

CLIMATE CHANGE COMMISSION
CITY AND COUNTY OF HONOLULU

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MAYOR

May 8, 2023

The Honorable Rick Blangiardi, Mayor
530 South King Street, Room 300
Honolulu, Hawaii 96813

AND

The Honorable Tommy Waters,
Chair and Presiding Officer
and Members
Honolulu City Council
530 South King Street, Room 202
Honolulu, Hawaii 96813

Dear Mayor Blangiardi, Council Chair Waters, and Councilmembers:

SUBJECT: Updated Climate Change Brief

Pursuant to the Revised Charter of Honolulu 1973 (2017 Edition) Section 6-107(h), the City and County of Honolulu (City) Climate Change Commission (Commission) is charged with gathering the latest science and information on climate change effects in the City. The Commission provides advice and recommendations to the Mayor, City Council, and executive departments as they look to draft policy, engage in planning for future climate scenarios, as well as, reduce Honolulu's contribution to climate change-causing global greenhouse gas emissions.

According to the Sixth Assessment Report (AR6) from the Intergovernmental Panel on Climate Changes (IPCC), it is unequivocal that human influence has warmed the atmosphere, ocean, and land. As a result, widespread and rapid changes in the atmosphere, ocean, cryosphere, and biosphere have occurred. The scale of recent changes across the climate system as a whole, and the present state of many aspects of the climate system, are unprecedented over many centuries to many thousands of years.

This Climate Change Brief (Brief) is updated every several years (first edition, 2018), with this update being prompted by the release of peer-reviewed research and several multinational and national climate change reports including a series of IPCC

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Special Reports and the AR6, and the Fifth U.S.-National Climate Assessment (currently in draft form).

The Climate Change Brief provides a summary of the latest and best-available science on climate change indicators and impacts under nine topical themes. The Brief does not provide detailed guidance and recommendations. The Commission also produces topically-focused guidance documents such as the recently updated Sea Level Rise Guidance (2022, updated from 2018).

This 2023 update to the Climate Change Brief emphasizes local climate change observations and projected impacts for O'ahu and Hawai'i followed by global observations and projected impacts. Each section also includes progress and next steps to highlight recent and ongoing efforts addressing these impacts at island, state, and global scales.

Key findings of the attached Climate Change Brief 2023 and March 31, 2023 summary presentation to the Commission include:

- Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface air temperature reaching 1.1°C (2°F) above the late 1800s. Average air temperature has risen 1.1°C (2°F) in Hawai'i since 1950.
- Global atmospheric carbon dioxide concentrations (420 ppm) continue to rise and are higher than at any time in at least 2 million years. Locally, O'ahu is making progress in reducing our greenhouse gas emissions, which declined 18% from 2005 to 2018 (most recent data available), but faster action is needed to achieve the City's (and state's) goal of a net-negative carbon economy by 2045.
- Human-caused climate change is already affecting weather and climate extremes in every region across the globe. In Hawai'i, drought frequency, duration, and magnitude have increased in both the wet and dry seasons increasing risk of wildfire and threats to water supplies.
- Globally, climate change has caused substantial damages and increasingly irreversible losses in terrestrial, freshwater, glacial, coastal, and open ocean ecosystems. The conservation and management challenges for O'ahu's watersheds and coastal ecosystems are inextricably linked to land use practices within City jurisdiction.
- Climate change is exposing weaknesses in societal systems and impacts are not experienced equally. Environmental and economic justice considerations should be central in climate mitigation and adaptation actions following the City's Climate Action Plan (2021).

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The Commission recognizes the significance of these findings in meeting the City's and state's climate change mitigation and adaptation goals and offers the resources of the Commission in helping to communicate this information. If you have any questions, please contact us at ccc@honolulu.gov.

Sincerely,



Rosanna 'Anolani Alegado, Ph.D.
Chair



Victoria Keener, Ph.D.,
Vice Chair

Attachment

Cc: All Executive Agencies
Honolulu Authority for Rapid Transportation
Honolulu Board of Water Supply