

CLIMATE CHANGE COMMISSION
CITY AND COUNTY OF HONOLULU

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July 21, 2020

TO: The Honorable Kirk Caldwell, Mayor and City Councilmembers

FROM: Victoria Keener, Chair
Climate Change Commission

SUBJECT: One Water Collaboration Framework

The City and County of Honolulu (“City”) Climate Change Commission (“Commission”) strongly supports the One Water Collaboration Framework (“Framework”) as presented to the Commission on November 18, 2019 and documented in the report “One Water for Climate Resiliency,” developed by One World One Water for consideration by the City Resilience Team and Commission. This Framework is an integrated water management system approach to coordinate planning and infrastructure investment among City agencies for climate resiliency. This Framework is in alignment with the Mayor’s Climate Change and Sea Level Rise Directive 18-2, the State of Hawai’i Sea Level Rise Vulnerability and Adaptation Report of 2017, and the Commission’s previous guidance and briefs.

As the Commission, we emphasize the importance of effective water management amid increasingly extreme and unpredictable climate conditions. Many climate change impacts involve water, often characterized as either too much or too little. The Commission’s “Climate Change Brief” (June 2018), highlights the below impacts as it relates to One Water:

- **Sea level rise** leads to chronic flooding, erosion, and worsening effects of high wave impacts, threatening 38 mi (61 km) of major roads and more than \$19 billion in assets.
- Models predict increasing occurrence of **tropical cyclones** and associated impacts.
- Changes in **precipitation patterns**, and intensity, effect eco systems and human use.
- **Heavy rainfall events** increase runoff, erosion, and flooding.
- **Warming** increases evapotranspiration and is stronger at higher elevations.
- **Increased evaporation** reduces water supply and relates to increasing water demand, compounded by humidity.

- **Drought and saltwater intrusion** threaten agricultural systems, including traditional crops like kalo.

The above impacts are magnified by a confluence of high tide and rainfall events that lead to increasingly damaging impacts of flooding. Sea level rise and coastal erosion are also undermining onsite wastewater disposal systems (cesspools and septic), which is a growing public health hazard. As such, Honolulu will experience tremendous adverse impacts from multiple sources of water that require changes to critical infrastructure (Habel, et al., 2020).


Climate change adaptation efforts are complex and require an integrated team effort to institutionalize a framework that is aligned with City budgeting decisions. The Commission is in support of the Action Plans as outlined in the One Water for Climate Resiliency white paper, which include:

- **Action 1:** Issue an Ordinance for One Water Framework for Climate Resilience;
- **Action 2:** Develop an interagency Memorandum of Understanding (MOA);
- **Action 3:** Establish a One Water Panel to consult on City projects and programs;
- **Action 4:** Establish a One Water component in the broader planning framework;
- **Action 5:** Coordinating on budgets and CIP checklist for One Water climate resiliency;
- **Action 6:** Develop a coordinating mechanism around developers seeking information about capacity and resilience; and
- **Action 7:** Identify and implement One Water demonstration projects representing island wide interest.

The impacts of climate change have already been observed and experienced in Hawai'i. Accelerated effects can threaten the City's assets and the livelihoods and well-being of O'ahu's residents. As the challenges of climate change are multi-sectoral and thus require new kinds of collaborations, we support the approach of this Framework to plan, budget, design and build climate-resilient infrastructure for the City.

Should you have any questions, please contact the Climate Change Commission at ccc@honolulu.gov.

Sincerely,



Victoria Keener, Ph.D.
Chair, Climate Change Commission

Attachment: One Water for Climate Resiliency White Paper

Works Cited:

- "Climate Change Brief." City and County of Honolulu Climate Change Commission, 2018. <https://www.resilientoahu.org/s/Climate-Change-Brief.pdf>
- Habel, S., Fletcher, C.H., Anderson, T.R. et al. Sea-Level Rise Induced Multi-Mechanism Flooding and Contribution to Urban Infrastructure Failure. Sci Rep 10, 3796 (2020). Web. <https://doi.org/10.1038/s41598-020-60762-4>
<https://www.nature.com/articles/s41598-020-60762-4#citeas>
- Hawai'i Climate Change Mitigation and Adaptation Commission. 2017. Hawai'i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai'i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai'i Department of Land and Natural Resources Contract No: 64064.