REPORT TO THE THIRTY-FIRST LEGISLATURE STATE OF HAWAII REGULAR SESSION OF 2021

HAWAII CLIMATE CHANGE MITIGATION AND ADAPTATION COMMISSION



Prepared by Department of Land and Natural Resources State of Hawaii In response to Section 225P-3(k), Hawaii Revised Statutes

December 2020



Hawaii Climate Change Annual Report 2020

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1. Hawai'i Climate Change Mitigation and Adaptation Commission Members and Staff

COMMISSION CO-CHAIRS

SUZANNE CASE - Chairperson of the Department of Land and Natural Resources MARY ALICE EVANS - Director of the Office of Planning

COMMISSION MEMBERS

MIKE MCCARTNEY - Director of the Department of Business, Economic Development, & Tourism RICHARD FRIED - Chairperson of the Board of Directors of the Hawai`i Tourism Authority

PHYLLIS SHIMABUKURO-GEISER - Chairperson of the Board of Agriculture SYLVIA HUSSEY - Chief Executive Officer of the Office of Hawaiian Affairs

WILLIAM AILĀ, JR - Chairperson of the Hawaiian Homes Commission

JADE BUTAY - Director of the Department of Transportation

ELIZABETH CHAR - Director of the Department of Health

CATHERINE PAYNE - Chairperson of the Board of Education

KATHY K SOKUGAWA - Director of the City and County of Honolulu, Department of Planning & Permitting

MICHELE CHOUTEAU MCLEAN - Director of the County of Maui, Department of Planning MICHAEL YEE - Director of the County of Hawai'i, Department of Planning

KA`ĀINA S. HULL - Director of the County of Kaua`i, Department of Planning

MIKE GABBARD - Chair of the Senate Committee on Agriculture & Environment

KAIALI`I KAHELE - Chair of the Senate Committee on Water & Land

NICOLE E. LOWEN - Chair of the House Committee on Energy & Environmental Protection

RYAN I. YAMANE - Chair of the House Committee on Water, Land & Hawaiian Affairs

MAJOR GENERAL KENNETH S. HARA - The Adjutant General

JUSTINE NIHIPLAI - Manager of the coastal zone management program

COMMISSION STAFF

ANUKRITI HITTLE - Coordinator

Website: Climate.hawaii.gov Facebook: @Hi Climate Instagram: @HI_Climate

2. Mission and priority statements

Mission Statement. Hawaii's Climate Commission recognizes the urgency of climate threats and the need to act quickly. It promotes ambitious, climate-neutral, culturally responsive strategies for climate change adaptation and mitigation in a manner that is clean, equitable and resilient.

Priority Statement: Mitigation¹ The Commission recognizes that ground transportation contributes significantly to Hawai'i's share of greenhouse gas emissions. It supports a price on carbon, and mechanisms to reduce overall vehicle miles traveled, as well as converting all remaining vehicle-based ground transportation to renewable, zero-emission fuels and technologies.

Priority Statement: Adaptation² The Commission recognizes the serious impacts of sea level rise on Hawai'i. It supports legislation to address development along beaches, as well as funding programs that assist in planning and implementation; urges the incorporation of the sea level rise exposure area into counties' general and development plans; and recommends that agencies identify and prioritize their assets that lie within this area.

¹ http://climate.hawaii.gov/wp-content/uploads/2018/11/NR-Climate-Commission-Recommends-Urgent-Action-to-Combat-Emissions-N ov.-28-2018.pdfOn adaptation:

² http://climate.hawaii.gov/wp-content/uploads/2018/09/NR-State-Cl imate-Commission-Adopts-Recommendations-MIssion-Statement -Sept.-5-2018.pdf

3. 2020 Highlights: Co-Chairs' Message

Aloha kākou,

The first year of the Climate Decade began with Hawai'i's second statewide Climate Conference, expanded to two days, with the keynote address by New York Times bestselling author David Wallace-Wells setting the tone with his message that the climate crisis has intensified. At the conference, Governor Ige said succinctly, "What we used to call climate change is more accurately described as a climate crisis."

Two months later, the State of Hawai'i began to document its first COVID-19 cases. The pandemic crisis highlighted how vulnerable Hawai'i is to larger unpredictable global forces—and why it is imperative to move quickly towards a clean, equitable, and resilient Hawai'i. Clearly, one major lesson of this pandemic is that Hawai'i cannot afford to rely on global tourism as its main economic driving force; Hawai'i needs to diversify its economy. There are ample opportunities to do just that by incorporating sustainable principles such as local agriculture and energy production, conservation, and electrification of transportation into its future planning. By incorporating the guiding principles of the Commission into COVID-19 recovery efforts, we can address present day health, and economic and climate change impacts to prepare for the future. Through its Climate Ready Hawai'i Initiative, the State's Climate Change Mitigation and Adaptation Commission's work attempts to exemplify such preparation.

While many of us have been on the frontlines dealing with COVID-19 issues, recognizing the inextricable links between climate, recovery, health, and economy, we have strengthened our climate response. Despite pandemic interruptions to meetings and work, we have put recovery and resilience at the center of our efforts and will continue to do so for the Climate Decade. This year, we have:

- Sought and been awarded grant funds for catalytic projects that reinforce the intertwined nature of climate change resilience and economic recovery;
- Assembled a Climate Ready Corps to support key departments in taking climate action by creating employment and mentoring opportunities for a six-member VISTA AmeriCorps cohort of young people to work on climate "readiness" and equity;
- Initiated development of critical climate change policy tools for departments to incorporate into their daily operations;
- Developed guidance for counties and communities to use in sea level rise adaptation;
- Strengthened and expanded international, regional, national, state, and local partnerships to motivate and move forward on climate action; and
- Compiled, analyzed and disseminated climate change information to the local, national and global communities.

The Commission and its staff are honored and proud to support Hawai'i's public, legislative and executive branches in service of Act 32.

With aloha,

Suzanne D. Case

Co-Chair, Hawai'i Climate Change Mitigation and Adaptation Commission Chair, Department of Land and Natural Resources

Mary Alice Evans

Co-Chair, Hawai'i Climate Change Mitigation and Adaptation Commission Director, Office of Planning, Department of Business, Economic Development and Tourism



4. Funds sought and awarded: External grants augment program budget totaling almost \$1million. The Commission quadrupled its overall program budget, from its General Fund allocation of \$205,000 to a total of \$995,595. The Commission's staff sought and was awarded a total of \$790,595 from federal sources and foundation grants outside of Hawai'i, approximately half of which was in-kind.

TABLE 1: SUMMARY OF FUNDS SOUGHT AND AWARDED

PRIORITY: MITIGATION	ACTIVE TRANSPORTATION		
PROJECTS/ACTIVITIES	DESCRIPTION/NOTES	GRANT AWARDS*	
MULTI-MODAL HUB OʻAHU	Identify, describe and recommend use of state parking lots and spaces to encourage the use of alternative transportation and multi-modal mobility options to achieve state goals	\$100,000	
ACTIVE TRANSPORTATION PROJECT STATEWIDE	Develop supporting framework for sustainable transportation statewide	\$100,000	
PRIORITY: ADAPTATION	CLIMATE READY HAWAI'I INITIATIVE		
PROJECTS/ACTIVITIES	DESCRIPTION/NOTES	GRANT AWARDS	
RISK ROAD MAP	Operationalizing climate change induced risk for State of Hawai'i departments	\$270,000**	
PUNALU'U PILOT	Using green-gray infrastructure to protect coastal roads (DLNR, DOT,C+C)	\$200,000	
PRIORITY: SUPPORTING FRAMEWORKS EQUITY FRAMEWORK DEVELOPMENT			
PROJECTS/ACTIVITIES	DESCRIPTION/NOTES	GRANT AWARDS	
VISTA CLIMATE READY CORPS	Further climate change and equity goals through a six-member VISTA cohort in four offices (HSEO, DLNR, OP, DOH)	\$120,595**	
TOTAL GRANT AWARDS:		\$790,595	

* From federal and private sources

** In-kind funds

5. Support and coordination for key offices to address resilience in

vulnerable communities. As climate change exacerbates weather patterns and extreme weather events, it is important to equip those who do not have the resources to recover and thrive as a result of even relatively "minor" disasters and impacts, particularly vulnerable low-income communities and those who are considered homeless or are at risk of becoming homeless. At present, no coordinated statewide effort exists to identify and address the impacts of climate change and related policies on vulnerable populations and communities. The Commission is eager to begin addressing this issue through its VISTA Climate Ready Corps.

Through a grant from the Corporation of National and Community Service (CNCS), six AmeriCorps VISTA members will join four key state offices for a period of three years to address climate readiness and equity issues statewide that will help our most vulnerable communities thrive and be resilient in the face of climate change induced events and impacts. The four offices are: the Hawaii Climate Change Mitigation and Adaptation Commission (Commission) based at the Department of Land and Natural Resources (DLNR), the Hawai'i State Energy Office (HSEO), the Hawai'i Office of Planning (OP), and the Hawaii Department of Health (DOH). The program will integrate the climate change work of these four offices through data collection, outreach, education, and information dissemination.



6. Development of policy tools for state and county departments. Following recommendations from the 2019 statewide conference that the State "consider adopting a community resilience building planning process to help Hawai'i'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," the Commission approved the development of a Climate Ready Hawai'i Initiative.

Recognizing that a *mauka-to-makai* problem needs an *ahupua'a* solution, a Climate Ready Hawaii framework aims to integrate the use of nature-based solutions to build climate adaptation and resiliency in ecosystems and communities. With in-kind assistance from the US Climate Alliance (USCA), this work is being done in close collaboration with partners at the UH Sea Grant College, and the Natural and Working Lands group of the USCA which includes DLNR's Division of Forestry and Wildlife and Division of Aquatic Resources, and other federal, private, and academy partners.

Under the Climate Ready Hawai'i framework, the Commission is formulating policy tools for use by all departments, such as:

- a. Social Cost of Carbon. In an attempt to assist the State of Hawai'i to move its economy to a low/zero-carbon growth path, the Commission, with the leadership of the Hawai'i Department of Transportation, has initiated research on how to assess, incorporate and measure the carbon footprint of projects and programs in all state departments. While it is a positive step for departments to consider how to reduce emissions from fuel use through fuel switching and efficiency measures, these efforts are not enough to bring about the reduction needed. Including the full cost of carbon emissions will allow a more accurate benefit-cost assessment for projects and associated policies. Outcomes will inform the development of optimal climate change mitigation and adaptation strategies for Hawai'i.
- b. Climate Risk Roadmap. Climate change, with its new challenges, has produced an administrative and governance burden on state and local governments. These entities, tasked with providing an array of public services from the physical upkeep of failing and increasingly vulnerable infrastructure to asset management, are confronted with increasing uncertainty. The Climate Risk Roadmap tool will help state and municipal entities formulate a response to climate change by "climate proofing" to protect against these uncertain conditions, and "mainstreaming" to incorporate such protections into daily operations. Both are needed to gain traction to deal with climate change impacts. This tool is being developed in close collaboration with the East-West Center.

- 7. Operationalizing Mitigation and Adaptation: Demonstration Projects and Guidance
 - a. Sea level rise guidance for parcel permits. In partnership with the UH Sea Grant College, and with input from counties, the Commission office has produced a draft "how to" manual and accompanying online tool for guidance in incorporating the Commission's sea level rise report's recommendations into parcel permitting.
 - b. Nature-based solutions. The Commission office (with DLNR's Office of Conservation and Coastal Lands) is coordinating a study/demonstration project to explore nature-based alternatives for the protection of coastal roads, while restoring public beach access. Through the use of green-gray infrastructure, the project seeks to study how to protect Kamehameha Highway, which provides the only road access to communities along northeast O'ahu from flooding, erosion, and more extreme storms, which are increasing with climate change and sea level rise. This work will be done in partnership with HDOT and the City and County of Honolulu.
 - c. Multi-modal mobility hub. A Climate Ready Hawai'i also supports mitigation efforts to reduce Hawai'i's dependence on imported fossil fuels. To this end, the Commission's work this year is focused on active transportation and multi-modal mobility, which includes the full gamut of strategies from telework, transit, bicycling, pedestrian and other modes to reduce miles traveled, thereby averting emissions. Specifically, this entails initiating collaborative work with the Hawai'i Energy Policy Forum, counties, metropolitan planning organizations, and federal and private partners to develop plans for innovative concepts of multi-modal mobility hubs statewide.
 - d. Fleet tools. To advance climate change work in Hawai'i, one of the critical components of reducing ground transportation emissions is the conversion of public fleets to clean, renewable fuels, and more efficient vehicles. A key is being able to assess lifecycle costs, benefits and emissions for such a transition. Such tools will assist fleet managers in making the best low/zero carbon decisions for their departments. Commission staff is working with partners at the University of Hawai'i and at the US Department of Energy's Clean Cities Coalition to develop cost and emission tools specific to Hawai'i.

Act 32 Mandates			
1. Provide policy direction, facilitation, coordination, and planning among state and county agencies, federal agencies, and other partners as appropriate.			
2. Establish climate change mitigation and adaptation strategies and goals to help guide planning and implementation statewide using the latest scientific analysis and risk assessment to monitor and forecast climate change related impacts at the regional, state and local level, including any additional information deemed necessary.			
3. Identify vulnerable people, communities, industries, ecosystems and potential economic ramifications for climate change related impacts.			
4. Identify existing climate mitigation and adaptation efforts at the federal state and local levels and make recommendations for how to meet or exceed Hawaii's state mitigation goals and shall adopt a liberal approach in preparation, so as to minimize future risk to the people and environment of Hawaii.			
5. The Commission shall identify the information necessary to track progress in implementing climate change mitigation and adaptation efforts and shall submit an annual report to the governor and legislation no later than 20 days prior to the convening of each regular session of the legislature.			
6. The Commission shall maintain a website that includes a mission statement as well as access to climate change related actions, plans, policies and results			
7. The Commission shall assess the capacity and availability of existing resources & identify new sources of revenue necessary to address climate change and advise the governor, legislature, & counties on the economic and budgetary ramifications of climate change impacts, mitigation and adaptation.			
8. The Commission shall conduct a comprehensive review of the implementation as required by this section and submit a report to the governor, legislature and the counties no later than 20 days prior to the convening of the regular session of 2023 and every five years thereafter.			
9. The Commission shall, as a first step, focus on and develop sea level rise vulnerability and adaptation reports, which shall be made publicly available no later than December 31, 2017, and the commission shall reevaluate and update the sea level rise vulnerability and adaptation report every five years.			

TABLE 2: ACT 32 MANDATES: SUMMARY OF PROJECTS AND ACTIVITIES, 2020

MITIGATION

PROJECTS	DESCRIPTION	MANDATES 1-9*
ACTIVE TRANSPORTATION	Develop recommendations for a suite of policies to address telework, commute trip reduction, and active transportation goals	24
MULTI-MODAL MOBILITY HUB O'AHU	Identify, describe and recommend use of state parking lots and spaces to encourage the use of alternative transportation and multi-modal mobility options to achieve state goals	
ACTIVE TRANSPORTATION PROJECT STATEWIDE	Develop supporting framework for sustainable transportation statewide	
FLEET TOOLS	Development of webinars, cost and emissions tools, resources and services for public fleet managers	2
ADAPTATION		
PROJECTS	DESCRIPTION	MANDATES 1-9*
CLIMATE READY HAWAI'I INITIATIVE	Framework for resilience and adap- tation to climate change	126
RISK ROAD MAP	Operationalizing climate change induced risk Road Map for State of Hawai'i departments	12
SOCIAL COST OF CARBON	Inter-departmental conversation to assess, incorporate and measure the carbon footprint of projects and programs in all state departments	
INFORMATION PORTAL	Develop an information hub/portal to maintain understanding and applicability of the latest and best available information on climate and sea level rise risks	

TABLE CONTINUED ON NEXT PAGE

TABLE 2: ACT 32 MANDATES: SUMMARY OF PROJECTS AND ACTIVITIES, 2020 (CONT'D)

ADAPTATION				
PROJECTS	DESCRIPTION	MANDATES 1-9*		
RESILIENCE GUIDANCE	Community planning guidance	200000		
PLANNER'S TOOL	Create sea level rise guidance and tools for State and county agencies for planning and permitting	200000		
SEA LEVEL RISE REPORT	Project Completed in 2018	00000000		
PUNALU'U PILOT	Using green-gray infrastructure to protect coastal roads (DLNR, DOT,C+C)			
SUPPORTING FRAMEWORKS				
PROJECTS	DESCRIPTION	MANDATES 1-9*		
VISTA CLIMATE READY CORPS	Further climate change and equity goals through a six-member VISTA cohort in four offices (HSEO, DLNR, OP, DOH)	1 3 7 7		
COMMUNICATIONS STRATEGY	Development of a Communications Hui supported by a strategy to further climate change communication (esp. slr) in Hawai'i (outcome of the 2020 statewide conference); includes maintaining a website, social media accounts and providing information to media, and partners	126		
STATEWIDE CONFERENCE 2021	Program development, planning, and building partnerships for a focus on climate change and economic recovery	126		
SUPPORTING FRAM	EWORKS			
PROJECTS	DESCRIPTION	MANDATES 1-9*		
US CLIMATE ALLIANCE	Sub-national activities: Co-chair of the Transportation Working Group; participant in Resilience working group, and the Just Transition working group			
UNDER 2 COALITION	International activities: Finance leaders global forum development; annual carbon disclosure report	1005000		
ANNUAL REPORT	Report to the Legislature describing progress towards the mandates of Act 32	56		



- 8. Engagement at international, national, sub-national, and state level amplifies Hawai'i's work. Hawai'i's geographic isolation makes it critical to connect to the rest of the world in dealing with this global challenge. For this reason, the Commission and its staff is involved at all levels of climate change response—from the global to the state and county levels. Such involvement provides venues to highlight the work being done in Hawai'i, forms channels of knowledge sharing and cooperation across jurisdictions, and helps align Hawai'i's efforts with sub-national, national and international efforts to combat climate change. Here are some of the efforts that Hawai'i has been involved in through the Commission and its staff:
 - a. **International**: Commission staff was designated to attend the United Nations Convention on Climate Change's Conference of the Parties (COP25). Through a sub-national delegation comprised of state and county officials, Hawai'i supports a regular and strong presence at these global negotiations. Hawai'i works with various thematic and regional entities such as:
 - The International Alliance to combat Ocean Acidification. Hawai'i, along with six US states, put forward a bi-coastal alliance to combat ocean acidification, and brings state-level ocean action planning to the global stage;
 - The USCA-European Union Climate Risk and Resilience Cooperation. Hawai'i contributed to developing key areas of cooperation: knowledge sharing, technical dialog and communication; and
 - The Under 2 Coalition which brings together more than 220 regional, local and national governments that represent 43% of the global economy. Through the Under 2 Coalition, Hawai'i is helping to incorporate climate change impacts into financial policies and form a global Finance Leaders Forum.
 - b. National: Commission co-Chairs and staff provide updates and respond to information requests to Hawai'i's Congressional delegation. This year, Commission co-Chairs submitted a letter to the House Select Committee on the Climate Crisis outlining the need for an economic recovery that must be closely tied with climate change impacts, which in turn must be intertwined with public health issues. Commission staff also provided briefings, coordinated by non-profit partners such as the Environmental Energy Study Institute and Carbon Xchange, to congressional staffers and the larger national community, highlighting Hawai'i's efforts in climate mitigation and adaptation/resilience. Outcomes have included a multi-state regional report (pending) on coastal resilience priorities and efforts.
 - c. **Sub-national**: Through its staff, the Commission is engaged in the many sub-national efforts of the US Climate Alliance, the 25-governor effort that pledged to uphold the US's commitments to the Paris Climate Agreement. Commission staff serves as co-Chair of the Transportation Working Group; participates in the Resilience and Just Transition working groups, and coordinates, collates

and organizes responses to the Governor's Office when requested. The Alliance is a valuable resource for Hawai'i's efforts, as it provides knowledge, guidance, funding, and amplification of climate change efforts at the state level, something that would otherwise be difficult for a small state.

- d. **State**: The Commission reached out beyond its immediate membership to include relevant departments in its work, in particular: Employees' Retirement Service, Public Utilities Commission, State Procurement Office, and the Department of Accounting and General Services. The Commission provides information and analysis in many ways, in particular, through the legislative session, and the annual statewide conference.
 - i. Legislative session 2020. Almost 50 testimonies³ were submitted on behalf of the Commission on measures relevant to climate change in the 2020 legislative session, most notably in support of SB2060 which modernizes the state's coastal management laws. Commission staff testified in person, coordinated testimony with departments and partners, flagged issues for legislators, and responded to requests for information.

ii. Annual Conference.

The statewide conference is a flagship event for the Commission. It highlights research, practice and engagement on the state's climate change response. It is the culmination of year-long work, cutting edge knowledge, and valuable partnerships. This year, the conference was expanded to two full days of on- and off-site activities, including a Governor's informational session with the keynote speaker and cabinet and legislators, a state-of-the-knowledge Hawai'i-specific research session, a student documentary film showcase, three workshops and an evening keynote address. Outcomes include: Research papers and presentations, which are highlighted on the Commission's web portal: climate.hawaii.gov; and a framework for the Commission's work for 2020.

The 2020 conference saw standing-room-only attendance of over 350 people in person, and over 50 viewers online. Attendees comprised government officials (30%), students (6%), advocates (19%), interested public (16%), researchers (18%) and industry (10%). On the second day, over 200 people attended research talks and workshops. Costs (total approximately \$37,000) were borne by the Commission (\$7,000 approximately) and its many partners.

³ https://climate.hawaii.gov/wp-content/uploads/2020/07/2020-Testimony-3.pdf

- **9.** Information to Hawaii's communities: The Commission provides climate change information through its annual conference, its web portal and social media accounts, presentations, webinars, briefings, and articles. Highlights of communications activities include:
 - a. **Communications strategy**. Taking the message from its 2020 conference to heart, the Commission, with its many partners, co-created a communications strategy to outline main components that address climate change priorities and to collaborate on events and campaigns of mutual interest. The conference highlighted communication as the bottleneck to climate action.
 - b. Web portal expansion. The expanded web portal contains several new pieces of climate change information, including:
 - A list of climate change related reports on adaptation⁴ and mitigation.⁵
 - Fact sheets for climate change issues (HI Facts).6
 - A Clean Fleets Toolbox⁷ and web discussion series "Green Car Talk"⁸ for fleet managers
 - Climate Ready Hawaii guidance and tool on sea level rise (under development).
 Shorter blog pieces⁹ to capture and convey the nuances of Commission priorities, research and analysis.
 - c. Social media, presentations, and articles: The Commission's social media accounts (Facebook and Instagram) are very active, and provide windows into the Commission's work between its regular public meetings. Given the Commission's relatively new presence in this space, these accounts are fairly competitive with similar accounts in followership (almost 900 as of September 2020 on Instagram) and engagement. Commission staff also provides information upon request through regular briefings, presentations, webinars, and media articles.



⁴ http://climate.hawaii.gov/climate-change-reports/

⁵ http://climate.hawaii.gov/mitigation-reports/

⁶ http://climate.hawaii.gov/hi-facts/

⁷ http://climate.hawaii.gov/hi-clean-cars-faq/

⁸ http://climate.hawaii.gov/wp-content/uploads/2020/06/Green-Fleet-Discussion-Series-Final.pdf

^{9 9} http://climate.hawaii.gov/hi-blog/