State of Hawai'i
Office of Planning and Sustainable Development

Scoping Study for a Regional Shoreline Management Strategy for the State of Hawai'i

Presentation to MACZAC
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Consultant Team
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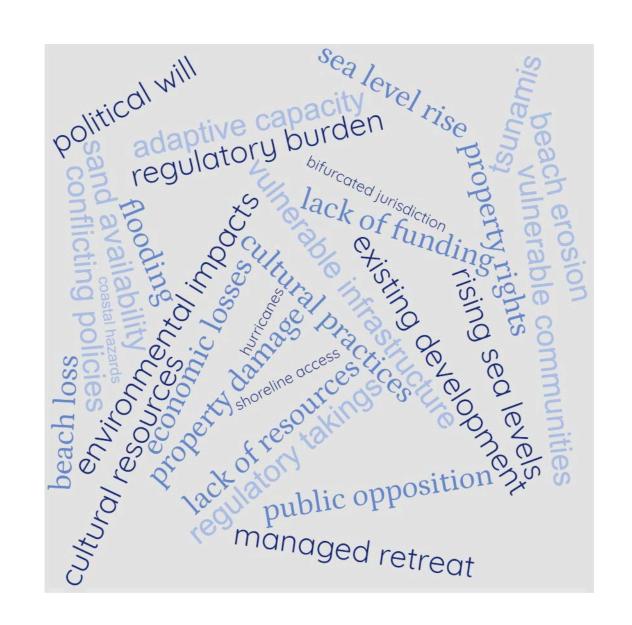**Coastal Planners, LLC** Thorne Abbott

What is a scoping study?

An exploratory step towards a regional shoreline management strategy for the State of Hawaiʻi

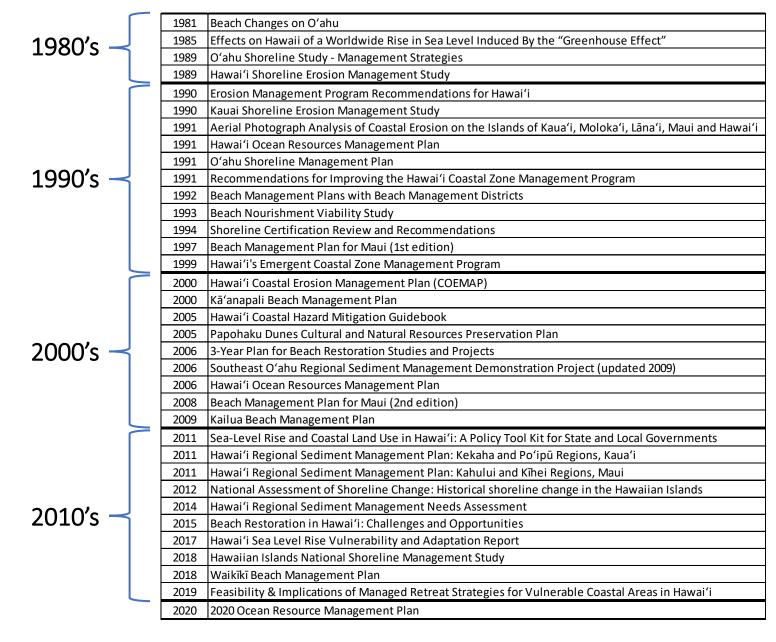# So, what's the problem?

- Hawaiʻi has a very diverse shoreline and there are many factors that make shoreline management in Hawaiʻi challenging. 👉

- Hawaiʻi is one of the most progressive states in the U.S. in terms of **regulating** shorelines.

- Hawaiʻi lacks a comprehensive and coordinated framework for **managing** shorelines.

Previous Studies, Plans, and Recommendations

1980's

1981	Beach Changes on Oʻahu
1985	Effects on Hawaii of a Worldwide Rise in Sea Level Induced By the "Greenhouse Effect"
1989	Oʻahu Shoreline Study - Management Strategies
1989	Hawaiʻi Shoreline Erosion Management Study

1990's

1990	Erosion Management Program Recommendations for Hawaiʻi
1990	Kauai Shoreline Erosion Management Study
1991	Aerial Photograph Analysis of Coastal Erosion on the Islands of Kauaʻi, Molokaʻi, Lānaʻi, Maui and Hawaiʻi
1991	Hawaiʻi Ocean Resources Management Plan
1991	Oʻahu Shoreline Management Plan
1991	Recommendations for Improving the Hawaiʻi Coastal Zone Management Program
1992	Beach Management Plans with Beach Management Districts
1993	Beach Nourishment Viability Study
1994	Shoreline Certification Review and Recommendations
1997	Beach Management Plan for Maui (1st edition)
1999	Hawaiʻi's Emergent Coastal Zone Management Program

2000's

2000	Hawaiʻi Coastal Erosion Management Plan (COEMAP)
2000	Kāʻanapali Beach Management Plan
2005	Hawaiʻi Coastal Hazard Mitigation Guidebook
2005	Papohaku Dunes Cultural and Natural Resources Preservation Plan
2006	3-Year Plan for Beach Restoration Studies and Projects
2006	Southeast Oʻahu Regional Sediment Management Demonstration Project (updated 2009)
2006	Hawaiʻi Ocean Resources Management Plan
2008	Beach Management Plan for Maui (2nd edition)
2009	Kailua Beach Management Plan

2010's

2011	Sea-Level Rise and Coastal Land Use in Hawaiʻi: A Policy Tool Kit for State and Local Governments
2011	Hawaiʻi Regional Sediment Management Plan: Kekaha and Poʻipū Regions, Kauaʻi
2011	Hawaiʻi Regional Sediment Management Plan: Kahului and Kīhei Regions, Maui
2012	National Assessment of Shoreline Change: Historical shoreline change in the Hawaiian Islands
2014	Hawaiʻi Regional Sediment Management Needs Assessment
2015	Beach Restoration in Hawaiʻi: Challenges and Opportunities
2017	Hawaiʻi Sea Level Rise Vulnerability and Adaptation Report
2018	Hawaiian Islands National Shoreline Management Study
2018	Waikīkī Beach Management Plan
2019	Feasibility & Implications of Managed Retreat Strategies for Vulnerable Coastal Areas in Hawaiʻi
2020	2020 Ocean Resource Management Plan

What is the purpose of this scoping study?

1. Understand the problems, issues, and challenges

2. Leverage previous studies, plans, and recommendations

3. Identify opportunities and pathways for improvement

4. Develop recommendations and process steps

Scoping Study Approach

Explore potential regional shoreline management strategies

- Identify examples
- Apply selected methodologies to specific case studies in Hawaiʻi
- Evaluate effectiveness, advantages, disadvantages, and tradeoffs
- Seek stakeholder input

Formulate recommendations and identify next steps

- Develop a methodology for defining regions/subregions
- Evaluate potential adaptation measures and opportunities to streamline solutions
- Identify data gaps and research needs
- Identify steps needed to implement a regional shoreline strategy

Key Scoping Questions

1. How will defining regions/subregions improve shoreline management?

2. How can shoreline regions/subregions be defined?

3. What are feasible adaptation options and limitations by region/subregion?

4. What policies and governance arrangements are in place or needed to support a regional shoreline management in Hawai'i?

Examples of regional shoreline management approaches
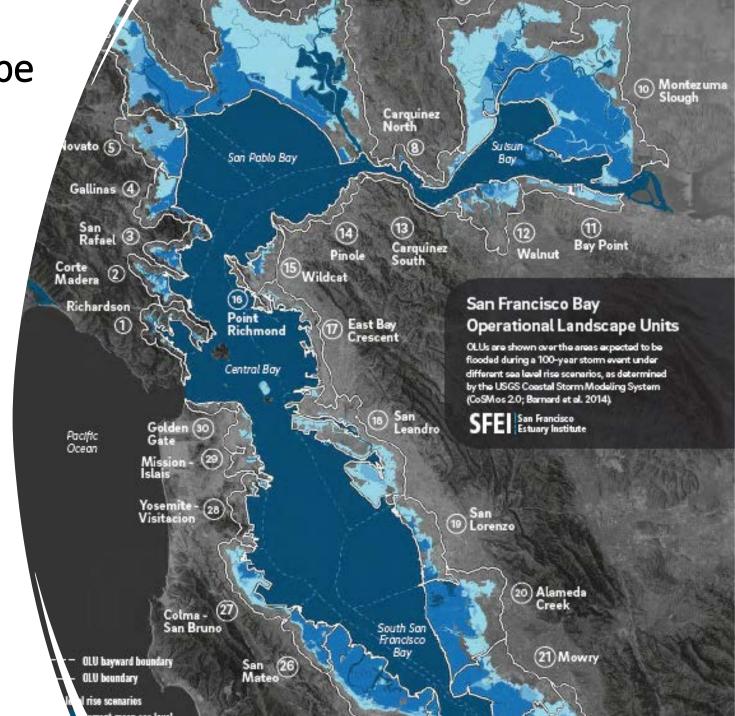
Florida Adaptation Action Areas (AAA)

- Voluntary designation for areas vulnerable to sea level rise and associated coastal flooding due to extreme high tides and storm surge to support:
  - Prioritize funding for infrastructure projects and adaptation planning.
  - Develop policies to improve resilience to coastal flooding.

SF Bay Operational Landscape Units (OLU) are defined to preserve coastal ecosystem functions and services

OLUs are:

- Delineated by geomorphic units and future conditions

- Characterized by land uses and habitats

- Used to identify adaptation strategies and nature-based management approaches that are appropriate to the OLU

San Francisco Bay
Operational Landscape Units

OLUs are shown over the areas expected to be flooded during a 100-year storm event under different sea level rise scenarios, as determined by the USGS Coastal Storm Modeling System (CoSMoS 2.0; Barnard et al. 2014).

SFEI | San Francisco Estuary Institute

Washington State Shoreline Master Program and Shoreline Master Plans (SMPs)

- Requirement of the Washington State Shoreline Management Act

- Provides a framework for managing shorelines.

- Critical Areas Ordinances (CAO) are designed to protect sensitive and hazardous areas via responsible management.

- Shoreline Inventory uses more than 50 parameters to characterize the physical, biological, and anthropogenic characteristics of the shoreline to inform management decisions.

Legend:
- Clallam County SMP
- Mason County SMP
- Anacortes CAO
- Normandy Beach CAO
- Des Moines SMP
- Federal Way SMP
- University Place SMP
- Coupeville SMP
- Gig Harbor SMP
- Whatcom County SMP & CAO
- Island County SMP
- Pierce County SMP
- Jefferson County SMP & CAO

Miles 0 — 20

COASTAL GEOLOGIC SERVICES

Figure 1-2. Littoral cells that comprise the West Maui Region.

U.S. Army Corps of Engineers Regional Sediment Management (RSM) Program

A systems approach using Best Management Practices for more efficient and effective use of sediments in coastal, estuarine, and inland environments = Healthy Systems.

- Navigation, Flood Risk Management, Ecosystem Restoration, Emergency Management

- Economically viable and environmentally sustainable solutions

- Recognizes sediment as a valuable resource.

- Link and leverage across multiple projects and authorities

- Consider regional implications of local actions (Adaptive Management)

- Enhance and share tools, technologies, lessons learned for RSM approaches

- Improve relationships through collaboration and decision making

Examples of Regional Shoreline Management in Hawaiʻi
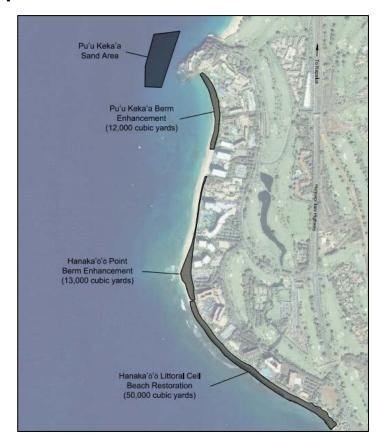
Waikīkī Beach Maintenance and Improvement Program

- Region: Honolulu
- Subregion: Waikīkī
- 8 littoral cells (beach sectors). 21 privately-owned parcels.
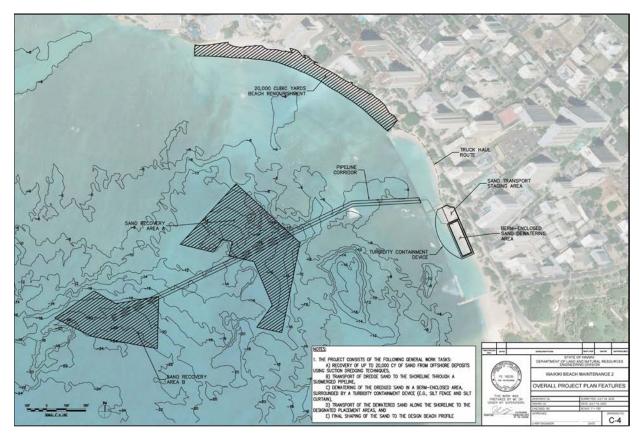- Public-private partnership (DLNR, WBSIDA)

Kāʻanapali Beach Nourishment and Berm Enhancement

- Region: West Maui
- Subregion: Kāʻanapali
- 2 littoral cells. 12 privately-owned parcels
- Public-private partnership (DLNR, KOA)

Examples of Subregional Shoreline Management in Hawaiʻi

Waikīkī Beach Maintenance (2012, 2021)

- Region: Honolulu
- Subregion: Waikīkī
- Management Unit: Royal Hawaiian Beach
- Public-private partnership (DLNR, WBSIDA)

Iroquois Point Beach Restoration and Stabilization

- Region: ʻEwa-Kalaeloa
- Subregion: ʻEwa Beach
- Management Unit: Iroquois Point (single parcel)
- Privately-funded (Hunt Development Group)

Regional Shoreline Management Scoping Study

Draft Outline

1. **INTRODUCTION**

2. **ISSUES, CHALLENGES AND OPPORTUNITIES**

3. **DESIRED OUTCOMES OF A REGIONAL SHORELINE MANAGEMENT STRATEGY**

4. **EXPLORATION OF SCOPING QUESTIONS**

5. **RECOMMENDATIONS FOR DEVELOPING A REGIONAL SHORELINE MANAGEMENT STRATEGY**

   - Methodology for Defining Regions and Subregions

   - Application of Methodology with Case Studies

   - Roadmap for Implementation

6. **CONCLUSIONS**

Key Project Activities

Explore scoping questions and develop case studies

Develop draft methodology/roadmap

Present progress/seek input during MACZAC/ORMP meetings (May, July, August)

Conduct virtual webinars to solicit input on draft outputs (July – November)

Finalize the scoping study report (December)

Shoreline Management in Hawai'i

What is working?

What is not working?

What would work?

Mahalo!

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