



## From Recognition to Regulation: Sea level rise adaptation by the Honolulu Department of Planning and Permitting

“As a community, Honolulu has prepared for the risk of coastal flooding in a number of ways, but there is always room for improvement, especially with the changes likely due to climate change,” said Mayor Kirk Caldwell in an email to a concerned citizen. The City and County of Honolulu Administration believes that climate change is real and must be reflected in its plans, regulations, rules and standards. This declaration is an important step in recognizing the county’s efforts thus far to address vulnerabilities due to sea level rise and other impacts of climate change, as well as recognizing the need for more dramatic future action. What is needed now, explained Art Challacombe, Deputy Director of the Honolulu City and County Department of Planning and Permitting, is translating those priorities into regulatory action to ensure that O’ahu’s coastal environments, development and communities are protected from sea level rise.

To reflect these adaptation priorities, the Department of Planning and Permitting (DPP) began incorporating “no regrets” climate change adaptation policies and guidelines in its Development Plans and Sustainable Communities Plans, the long range regional land use and infrastructure plans guiding public and private development for O’ahu. Starting in 2011, the City and County adopted revised plans

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*Key Message: Hawaii’s existing coastal erosion and flooding problems are only going to get worse with sea level rise. Reducing coastal community vulnerability, improving coastal community resilience, and protecting natural resources makes sense for now and the future.*

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for the North Shore, Wai’anae and ‘Ewa which include climate change adaptation policies and guidelines. Issues addressed by these policies and guidelines include shoreline setbacks, coastal erosion, sea level rise, water use and conservation, alternative water supplies, and emergency shelter needs. In addition, DPP proposed adding climate change adaptation policies to the Ko’olau Loa Sustainable Communities Plan, the revision of which is currently under review by the City Council.

In the future, DPP plans to recommend adoption of climate change adaptation policies and guidelines in all proposed revised Development Plans and Sustainable Community Plans submitted for official review and action. Currently, revised plans for Ko’olau Poko, Central O’ahu, and East Honolulu are being prepared for submittal for official review and action.

To implement the sea level rise policies and guidelines in these plans, which call for analysis of the possible impact of sea level rise on all new public and private shoreline area projects, DPP began asking in 2015 that environmental assessments and other applications for shoreline projects submitted to the Department for review and comment include such an analysis. The department provides for applicants a standard comment, which states that, “If it is likely that sea level rise will increase the risk of flooding during the life of the project structures, the [applicant] should discuss how the design of the project and proposed operations at the project site will address that risk and provide resilience in recovering from any flooding.”

Because this new procedure began in 2015, it is not clear if these comments will affect the proposed designs and operations of shoreline projects. It is hoped that by raising the concern about the



possible impact of sea level rise that possibility will be seriously investigated and considered by the developer and those approving the development.

In that vein, the State Office of Planning commissioned a consultant, Gary Chock of Martin and Chock, Inc. Structural Engineers, to review the City’s building code rules, regulations, and best practice standards to determine how they could be strengthened to promote greater resiliency to coastal hazards and the impacts of climate change. In the draft report, Chock identified all the “building codes and regulatory standards currently in effect that are intended to protect life and property from coastal hazards and climate impacts” and suggested the potential gaps in these protections that do not account for sea level rise or other climate impacts. The Department is currently reviewing Chock’s recommendations and will determine which regulatory changes may be appropriate to adopt.

## From Science to Regulation: A Lesson from Florida

“My experience as a coastal planner dates back many years, and one of the experiences I had the opportunity to have was working 7 years as a coastal planner in the State of Florida,” said Challacombe. He was working for Indian River County, collaborating closely with the State of Florida Department of Natural Resources, Division of Beaches and Shores, during a transformative period of forward-thinking policy making on coastal zone planning. FEMA was updating their maps for the region and the state was putting together their first regulations for the coastal construction control line, which delineates the jurisdictional area in which the State can restrict construction. The state received significant initial pushback from coastal landowners who did not want their construction restricted and many lawsuits were launched against the State. Yet the State had a tool that enabled them to hold firm to their new regulations.

“In every hearing that I went to, the State of Florida prevailed,” recalled Challacombe, “and the reason they prevailed is that they had the best scientific information.” The State commissioned comprehensive studies on an ongoing basis from the University of Florida on erosion of the state’s coastline so that they always have the most up to date science. Additionally, the state updates the coastal construction control line on a regular basis with physical monuments placed on the line. This regional field work enables regional management of the shoreline – not on a parcel-by-parcel basis as in Honolulu City and County – as well as ensuring the control line is as true to date as possible. Therefore, when lawsuits contest the restrictions of the control line, the state has evidence to prove the protections are accurate and necessary, and people and property are safer as a result.



In 1990, by which time Challacombe was working at the Honolulu City and County, Sea Engineering, Inc. conducted a coastal erosion study on O’ahu to support a similar coastal protection regulation. There was, however, too much public opposition to the 100-ft shoreline setback that the City and County proposed based on this study. The City Council didn’t have the political will to pass the setback and to this day,



Coastal Erosion on the North Shore of O’ahu. Photo Credit: Dolan Eversole, Hawaii Sea Grant

Oahu has one of the smallest shoreline setbacks at 40 feet – or 60 feet for a subdivided plot.

“If you remember in December of 2013, those homes around Rocky Point and Sunset Beach that were teetering on the edge,” said Challacombe, “that’s exactly where the Sea Engineering study showed an erosion rate that would have put those houses at risk in the timeframe that it was.” Challacombe hopes that Honolulu City and County can establish a profound scientific basis for sea level rise adaptation, as Florida did for coastal erosion, to keep Oahu communities safe before many more teetering house prove the science correct.

Before any regulatory changes can be implemented, the City and County needs to establish a solid scientific justification for restricting private development either through building codes or other regulations. In order to implement regulatory changes, there exists a need to adopt official sea level rise projections for O’ahu by either the County or State as the basis for regulatory actions to require protection, adaptation, or relocation responses to sea level rise impacts. The statewide projections and mappings of sea level rise and coastal erosion being prepared for the Interagency Climate Adaptation Committee (ICAC) by the University of Hawai’i School of Ocean and Earth Sciences and Technology could meet this need.

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*Key Message: Solid scientific understanding enables decisive action.*

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“Hopefully all the good work that the ICAC does, all the good work that Gary Chock is doing, is going to result in some sort of action, and that action basically takes the form of regulations,” said Challacombe. “If we can get that, with the technical studies to back it up, then when we should prevail at the city council when we propose any legislation that would further restrict property owners from building recklessly along the shoreline.”

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Written by Ali Andrews, Tetra Tech; based on an interview with Art Challacombe, Deputy Director, Honolulu City and County Department of Planning and Permitting on February 18, 2016.