Report

To the Hawaii Climate Change Mitigation and Adaptation Commission

On Sea Level Rise Adaptation Implementation

Scope of this report

This report seeks the support of the Hawaii Climate Change Mitigation and Adaptation Commission (Climate Commission) on State and County level actions necessary to reduce the impacts of sea level rise in Hawaii. Within our institutional framework, existing tools are available to state and local governments—from executive orders, proclamations and administrative directives, to new state and county legislation, and programs—to implement priority actions for sea level rise adaptation.

Background

In 2014, the Hawai‘i State Legislature passed Act 83, which formally established The Hawai‘i Climate Adaptation Initiative to enable a coordinated approach among all agencies at all levels of government to plan for and address the effects of climate change to protect the State's economy, health, environment, and way of life. Act 83 established a coordinating body to carry out this mission known as the Interagency Climate Adaptation Committee (ICAC) composed of State and County government representatives. Their first task was to develop this Report to address the state-wide impacts of sea level rise. In addition, they were also tasked to develop plans and policy recommendations for action, and with the coordination of the State of Hawai‘i Office of Planning (Office of Planning), to then use this Report as a model framework for addressing other climate threats and priorities.

In 2017, The Hawai‘i Climate Adaptation Initiative (Act 83, SLH 2014), was strengthened through the passing of Act 32, The Hawai‘i Climate Change Mitigation and Adaptation Initiative which expanded the ICAC into the Hawai‘i Climate Change Mitigation and Adaptation Commission (Hawai‘i Climate Commission). The Hawai‘i Climate Commission was assigned various tasks related to climate change mitigation and adaptation including systematically reducing GHG emissions and improving Hawaii's resiliency to climate change aligned with the principals and contributing to the goals established by the 2014 Paris Accord (Act 32, SLH 2017). Through all these efforts, Hawai‘i has laid a solid foundation for adapting to climate change, reducing GHG emissions, and charting a new course to protect the State's economy, health, environment, and way of life.

In December 2017 the Hawaii Climate Change Mitigation and Adaptation Commission accepted the Hawaii Sea Level Rise Vulnerability and Adaptation Report. The report identifies areas that are susceptible to sea level rise impacts based on a 3.2-foot increase in sea level projected to occur by mid-century, or later. The Hawaii Sea Level Rise Vulnerability and Adaptation Report also made a number of recommendations to state and county agencies based on emerging good practices to strengthen Hawaii's overall readiness to face sea level rise and climate change.

As global temperature increases, more ice on Antarctica, Greenland, and continental glaciers melts. This, coupled with thermal expansion of the ocean, will cause sea level to rise. Research finds that, relative to the year 2000, global mean sea level (GMSL) is very likely (90-100% confidence) to rise 0.3-0.6

ft by 2030, 0.5-1.2 ft by 2050, and 1.0-4.3 ft by 2100. However, high tide flooding events (initially clustered around the summer and winter solstices) will occur decades ahead of any GSML, threatening the security of coastal communities around the State long before areas are permanently inundated.

Thus, even if Hawaii achieves carbon neutrality today, tomorrow, or in 30 years, global carbon emissions from developing countries will steadily increase over this time. Despite our trailblazing accomplishments, Hawaii will not escape the severe effects of climate change in the form of rising sea level, increased storminess, and warmer temperatures (higher temperatures bring a multitude of social and ecological problems). Sea level rise will reshape our shorelines at an increasing rate of change throughout this century and beyond resulting in the loss of valued natural and cultural resources as well as high value private property. It is therefore critical that Hawaii brace for and reduce the severity of these effects by implementing aggressive climate adaptation measures. Rapid deployment of climate adaption measures will require supporting policies, statutes, programs, and financial resources at all levels of government. The State and Counties will need to adopt aggressive sea level rise avoidance practices to accommodate GMSL and high tide flooding.

Summary of Recommendations to the Climate Commission[1]:

1. **Support legislation for disclosure for private property and public offerings located in areas with potential exposure to sea level rise.** The real estate and insurance industries need to be compelled to require mandatory disclosures of risks for all properties located within the SLR-XA. The list of disclosable hazards should be expanded for public offerings to include future risks of sea level rise, including erosion and flooding, and other risks from climate change. This report recommends re-introduction and passage of legislation to effect this change.

2. **Issue a statement to the counties requesting that all new development be directed away from vulnerable beach areas to limit the loss of beaches**. Beaches are critical to Hawaii's culture and economy. They serve as a vital natural resource supporting recreation, tourism, and habitat for the critically endangered Hawaiian monk seal. Beaches will be lost with sea level rise, but these losses can be mitigated if some form of managed retreat is implemented, such as moving highways, seawalls, and other structures, as well as directing new development away from beaches. This report encourages the Commission to issue a statement that requests all new development be directed away from vulnerable beach areas.

3. **Issue a statement requesting state and county public works departments to identify and prioritize their vulnerable assets located within the sea level rise exposure area (SLR-XA) of 3.2 feet of sea level rise**. For infrastructure vulnerability, managers need to know what is vulnerable, where they can move the vulnerable structures, and how much it will cost to move, compared to how much it will cost to maintain in place. This report encourages the Commission to issue a statement that requests public works departments to identify and prioritize vulnerability within the exposure area as described in the State's Sea Level Rise report, and to provide a status update on this activity annually to the State Climate Commission.

[1] These recommendations are the result of several discussions and input from an informal group of subject matter experts, compiled by staff of OCCL-DLNR, and the Climate Commission Coordinator. For questions: Anukriti.s.Hittle@hawaii.gov.

4. **Urge incorporating the vulnerability zone into county planning.** This report encourages the Commission to urge counties to incorporate the 3.2 ft. SLR-XA into their general and development plans.

5. **Support the establishment of a State program to bring resources to assist in planning for sea level rise.** The State has a crucial support role to play in assisting communities plan for and implement projects to adapt to sea level rise impacts. To this end, this report encourages the Commission to direct the Climate Change Mitigation and Adaptation Coordinator, with input from subject matter experts, to develop draft legislation that would establish a climate change vulnerability resource program. Such a program would provide technical assistance to agencies and communities towards the development of vulnerability assessment and adaption strategies to improve their resiliency and adaptation to climate change.