



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

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202412101520CH

December 20, 2024

The Honorable Ronald D. Kouchi,
President and Members
of the Senate
Thirty-Third State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Nadine K. Nakamura,
Speaker and Members of the
House of Representatives
Thirty-Third State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Nakamura, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the Act 178, SLH 2021: Relating to Sea Level Rise Adaptation 2024 Annual Report, as required by Act 178, SLH 2021. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at:

<http://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/>.

Sincerely,

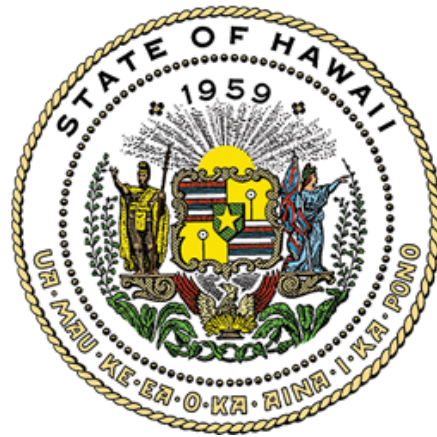
James Kunane Tokioka
DBEDT Director

Enclosure

c: Legislative Reference Bureau

ACT 178, SLH 2021: RELATING TO SEA LEVEL RISE ADAPTATION

2024 Annual Report
Report to the Thirty-Third
Legislature Regular Session of 2025



Prepared pursuant to Act 178, Session Laws of Hawai'i 2021

by

Office of Planning and Sustainable Development

Department of Business, Economic Development and Tourism

State of Hawai'i

December 2024

Table of Contents

| | |
|--|----------|
| 1. Introduction | 3 |
| 1.1 2024 Major Accomplishments | 3 |
| 1.2 Act Summary | 3 |
| 1.3 Hawai'i CZM Program | 4 |
| 2. Phased Approach..... | 4 |
| 2.1 Past Major Accomplishments | 4 |
| 3. 2024 Activities and Accomplishments..... | 5 |
| 3.1 Procurement for Services to Develop a Standardized Vulnerability Assessment Process | 5 |
| 3.2 Project - Vulnerability of State Facilities to Seal Level Rise: Development of a Standardized Vulnerability Assessment Process & Guidance | 5 |
| 4. Next Steps & Anticipated Activities for 2025..... | 8 |

List of Acronyms

| | |
|------------|---|
| AGR | DEPARTMENT OF AGRICULTURE |
| B&F | DEPARTMENT OF BUDGET AND FINANCE |
| CCMAC | HAWAI'I CLIMATE CHANGE MITIGATION AND ADAPTATION COMMISSION |
| DAGS | DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES |
| DBEDT | DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT, AND TOURISM |
| DHHL | DEPARTMENT OF HAWAIIAN HOME LANDS |
| DHS | DEPARTMENT OF HUMAN SERVICES |
| DLNR | DEPARTMENT OF LAND AND NATURAL RESOURCES |
| DLNR-DAR | DEPARTMENT OF LAND AND NATURAL RESOURCES - DIVISION OF AQUATIC RESOURCES |
| DLNR-DOBOR | DEPARTMENT OF LAND AND NATURAL RESOURCES - DIVISION OF BOATING AND OCEAN RECREATION |
| DLNR-DOFAW | DEPARTMENT OF LAND AND NATURAL RESOURCES - DIVISION OF FORESTRY AND WILDLIFE |
| DLNR-OCCL | DEPARTMENT OF LAND AND NATURAL RESOURCES - OFFICE OF CONSERVATION AND COASTAL LANDS |
| DOD | DEPARTMENT OF DEFENSE |
| DOE | DEPARTMENT OF EDUCATION |
| DOE-HSPLS | DEPARTMENT OF EDUCATION – HAWAI'I STATE PUBLIC LIBRARY SYSTEM |
| DOH | DEPARTMENT OF HEALTH |
| DOT | DEPARTMENT OF TRANSPORTATION |
| GIS | GEOGRAPHIC INFORMATION SYSTEM |
| HHSC | HAWAI'I HEALTH SYSTEM CORPORATION |
| HI-EMA | HAWAI'I EMERGENCY MANAGEMENT AGENCY |
| JUD | HAWAI'I STATE JUDICIARY |
| NOAA | NATIONAL OCEAN AND ATMOSPHERIC ADMINISTRATION |
| OPSD | OFFICE OF PLANNING AND SUSTAINABLE DEVELOPMENT |
| OPSD-CZM | OFFICE OF PLANNING AND SUSTAINABLE DEVELOPMENT – COASTAL ZONE MANAGEMENT PROGRAM |
| ORMP | HAWAI'I OCEAN RESOURCES MANAGEMENT PLAN |
| SLH | SESSION LAWS OF HAWAI'I |
| SLR | SEA LEVEL RISE |
| SLR-XA | SEA LEVEL RISE EXPOSURE AREA |
| UH | UNIVERSITY OF HAWAI'I |

1. Introduction

This report describes the Office of Planning and Sustainable Development (OPSD)'s activities and progress related to the implementation of Act 178, Session Laws of Hawai'i (SLH) 2021, Relating to Sea Level Rise Adaptation. This report includes a description of activities and progress to date, as well as a discussion of next steps.

This annual report fulfills the requirement in Act 178, SLH 2021 for the Office of Planning and Sustainable Development to report annually to the Governor, the Legislature, and the Hawai'i Climate Change Mitigation and Adaptation Commission regarding vulnerability and mitigation assessments for state facilities and progress in implementing sea level rise adaptation in future plans, programs, and capital improvement needs and decisions.

1.1 2024 Major Accomplishments

In 2024, the OPSD-CZM accomplished several tasks in continuing to move forward the Act 178, SLH 2021 initiative. Key accomplishments and takeaways include (Detailed descriptions of the completed activities can be found in **Section 3**):

- Finalized Scope of Work with Action Team: OPSD, in collaboration with a small group of multi-agency representatives, developed a scope of work to procure professional consultant services to develop a standardized methodology and process for assessing the vulnerability of state-managed facilities to sea level rise.
- Completed Procurement Process: State general funds were released to OPSD in May 2024. The RFP procurement process ran from May to June 2024. ICF Incorporated, L.L.C. was the selected vendor and a contract was executed in July 2024.
- Started work on project to develop a Sea Level Rise Vulnerability Assessment for State Facilities: ICF Incorporated began work on the project with a kick-off meeting with multi-agency representatives on November 1, 2024. The project has an anticipated completion of July 31, 2025.

1.2 Act Summary

The State's Thirty-First Legislature recognized that climate change and sea level rise "pose significant, dangerous, and imminent threats to the State's social and economic well-being, public safety, nature and environment, cultural resources, property, infrastructure, and government functions and will likely have a disproportionate impact on low-income and otherwise vulnerable communities." Act 178, SLH 2021 was passed in order to begin the long-term planning needed to effectively address climate impacts.

The purpose of this Act is to:

Require the OPSD, in coordination with state agencies with operational responsibilities over state facilities, to:

- Identify existing and planned facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards;
- Assess options to mitigate the impacts of sea level rise to those facilities; and
- Submit annual reports to the Governor, Legislature, and the Hawai'i Climate Change Mitigation and Adaptation Commission regarding vulnerability and mitigation assessments for state facilities and progress toward implementing sea level rise adaptation in future plans, programs, and capital improvement needs and decisions.
- Update and reaffirm the role of the OPSD to coordinate climate change adaptation and sea level rise adaptation among all state agencies to improve the interagency coordination of these activities; and
- Amend the Hawai'i State Planning Act to include sustainable development, climate change adaptation, and sea level rise adaption as objectives for facility systems.

1.3 Hawai'i CZM Program

Within the OPSD, the Coastal Zone Management Program (OPSD-CZM) has been charged with coordinating the objectives for Act 178, SLH 2021. This aligns with the OPSD-CZM's role as the lead coordinating entity for the implementation of the 2020 Hawai'i Ocean Resources Management Plan: Collaborative Coastal Zone Management from Mauka to Makai (ORMP), that similarly identifies the need to inventory and analyze critical facility assets threatened by chronic and episodic coastal hazards and future sea level rise projections.

2. Phased Approach

Adaptation planning takes place over decades and is constantly evolving as conditions and data change and progress. In order to move towards statewide, coordinated action, OPSD-CZM has identified an approach which includes three phases of implementation.



2.1 Past Major Accomplishments

Since 2021, the first year of the initiative, the OPSD-CZM has completed the following tasks under Phases 1 and 2 of the implementation approach:

- ✓ **State Facilities Inventory (2021):** OPSD-CZM created a GIS layer identifying the physical locations of all facilities owned and managed by the state. Pursuant to the Act language, this initiative focuses on

state-operated facilities (i.e., buildings).

- ✓ **Sea Level Rise Exposure Assessment (2021)**: OPSD conducted an analysis to identify which state owned and managed facilities were located within various sea level rise scenarios.
- ✓ **StoryMap webpage (2021)**: OPSD created an online resource to share activities and findings with the public. ([LINK](#))
- ✓ **Literature Review (2022)**: OPSD evaluated guidance documents and tools from 11 different coastal states and municipalities to understand the range of strategies used to assess vulnerability to sea level rise. Findings from the Literature Review, as well as feedback from agency partners, informed OPSD’s decision to pursue the development of a standardized process and methodology that could be used by all state agencies with facilities management responsibilities.
- ✓ **Data Refinement for Sea Level Rise Exposure Assessment (2023)**: OPSD aggregated existing county GIS data to update the GIS layer identifying the physical locations of all state-managed facilities. The updated layer used building footprints, as opposed to points, to represent facilities.
- ✓ **Received Funding from Legislature (2023)**: The Legislature allocated \$400,000 ‘CIP in operating’ to OPSD in the State budget (Act 164, SLH 2023) for the development of guidance and a standardized process for conducting vulnerability assessments for state-managed facilities. This was reduced to \$360,000 due to fund diversion for fire recovery.

The completed 2021, 2022 and 2023 Annual Reports can be found on the Act 178, SLH 2021 StoryMap. ([LINK](#))

3. 2024 Activities and Accomplishments

In 2024, the OPSD-CZM continued work under Phase 2 of the initiative and took action to move forward on recommendations made by the Act 178 Action Team and in the 2023 Annual Report. The following sections outline the completed activities-to-date.

3.1 Procurement for Services to Develop a Standardized Vulnerability Assessment Process

The OPSD-CZM completed the procurement process and executed a contract for consultant services to develop guidance and a standardized process for assessing the vulnerability of state facilities to sea level rise. OPSD, in collaboration with representatives from HDOT (Harbors & Airports), DAGS, DLNR and UH Sea Grant, developed the scope of work and RFP. The RFP was released May 13, 2024 with a closing date of June 12, 2024. Two proposals were received and evaluated based on criteria specified in the RFP. As the highest scoring proposal, ICF Incorporated, L.L.C was the selected vendor. A contract was executed on July 25, 2024 with a project end date of July 31, 2025.

3.2 Project - Vulnerability of State Facilities to Sea Level Rise: Development of a Standardized Vulnerability Assessment Process & Guidance

Based off recommendations from the 2022 literature review and consultations with the multi-agency

Action Team, OPSD is pursuing the development of a standardized sea level rise vulnerability assessment methodology and process for state-managed facilities.

Project Goals & Deliverables

The project’s objective is to develop Hawai’i-specific tools and guidance including:

1. **A methodology** for assessing the vulnerability of state-managed facilities (i.e. buildings) to sea level rise,
2. **A standardized sea level rise vulnerability assessment form/tool** for state-managed facilities (i.e. buildings),
3. **Guidance** on how to use the assessment form/tool,
4. **General guidance** on how to prioritize/rank vulnerability, and
5. **Recommendations** on how to integrate sea level rise planning benchmarks and infrastructure triggers into adaptation planning.

The final products developed in this project will facilitate a consistent adaptation planning framework across the State and can be used to inform adaptation efforts and investments related to state-managed facilities. Definitions and deliverables identified in the project scope are aligned with definitions and goals identified in the [Hawai’i Sea Level Rise Vulnerability and Adaptation Report, 2022 Update](#).

Progress to Date

Action Team Meeting

The OPSD-CZM hosted an Act 178 Action Team virtual meeting on November 1, 2024. Twenty-six (26) individuals representing 10 different agencies participated (see **List** below for list of attending agencies/departments). The meeting agenda included:

- A summary of the project, including introduction of the project team, methodology and expected outcomes
- A facilitated discussion seeking comments and feedback on the current processes, challenges and needs state agencies are facing when incorporating sea level rise planning into facilities management decisions.

List of November 1, 2024, Act 178 Action Team Meeting Attendees

| | |
|---|---|
| DBEDT, Office of Planning & Sustainable Dev (host) | Dept of Defense, Hawai’i Emergency Management Agency |
| Dept of Accounting and General Services | Dept of Hawaiian Home Lands |
| Dept of Corrections & Rehabilitation | Dept of Land and Natural Resources |
| Dept of Business, Economic Development & Tourism | Dept of Transportation |
| | Hawai’i State Public Library System |
| | University of Hawaii, Sea Grant Program |

The following answers summarize key questions addressed during the facilitated discussion:

1. **Does your agency currently assess the vulnerability of its facilities to sea level rise?** Most agencies assess vulnerability in some form, but at various levels due to capacity (staff & funding)

and expertise limitations. For example, HDOT-Harbors has been planning for sea level rise for over 10 years, while DAGS noted that they consider sea level rise for new construction, but rarely for existing buildings. Many agencies noted working with consultants to do much of this work.

2. **Is your agency accounting for sea level rise vulnerability in the capital improvement planning process?** The main challenges discussed were:

-A need for clear guidance and State policy on targets and costs of capital improvements associated with sea level rise planning, and

-Prioritizing short-term needs versus long-term planning.

3. **What types of additional information, resources, or tools would be most beneficial for your agency to better prepare for and adapt to the impacts of sea level rise or coastal erosion?**

Overall, there is a need for advanced technology, clear guidance, and better data to enhance sea level rise preparedness. Many expressed support for a vulnerability assessment form and that it would be helpful in assessing their own vulnerability and to have firm guidance for planning.

In-person Agency Interviews

From November 4-8, 2024, the project team (ICF Incorporated & OPSD) conducted a series of in-person interviews with selected agencies to better understand existing processes, challenges and needs related to incorporating sea level rise vulnerability into their facilities management planning and decision making. These consultations allowed the project team to better understand agency-specific considerations to ensure that the final products meet agency needs.

The following five agencies were chosen for interviews:

1. **Department of Accounting and General Services**

- *Rationale:* Responsible for building, operating and maintaining vertical infrastructure

2. **Department of Land and Natural Resources (DOBOR, Parks, CCMAC)**

- *Rationale:* DOBOR and State Park facilities are often located near/at the shoreline out of necessity

3. **Department of Hawaiian Home Lands**

- *Rationale:* Unique land ownership and leasing responsibilities

4. **Department of Transportation (Harbors, Airports, Highways, STP)**

- *Rationale:* Actively working on vulnerability assessment/adaptation planning projects

5. **Department of Education**

- *Rationale:* Has the highest number of exposed facilities

Deliverable #1: Background Information Report (Literature Review, Summary of Findings from Agency Consultations)

The first deliverable was provided by ICF Incorporated to OPSD in December 2024. This background information report was primarily informed by a desktop review of existing guidance from across the country on processes, frameworks, and methodologies to assess vulnerabilities to sea level rise and incorporate climate adaptation into planning. The review was focused on identifying key data sources, existing methodologies for evaluating sea level rise vulnerability, and how exposure, sensitivity, and adaptive capacity are used to determine vulnerability. Documents including vulnerability assessment forms were especially consulted to support the development of similar resources in Hawai'i. While conducting the review, the research team also considered the implications for Hawai'i state agencies,

using information gathered during in-person interviews.

A total of 20 documents (including the Hawai'i Sea Level Rise Vulnerability and Adaptation Report, 2022 Update) were chosen for a detailed review, based on relevance to this project, out of an initial list of 40. To identify potentially relevant documents, research team members leveraged previous experience working with the State of Hawai'i and the National Institute of Standards and Technology (NIST) on similar projects, as well as familiarity with the National Oceanic Atmospheric Administration (NOAA) U.S. Climate Resilience Toolkit. The initial list of documents included those identified by OPSD prior to the start of this project; all other resources were found through internet searches.

The 20 documents reviewed include vulnerability and risk assessments, design guides, and adaptation and resilience plans from various jurisdictions, published between 2015 and 2024. The authors of the sources are government entities at the national, state, and local levels facing similar sea level rise-related issues to those currently experienced in Hawai'i. Sources directly relevant to Hawai'i— for example, from the University of Hawai'i Community Design Center and the UH Mānoa Institute for Sustainability and Resilience— were also included.

The Report also included information on the agency interview process, summaries of the agency interviews, and interview findings. Key findings across interviewed agencies include:

- Agencies are currently constrained by limited resources and technical capacity.
- Need for comprehensive and clear sea level rise adaptation guidance; and,
- Cross-collaboration as a critical component for effective sea level rise adaptation.

The full Background Information Report will be posted to the Act 178, SLH 2021 StoryMap upon completion of the project in 2025.

4. Next Steps & Anticipated Activities for 2025

Looking to 2025, the OPSD will continue working with ICF Incorporated on the '*Vulnerability of State Facilities to Sea Level Rise: Development of a Standardized Vulnerability Assessment Process & Guidance*' project. The following are anticipated milestones for the project:

- Develop Sea Level Rise Vulnerability Assessment Methodology
 - *Anticipated Completion:* February 2025
- Develop Recommendations for Ranking Vulnerability
 - *Anticipated Completion:* February 2025
- Develop Sea Level Rise Vulnerability Assessment Form/Tool
 - Work with Multi-Agency Action Team to review and pilot form/tool: March-April 2025
 - *Anticipated Completion:* April 2025
- Develop Instructions on How to Complete the Sea Level Rise Vulnerability Assessment Form/Tool
 - Work with Multi-Agency Action Team to review and pilot guidance: March-April 2025
 - *Anticipated Completion:* May 2025
- Develop Guidance on Integrating Sea Level Rise Planning Benchmarks into Adaptation Plans
 - *Anticipated Completion:* July 2025
- Final Deliverables & End of Contract: July 31, 2025