

Hawai'i 3.2: Adapting to Climate Change and Impacts of Sea Level Rise¹



A program to assist agencies and communities adapt to climate change-- especially, the impacts of sea level rise

Hawai'i 3.2 is a program to support state and county government agencies and communities in maintaining best available information and practices for sea level rise adaptation actions. The proposed program implements the Hawai'i Climate Change Mitigation and Adaptation Commission's (Climate Commission) September 4, 2018 statement to "...bring resources to assist in planning and implementation for sea level rise and other climate related impacts."²

At the State's first annual climate conference held on January 14, 2019, an expert panel reiterated the State's role, and expanded on the Commission's statement as the next big step for Hawaii to implement adaptation to sea level rise impacts.³ The panel recommended that the State "consider adopting a community resilience building planning process to help Hawaii's communities, counties and institutions of any scale to identify their top priorities based on climate change hazards cross-referenced to strengths and vulnerabilities relative to infrastructure, social and environmental characteristics." This document outlines the next steps for such a process.

Rising seas means rising vulnerabilities

The rationale for the panel's recommendations lies in the fact that the foreseeable impacts of rising sea levels are deeply concerning to Hawai'i due to its geographic isolation, coastal-focused society, and observable present-day impacts from coastal erosion and flooding. Hawai'i's vulnerability to climate change and sea level rise is clearly described in the Climate Commission's *2017 Hawai'i Sea Level Rise and Vulnerability and Adaptation Report* (Hawai'i Sea Level Rise Report), the 2018 National Climate Assessment, Sea Level Rise Guidance from the City and County of Honolulu Climate Change Commission, and elsewhere.

In 2018, the mayors of Maui and Honolulu counties issued directives accepting the findings of the Hawai'i Sea Level Rise Report and instructing their county agencies to begin considering climate change and sea level rise risks in their plans, programs, and capital improvement decisions. Maui County Council passed a resolution later in 2018 reinforcing the mayor's proclamation. The State and counties are beginning to take important strides in considering sea level rise in planning and decision-making such as in the 2018 updated State Hazard Mitigation Plan, 2018 updated Kaua'i General Plan, and ongoing work on community plan updates for West Kaua'i, West Maui, and the Honolulu Primary Urban Center, as well as development of a Honolulu Resilience Strategy. However, ongoing technical and financial support is urgently needed for state and county agencies in assessing and preparing for increasing impacts from sea level rise. To be maximally effective, agencies and communities need to approach sea level rise adaptation through a coordinated and collaborative program. This brief outlines the concept for such a program.

¹ This draft document is produced by the Hawaii Climate Change Mitigation and Adaptation Coordinator, with input from various colleagues, for purposes of supporting and informing discussion at the Hawaii Climate Change Mitigation and Adaptation commission's meeting on April 24th, 2019. Please do not quote or cite. For questions, contact: Anukriti.s.Hittle@hawaii.gov

² The full statement is contained in this press release: <http://climate.hawaii.gov/wp-content/uploads/2018/09/NR-State-Climate-Commission-Adopts-Recommendations-Mission-Statement-Sept.-5-2018.pdf>

³ The full paper from the panel is available here: <http://climate.hawaii.gov/wp-content/uploads/2019/02/Panel-2-Paddling-Together-FINAL-feb-13.pdf>

Multi-jurisdictional coordination for a multi-dimensional problem

The State Climate Commission is able and willing to manage a coordinated climate resiliency program that has the capacity to provide climate adaption guidance to support agencies and communities that desire to undertake sea level rise adaptation actions. The program would tap into networks of interdisciplinary expertise in government, university, business, and community, in particular, partnership with The University of Hawai'i's Sea Grant College Program (Hawai'i Sea Grant). This would aim to help agencies and communities develop the best possible sea level rise adaption strategies -e.g., a vulnerability assessment and adaption plan, that suits their short-, mid-, and long-term needs. The Climate Commission would leverage resources to support staffing in appropriate institutions to accomplish the goals and implementation of the program.

Program Components

The first of the two phases consists of the following four components:

1. Develop an information hub on climate science and sea level rise risks
2. Create guidance and tools for planners to assist in planning and policy development, with respect to sea level rise
3. Provide scientific and technical support for vulnerability analysis for government and communities
4. Engage the community to develop local priorities for adaptation

The second phase of this program will address implementation of priority projects and monitoring. However, that is beyond the scope of this paper and this phase of the program.

First Phase: Information Hub, Planner's Tool, Decisionmaker's Tool & Community Engagement

1. Develop an information hub to maintain understanding and applicability of the latest and best available information on climate and sea level rise risks. Science and planning approaches for climate change and sea level rise continue to evolve. Coordinating with partners such as Hawai'i Sea Grant, the program will provide ongoing outreach to keep agencies and communities informed of the latest observations and projections for climate change and sea level rise by presenting information in a manner that is translatable and relevant to Hawai'i, its communities, and decision-makers. The Climate Commission through the program and its partners would convene experts in climate science and sea level rise adaption planning from federal, state, and county agencies, the University of Hawai'i and other institutions, non-governmental organizations, and the private sector to provide the latest climate and sea level rise information through various means, such as its annual climate conference, outreach and meetings on each of the islands and written summary materials. Key elements of this program component might include:

- Developing briefs, white papers and other relevant documents to capture the latest and best-available information on climate change and sea level rise observations and projections as they relate to Hawai'i; and
- Developing a searchable database containing relevant resources, and an online interface for these.

2. **Create sea level rise guidance and tools for State and county agencies for planning and permitting.** Since the issuance and adoption of the State’s Sea Level Rise Report, it has become clear that more guidance is needed in order to implement the recommendations of the report, especially at the local and county levels. The program aims to address this by creating “planner’s tools” and guidance that will help in the permitting and regulatory functions of institutions seeking to incorporate the findings of the Sea Level Rise report. Key elements of this component might include:
 - Producing an addendum to the Sea Level Rise report, that will provide guidance for implementation of best management practices in support of adaptation; and
 - Creating a planner’s tool to apply the sea level rise exposure area (SLR-XA) in planning and regulatory situations.

3. **Support localized and sector-specific vulnerability assessments.** Recognizing the urgent need to begin preparing for sea level rise now, institutions need to conduct exposure and vulnerability assessments for critical infrastructure --such as roads, utilities, drainage systems, public lands and facilities. At the county level, directives from Honolulu and Maui County mayors have spurred more localized vulnerability assessments to support required updates to general and community plans, and other government plans. Counties have begun using maps and data from the *Hawai’i Sea Level Rise Report* and companion Hawai’i Sea Level Rise Viewer tool, which provide a basis for assessing sea level rise exposure and vulnerability. This program would provide technical guidance in utilizing and interpreting the information, allowing government departments and communities to downscale the data contained in these tools for use in required updates to existing plans (e.g., infrastructure plans, community development plans, hazard mitigation plans, vulnerability assessments), as stand-alone climate adaptation strategies, and/or through updates to state and county policies and regulations. Key program elements might include:
 - Supporting identification of vulnerable assets, and assessment of sensitivity to sea level rise, through a better understanding of general risks and vulnerabilities from sea level rise for specific agencies, sectors, and communities;
 - Identifying short-, medium- and long-term options and preferred strategies to reduce vulnerability and build resilience to sea level rise, along with benefit-cost and pathways analyses to inform decision making; and
 - Supporting prioritization of projects by using the results of the vulnerability assessments, while ensuring necessary flexibility to meet localized needs and priorities among the islands through community engagement.

4. **Community engagement, input and feedback to gain an understanding of what are community priorities.** Consultation with stakeholders—the local communities—is crucial in determining priorities for public spending. Using the Climate Commission’s equity lens framework, and in consultation with local groups, neighborhood boards, and in coordination with county governments, this program will solicit input across the state to determine what matters to communities with respect to sea level rise adaptation. This information will be incorporated into benefit-cost and pathways analyses, which will be used to prioritize projects. Key elements of this component might include:

- Setting up a coordination mechanism for producing a strategy with counties and communities; and
- Organizing outcomes from this strategy.

This program is expected to span two years and contain a mechanism to monitor progress against established goals. Progress will be reported to the State's Climate Commission at quarterly meetings in 2019, 2020 and 2021, at the annual climate conferences in 2020 and 2021, and be included in the Annual Report to the Legislature in 2020 and 2021.



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