



FINAL REPORT RELATING TO GLOBAL WARMING
TO THE
GOVERNOR AND LEGISLATURE
STATE OF HAWAII

Pursuant to
2009 Haw. Sp. Sess. Laws Act 20

Prepared by
Office of Planning
Department of Business, Economic Development & Tourism
State of Hawai'i
December 2011

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I. Purpose of this Report

On July 15, 2009, the legislature met in special session to override the governor's veto and enact Act 20.¹ Act 20 established a climate change task force within the Office of Planning (OP) to assess the impacts of global climate change trends in the State of Hawai'i.

Act 20 appropriated out of the tourism special fund the sum of \$50,000 for fiscal year 2009-2010, and the same sum for fiscal year 2010-2011. However, the previous administration chose not to release those funds; consequently, the previous administration did not submit a final report on or before January 19, 2011 (i.e., 20 days prior to the 2011 legislative session).² By operation of law, the Act 20 task force ceased to exist on June 30, 2011.³

This report serves as the final report to the legislature on Act 20 of 2009.

II. Legislative History of Climate Change Policy

The legislature has recognized the need for Hawai'i to address mitigating and adapting to the impacts of climate change. Reducing green house gas (GHG) emissions, thereby reducing the rate and magnitude of climate change is referred to as "mitigation." Mitigation primarily addresses the reduction of human factors that contribute to global warming, also known as anthropogenic causes. GHGs are the primary contributor to global warming, because they trap heat in the atmosphere. Principle GHGs that enter the atmosphere because of human activities are Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), and Fluorinated Gases⁴ Of all the anthropogenic GHGs emitted in 2004, over 56 percent was CO₂ caused by fossil fuel use, the second being CO₂ from deforestation at about 17 percent.⁵

Act 234, Session Laws of Hawai'i 2007, established the state's policy framework and requirements to address Hawaii's GHG emissions.⁶ In Act 234, the legislature recognized the following:

... climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of Hawaii. The potential adverse effects of global warming include a rise in sea levels resulting in the displacement of businesses and residences and the inundation of Hawaii's freshwater aquifers, damage to marine ecosystems

¹ 2009 Haw. Sp. Sess. Laws Act 20, available at http://www.capitol.hawaii.gov/splsession2009/bills/ACT20_.pdf.

² OP also prepared a preliminary report to the legislature (also required by Act 20), which was submitted to the legislature in December of 2009. It is available at <http://hawaii.gov/dbedUmain/aboutUannual/2009-reports/2009-op-global-warming.pdf>.

³ *Supra* note 1, § 2 at 835-36.

⁴ U.S. Environ. Protection Agency, *Greenhouse Gas Emissions*, available at <http://epa.gov/climatechange/emissions/index.html> (last visited, Dec. 26, 2011).

⁵ Intergovernmental Panel on Climate Change *Climate Change, 2007: Synthesis Report* (2007).

⁶ 2007 Haw. Sess. Laws Act 234, *available at* http://www.capitol.hawaii.gov/session2007/bills/GM1005_.PDF.

and the natural environment, extended drought and loss of soil moisture, an increase in the spread of infectious diseases, and an increase in the severity of storms and extreme weather events.

The intent of Act 234 was to address the following:

Climate change will have detrimental effects on some of Hawaii's largest industries, including tourism, agriculture, recreational, commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for air conditioning during the hottest times of the year.

The focus and general purpose of Act 234 was to achieve cost-effective GHG emissions reductions at or below Hawaii's GHG emissions estimates of 1990 by January 1, 2020. However, even if GHG emissions are reduced to 1990 levels, Hawai'i will still be significantly impacted by climate change well into the future. Hawai'i can best respond to climate change by adapting to its impacts.

Policies that address how society will respond to adverse effects of climate change to reduce the impacts of climate change and increase resilience to future impacts is referred to as "adaptation."⁷ Act 20, created a climate change task force to address climate change adaptation. The legislature's findings in Act 20 were substantially similar to the findings in Act 234. The Act 20 task force was charged primarily with (1) scoping the current and potential impacts of global warming and climate change and the potential impacts of rising ocean levels on the on the people, natural resources, and the economy of the state, (2) estimating the costs to the state of the adverse effects associated with climate change and rising sea levels, and (3) making recommendations to the governor and legislature. The Act 20 task force was not funded by the previous administration and did not meet; consequently, the previous administration did not submit a report 20 days prior to the 2011 legislative session. By operation of law, the Act 20 task force "cease[d] to exist on June 30, 2011."⁹

Act 73, Regular Session Laws of Hawai'i 2010, increased the per-barrel tax on petroleum products, commonly known as the "barrel tax."¹⁰ The barrel tax created a mechanism for funding, among other things, the greenhouse gas emissions reduction task force (Act 234) and the climate change task force (Act 20); however, as discussed above, the Act 20 task force ceased to exist on June 30, 2011 by operation of law. Still, in Act 73, the legislature continued to recognize the importance of addressing the impacts of climate change. Of the six enumerated purposes of Act 73, the third was to

⁷ See UNFCCC, Cancun Adaptation Framework, at http://unfccc.int/adaptation/cancun_adaptation_framework/items/5852.php (last visited, Dec. 26, 2011).

⁸ See Act 20, *supra* note 1.

⁹ *Id.* at § 2, 837.

¹⁰ 2010 Haw. Sess. Laws Act 73, available at http://www.capitol.hawaii.gov/session2010/bills/H82421_CD1_.htm.

Help Hawaii's natural resources and population adapt and be resilient to the inevitable challenges brought on by climate change caused by carbon dioxide and other greenhouse gas emissions from burning fossil fuels.¹¹

The legislature also recognized that Hawai'i imports "about eighty-five per cent of our food and ninety-five per cent of our energy," which lead to the legislature to make the following statement:

... the mass consumption of fossil fuels, driven by our dependence on food and energy imports, contributes to climate change and the deterioration of the environment, including severe storm events, less rainfall, warmer temperatures that favor invasive species, a rise in sea levels, and ocean acidification that hampers coral growth. These climate changes will likely impose major, but not fully understood, costs and other impacts on Hawaii's people and the natural capital we depend upon to support our lives in the middle of the Pacific Ocean. Nowhere is it more obvious than in remote island chains like Hawaii that our lives and the economy are intertwined with the health and function of the natural world around us.

The legislature intended aggressive movement on climate change as evidenced by the following statement: "Now is the time for bold action to squarely address Hawaii's energy and food requirements and plan for and address the inevitable effects of climate change."¹²

III. OP Initiatives for Climate Change Adaptation Planning

OP is proposing, through the administration's bill package for 2012, a climate change adaptation policy. The purpose of this bill is to encourage collaboration and cooperation between county, state, and federal agencies, policy makers, businesses, and other community partners to plan for the impacts of climate change and avoid, minimize, or mitigate loss of life, land, and property of future generations.

A. Developing the Climate Change Adaptation Bill

As discussed above, since the climate change task force was never funded and ceased to exist by operation of law, work on the climate change adaptation bill was prepared under the rubric of the Coastal Zone Management (CZM) Act of which OP is the lead agency for the State of Hawai'i. OP has been the lead agency for implementing the CZM Act since 1977. According to the CZM Act, "global warming may result in a substantial sea level rise with serious adverse effects in the coastal zone"

¹¹ Id.

¹² Id.

and that "coastal states must anticipate and plan for such an occurrence."¹³ OP consulted with various stakeholders and leveraged federal funding to support its efforts.

The draft bill is structured as a "Priority Guideline" to the State Planning Act, which also falls under the jurisdiction of OP under Hawai'i Revised Statutes (HRS) chapters 226 and 225M. These HRS chapters direct OP to recommend planning related policy to the governor and the legislature. In drafting the subject bill, OP consulted with several and various stakeholders.¹⁴ OP then circulated the draft policy to a broader audience for comments before OP submitted it for consideration in the administration's bill package.

The draft bill was also coordinated with the development of the Ocean Resources Management Plan (ORMP) Policy and Working Groups.¹⁵ The Policy and Working Groups identified climate change as one of two top priority issues for the State of Hawai'i.¹⁶ The ORMP Working Group partnered with the University of Hawai'i Center for Island Climate Adaptation and Policy (ICAP) in 2009 to develop A Framework for Climate Change Adaptation in Hawai'i, which lays out a proposed step by step process by which the State of Hawai'i can begin to conduct studies, develop plans and make informed decisions on climate change adaptationn

The bill drafting process was vetted through the various partners listed in Appendix B as well as those in Appendix A who attended a 2-day climate change workshop in August of 2011, which was funded by the CZM Program and the U.S. Army Corps of Engineers (USACE) Silver Jackets Initiative. In addition to the above stakeholders, OP also consulted with the Pacific Islands Climate Change Cooperative (PICCC), local members of the Pacific Risk Management 'Ohana (PRiMO), and the Pacific Climate Information System (PaCIS), as well as the Lieutenant Governor's Office and public stakeholders.

OP also posted the draft policy on our Facebook page and Twitter feed to take advantage of social media.

B. Objectives of the Bill

The proposed bill is not a command and control mandate. It is a planning tool that guides the state and counties in improving the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in its system of

¹³ See 16 U.S.C. § 1451; see also Adapting to Climate Change, at http://hawaii.gov/dbedt/czm/initiative/climate_change.php (last visited, Dec. 26, 2011).

¹⁴ See Appendix A, Climate Change Workshop Participants.

¹⁵ See Appendix B, ORMP Partners.

¹⁶ HRS § 225M-2(b)(7), provides that OP "shall engage in . . . developing and maintaining an ocean and coastal resources information, planning, and management system further developing and coordinating implementation of the ocean resources management plan[.]" See also, HRS § 205A-61 et seq. (regarding OP's duties and responsibilities relating ORMP development, stakeholder coordination, and implementation).

¹⁷ See A Framework for Climate Change Adaptation in Hawaii, Nov. 2009, available at http://hawaii.gov/dbedt/czm/ormp/reports/climate_change_adaptation_framework_final.pdf.

statewide planning.¹⁸ To understand the bill, one must understand Hawaii's statewide planning system.

1. Overview of the Hawai'i State Planning Act

All state agencies are guided by two statewide planning documents (1) the Hawai'i State Planning Act (HRS Chapter 226), which is a broad policy document that sets the table for all activities, programs, and decisions made by county and state agencies; and (2) the New Day Comprehensive Plan¹⁹, which outlines the current administration's priorities.

The Hawai'i State Planning Act was signed into law in 1978 to "improve the planning process in this state, to increase the effectiveness of government and private actions, to improve coordination among different agencies and levels of government, to provide for wise use of Hawaii's resources and to guide the future development of the state."²⁰ The Act sets forth the Hawai'i state plan, which is a long-range comprehensive plan that includes a overall theme, goals, objectives, policies, priority guidelines, and implementation mechanisms. The Hawai'i state plan:

- Serves as a guide for the future long-range development of the state;
- Identifies the goals, objectives, policies, and priorities for the state;
- Provides a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources;
- Improves coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities; and
- Establishes a system for plan formulation and program coordination to provide for an integration of all major state, and county activities.

The state plan is divided into three parts. Part I lists the state plan's overall theme and goals. Objectives and policies are listed in sections 226-5 through 226-27. Objectives and policies focus on general topic areas, including population, economy, physical environment, facility systems, and socio-cultural advancement.

Part II of the state plan establishes a statewide planning system to coordinate and guide all major state and county activities and to implement the overall theme, goals, objectives, policies, and priority guidelines. The system implements the state plan through the development of functional plans and county general plans. Functional plans, general plans, and the formulation, administration, and implementation of state programs must be in conformance with the state plan.²¹

Functional plans set forth the policies, statewide guidelines, and priorities within a specific field of activity, when such activity or program is proposed, administered, or

¹⁸ HRS §226-102.

¹⁹ *A New Day in Hawaii*, available at <http://hawaii.gov/gov/about/a-new-day>.

²⁰ HRS §226-1.

²¹ HRS § 226-59.

funded by any agency of the state. Functional plans are developed by the state agency primarily responsible for a given functional area, which include agriculture, conservation lands, education, energy, higher education, health, historic preservation, housing, recreation, tourism, and transportation.²² When preparing functional plans, the agency responsible must seek the cooperation of advisory committees established by the governor, affected government officials, and people from each county.²³ Functional plans must identify priority issues in the functional area and contain objectives, policies, and implementing actions to address those priority issues. Actions may include organizational or management initiatives, facility or physical infrastructure development initiatives, initiatives for programs and services, or legislative proposals. Functional plans are approved by the governor and serve as guidelines for funding and implementation by state and county agencies. In addition, functional plans must be used to guide the allocation of resources for the implementation of state policies adopted by the legislature.²⁴

County general plans are comprehensive long-range plans, which have been adopted by ordinance or resolution by a county council. General plans are formulated with input from the state and county agencies as well as the general public.²⁵ County general plans must include the following information and considerations:

- Indicate desired population and physical development patterns for each county and regions within each county;
- Address the unique problems and needs of each county and regions within each county;
- Define applicable provisions of the state plan;
- Consider statewide objectives, policies, and programs stipulated in approved state functional plans;
- Use sound rationale, data, analyses, and input from state and county agencies and the general public;
- Contain objectives to be achieved and policies to be pursued with respect to population density, land use, transportation system location, public and community facility locations, water and sewage system locations, visitor destinations, urban design, and all other matters necessary for the coordinated development of the county and regions within the county; and
- Contain implementation priorities and actions to carry out policies to include but not be limited to land use maps, programs, projects, regulatory measures, standards and principles, and interagency coordination provisions.

²² Electronic copies of these functional plans can be found on OP's Web site at <http://hawaii.gov/dbedtlop/StatePlanningAct.htm>.

²³ HRS § 226-55(c).

²⁴ HRS § 226-57.

²⁵ HRS §226-58.

The purpose of Part III, Priority Guidelines, is to establish overall priority guidelines to address areas of statewide concern²⁶ This part lays out the overall direction for the state, as follows:

The state shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in five major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, and principles of sustainability.²⁷

2. Proposed Climate Change Priority Guideline

The proposed "climate change adaptation" priority guideline is intended to improve the planning process in this state, increase the effectiveness of government and private actions, improve coordination among different agencies and levels of government, provide for wise use of Hawaii's resources, and guide the future development of the state in the area of climate change adaptation²⁸ The proposed bill adds the following priority guidelines to Part III of the State Planning Act:

"§226- Climate change adaptation priority guidelines. (a) Priority guidelines to prepare the State of Hawaii for addressing the impacts of climate change on, but not limited to, the areas of agriculture, conservation lands, coastal and near shore marine areas, natural and cultural resources, education, energy, higher education, health, historic preservation, water resources, built environment (such as housing, recreation, transportation), and the economy:

- (1) Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities;
- (2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;
- (3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State of Hawaii;
- (4) Consider Native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;
- (5) Encourage the preservation and restoration of natural landscape features (such as coral reefs, beaches and dunes, forests, streams,

²⁶ HRS §226-101.

²⁷ HRS §226-102.

²⁸ HRS §226-1.

floodplains and wetlands) that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;

- (6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;
- (7) Promote sector resilience (in areas such as water, roads, airports, public health) by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;
- (8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other non-governmental entities, including not for profits;
- (9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and
- (10) Encourage planning and management of the natural and built environments that effectively integrates climate change policy."

The bill not only guides physical land use planning, but also helps decisionmakers prioritize funding decisions for programs and projects related to climate change adaptation.

C. Implementation

If adopted, climate change adaptation planning will flow through state and county decisions by way of the statewide planning system. Responsibility for further implementing the State Planning Act, and consequently the priority guidelines, lies with state boards/commissions, counties, the administration, and the legislature.

The State Planning Act specifically provides that state programs such as the capital improvements program, the coastal zone management program, and land use and management programs administered by the land use commission (LUC) and the board of land and natural resources (BLNR), shall further define, implement, and be in conformance with the statewide goals, objectives, policies, and priority guidelines.²⁹ The formulation, administration, and implementation of state programs must be in conformance with statewide goals, objectives, policies, and priority guidelines³⁰ Functional plans, which further define and implement statewide goals, objectives, policies, and priority guidelines, "shall be used to guide the allocation of resources for

²⁹ HRS §226-52(a)(5).

³⁰ HRS §226-59.

the implementation of state policies adopted by the legislature."³¹ Counties will take climate change adaptation into consideration through its general and community plans, which inform zoning and other land use decisions.

Future climate change adaptation actions by the state and counties, in cooperation with federal partners, might include:

- Developing a cost-effective monitoring program as a priority investment to be able to track and evaluate the actual changes/impacts of climate change to meet adaptive management needs.
- Developing strategic plans that specify what agencies are doing to address climate change impacts on resources under their jurisdiction.
- Developing a process for climate change risk assessments for shoreline and special management area related projects.
- Creating opportunities for private sector financial and loan officers in assessments of impacts on both private and public resources and on future financing.
- Addressing impacts to public infrastructure such as wastewater, potable water, and roads.
- Addressing the magnitude of future costs and the funding mechanisms that will be required for development of mitigation measures.
- Clarifying the potential sources of county, state, and or federal funding as appropriate.
- Identifying practices that hinder climate change resiliency.
- Addressing water resources, as current data and research shows that there may be significant changes (spatial and temporal) in rainfall, temperature, and evapotranspiration which would affect the hydrologic cycle in Hawaii.
- Investing and expanding Hawaii's climate change monitoring network, including but not limited to instruments measuring, rainfall, stream flow, aquifer water levels, air and ocean temperatures, and sea level/tides.

IV. Other OP Climate Change Adaptation Initiatives

OP partnered with ICAP to develop and submit a proposal in response to the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center's federal funding opportunity for Coastal Resilient Communities (CRest). The proposed project will build a foundation for the upcoming climate change adaptation planning process, focusing on outreach and social marketing to help coastal communities understand and adapt to changing sea levels and to build political will through a series of symposia. The target audiences include the general public and elected officials.

³¹ HRS §226-57.

The USAGE Honolulu District invited the ORMP Policy and Working Groups to partner in the Silver Jackets Initiative to support the continued development of synergies between agencies to help reduce risk associated with an array of issues, including environmental degradation, natural disasters, and climate change. Through funding received from the USAGE, the Honolulu District will continue to support interagency collaboration through engagement in key interagency working groups, the ORMP, and PRiMO. The goal of the project is to enhance opportunities to bring together multiple collaboration initiatives and multiple federal, State and local agencies to learn from one another and facilitate partnering capabilities to reduce risks in the Pacific that could affect or impair holistic water resource management

If adequate funding is allocated to the USAGE's Planning Assistance to the States Program (PAS Program), the ORMP Groups will partner with the PAS Program in 2012 to develop a Climate Change Vulnerability and Risk Assessment for Hawai'i. The previous work of the ORMP Working Group will be instrumental in this effort.

In addition to the CZM Program's climate change adaptation initiatives, OP's Land Use Division ensures that all Land Use Commission petitions and their supporting environmental documents are reviewed with respect to measures to be taken to adapt to climate change and climate-related hazards, as well as measures to be taken to reduce greenhouse gas emissions related to development and operation of the proposed development

V. Conclusion

Hawaii's best response to climate change is developing a climate change policy that addresses both (1) mitigation to reduce our contribution of GHG to reduce Hawaii's contribution to global warming in the long-term, and (2) adaptation to reduce Hawaii's vulnerability and increase resilience to the effects of climate change. The legislature has consistently supported this approach as evidenced by Acts 234, 20, and 73.

Despite the funding challenges associated with Act 20 and the dissolution of the climate change task force before it could start its work, OP has found ways to help prepare the State of Hawai'i for the impacts of climate change through its planning function, the CZM Program, existing mandates (such as the ORMP), and with the support of county, state, and federal agencies and stakeholders.

For more information on OP's climate change adaptation initiatives, visit the CZM Program's [Adapting to Climate Change](http://hawaii.gov/dbedt/czm/initiative/climate_change.php) Web page at http://hawaii.gov/dbedt/czm/initiative/climate_change.php. To keep up with initiatives and projects OP is engaged in, including climate change, join us on Facebook (State of Hawaii Office of Planning) and Twitter (@HawOfcPianning).

Appendix A: Climate Change Workshop Participants

Affiliation	Name	Title
Center for Island Climate Adaptation & Policy	Maxine Burkett	Director
Center for Island Climate Adaptation & Policy	Zena Grecni	Program Assistant
City and County of Honolulu, Department of Planning & Permitting	Jiro Sumada	Deputy Director
City and County of Honolulu, Department of Planning & Permitting	Randy Hara	Policy Planning Branch Chief
Commission on Water Resource Management	Neal Fujii	State Drought Coordinator
County of Hawai'i, Planning Department	April Surprenant	Long Range Planning Manager
County of Hawai'i, Planning Department	Bethany Morrison	Planner
County of Hawai'i, Planning Department	Bobby Jean Leithhead Todd	Director
County of Kauai, Planning Department	Dale Cua	Planner
County of Kauai, Planning Department	Dee Crowell	Deputy Director
County of Maui, Department of Planning	Jim Buika	Planner
County of Maui, Department of Planning	Michele Mclean	Deputy Director
Dept. of Agriculture, Aquaculture Development Program	Todd Low	Manager
Dept. of Health, Clean Air Branch	Willie Nagamine	Chief
Dept. of Health, Environmental Health Administration	Gary L. Gill	Deputy Director
Dept. of Health, Environmental Planning Office	Maile Sakamoto	Public Participation Coordinator
Dept. of Health, Health Resources Division	Judy Kern	Information Specialist
Dept. of Health, Polluted Runoff Control Program	Brian Hunter	Planner
Dept. of Land & Natural Resources	William M. Tam	Deputy Director
Dept. of Transportation, Harbors Division	Sandra Rossetter	Transportation Planner

Affiliation	Name	Title
Dept. of Transportation, Statewide Transportation Planning Office	David Shimokawa	Project Manager
East-West Center	Melissa Finucane	Senior Fellow, Research Program
Environmental Council	Scott Glenn	Climate Change Representative
Hawai'i Chamber of Commerce	Jim Tollefson	President & CEO
Hawai'i State Legislature	Clarence Nishihara	State Senator
Hawaiian Islands Humpback Whale National Marine Sanctuary	Malia Chow	Superintendent
Honolulu Board of Water Supply	Barry Usagawa	Program Administrator, Water Resources
Island Insurance	Jim Dixon	Asst.VP, Compliance & Governmental Affairs
Ka'ala Farm	Eric Enos	Co-Founder and Program Director
Kako'o'iwi	Kanekoa Shultz	Executive Director
Marine and Coastal Zone Advocacy Council	Jim Coon	Vice Chair
Marine and Coastal Zone Advocacy Council	Robin Kaye	Chair
NOAA Office of National Marine Sanctuaries, Pacific Islands Region	Allen Tom	Director
NOAA Office of Ocean & Coastal Resource Management	Bill O'Beirne	Pacific and Islands Region Team Lead
NOAA Office of Ocean & Coastal Resource Management	Steve Frana	Coastal Management Specialist
NOAA Pacific Services Center	Adam Stein	Physical Scientist
NOAA Pacific Services Center	Doug Harper	Coastal Planner
NOAA Pacific Services Center	Kristina Kekuewa	Acting Director
'Oahu Metropolitan Planning Organization	Brian Gibson	Executive Director
'Oahu Metropolitan Planning Organization	Randolph Sykes	Planning Program Coordinator
Office of Hawaiian Affairs	Jeffrey Kent	Public Policy Advocate
Office of Planning	Jesse K. Souki	Director
Office of Planning, Coastal Zone Management Program	Leo Asuncion	CZM Program Manager
Office of Planning, Coastal Zone Management Program	Mamie Meyer	Planning & Policy Analyst
Office of Planning, Coastal Zone Management Program	Melissa Iwamoto	Planner

Affiliation	Name	Title
Office of Senator Mike Gabbard	Carlton Saito	Committee Clerk for Senate Committee on Energy and Environment
Pacific Climate Information System	John Marra	Regional Director
Pacific Islands Climate Change Cooperative	Deanna Spooner	Coordinator
Pacific Islands Ocean Observing System	Chris Ostrander	Director
Public Utilities Commission	Josh Strickler	Chief Researcher
State Civil Defense	Dawn Johnson	Pre-Disaster Hazard Mitigation Planner
The Nature Conservancy, Hawai'i	Mark Fox	Director of External Affairs
U.S. Army Corps of Engineers, Honolulu District	Athline Clark	Project Manager/Environmental Coordinator
U.S. Army Corps of Engineers, Honolulu District	Cindy Barger	Biologist/Project Manager
University of Hawai'i, School of Ocean & Earth Science & Technology	Brian Taylor	Dean
University of Hawai'i, School of Ocean & Earth Science & Technology	Chip Fletcher	Assoc. Dean for Academic Affairs & Professor
University of Hawai'i, Sea Grant College Program	Darren Lerner	Associate Director
University of Hawai'i, Sea Grant College Program	Gordon Grau	Director
Waikiki Improvement Association	Rick Egged	President
Youth representative	Jamaica Osorio	Intern, Honua Consulting

Appendix 8: ORMP Partners

Ocean Resources Management Plan (ORMP) Policy and Working Groups include the following partners:

Federal Partners include NOAA Office of National Marine Sanctuaries, Pacific Islands Region (ONMS); NOAA Office of Ocean & Coastal Resource Management (OCRM); NOAA Pacific Services Center (PSC); United States Army Corps of Engineers (USACE); United States Coast Guard (USCG); and United States Environmental Protection Agency (EPA).

State Partners include State of Hawai'i Departments of Agriculture (DOA), Civil Defense (SCD), Health (DOH), Land & Natural Resources (DLNR), Transportation (DOT), and Office of Hawaiian Affairs (OHA).

University Partners include University of Hawai'i, School of Ocean & Earth Science & Technology (SOEST); University of Hawai'i, Sea Grant College Program (UH Sea Grant); University of Hawai'i, Center for Island Climate Adaptation & Policy (ICAP); and Pacific Islands Ocean Observing System (PaciOOS).

County Partners include City and County of Honolulu, Department of Planning and Permitting; County of Hawai'i, Planning Department; County of Kauai, Department of Planning; County of Maui, Department of Planning; and Honolulu Board of Water Supply (BWS).

Community Partners include the Marine & Coastal Zone Advocacy Council (MACZAC).

To learn more about ORMP, visit <http://hawaii.gov/dbedUczm/ormp/ormp.php>.