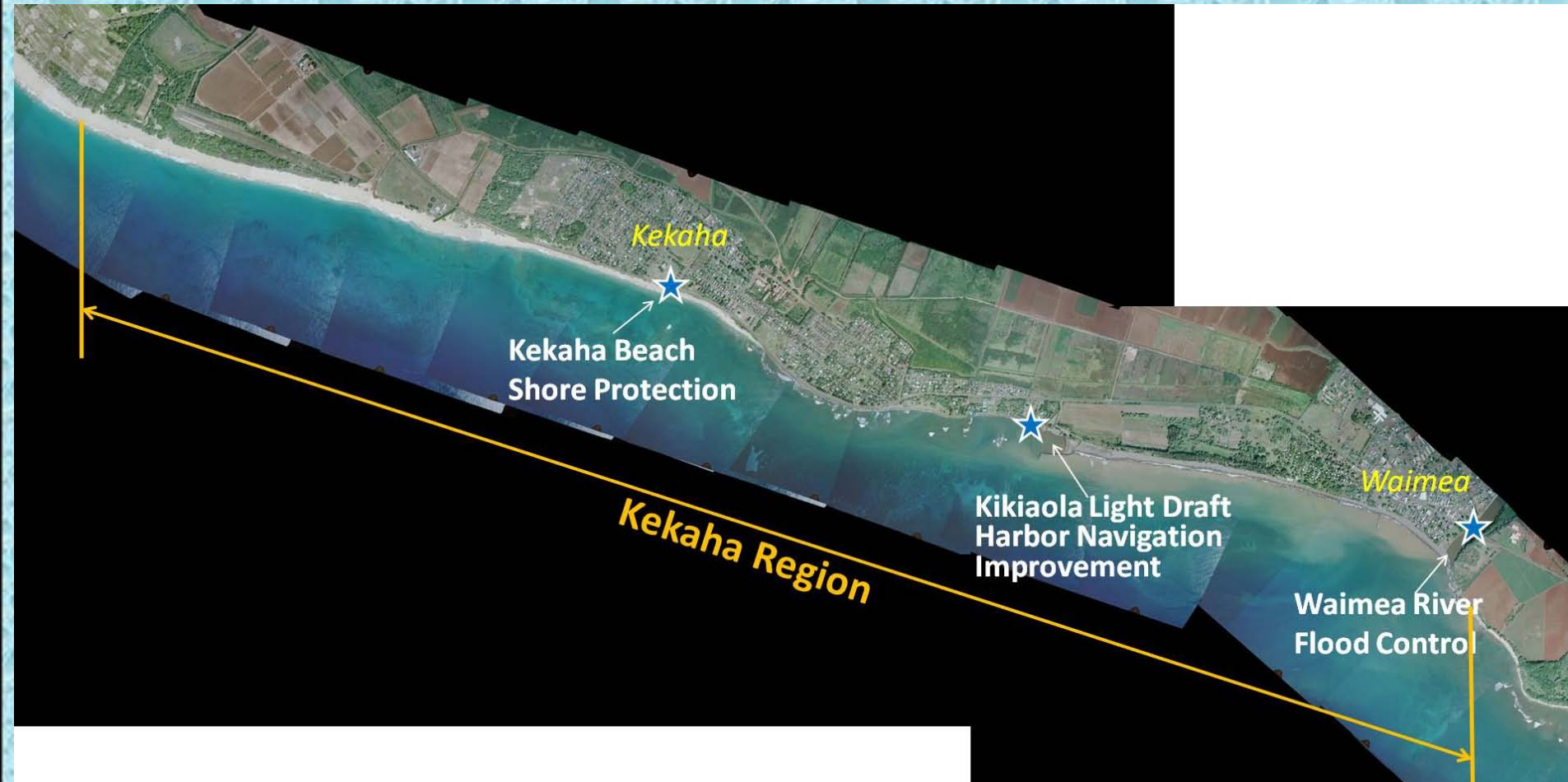


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Existing Federal Projects – Kekaha Region



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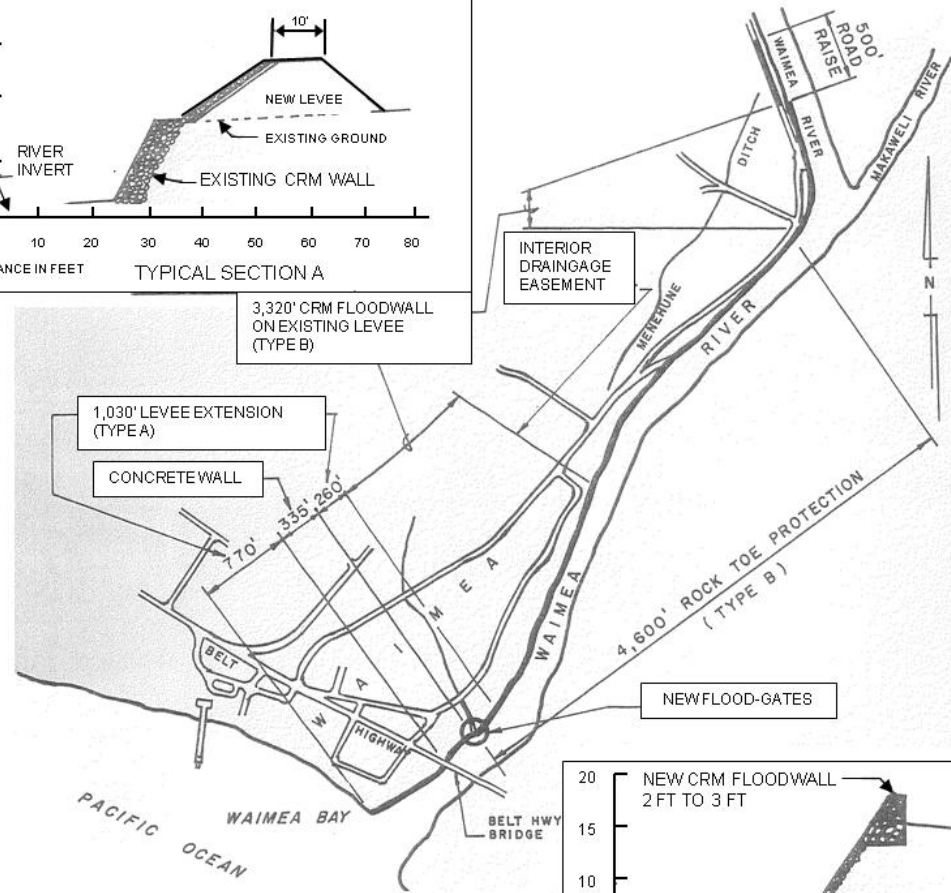
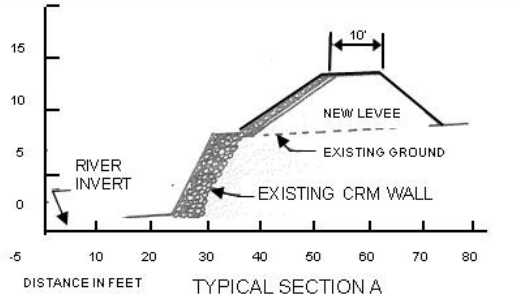
Waimea River Flood Control Kauai, Hawaii

PROJECT LOCATION
U.S. ARMY ENGINEER DISTRICT
HONOLULU

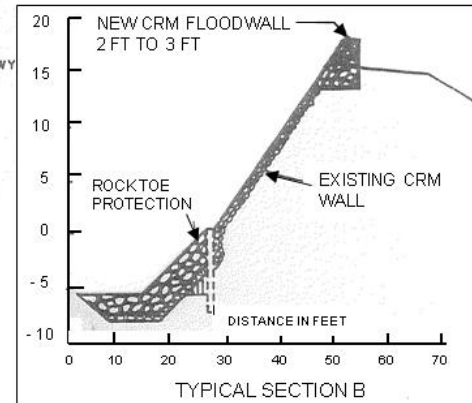
Waimea



Location Map



NOTE:
PLAN INCLUDES FLOOD WARNING SYSTEM



Location Map - Not to Scale



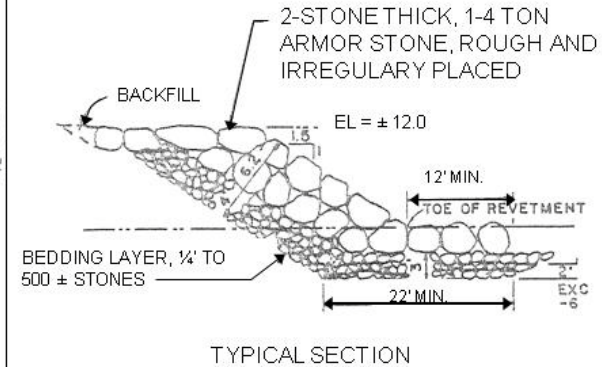
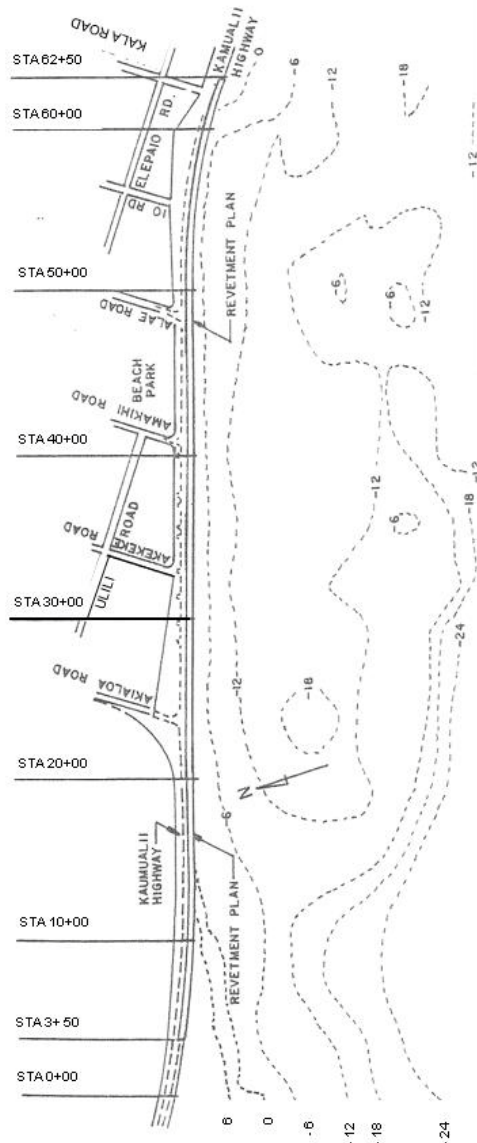
Kekaha Beach Erosion Control Kauai, Hawaii

PROJECT LOCATION
U.S. ARMY ENGINEER DISTRICT
HONOLULU

Kekaha



Location Map



PLAN
200' 0' 200' 400'
SCALE IN FEET



Kikiaola Light Draft Harbor Kauai, Hawaii

LOCATION MAP



U.S. ARMY ENGINEER DISTRICT
HONOLULU

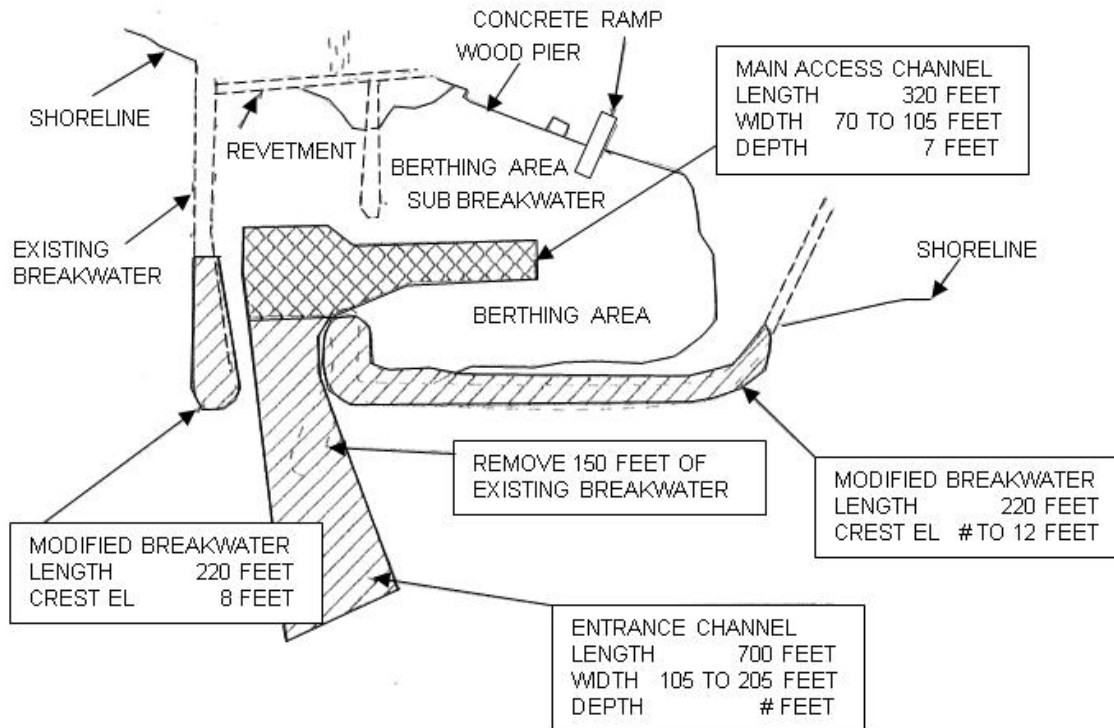
Kikiaola Light Draft Harbor



Location Map

LEGEND:

- NONE WORK COMPLETED AS OF 30 SEP 2002
- NONE WORK PROPOSED WITH FUNDS AVAILABLE FOR FY 2003 and 2004
-  WORK PROPOSED WITH FUNDS AVAILABLE FOR FY2005
-  WORK REQUIRED TO COMPLETE THE PROJECT AFTER FY 2005



STATE PERSPECTIVE



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