DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
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December 21, 2022

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

The Honorable Scott K. Saiki,
Speaker and Members of the
House of Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

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

For your information and consideration, I am transmitting a copy of the Act 178: Relating to Sea Level Rise Adaptation 2022 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/.

Mahalo a e mālama pono,

Chris J. Sadayasu

Enclosure

c: Legislative Reference Bureau

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

2022 Annual Report

Report to the Thirty-Second Legislature
Regular Session of 2023

Prepared pursuant to Act 178, Session Laws of Hawaii 2021

by

Office of Planning and Sustainable Development

Department of Business, Economic Development and Tourism

State of Hawaii

December 2022

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List of Acronyms

AGR	DEPARTMENT OF AGRICULTURE
B&F	DEPARTMENT OF BUDGET AND FINANCE
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 – HAWAIʻI STATE PUBLIC LIBRARY SYSTEM
DOH	DEPARTMENT OF HEALTH
DOT	DEPARTMENT OF TRANSPORTATION
GIS	GEOGRAPHIC INFORMATION SYSTEM
HHSC	HAWAIʻI HEALTH SYSTEM CORPORATION
HI-EMA	HAWAIʻI EMERGENCY MANAGEMENT AGENCY
JUD	HAWAIʻI STATE JUDICIARY
KCCC	KAUAʻI COUNTY CORRECTIONAL CENTER
NOAA	NATIONAL OCEAN AND ATMOSPHERIC ADMINISTRATION
OHA	OFFICE OF HAWAIIAN AFFAIRS
OPSD	OFFICE OF PLANNING AND SUSTAINABLE DEVELOPMENT
OPSD-CZM	OFFICE OF PLANNING AND SUSTAINABLE DEVELOPMENT – COASTAL ZONE MANAGEMENT PROGRAM
ORMP	HAWAIʻI OCEAN RESOURCES MANAGEMENT PLAN
PLTIS	PUBLIC LAND TRUST INFORMATION SYSTEM
PSD	DEPARTMENT OF PUBLIC SAFETY
RCUH	RESEARCH CORPORATION OF THE UNIVERSITY OF HAWAIʻI
SBAM	STATE BUILDING ASSET MANAGEMENT DATABASE
SLH	SESSION LAWS OF HAWAIʻI
SLR-XA	SEA LEVEL RISE EXPOSURE AREA
UH	UNIVERSITY OF HAWAIʻI SYSTEM

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. In addition to the activities and progress to-date, this report includes a discussion on the findings of a literature review on approaches to conducting vulnerability assessments, recommended strategies for the State, and related 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 assessment for state facilities and progress in implementing sea level rise adaptation in future plans, programs, and capital improvement needs and decisions.

1.1 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 was passed in order to begin the long-term planning needed to effectively address climate impacts.

The purpose of this Act is to:

(1) Require the OPSD, in coordination with state agencies with operational responsibilities over state facilities, to:
    a. Identify existing and planned facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards;
    b. Assess options to mitigate the impacts of sea level rise to those facilities; and
    c. 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.
(2) 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
(3) Amend the Hawai'i State Planning Act to include sustainable development, climate change adaptation, and sea level rise adaption as objectives for facility systems.

1.2 Hawai'i CZM Program

Within the OPSD, the Coastal Zone Management Program (OPSD-CZM) has been charged with coordinating the objectives for Act 178. 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 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 2021 Accomplishments

In 2021, the first year of the initiative, the OPSD-CZM completed the following tasks under Phase 1 of the implementation approach:

- State Facilities Inventory: 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). For further details, refer to Section 5.2: Out-of-Scope Assets in the 2021 Annual Report.
- Sea Level Rise Exposure Assessment: OPSD-CZM conducted an analysis to identify which state owned and managed facilities were located within various sea level rise scenarios.
- StoryMap webpage: OPSD-CZM created an online resource to share activities and findings with the public. (LINK)
- Recommendations: OPSD-CZM provided recommendations on next steps to facilitate in-depth, localized vulnerability assessments.

The complete 2021 Annual Report can be found at this link.

3. 2022 Activities and Accomplishments

In 2022, the OPSD-CZM moved into Phase 2 and completed the first steps towards implementing the recommendations made in the 2021 Annual Report. The following sections outline the completed activities-to-date.

3.1 2021 Annual Report Briefings for Legislators

In January, after the submission of the 2021 Annual Report, the OPSD-CZM reached out to chairs of the Senate and House Committees on Water and Land to provide a briefing on the key findings of the sea

level rise exposure assessment. Briefings were provided to Senator Lorraine Inouye, Senator Gil Keith-Agaran, and Representative David Tarnas. Main themes brought up during discussion were costs of implementing adaptation strategies, process for prioritizing projects, and incorporating sea level rise projections into planning, especially for future Capital Improvement Projects (CIP).

3.2 Literature Review of Approaches to Conducting Sea Level Rise Vulnerability Assessments

In response to the main recommendation from the 2021 Annual Report – conduct detailed and localized vulnerability assessments of those state facilities identified in the sea level rise exposure assessment – the OPSD-CZM conducted a literature review to better understand the range of mechanisms with which to assess sea level rise vulnerability. Information was gathered through desktop research, as well as through solicitation to the Coastal States Organization network requesting examples of sea level rise adaptation guidance being used in other coastal states and municipalities.

The OPSD-CZM evaluated guidance documents and tools from 11 different coastal states and municipalities. Amongst the reviewed documents, there was a wide variation in approaches that spanned the spectrum from broad recommendations and best practices to the development of standardized procedures with specific templates. The following are selected examples to represent the range of strategies being used by other coastal states.

Georgia – Coastal Resiliency Guide (2020)

This strategy falls on the *"broad recommendations" end of the spectrum* as it provides broad recommendations for a broad range of assets. Published by the Georgia Department of Natural Resources, the Coastal Resiliency Guide supports local government and communities by increasing coastal resiliency. This guidance does not focus on any specific type of asset and is part of a larger initiative to build resiliency through policies and practices that generally focus on natural systems and environmental services. The guidance includes descriptions of the various coastal hazards that should be considered when assessing vulnerability and provides links to online tools for mapping and sea level rise projections. Since this document has a wide application, the guidance and recommendations are broad and focus on general best practices. Some of the more specific recommendations include using a 30-year planning horizon, using NOAA's 2017 "intermediate" sea level rise projection scenario, and developing for a higher standard of safety for critical infrastructure (i.e., planning for outcomes associated with high-consequence, low-probability situations).

California – State of California Sea Level Rise Guidance (2018)

This strategy is in the *middle of the spectrum*. California has several sea level adaptation-related guidance documents, but OPSD-CZM chose to highlight this 2018 document because it includes different elements not used in other examples. This guidance provides a science-based methodology for state and local governments to analyze and assess sea level rise vulnerabilities and incorporate risk into planning, permitting, and investment decisions. **Figure 1** below, "Risk Analysis and Decision Framework," presents a step-by-step approach to assessing risk. Each step includes guiding questions, considerations, and recommended data sets to use when completing that portion of the framework. Additionally, this guidance includes "Preferred Coastal Adaptations." This section outlines eight principles that should be

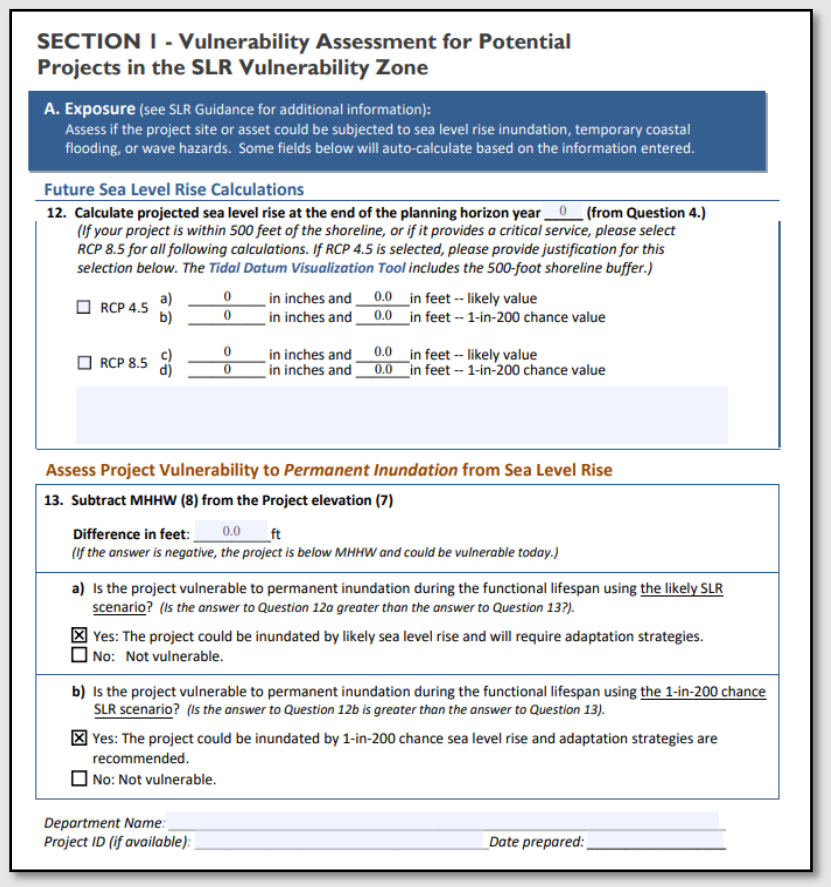
used when choosing an adaptation approach. Principles include prioritizing social equity, prioritizing protection of coastal habitats and public access, including adaptive planning, etc.

Figure 1: California's "Risk Analysis and Decision Framework"

<u>City of San Francisco – Guidance for Incorporating Sea Level Rise into Capital Planning (2020)</u>

The City of San Francisco's Guidance for Incorporating Sea Level Rise into Capital Planning is one of the more *specific approaches* found in the literature review. This guidance and associated checklist were created by the City of San Francisco's Office of Resilience and Capital Planning. City departments responsible for proposed projects within the designated "zone of vulnerability" (identified areas at risk of inundation during sea level rise plus a 100-year storm by 2100) are required to address adaptive capacity by completing the sea level rise checklist. It must be submitted to and approved by the City Engineer in advance of project authorization or funding. To assist with completing the checklist, all necessary data, tools, and formulas are provided, as well as training sessions and documents. While the checklists are used to assess individual projects, the standardized format and questions allow for comparison and prioritization amongst several projects. The guidance provides directions on how to set up a vulnerability matrix to score and compare several projects. One of the goals of creating this standardized approach was to allow for increased potential for seamless collaboration and integration across all city agencies. See **Figure 2**, below.

Figure 2: An excerpt from the checklist used in the City of San Francisco's Guidance for Incorporating Sea Level Rise into Capital Planning (2020)



SECTION I - Vulnerability Assessment for Potential Projects in the SLR Vulnerability Zone

A. Exposure (see SLR Guidance for additional information):
Assess if the project site or asset could be subjected to sea level rise inundation, temporary coastal flooding, or wave hazards. Some fields below will auto-calculate based on the information entered.

Future Sea Level Rise Calculations

12. Calculate projected sea level rise at the end of the planning horizon year 0 **(from Question 4.)**
(If your project is within 500 feet of the shoreline, or if it provides a critical service, please select RCP 8.5 for all following calculations. If RCP 4.5 is selected, please provide justification for this selection below. The Tidal Datum Visualization Tool includes the 500-foot shoreline buffer.)

☐ RCP 4.5
a) 0 in inches and 0.0 in feet -- likely value
b) 0 in inches and 0.0 in feet -- 1-in-200 chance value

☐ RCP 8.5
c) 0 in inches and 0.0 in feet -- likely value
d) 0 in inches and 0.0 in feet -- 1-in-200 chance value

Assess Project Vulnerability to *Permanent Inundation* from Sea Level Rise

13. Subtract MHHW (8) from the Project elevation (7)

Difference in feet: 0.0 ft
(If the answer is negative, the project is below MHHW and could be vulnerable today.)

a) Is the project vulnerable to permanent inundation during the functional lifespan using the likely SLR scenario? *(Is the answer to Question 12a greater than the answer to Question 13?).*

☒ Yes: The project could be inundated by likely sea level rise and will require adaptation strategies.
☐ No: Not vulnerable.

b) Is the project vulnerable to permanent inundation during the functional lifespan using the 1-in-200 chance SLR scenario? *(Is the answer to Question 12b is greater than the answer to Question 13).*

☒ Yes: The project could be inundated by 1-in-200 chance sea level rise and adaptation strategies are recommended.
☐ No: Not vulnerable.

Department Name:
Project ID (if available): *Date prepared:*

Additional information on other selected examples studied in the literature review can be found HERE

OPSD-CZM has identified three main takeaways:

1. Many of the elements included in the **broader guidance documents already exist in Hawai'i**, for example the 2017 Hawai'i Sea Level Rise Vulnerability & Adaptation Report, the Climate Change Priority Guidelines (HRS§226-109), etc.
2. A **standardized template approach encourages a statewide aligned effort** and could facilitate a process **for prioritizing projects** within and across agencies within Capital Improvement Programs.
3. If there were a state-recognized assessment procedure, completed assessments could be used as **supporting documentation for CIP funding.**

3.3 Act 178 Action Team Meeting

The OPSD-CZM hosted an Act 178 Action Team virtual meeting on March 30, 2022. 29 individuals representing 15 different agencies participated (see **Table 1** for list of attending agencies/departments).

The meeting agenda included a presentation summarizing the 2021 Annual Report and sea level rise exposure assessment findings, an overview of the literature review, a facilitated discussion seeking comments and feedback on the literature review findings and applicability of various approaches to Hawaii, and a presentation from HDOT-Highways on their Climate Adaptation Action Plan.

Table 1: March 30, 2022, Act 178 Action Team Meeting Attendees

Department/Agency	
DBEDT, Office of Planning & Sustainable Dev (host)	Dept of Land and Natural Resources
Dept of Accounting and General Services	Dept of Public Safety
Dept of Business, Economic Development & Tourism	Dept of Transportation
Dept of Defense, Hawaii Emergency Management Agency	Hawai‘i Health Systems Corp.
Dept of Education	Hawai‘i State Judiciary
Dept of Hawaiian Home Lands	Office of Hawaiian Affairs
Dept of Health	University of Hawai‘i
Dept of Human Services	

The Action Team provided feedback on the project direction and implementation. The following are the main themes and observations that were brought up in discussion:

- Need for a coordinated approach: Many agencies expressed interest in conducting vulnerability assessments, and a few reported that they are taking action. However, agencies are at various stages in the process and, without State guidance, are utilizing various approaches. Some of the agencies that expressed interest, but have not yet taken action, identify lack of capacity as an obstacle.

- Support for a specific template/procedure with flexibility: Action Team members liked the consistency of a standardized approach but would also like flexibility to be able to address large areas at once (i.e., master permitting for all projects of a similar type within a host park). There were questions about who would be responsible for implementing and enforcing a vulnerability assessment strategy. It was suggested that any sea level rise vulnerability assessment be integrated into already existing processes, such as Environmental Impact Statements (EIS).

- Adaptation for existing facilities: Some existing state facilities have low capacities for adaptation (example: airport runways). It was suggested that separate strategies may be necessary for new structures and existing facilities.

- Expanding the assessment to cover more types of hazards: As written, the Act 178, SLH 2021 scope includes an assessment of “facilities that are vulnerable to sea level rise, flooding impacts, **and natural hazards**.”

- Need for comprehensive planning: The functions of state facilities are interconnected with private and county-managed services (i.e., telecommunications, wastewater treatment, etc.), therefore it is necessary to look at vulnerabilities and adaptation for public and private development comprehensively.

3.4 Concurrent Initiatives & Meetings with Stakeholders

In addition to a literature review, the OPSD-CZM also conducted one-on-one meetings with key stakeholders and agency partners to better understand concurrent initiatives and ensure that any future activities under Act 178 are aligned with partner agency goals.

Hawai‘i Emergency Management Agency (HI-EMA)
HI-EMA is currently in the process of completing the 2023 update to the State Multi-Hazard Mitigation Plan. New FEMA policies require that climate change impacts be included in updated state plans. Collaboration and alignment with HI-EMA on this Hazard Mitigation Plan update can begin to address the Action Team feedback of expanding the Act 178 assessment to include more hazard types. The updated plan will include exposure assessments for a wide range of hazards, including wildfire, high wind storms, tsunami, etc.

One of the secondary needs identified by OPSD-CZM in Phase 1 was the development of a standardized state asset management database. Currently, each agency has, to an extent, their own facilities inventory; however, there is not one complete statewide database. The DAGS' State Building Asset Management Database (SBAM) does capture statewide facilities; however, due to it being voluntary self-reporting, agencies report different information, and many fields are left blank. HI-EMA has also expressed interest in developing a state asset management system that would allow for agencies to track mitigation and adaptation projects across the state. HI-EMA is familiar with a platform that could be a potential tool to address this issue, if funding were available.

Assessing Vulnerability of Non-Facility Assets: Department of Land and Natural Resources (DLNR), Department of Hawaiian Home Lands (DHHL) and County Parks Departments
One of the main concerns of DLNR is the need to adapt the State's non-facility assets, such as natural parks and state beaches as they are part of the public trust. DLNR is seeking funding to develop a screening tool that would assess the vulnerability of non-facility assets to sea level rise and coastal hazards. Non-facility assets include public trust resources, wetlands and dune areas, state park lands, and ecologic and cultural resources. If funded, this project would supplement and be complementary to any work being done under the Act 178 initiative as it would address assets outside the current scope of the Act.

Department of Hawaiian Home Lands (DHHL) has expressed a similar concern about its public trust resources, including encumbered and unencumbered lands with wetlands and dunes, community use areas, cultural resources, drainage systems for homestead areas, etc.

At the County level, Maui County's Department of Parks and Recreation conducted a Beach Vulnerability and Adaptation Study. This study assessed the vulnerability of 65 County beach parks and facilities to flooding and land loss due to sea level rise and other coastal hazards, as well as identified adaptation strategies to address these threats. An associated *Adaptation and Mapping Tool* provides interactive data on the vulnerability of County beach parks. (LINK)

Department of Transportation (DOT) – Harbors Division
One of the sea level rise adaptation strategies being considered for the harbor includes raising structures, which would require the raising of storm drain outfalls. As a gravity-powered system, raising the outfall point could have system-wide impacts. Currently, DOT Harbors has GIS data for the locations of the facilities (building footprints), as well as subterranean infrastructure (wastewater systems, storm

drain, etc.) located within their properties. DOT Harbors is interested in understanding who is upstream of their facilities and connectivity of users to storm drain systems that run under harbor lands and drain into harbor waters to better understand the potential impacts of raising storm drain outfalls.
DOT Harbors is in conversation with OPSD-CZM and HI-EMA to pursue a US Army Corps of Engineers Planning Assistance to the States (PAS) funding opportunity. The proposal would be to provide OPSD-CZM an opportunity to expand its ability to coordinate with other agencies like DOT Harbors with a more standardized, consistent, and more efficient approach by referring to DOT Harbors' GIS as a potential model to emulate. If funded, this initiative would support work being done under Act 178, SLH 2021 as well as address assets, such as storm drains, that are outside the current scope of "state facilities."

Environmental Review Program (OPSD-ERP)
One of the Action Team suggestions was to incorporate any vulnerability assessment process into an already existing process, such as the Environmental Impact Statements (EIS) HRS Chapter 343. Act 17, SLH 2018 required OPSD-ERP to "adopt and maintain rules pursuant to Chapter 91, Hawaii Revised Statutes, requiring all environmental assessments and environmental impact statements prepared pursuant to Chapter 343, Hawaii Revised Statutes, whether in draft or final form, to include consideration of sea level rise based upon the best available scientific data regarding sea level rise." However, the level of detail to which sea level rise vulnerability is discussed is not specified and can vary based on who is preparing the Environmental Assessment/Environmental Impact Statement (EA/EIS). Discussion and engagement with the ERP and Environmental Advisory Council should be included in further explorations of developing a standardized vulnerability assessment process.

City & County of Honolulu, Department of Design and Construction (DDC)
City & County of Honolulu's DDC is in the process of developing a set of guidelines for incorporating sea level rise adaptation and mitigation into the City & County of Honolulu's capital projects. DDC is proposing an approach based off the New York City model (see Lit Review attachment, in **Section 3.2**) which is similar to the San Francisco model in its use of a specified procedure and template. DDC is developing a screening tool, checklist, and design guidelines which will guide project managers from the pre-planning stage, to a project's inception, and into implementation. The developed guidelines will be highly recommended for city-wide application. As acknowledged in Action Team discussions, the functioning of state facilities is interconnected with the functioning of county facilities. It is important to make sure that state and county approaches to assessing vulnerability are coordinated.

3.5 Additional Data Refinement

Since the completion of the exposure assessment in 2021, the OPSD-CZM has continued to seek ways to refine and improve the data.

Department of Education (DOE) updated data
The DOE's Office of Facilities and Operations has developed its own internal facilities tracking system, which includes a map of schools. The spatial data includes school location, building footprints, parking lot facility locations, and outdoor recreation areas. This information will be integrated with the OPSD-CZM's facility inventory to create a more detailed dataset.

Building footprints for all state facilities

In the 2021 exposure assessment, facilities were represented as points with a 200-foot buffer. In order to refine and improve the facilities inventory data, the OPSD-CZM is in the process of converting facilities point data into building footprints. The OPSD-CZM is working with county GIS programs to incorporate already existing building footprint data, as well as create building footprint data layers for areas where that information is not currently available. Once completed, the exposure assessment will be rerun using the more detailed building footprint location information.

4. Recommendations & Next Steps

As described in Section 2 (Phased Approach), this initiative is an on-going and dynamic process. Additionally, the process of adaptation is inherently continuous as conditions change and understanding evolves. With the completion of the literature review and stakeholder meetings, OPSD-CZM is looking towards the next steps in continuing to carry out its charge from Act 178, SLH 2021.

4.1 Standardized Process for Conducting Vulnerability Assessments

As noted in the recommendations from the 2021 Annual Report, facility-specific vulnerability assessments are needed to better understand the risks and adaptative capacity of facilities identified in the exposure assessment, as well as to prioritize adaptation projects. Currently, many state departments/agencies with facilities management responsibilities have expressed interest in conducting vulnerability assessments and some have begun to develop strategies; however, departments/agencies are at various stages and, without State approved or vetted application of sea level rise adaptation for State facilities, departments/agencies are using various approaches with inconsistent application. Lack of a standardized approach and staff capacity makes it challenging to ensure that the State is moving forward in a coordinated and focused effort. In the long term, it will be difficult to equitably prioritize projects across the state if each department/agency is using a different method and metrics for conducting vulnerability assessments.

Based off the literature review findings and conversations with the Action Team and key stakeholders, **OPSD-CZM recommends pursuing the development of standardized approach to conducting vulnerability assessments for state facilities.** As many general guidance documents outlining best practices already exist in Hawai‘i, the development of a vulnerability assessment process and a standardized checklist would provide state departments/agencies with actionable guidance to facilitate the prioritization of sea level rise adaptation needs within their asset portfolios. A standardized approach encourages an alignment of efforts statewide, and could create a system for prioritizing projects within and across agencies. Additionally, if there were a state-recognized assessment procedure, completed assessments could be used as supporting documentation for CIP funding.

The creation of a standardized approach to conducting vulnerability assessments would build resiliency capacity statewide by encouraging proactive adaptation planning. It would ensure that the facilities that provide services and government offices maintain functionality in the face of sea level rise, and would decrease the chances of disruption in government services for housing, jobs, education, environment, and other services critical to state functions.

4.2 Identified Needs

Act 178, SLH 2021 has taken initial steps towards developing resiliency for state facilities but remains an unfunded mandate without a dedicated position to coordinate with agencies nor to implement the actions for assessing vulnerability to sea level rise and inform possible adaptation strategies. Thus far, OPSD-CZM staff have facilitated the coordination for this initiative; however, consultant services are needed to provide technical expertise and develop the vulnerability assessment process.

OPSD intends to request an appropriation from the Legislature in the amount of $400,000 to continue to carry out its charge from Act 178, SLH 2021 and to facilitate the development of a standardized method for conducting vulnerability assessments for state managed facilities.

FEMA studies have demonstrated that **one of the most cost-effective ways to safeguard communities against natural disasters is to adopt and follow hazard-resistant building codes**. Structures outfitted for climate adaptation not only reduce human casualties and societal impacts, but reduce the cost of building damage as well. A 2021 report by the National Institute of Building Sciences found that **every $1 spent on mitigation saves up to $13 in recovery costs.** Therefore, proactively preparing for sea level rise adaptation will save the state in long-term costs.