

Hawaii CZM Program

Coastal Zone Management
HAWAII STATE OFFICE OF PLANNING

Council on Ocean Resources Meeting

January 7, 2022

Agenda

Welcome and Introductions

Mary Alice Evans, Director, Hawai'i Office of Planning & Sustainable Development (OPSD)

General ORMP Updates

Justine Nihipali, Program Manager, Hawai'i Coastal Zone Management (CZM) Program

The Ocean Resources Management Plan (ORMP) Implementation Updates

Yusraa Tadj, Project Analyst, OPSD-CZM
Sarah Chang, Project Analyst, OPSD-CZM
Keelan Barcina, Project Analyst, OPSD-CZM
Melanie Lander, Community Planning and Design Extension Agent, UH Sea Grant

Next Steps

Justine Nihipali

Welcome & Introductions



CZM Program Updates

Authorities Matrix

What is CZM?

Beach Protection HRS §§ 205A-2(b)(9) and 205A-2(c)(9)

Objective 9:

Protect beaches and coastal dunes for (i) Public use and recreation; (ii) The benefit of coastal ecosystems; and (iii) Use as natural buffers against coastal hazards; and Coordinate and fund beach management and protection

DLNR:
HRS CHAPTER 115: PUBLIC ACCESS TO COASTAL AND INLAND RECREATIONAL AREAS
HRS CHAPTER 171: CONSERVATION AND RESOURCES
HRS CHAPTER 174C: STATE WATER CODE

COUNTY APPLICABLE STATE AUTHORITIES:
HRS CHAPTER 205A, PART II: SPECIAL MANAGEMENT AREAS
HRS CHAPTER 205A, PART III: SHORELINE SETBACKS

COUNTY AUTHORITIES:
CITY AND COUNTY OF HONOLULU SMA AND SHORELINE SETBACK ORDINANCES
COUNTY OF HAWAII SMA AND SHORELINE RULES
COUNTY OF KAUAI SMA RULES AND SHORELINE ORDINANCES
COUNTY OF MAUI SMA AND SHORELINE RULES

Policy A:

Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion.

DOH:
HRS CHAPTER 180C: SOIL EROSION AND SEDIMENT CONTROL

LUC:
HRS CHAPTER 205: LAND USE COMMISSION
HAR CHAPTER 15-15: LAND USE COMMISSION RULES

OPSD:
HRS CHAPTER 225M: STATE PLANNING

ALL AGENCIES:
HRS CHAPTER 343: ENVIRONMENTAL IMPACT STATEMENTS
HRS CHAPTER 344: STATE ENVIRONMENTAL POLICY

COUNTY APPLICABLE STATE AUTHORITIES:
HRS CHAPTER 205A, PART II: SPECIAL MANAGEMENT AREAS
HRS CHAPTER 205A, PART III: SHORELINE SETBACKS



HAWAII CZM PROGRAM AUTHORITIES MATRIX

A network approach to legal authorities for
implementing HRS Chapter 205A, Coastal Zone
Management Law

Contact: dbehl.op.czm@hawaii.gov



ORMP Focus Area Implementation

Focus Area #1: Development & Coastal Hazards

Yusraa Tadj, Project Analyst, OP-CZM
Sarah Chang, Project Analyst, OP-CZM

Focus Area #2: Land-Based Pollution

Keelan Barcina, Project Analyst, OP-CZM
*Melanie Lander, Community Planning and
Design Extension Agent, UH Sea Grant*

Focus Area #3: Marine Ecosystems

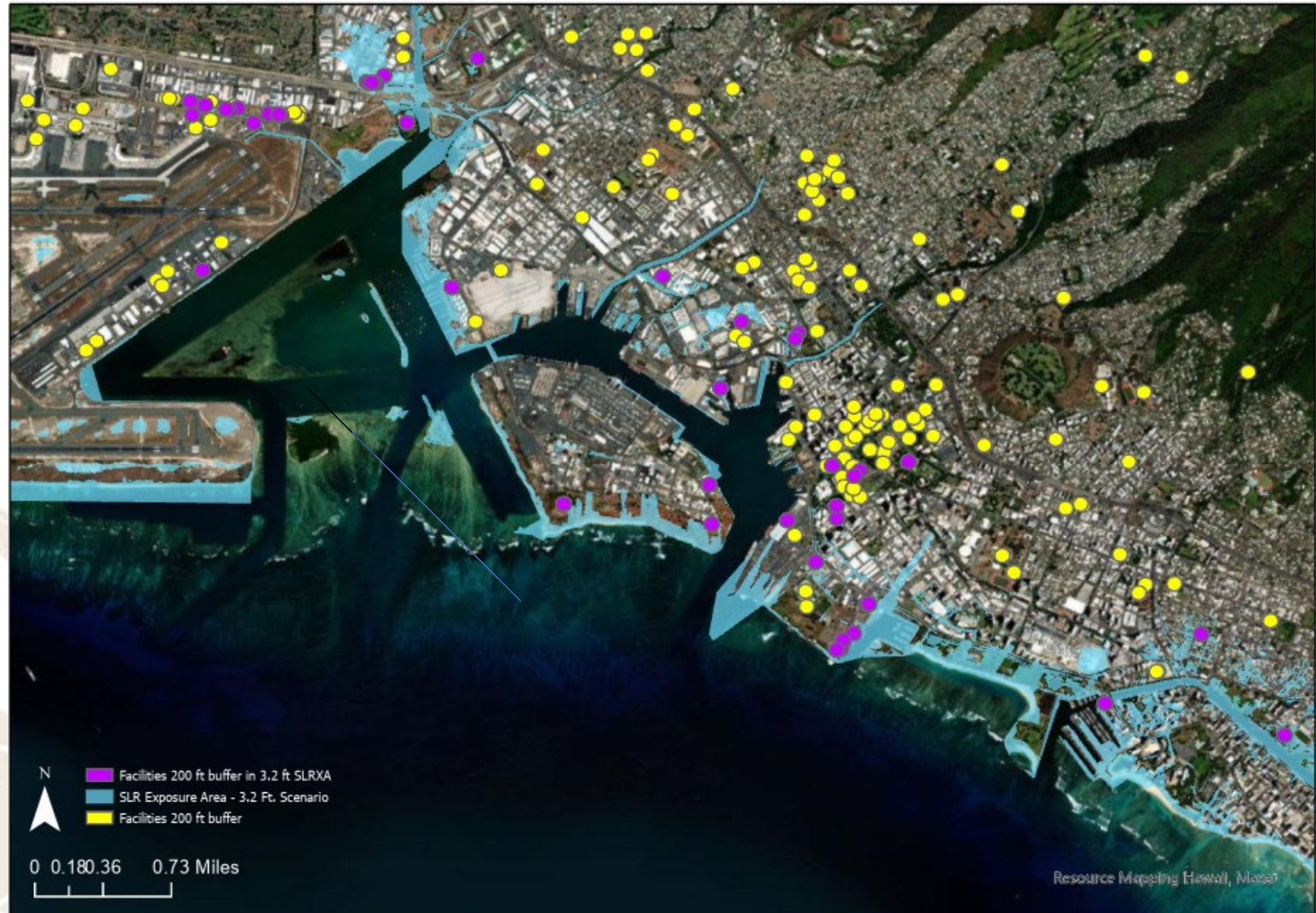
Keelan Barcina, Project Analyst, OP-CZM

Focus Area 1: Development & Coastal Hazards



Act 178, SLH 2021: Relating to Sea Level Rise Adaptation

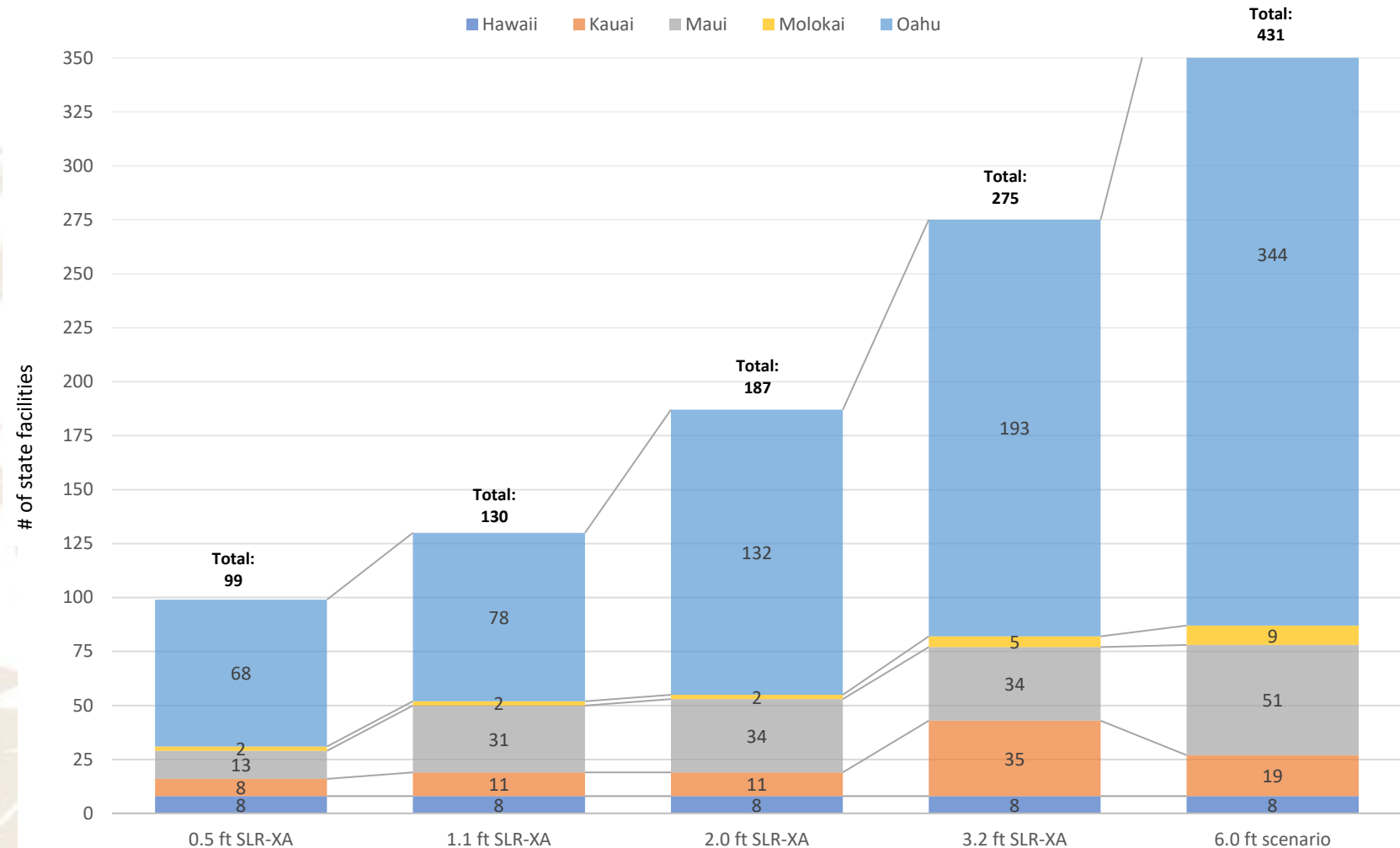
- Data Verification
 - Collaboration with partner agencies
 - CZM staff verification of GIS coordinates
- Analysis
 - SLR-XA scenarios
 - NOAA 6ft projections



Inventory Findings

- All islands, except Lanai, have vulnerable facilities in all scenarios
- Statewide, there is an exponential increase in the number of vulnerable facilities as sea level rise impacts increase

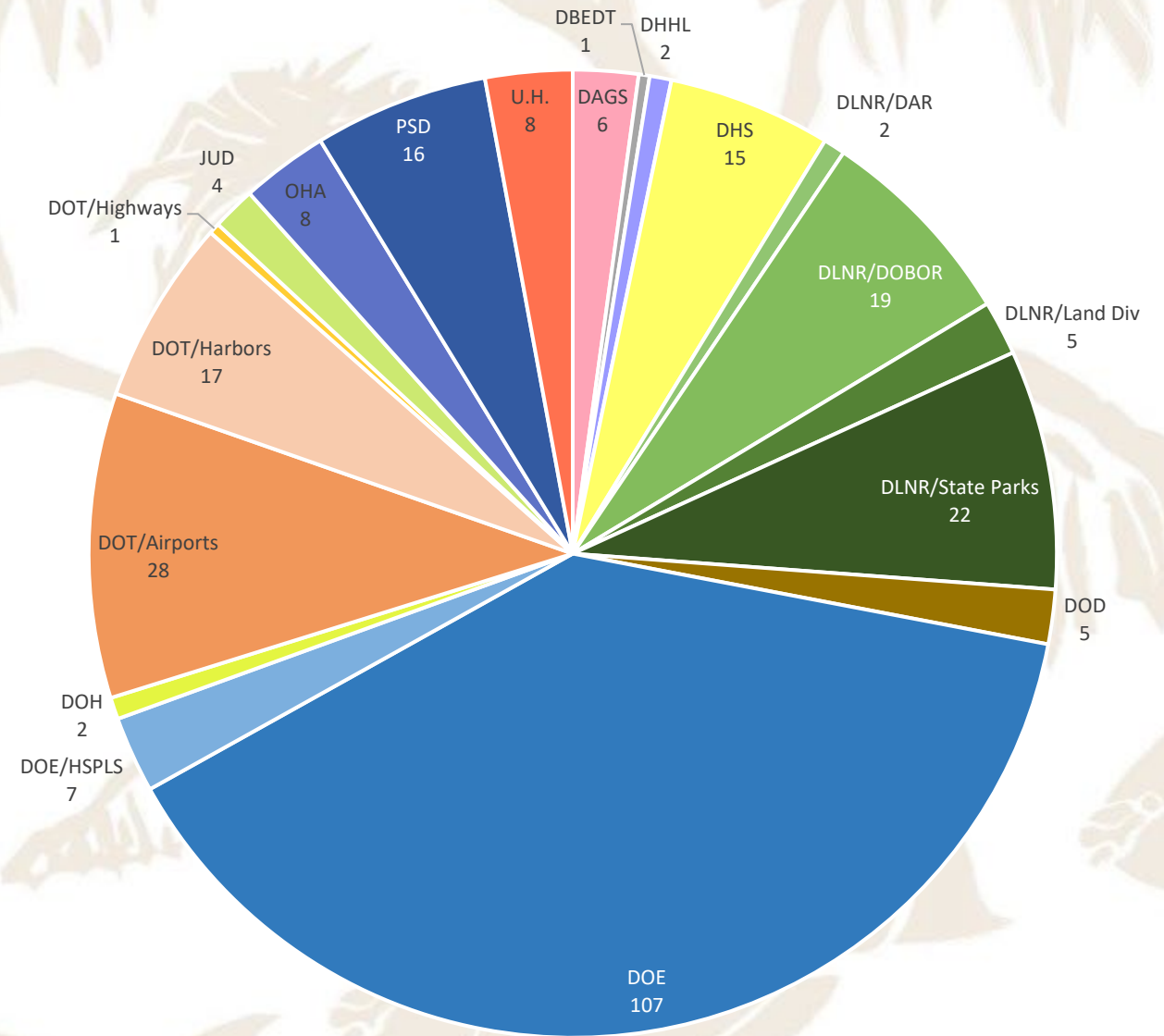
FACILITIES IN SLR-XA BY ISLAND



Inventory Findings

➤ DOE, DOT and DLNR are most impacted in all scenarios

State Facilities in the 3.2 ft SLR-XA by Agency/Dept

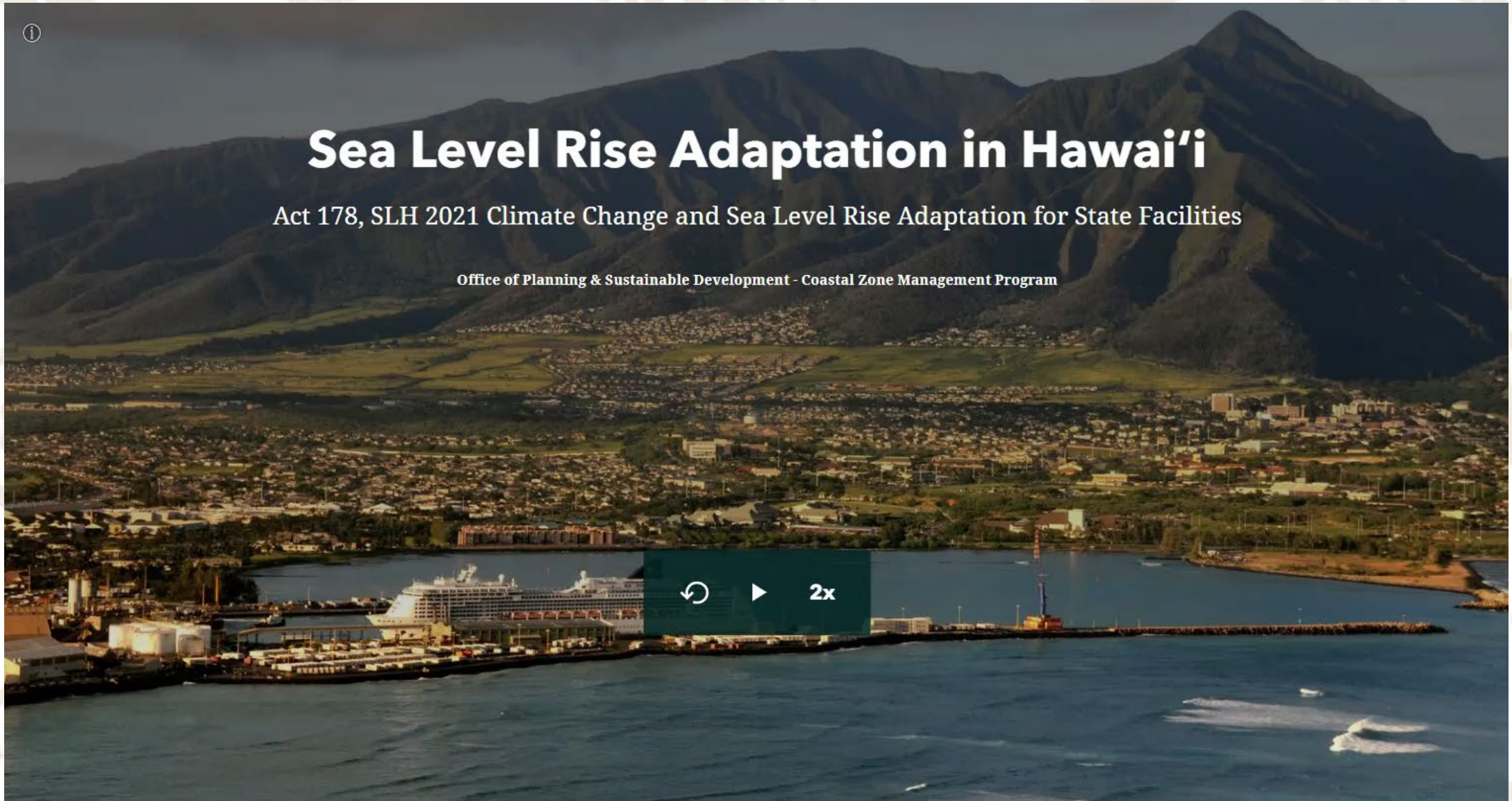


Assessment of Adaptation Options

To fully understand the impacts and vulnerabilities, more detailed and localized assessments should answer the following questions:

- **Vulnerability:** What is the probability of impact?
- **Sensitivity:** To what degree is a facility impacted? (ie. Does temporary flooding cause minimal impact/disruption or complete loss of the facility?)
- **Impact:** What are the direct and secondary impacts if a facility is temporarily or completely lost?
- **Cost:** What are the costs to repair or replace a facility? What are the economic and societal costs associated with service disruption?
- **Adaptive capacity:** What is the ability for a facility to be adapted to sea level rise impacts without significant modifications?

[Sea Level Rise Adaptation in Hawai'i \(arcgis.com\)](https://arcgis.com)



Sea Level Rise Adaptation in Hawai'i

Act 178, SLH 2021 Climate Change and Sea Level Rise Adaptation for State Facilities

Office of Planning & Sustainable Development - Coastal Zone Management Program

Projects Overview

- i. RFP Scoping Study for a Regional Shoreline Management Approach (*in progress*)
- ii. Coastal Management Fellowship (*in progress*)
- iii. Assessing the Legal & Policy Impacts of Managed Retreat (*pending; conditional based on NOAA award*)

RECAP & OVERVIEW: Scoping Study for Regional Shoreline Management

Challenge

Parcel-by-parcel decision making is at odds with regional (nature-based) interventions

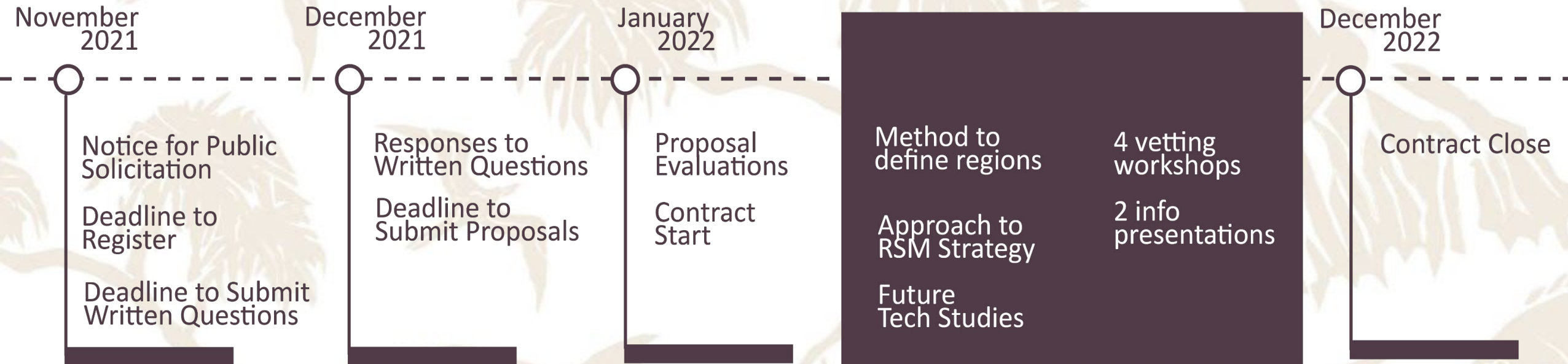
Background

- Desk study of regions
- Focus group interviews

RFP Scoping Study

initial step in an overall initiative to better understand shoreline management + its implications

TIMELINE: Scoping Study for Regional Shoreline Management



OVERVIEW: Coastal Management Fellowship

- Mission: on-the-job education and training opportunities in coastal resource management and policy
- Hosted by Digital Coast Partners: the Coastal States Organization (in partnership with Association of State Floodplain Managers, the National States Geographic Information Council, and The Nature Conservancy)
- Cost: CZM's contribution \$15,000

GOALS: Coastal Management Fellowship

Goal 1 Develop a statewide profile for Coastal Hazards and Development that represents population trends

Goal 2 Identify exposure of at-risk communities, or hotspots, vulnerable to coastal hazards and from a social and socioeconomic perspective

Goal 3 Create case studies at a micro-level, granular level of the demographic composition for 3-5 of most socially & environmentally vulnerable communities

BACKGROUND: Assessing Legal & Policy Impacts of Managed Retreat for Hawai'i

Project of Special Merit

- Intent: to offer CMPs the opportunity to develop innovative projects that further their CZM program enhancement area strategies and focus on national priorities
- Eligibility: Coastal Management Programs with approved Section 309 Strategy

BACKGROUND: Assessing Legal & Policy Impacts of Managed Retreat for Hawai`i

Barriers to Managed Retreat

place attachment

lack of suitable land

potential loss of livelihoods

community consensus

lack of funding

governance procedures

GOALS: Assessing Legal & Policy Impacts of Managed Retreat for Hawai'i

Goal 1 Assessing policy and legal aspects related to managed retreat that identifies policy and legal areas that can facilitate retreat or hinder retreat

Goal 2 Developing legal framework that facilitates managed retreat

Goal 3 Exploring managed retreat framework through 2 case studies



Single-family residences, North Shore, Oahu



Kahana Sunset Condominium, Maui

Focus Area 2: Land Based Pollution



Focus Area 2: Land-Based Pollution

Implementation Update

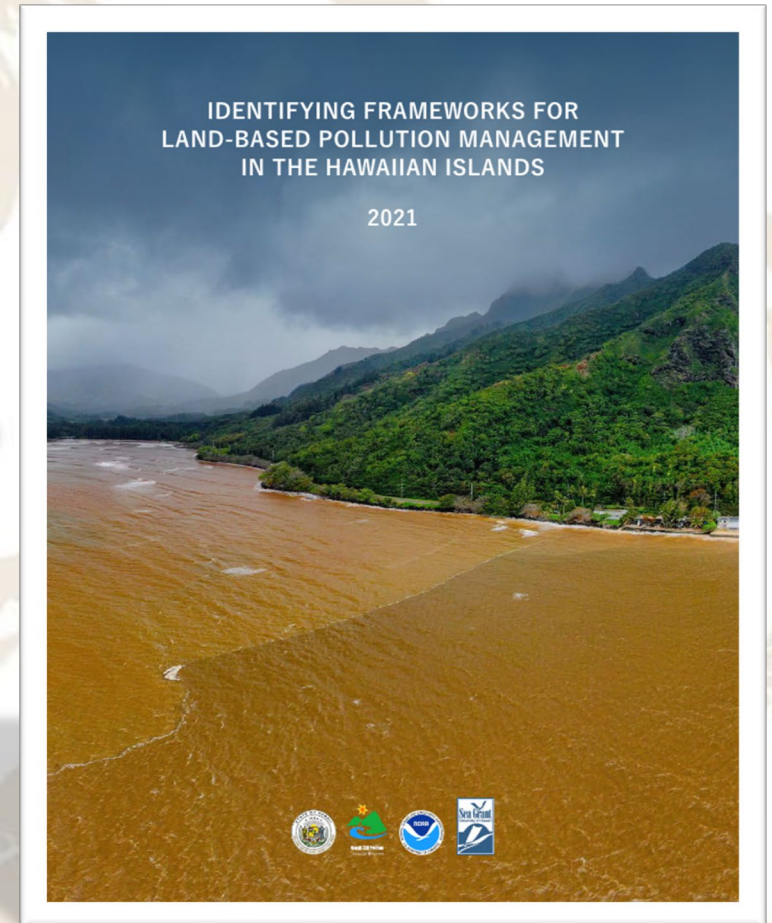
Last time: UH-Sea Grant presentation on the progress of the land-based pollution mgmt report

- Purpose: to recommend potential projects, and identify research needs and agency partners to collaborate with.
- *Identifying Frameworks for Land-Based Pollution Management in the Hawaiian Islands* finalized this week.

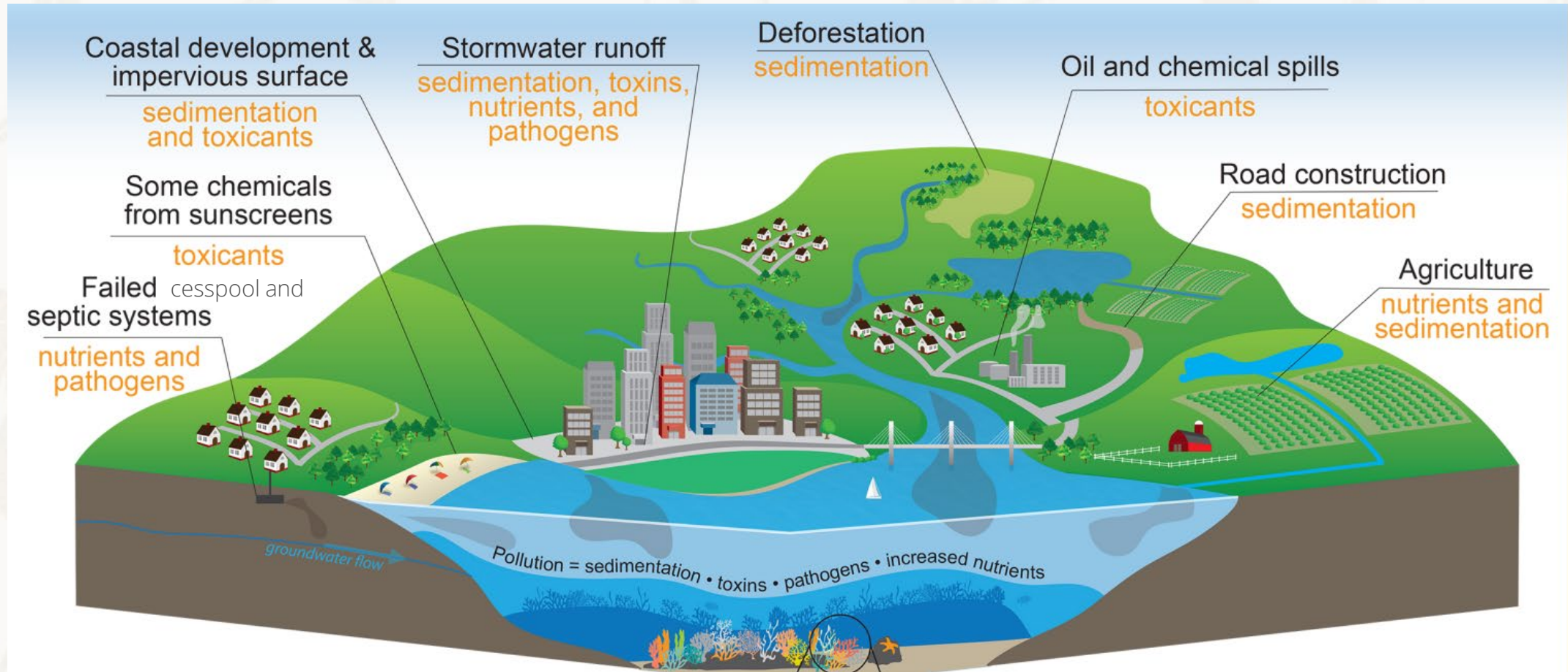


Report Overview: "Identifying Framework for Land-Based Pollution Management in the Hawaiian Islands"

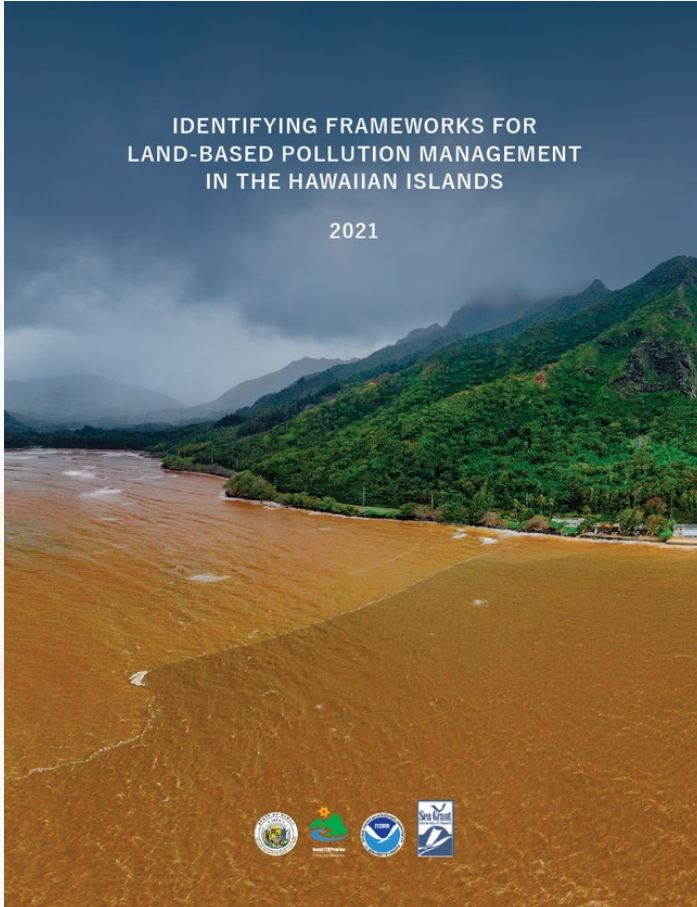
- **Approach**: stakeholder interviews across federal, state, and county agencies; and literature review.
- **Objective**: to describe the following within the urban / developed zone:
 - The **multi-jurisdictional mgmt** of LBP,
 - **Success and shortfalls** of current mgmt system,
 - Existing agency **public outreach and compliance campaigns**, and
 - **Research needs** for understanding and mgmt.



Defining Land-Based Pollution



Report Structure



SECTION I The Multi-Jurisdictional Management of Land-Based Pollution



The Federal Framework

Federal laws establish overarching mandates that guide the control of land-based pollution in every state. These policies affect planning, management, and implementation at the state and local levels. The policy framework governing land-based pollution management in Hawai'i is largely framed by two important pieces of Federal legislation: the Clean Water Act (CWA) and its amendments and the Coastal Zone Management Act (CZMA) and its amendments.⁴



Environmental Protection Agency (EPA)

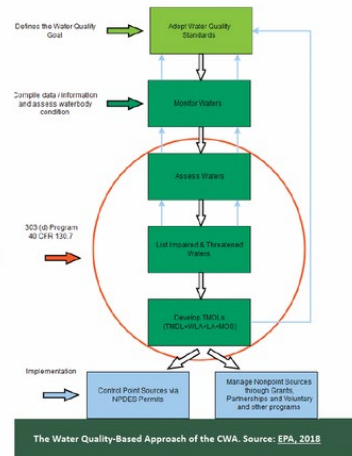
Mission:
To protect human health and the environment.

Compliance to Regulatory Responsibility:
The EPA co-administers the Federal Water Pollution Control Act, commonly known as the CWA [33 U.S. Code Section 1251 (1972)] with the U.S. Army Corps of Engineers (USACE) and jointly administers the CZMA and its amendments with the National Oceanic and Atmospheric Administration (NOAA).

The CWA created the imperative to review pollutant discharges into the waters of the United States and established standards to protect surface water quality. The CWA is the primary source of regulatory enforcement of point source pollution in the nation, which is defined by the CWA as "any discernible, confined and discrete conveyance... from

which pollutants are or may be discharged." Examples of point sources are pipes, man-made ditches and conveyances, and vessels. The CWA does not define nonpoint source pollution, nor does it assert any regulatory authority over its management, instead relying on an incentives-based program.

Management Approach:
The EPA establishes national water quality standards, funds water quality monitoring, creates tools and educational resources, and oversees CWA program administration, implementation, and enforcement. Regulatory oversight of point source pollution is primarily



⁴Federal mandates are often viewed as incompatible with Hawai'i's unique conditions. See Section II for additional context on the shortfalls of the current management framework.

SECTION II Successes and Shortfalls of the Current Management System

Shortfalls

Cascading Effects of Federal Actions
Federal mandates to manage water quality guide the management of land-based pollution at the state and county levels. In creating and amending the CWA, the U.S. Congress elected to encourage voluntary rather than regulatory controls for nonpoint sources of pollution. As a result, state and county governments have largely lacked mechanisms to create comprehensive, proactive, and enforceable management frameworks of their own. Instead, states and counties have allocated staffing and funding to work areas mandated by the federal government in order to keep up with reporting and planning obligations. While nonpoint sources of pollution are acknowledged as an important factor in meeting federal water quality standards, the voluntary emphasis on nonpoint source management has resulted in a substantial lack of investment in the data collection, research, technology and innovation, project implementation, and long-term maintenance needed to effectively curb water quality impacts.

When changes occur at the federal level, they effectively reshape the policy framework that Hawai'i works within. For example, recent alterations to the Navigable Waters Protection Rule definition⁵ has had an impact on many of Hawai'i's waterways. Ephemeral gulches and streams no longer meet the jurisdictional requirements for federal review. This has removed a layer of regulatory protection from streams that do not flow consistently, making them vulnerable to hydromodifications. While the state could meet this new management gap with targeted legislation, terrestrial impacts with land-based pollution implications may occur in the interim.

The broad influence of federal agencies can be interpreted as either a success or shortfall. If the federal government were to pass sweeping legislation or make available substantial funding targeting nonpoint source pollution, such a change would have positive impacts at the state and county levels. However, based on the current legal framework and its implementation within Hawai'i, the national emphasis on voluntary measures for nonpoint source pollution can largely be interpreted as a management shortfall.

Separation of Flood and Water Quality Management
Water quantity and quality are two sides of the same coin—managing the volume of water produced during a storm is a very effective way to reduce the amount of land-based pollution carried from land to sea. However, in our current regulatory environment, flood hazards are primarily managed to reduce risks to life and property. Because water quality is legally considered as a separate issue from flood management, opportunities to leverage synergies between the two have largely been lost.

A great example of this management failure can be seen in the wide-reaching hydromodifications that have taken place across the state. When clear of debris and operating as designed, concrete-lined stormwater channels have generally been an effective flood management strategy.⁶ However, this flood management approach has immeasurably increased water quality issues statewide by increasing the velocity, quantity, temperature, and pollutant loads in stormwater. Abetted by flood control

⁵The CWA Section 403 Certification Rule and Navigable Waters Protection Rule are currently under review at the federal level.

⁶Currently, stream channel maintenance is under-resourced, impacting both flood and water quality management.

The Multi-Jurisdictional Management of Land-Based Pollution

Successes and Shortfalls of the Current Management System

Section II: Successes and Shortfalls of the Current Management System



Photo: Ellen Zhang, 2021

Niu Valley, O'ahu



Photo: Don McLeish, 2020 for the Hawai'i and Pacific Islands King Tides Project

Honokawai Point, Maui

Section III

Suggestions of Research Needs to Improve Land-Based Pollution Understanding and Management

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Improve Understanding of Source and Volume of Nonpoint Source Pollutants
Hawaii's environmental managers lack fundamental information for decision making, specifically the constituent parts that compose land-based pollution and the varying contributions of each land use area to pollution at the watershed scale. This fundamental knowledge is lacking due to the sheer number of watersheds statewide, fragmented research efforts (often based on short grant funding cycles), lack of consistent monitoring methodologies and acceptance of the resulting data by accredited labs, and an overall lack of investment in data collection from ridge to reef.

It is important to understand the components that comprise land-based pollution, but this can only be done through thorough and often expensive monitoring and data collection. When monitoring systems are put in place, they are frequently stolen or vandalized. Currently, most monitoring occurs along Hawaii's shorelines and beaches. By the time runoff reaches the coast, it's difficult to determine the full spectrum of pollutants in contaminated waters and ascertain their sources. In order to collect information on origin zones and pollutant amounts, monitoring needs to occur through the entire watershed, in upper, middle, and lower reaches, both up and downstream of major confluences and land use changes. At the state and watershed scales, this information could be implemented in management decisions. For instance, in some regions the untreated waste from feral ungulates in conservation areas may outpace contamination from cesspools, whereas in others cesspool conversion may be the most urgent priority. This information would allow the prioritization and direction of resources to the pollution 'hotspot' and would also

allow managers to gauge the success of investments by comparing data before and after the intervention occurs. In other areas, the value and success of investments in low impact development could be assessed by understanding the amount of sediment flowing to, and through, urban areas along the coastline.

Until this data becomes available, there are several resources and tools that may be helpful as a stopgap. The Ocean Tipping Points Hawaii Case Study tool allows users to explore mapped 'environmental and anthropogenic drivers of coral reef ecosystem states', with sedimentation, effluent, development, and habitat modification layers being particularly important considerations for land-based pollution management.²⁰ However, Ocean Tipping Points is likely most useful for marine habitat managers as the tool only displays these drivers in the nearshore area. The NFWF Coastal Resilience Evaluation and Siting Tool (CREST) includes more robust terrestrial information.²¹ CREST provides generalized insight about threats like impermeable soils and soil erodibility on land, and also allows the display of marine, terrestrial, and fish and wildlife indexes to gauge habitat value. This tool has been used to consider the siting of restoration and resilience projects but was not designed for use in planning and permitting.

Further Assess the Intersection of Global Climate Change and Land-Based Pollution Management

The formation of the Hawaii Climate Change Mitigation and Adaptation Commission (as called for by Act 83 (2014) codified as HRS Chapter 225P), and the commissioning of the *Hawaii Sea Level Rise Vulnerability and Adaptation Report*,²² *Guidance for Using the Sea Level Rise Exposure Area in Local Planning*

Section III: Research Needs

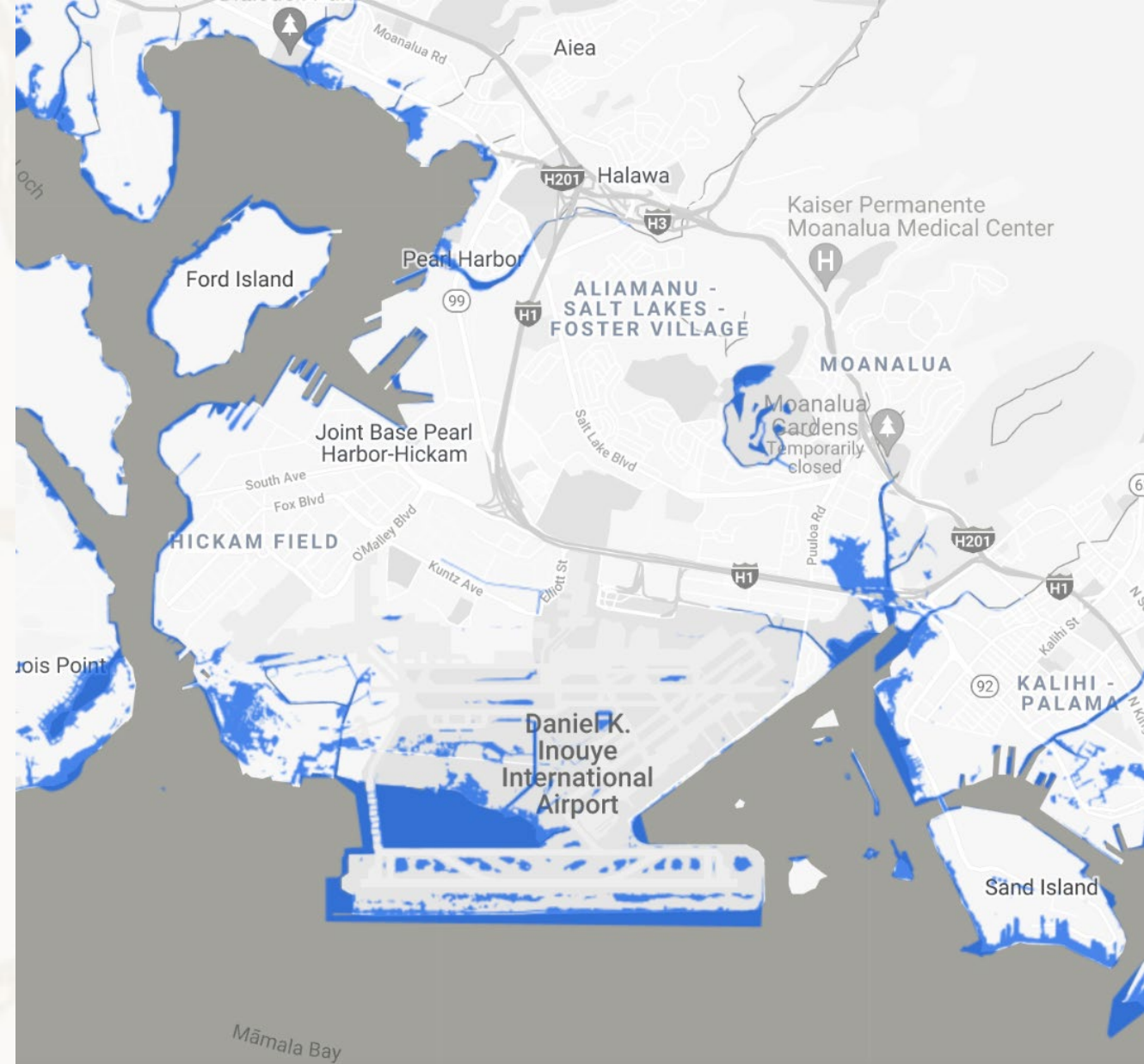
Improve Understanding of Source and
Volume of Nonpoint Source Pollutants



Photo: Bert Weeks

Section III: Research Needs

Further Assess the Intersection
of Global Climate Change and
Land-Based Pollution Management



Section III: Research Needs

Ground-truth Cesspool Data



Photo: DNL, Office of Conservation and Coastal Lands

Section IV

Recommendations for Future ORMP Focus Area 2 Action Team Implementation Actions

SECTION IV

Recommendations for Future ORMP Focus Area 2 Action Team Implementation Actions

This section includes recommendations intended to build upon the bolded objectives below, which were included under the ORMP Focus Area 2 as 'Proposed Components for Goal Success'. These recommendations are intended to provide a spectrum of implementation options for proposed ORMP actions, each of which will vary in time, expense, and effort. Pursuit of one, several, or all of the following recommendations would make a contribution towards improving land-based pollution management in the state. This section has been collaboratively derived from conversations with federal, state, and county stakeholders who participated in the creation of this report.

The following priorities are elaborated on in the recommended actions for each objective:

- Encourage county planning departments to take ownership of their unique role in controlling land-based pollution and empower more rigorous review during permitting processes
- Engage the public as partners in mitigation, compliance, and enforcement
- Support efficiencies by partnering with state and county agencies with shared goals
- Increase the implementation and visibility of green infrastructure in developed areas

Focus Area 2 Objective: Increase the shared understanding of green stormwater infrastructure among homeowners, government officials, practitioners, and private industry, through continuing outreach efforts.

Recommended Action: Increase access to land-based pollution and natural infrastructure information.

Work to add known erosional hotspots, soil survey data, riparian habitat areas, impervious surfaces, and urban tree cover layers to existing state and county 'map viewer' resources such as, but not limited to, the [DLNR Flood Hazard Assessment Tool \(FHAT\)](#), [Sea Level Rise Viewer](#), [Maps of O'ahu](#), and government mapping tools used for internal plan review processes. Notify relevant agencies when new or updated GIS layers become available related to land-based pollution, low impact development, or green infrastructure.

Justification- Users of map viewer resources may be impeded by a lack of available information and consistency across public-facing platforms. State and county officials have expressed concerns that they do not have access to or awareness of the latest data layers for GIS platforms used in decision-making.

Suggested Partners- NOAA OCM, Hawai'i Statewide GIS Program, DLNR Engineering Division, County Planning Departments, PaCLOOS

Recommended Action: Increase the public's role in enforcement by providing new, user-friendly ways to report land-based pollution observations.

Work with neighbor island information technology departments to encourage development of reporting mechanisms like the [City and County of Honolulu's 311 App](#), a simple and effective reporting tool that includes reporting options such for stormwater pollution, stream/canal cleaning, and debris/litter dumping.

Selected Recommendations and Insights

Work with neighbor island information technology departments to encourage development of LBP reporting mechanisms.

HOW IT WORKS

- SUBMIT**
Request a service, report an issue, and help improve your community.
- SCHEDULE**
Once submitted, your request is reviewed by the appropriate city department and the work is assigned or scheduled.
- WORK**
We're on it. Estimated times to complete vary by request.
- UPDATE**
If you sign up, we'll send you updates as work is completed on your request.



Photos: City and County of Honolulu Department of Information Technology, American Society of Civil Engineers

Selected Recommendations and Insights

Create succinct guidance specific to SMA permit review for land-based pollution considerations.

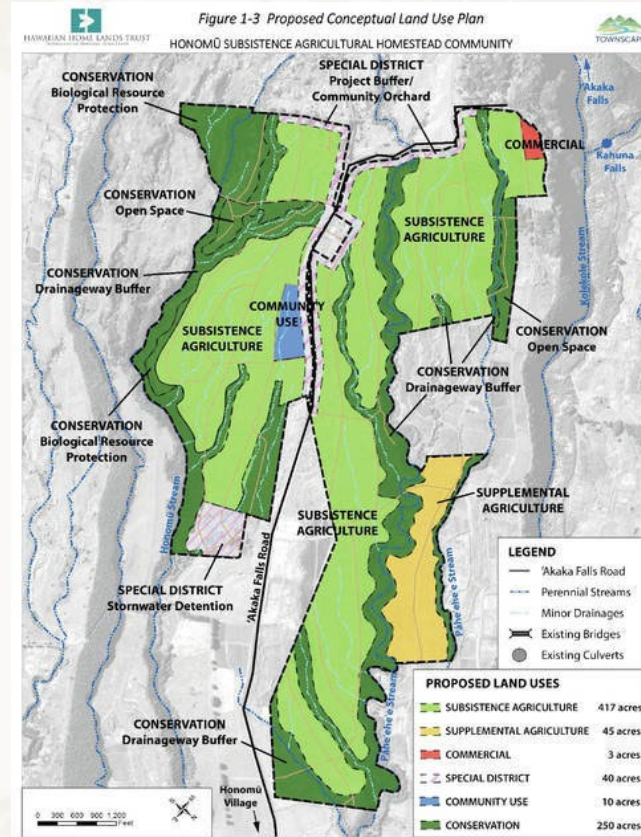


(vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible restore the recreational value of coastal waters;

Photo: Hawaii Tribune Herald

Selected Recommendations and Insights

Standardize the inclusion of water quality considerations in mid-to-long-term community-scale planning efforts.



Photos: Department of Hawaiian Homelands, Loopnet

Selected Recommendations and Insights

Support efficiencies by partnering with state and county agencies with shared goals.



As human population & development expands in coastal areas, the landscape is altered, increasing land-based sources of pollution & **THREATENING CORAL REEF HEALTH.**



Urban Tree Plan
March 2019



Focus Area 3: Marine Ecosystems



Focus Area 3: Marine Ecosystems

Implementation Update

Last time:

- Shared Marine and Coastal Zone Advocacy Council (MACZAC) mana'o for Marine Ecosystem Focus Area projects.
- Mentioned links for Federal 30x30: *Conserving and Restoring America the Beautiful*
- Project of Special Merit update: Kokua Community-Based Monitoring Program



Focus Area 3: Marine Ecosystems

Project Overview: *Kōkua Community-Based Monitoring Program*

Status: early stages in progress; awarded \$190, 067 in Sept 2021; contract executed with UH in Nov 2021

Implements both ORMP and Holomua: Marine 30x30

- ✓ Addresses mgmt gaps to prevent further damage to nearshore ecosystems
- ✓ Fills mgmt gaps to support and expand coral reef enhancement efforts
- ✓ Increases DLNR-DAR capacity to work with communities
- ✓ Supplements DLNR-DAR education, outreach efforts
- ✓ Strengthens the Marine 30x30 Pillars

Next Steps: Hiring a RCUH coordinator to work with DLNR-DAR



Summary: ORMP Implementation Updates

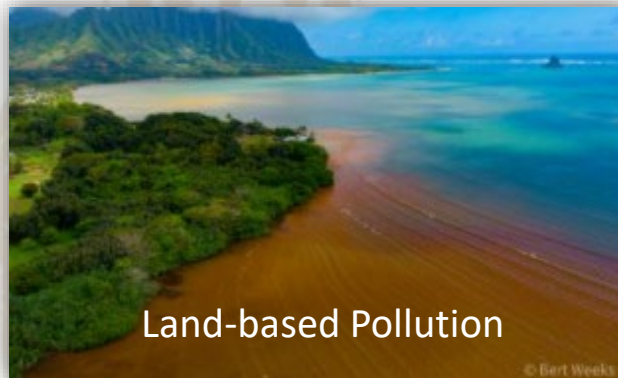


Coordination of Act 178, SLH 2021 **Relating to Sea Level Rise Adaptation**

Developing scoping options for **regional shoreline management planning** (in procurement)

Coastal Management Fellow placement to develop a stronger understanding of the exposure of **at-risk communities**, or hotspots, vulnerable to coastal hazards and from a **social and socioeconomic perspective** (in progress)

Managed retreat **legal and policy analysis** (proposed)



Report: *Identifying **Frameworks for Land-based Pollution Management** in the Hawaiian Islands* (completed)



Project: *Creating a Framework for and Implementing a **Community-based Monitoring Program*** (CZM-funded w/DLNR-DAR lead)

Questions/Comments?



**Next Council Meeting:
July 7, 2022**

Mahalo!

<http://planning.hawaii.gov/czm>

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