DAVID Y. IGE GOVERNOR OF HAWAII



BOATING AND OCEAN RECREATION BUREAU OF CONVEYANCES COMMISSION ON WATER RESOURCE MANAGEMENT CONSERVATION AND COASTAL LANDS CONSERVATION AND RESOURCES ENFORCEMENT ENGINEERING FORESTRY AND WILDLIFE HISTORIC PRESERVATION KAHOOLAWE ISLAND RESERVE COMMISSION LAND STATE PARKS

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

November 17, 2021

The Honorable Ronald D. Kouchi, President and Members of the Senate Thirty-First State Legislature State Capitol, Room 409 Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker and Members of the House of Representatives Thirty-First State Legislature State Capitol, Room 431 Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the Hawaii Climate Change Mitigation And Adaptation Commission report, as required by Section 225P-3(k), Hawaii Revised Statutes (HRS). In accordance with Section 93-16, HRS, a copy of this report has been transmitted to the Legislative Reference Bureau and the report may be viewed electronically at https://files.hawaii.gov/dlnr/reports-to-thelegislature/2022/OCCL22-Hawaii-Climate-Change-Report-FY21.pdf.

Sincerely.

SUZANNE D. CASE

ame Q. Code

Chairperson

Enclosure

REPORT TO THE THIRTY-FIRST LEGISLATURE STATE OF HAWAII REGULAR SESSION OF 2022

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

November 2021



Hawai'i Climate Change Annual Report 2021

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

COMMISSION CO-CHAIRS

SUZANNE CASE - Chairperson of the <u>Department of Land and Natural Resources</u>
MARY ALICE EVANS - Director of the Office of Planning and Sustainable Development

COMMISSION MEMBERS

MIKE MCCARTNEY - Director of the <u>Department of Business</u>, <u>Economic Development</u>, & Tourism

GEORGE KAM - 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

DEAN UCHIDA - Director of the <u>City and County of Honolulu</u>, <u>Department of Planning & Permitting</u>

MICHELE CHOUTEAU MCLEAN - Director of the County of Maui, Department of Planning

ZENDO KERN - 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

LORRAINE INOUYE - Chair of the Senate Committee on Water & Land

NICOLE E. LOWEN - Chair of the <u>House Committee on Energy & Environmental</u> Protection

DAVID TARNAS - Chair of the House Committee on Water & Land

MAJOR GENERAL KENNETH S. HARA - The Adjutant General

JUSTINE NIHIPALI - 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. Hawai'i'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.

3. New Statement on Guidance for Investment in Resilient Infrastructure³

This statement of the Hawai'i Climate Change Mitigation and Adaptation Commission (Commission) from July 2021 aims to provide guidance to all Hawai'i state and county governments and their agencies; and recommendations on how to translate Hawai'i's robust climate policy framework to decision making and investments to address the current climate emergency.

A Climate Ready Hawai'i is a clean, equitable, and resilient Hawai'i. The Commission emphasizes that nature-based solutions, green infrastructure, and carbon-smart practices must be implemented now and prioritized in all planning and future actions as part of a climate ready Hawai'i. By doing so, it supports state sustainability and climate resiliency which provide a multitude of economic, environmental, and social co-benefits.

Climate Ready Priority A: The ambitious mitigation of greenhouse gases through elimination and reduction of emissions. Recognizing that this must be done through decarbonization of the energy sector by eliminating and reducing emissions from power and transportation — which includes energy efficiency, renewable energy, electrification of ground transportation, and renewable fuel switching for aviation and shipping — and land use reform, the Commission urges agencies, government, business and community partners to work towards the goals and actions.

Climate Ready Priority B: The preservation of our cultural, biological and public

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

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

³ https://climate.hawaii.gov/wp-content/uploads/2021/07/FINAL-statement-on-decision-making-and-investment-guidance-Jul-19-2021.pdf



resources through adaptation. Recognizing that human life and health, natural and built infrastructure, biological and cultural resources, and communities in Hawai'i are under existential threat from the impacts of climate change, the Commission urges all departments and planning organizations to help integrate adaptation and resilience into their programs and operations, and to plan for and implement climate change adaptation projects for critical infrastructure and natural environments.

Climate Ready Priority C: The accelerated sequestration of carbon, production of local foods and protection of public health and ecosystems. Recognizing that mauka and makai croplands (including lo'i kalo and loko i'a), forests, and ranchlands paired

with climate-smart practices can reduce greenhouse gas (GHG) emissions, increase carbon sequestration, and provide additional economic, social, cultural, and environmental benefits, the Commission urges partners in the Greenhouse Gas Sequestration Taskforce and the Hawai'i Natural and Working Lands (NWL) hui to develop and refine strategies, programs, and projects that focus on: (1) the sustainable increase of agricultural productivity and incomes, and (2) the reduction and removal of GHGs.

Climate Ready Priority D: The adoption of nature-based solutions and building of resilience to climate change. Recognizing that managing lands for soil health can protect waterways and nearshore reef ecosystems and increase resilience in the face of other stressors such as increased ocean temperatures and acidification, and recognizing that Hawai'i's oceans and reefs are local and international treasures that drive Hawai'i's economy and provide coastal protection, the Commission recommends climate-smart land management practices that focus on building soil health to provide ecological and economic resilience for agricultural communities throughout the islands and increase food system resilience, a key social determinant of public health.



4. 2021 Highlights: Co-Chairs' Message

Aloha kākou,

In this second year of the Climate Decade, we recognize that the time is now, to lead the change we want to see and to stay true to the values that underpin our state. The pandemic has shown us how intimately we are connected to each other. In Hawai'i, we have always known this-the power of being connected, having an ethic of care, responsibility, and respect in the way we face the future.

Recognizing this interconnectedness, at the state's Climate Commission, we are also eager to join the dots. The 2021 session of the state legislature declared a climate emergency in Hawai'i. Several laws were enacted to address the climate emergency—from disclosure on real property transactions, and vulnerability analyses for state infrastructure, to transportation, sidewalks and more. In support, the Commission's latest statement issues guidance on where to direct investment so that both crises can be addressed in a manner that is clean, equitable and resilient. 4,5

By folding the guiding principles of the Commission into COVID-19 recovery efforts, we know we can address present day health, and economic and climate change impacts to prepare for our common future. Through its Climate Ready Hawai'i Initiative, the Commission is shaping climate action in Hawai'i from international to local levels by:

- Ratcheting ambition around the world. Through our close involvement with the 25governor U.S. Climate Alliance, the IUCN and the World Conservation Congress, the global regional partnership of the Under 2 Coalition, and our strong presence at COP26, we continued to inspire climate ambition abroad and at home.
- Building a social and climate vulnerability framework for use at home. Using the Commission's statement on equity as a starting point, we initiated development of a climate and social vulnerability framework for state government operations in light of the intertwined nature of climate change, resilience, and recovery. 6
- Assembling priority infrastructure projects for climate readiness. To support the new statement on infrastructure investments, we built a list of priority shovel worthy/ shovel ready projects statewide for mitigation, adaptation, resilience, and sequestration, and accompanying sources of grants.
- Expanding capacity for member departments through our VISTA team. Through a sixmember Climate Ready Hawai'i AmeriCorps VISTA, supported four key departments in implementing climate change priorities: from addressing energy and transportation affordability and equity, developing outreach and communications materials on climate change issues, to increasing capacity for climate change projects and meetings.
- Constructing a policy toolkit for emissions reduction from transportation. To address the Commission's mitigation priority, we built a toolkit consisting of policy-related strategies and synthesized data for reducing vehicle miles traveled, that reinforce GHG reduction, resilience, and equity.

⁴ https://www.capitol.hawaii.gov/session2021/bills/SCR44_HD1_.htm

⁵ https://climate.hawaii.gov/hi-news/climate-legislation/

⁶ https://climate.hawaii.gov/wp-content/uploads/2021/02/Commision-Statement-on-Climate-Equity-FINAL.pdf



- Highlighting nature-based solutions to address climate change. In a collaborative effort
 with key departments and experts, we synthesized resilience efforts in Hawai'i, through the
 Nature-Based Resilience and Adaptation to Climate Change in Hawai'i Working Paper,
 which emphasized the need to use nature-based solutions.⁷
- Briefing departments on sea level rise adaptation at the parcel level. We briefed over 100 staff from 22 different state and county departments on guidance and new tools to incorporate sea level rise in planning and permitting at the parcel level.
- Engaging our communities on latest climate information. Through a speaker series
 focused on climate change, and in partnership with UH's Better Tomorrow Speaker Series,
 we brought the latest climate science and policy work to Hawai'i. Our expanded website,
 community slide decks, fact sheets and social media content, and monthly updates to the
 community synthesize complex information into understandable concepts and materials for
 our partners.

This year, again, the Commission, its member departments, its staff, and its first VISTAs 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

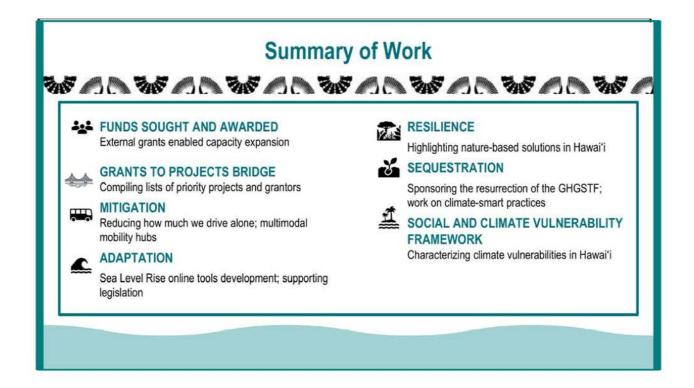
Mary Alice Evans
Co-Chair, Hawai'i Climate Change Mitigation and Adaptation Commission
Director, Office of Planning and Sustainable Development, Department of Business, Economic Development and Tourism

⁷ https://climate.hawaii.gov/wp-content/uploads/2021/04/CRHI-Working-Paper-V5.pdf



5. Operationalizing Climate Ready Hawai'i

The Commission's guiding principles embodied in its various statements are operationalized in its Climate Ready Hawai'i initiative. These projects and efforts summarize Climate Ready Hawai'i.



Funds sought and awarded: External grants enabled capacity expansion even as budget shrank.

This year, the Commission's General Fund allocation shrank from \$205,000 to \$170,264. Even so, capacity to do climate change work increased as AmeriCorps granted \$125,000 for six VISTA members to work in four State offices: Department of Business, Economic Development & Tourism – Hawai'i State Energy Office (3) and Hawai'i Green Infrastructure Authority (1), Department of Transportation (1) and Department of Health (1). The current year's VISTA cohort's profiles and projects are on the Commission's site.⁸

In addition, funds were reassigned for a 2-year specialist position that will implement strategies to reduce vehicle miles traveled (VMT) from the VMT toolkit project (see below).

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⁸ https://climate.hawaii.gov/hi-vista/



b. "Grants-to-Projects Bridge" supports the new statement on infrastructure investment.

The Grants-to-Projects Bridge supports the Commission's statement to help direct funds to priority climate-smart infrastructure in Hawai'i.⁹ With the help of the Climate Ready VISTA cohort, and many colleagues, state and county active transportation projects, and resilience projects for natural and working lands were assembled into a searchable online format. Grants information was also compiled to potentially make a bridge to funding priority projects. It is hoped that this resource will help make grant and project information more accessible to community members and government agencies, and coordinate funding to ensure these projects are completed and so, move to a Climate Ready Hawai'i.



c. Mitigation work focuses on reducing emissions from vehicle miles traveled.

i. Driving down emissions.

Experts agree that electrification of transportation alone will not be sufficient for Hawai'i to achieve its climate change and clean energy goals. 10,11 Strategies are needed to get people out of cars, and into transit, biking and walking—that is, to reduce vehicle miles travelled (VMT). The Commission's priority to reduce emissions from ground transportation was addressed through a

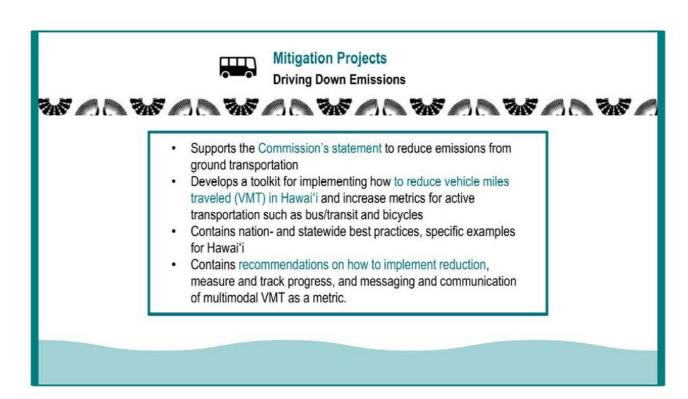
https://climate.hawaii.gov/wp-content/uploads/2021/07/FINAL-statement-on-decision-making-and-investment-guidance-Jul-19-2021 pdf

¹⁰ https://energy.hawaii.gov/wp-content/uploads/2011/09/2015HCEITransAnalysisHandout.pdf

¹¹ https://www.hawaiianelectric.com/documents/clean_energy_hawaii/electrification_of_transportation/201803_eot_roadmap.pdf



VMT Reduction Strategies Toolkit project, funded by EPA.¹² This project developed a toolkit for implementing how to reduce motor vehicle VMT in Hawai'i and increase metrics from other modes, such as bus/transit and bicycles. The toolkit contains: nation- and statewide best practices, specific examples that are helpful for Hawai'i, recommendations for how to implement such reduction, how to measure and track progress, and messaging and communication of multimodal VMT as a metric.



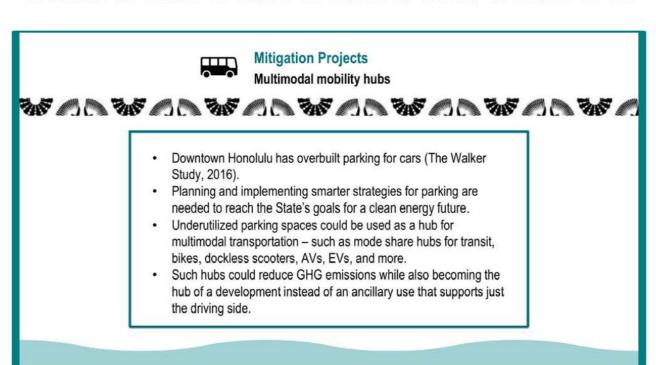
ii. Multimodal mobility hubs.

Our multimodal mobility hub work was initiated through a cost-share grant from the Oʻahu Metropolitan Planning Organization. The project, focusing on multi-modal transportation, fits into the Commission's priorities to curb emissions from ground transportation by proposing to develop a plan for assessment of state parking facilities on Oʻahu that will allow for multi-modal use. It proposes to identify and describe State parking facilities, including their utilization rates; evaluate and price various ways to make better use of these state assets in ways that encourage the use of alternative transportation and mobility options; and overall, help optimize state and county goals for clean transportation while maximizing the public benefit.

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¹² https://climate.hawaii.gov/wp-content/uploads/2018/11/NR-Climate-Commission-Recommends-Urgent-Action-to-Combat-Emissions-Nov.-28-2018.pdf





d. Adaptation work: Development of Sea Level Rise tools and supporting legislation.

In collaboration with Hawai'i Sea Grant program, the Commission staff was able to provide handson briefings and discussion to the sea level rise guidance document and tools that were developed earlier this year. ¹³ These tools are intended to assist with permitting at the parcel level, taking sea level rise issues into account. The briefings engaged over 100 participants, from 22 different offices for this work.

In addition, the Commission provided research and testimony in support of critical adaptation bills that were enacted into law. Acts 178 and 179 dealing with sea level rise disclosure on private property, and vulnerable infrastructure on public property addressed the Commission's adaptation priorities. 14,15

e. Resilience work: Highlighting nature-based solutions for Hawai'i.

Nature-based Resilience and Adaptation to Climate Change in Hawai'i (2021), a Climate Ready Hawai'i Working Paper, highlighted actions in Hawai'i that rely on nature-based "green-blue" strategies to adapt to and mitigate climate change. This collaboratively produced paper identified ongoing efforts in the state, and key action areas for next steps that enhance climate readiness. Along with reiterating the role that Hawai'i's mauka-makai lands and waters play in resilience,

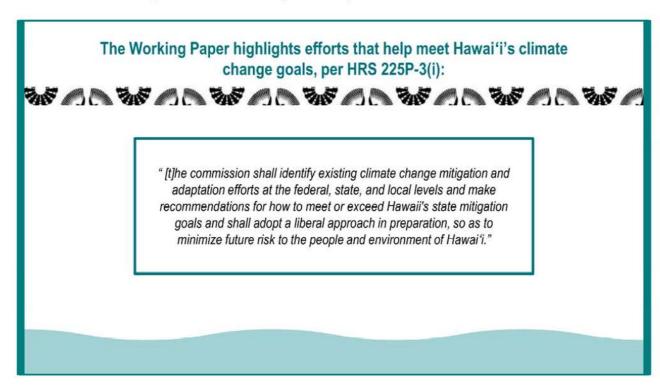
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¹³ https://climate.hawaii.gov/hi-adaptation/state-sea-level-rise-resources/

¹⁴ Act 179 (2021) requires that mandatory seller disclosures in real estate transactions include identification of residential real properties lying within the sea level rise exposure area: https://www.capitol.hawaii.gov/session2021/bills/GM1307_.PDF
¹⁵ Act 178 (2021) requires OPSD to identify existing and planned facilities vulnerable to SLR and assess options to mitigate its impacts: https://www.capitol.hawaii.gov/session2021/bills/GM1306_.PDF



the paper highlighted the role of soils and food security in resilience and adaptation. This is something the Commission has not addressed thus far, and the working paper offers up a starting point for this discussion. It is hoped that this document that involved a team of 25 partners and Commission staff will be used by decision makers, planners, communities, businesses, and scientists as a guide for climate change resiliency work in Hawai'i.



f. Sequestration work: Commission sponsors GHG Sequestration Taskforce resurrection, and works with Natural & Working Lands hui on climate-smart practices.

Through the Commission's Climate Ready Hawai'i VISTA program, the Commission sponsored the resurrection of the Greenhouse Gas Sequestration Taskforce. The assigned VISTA member provided logistical support to the Taskforce, which has been understaffed since 2019.

The Commission also worked with the US Climate Alliance's Hawai'i Natural and Working Lands Research Team to bring together key departments to coordinate priorities for resilience and sequestration action.

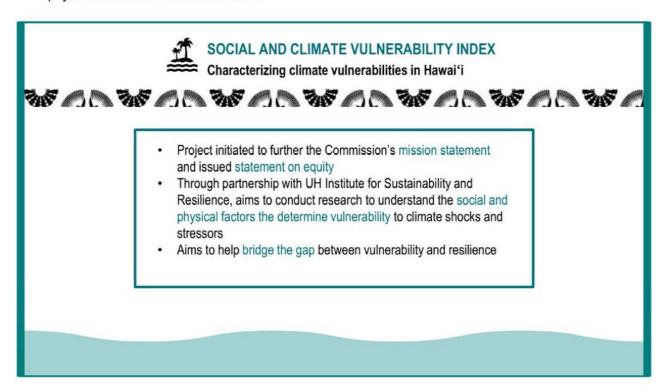
g. Building a social and climate vulnerability framework for Hawai'i.

To further the Commission's mission statement and issued statement on equity, this project was initiated to help conceptualize social and economic dimensions of vulnerability to climate change through the gathering of relevant data on key climate change threats to Hawai'i. ¹⁶ This

¹⁶ https://climate.hawaii.gov/wp-content/uploads/2021/02/Commision-Statement-on-Climate-Equity-FINAL.pdf



project, in partnership with University of Hawai'i's Institute for Sustainability and Resilience, aims to conduct research on the operationalization and application of a data/index approaches as well as other spatially-explicit data tools. Such research will help to understand the social and physical factors that are important in shaping dimensions of vulnerability to different climate shocks and stressors, including the spatial distribution of such vulnerability. It aims to help bridge the gap between vulnerability and resilience by distinguishing between the drivers of chronic and transitory vulnerability, identifying the opportunities and constraints in capacity to adapt, as well as social and physical limitations at different scales.



6. Information and engagement: Critical to climate action at home and abroad.

a. Information to Hawai'i's communities.

Through its climate change portal (climate.hawaii.gov), social media accounts, webinars, presentations, briefings, blogs, and articles, the Commission provides the latest climate change information to Hawai'i's communities. Under supervision of the Commission staff, these are, in large part, supported by the Climate Ready Hawai'i VISTA assigned to DLNR. 2021 highlights include:

i. Commission Meetings. This year, because of the pandemic situation, all Commission meetings were held virtually, where members of the Commission provided updates on climate work being conducted in their respective departments. The meetings were



- recorded and made available on the Commission's website.¹⁷ The remote nature of the meetings has increased the Commission's reach to the public. The April 2021 meeting had 202 views, and the July 2021 meeting had 99 views as of August 2020.
- ii. Speaker Series. This year, because of the pandemic situation, in lieu of a conference, the Commission entered into a partnership with UH's Better Tomorrow Speaker Series to organize a series of informational events on climate action. The collection of events, titled "Hā O Ke Kai," meaning "Breath of the Sea," is paired with the Commission's statewide conference series of the same name. It was also intended to coincide with planning for a strong Hawai'i presence at the United Nations Climate Change Summit (COP26).
- **Climate legislation list**. This new section on the web portal contains climate change related laws enacted in Hawai'i since 2018. This section is intended to help communities not only understand the enabling laws that provide a framework for climate action, but also displays the breadth of issues that intersect with climate change.
- iv. Community informational materials. The portal now contains slide decks, videos, and fact sheets on a variety of "Climate Ready Hawai'i" topics such as Vision Zero, multi-modal mobility hubs, and climate change impacts in Hawai'i.
- v. Monthly updates. A new feature on the web portal allows members of our community to sign up to get monthly updates on the Commission's work. This highlights blog posts on topics of interest, projects initiated by the staff, and other updates on climate change information.
- vi. Social media. A social media strategy was developed for the Commission, and includes the rationale for the Commission's social media accounts, outreach strategy, and guiding principles. The Commission's two social media accounts (on Instagram and Facebook) continue to generate activity and engagement. ^{19,20} An increase in engagement was observed during campaigns such as Earth Week, which resulted in a +1.77% in followers and over 2,200 views for "Our Common Future: Climate Action in the Climate Decade" with Governor David Ige.
- vii. Mini media campaigns. Campaigns for Koloaiki, Earth Week and the Drumbeat to COP26 helped to bring attention to Climate Ready Hawai'i issues at moments that align with world events, and connect Hawai'i to the global community.

b. Engagement at international, national, sub-national levels.

The Hawai'i Climate Commission continues to engage actively in global action to combat climate change:

- At the international level, through active participation at the COP26 in 2021, the IUCN's World Conservation Congress, and through the Under 2 Coalition's work with regions and states all over the world:
- At the national and sub-national level through the US Climate Alliance's many working groups, and engagement with the White House; and

¹⁷ https://climate.hawaii.gov/hi-commission/commission-meetings/

¹⁸ https://climate.hawaii.gov/hi-news/climate-legislation/

¹⁹ The Commission's Instagram account (@HI_Climate) can be found at: https://www.instagram.com/hi_climate/

²⁰ The Commission's Facebook page (@hiclimate) can be found at: https://www.facebook.com/hiclimate

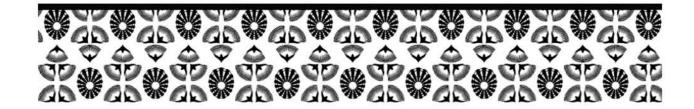


iii. At the state level, with other states on specific issues on projects relevant to Hawai'i.

The IPCC's Sixth Assessment Report, *Climate Change 2021: The Physical Science Basis* was released as this annual report was being compiled.²¹ Its main message is dire for Hawai'i and neighbors in the Pacific, the IPCC report warns "[u]nless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach." For Hawai'i, climate change continues to pose an existential threat. As the world comes together in this decade of climate action, Hawai'i looks to help ratchet up ambition abroad, and buckle down to work on adaptation actions at home. And Hawai'i's Climate Commission aims to continue joining the dots and limit warming to under 1.5°C.

"[B]y the Senate of the Thirty-first Legislature of the State of Hawaii, Regular Session of 2021, the House of Representatives concurring, that this body acknowledges that an existential climate emergency threatens humanity and the natural world, declares a climate emergency, and requests statewide collaboration toward an immediate just transition and emergency mobilization effort to restore a safe climate..."22

--Senate Concurrent Resolution 44, Thirty-first Legislature



²¹ https://www.ipcc.ch/report/ar6/wg1/

²² https://www.capitol.hawaii.gov/session2021/bills/SCR44_HD1_.htm