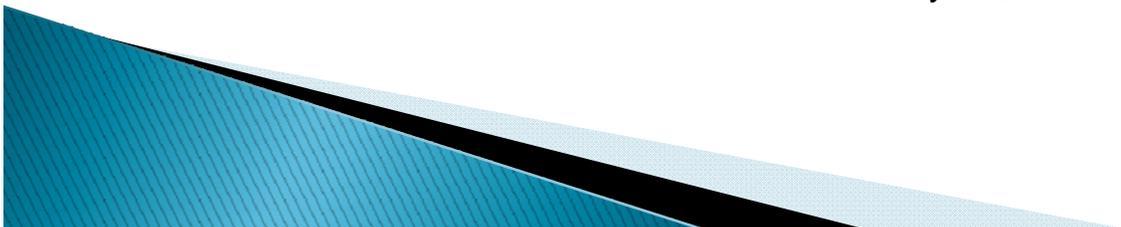


Climate Change Adaptation Policy for Hawaii

Jesse K. Souki
Director, Office of Planning
State of Hawaii

Before the
Committee on Energy and Environment
Committee on Energy & Environmental Protection
January 17, 2012



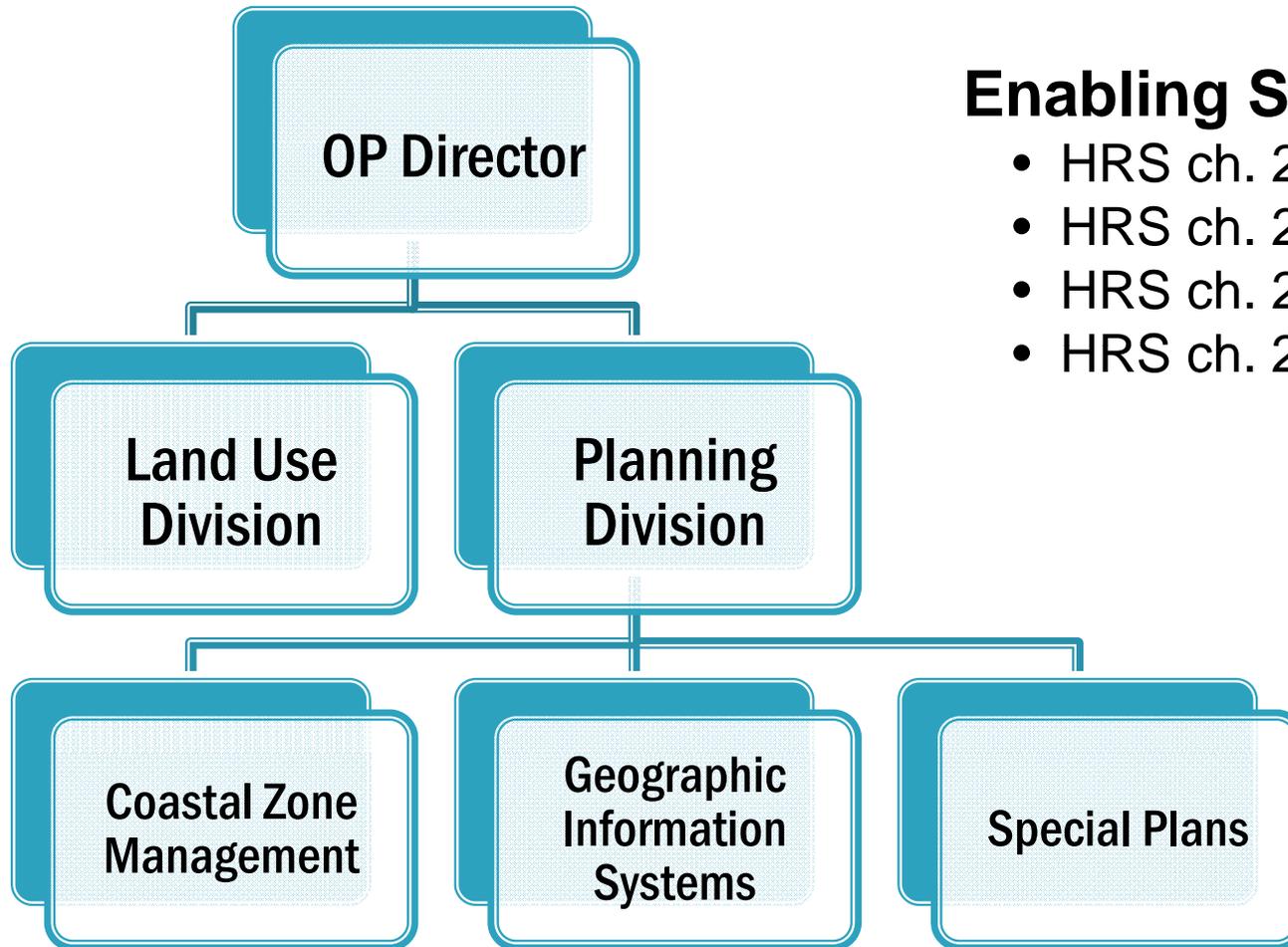


Office of Planning's Mission and Vision

Mission: To guide the overall growth and development of the State of Hawaii through a statewide comprehensive planning framework.

Vision: To be a model planning office; to be comprised of staff who provide superior planning and technical assistance to the State; to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action that effectively address current and emerging issues and opportunities; and to carry out our mission through close coordination with county, state, and federal government agencies, the University of Hawaii, and community stakeholders.

Office of Planning's Structure



Enabling Statutes

- HRS ch. 225M
- HRS ch. 226
- HRS ch. 205A
- HRS ch. 205

Definitions

- ▶ **Climate Change** - A change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.
- ▶ **Mitigation** - An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.
- ▶ **Adaptation** - Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Legislative History: Act 234 (2007)

- ▶ Climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment.
- ▶ 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 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.
- ▶ 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.

Legislative History: Act 20 (2009)

- ▶ Legislature's findings were substantially similar to the findings in Act 234.
- ▶ Created a climate change task force to address climate change adaptation:
 - Scoping the current and potential impacts of climate change and rising ocean levels on the on the people, natural resources, and the economy of the state;
 - Estimating the costs to the state of the adverse effects associated with climate change and rising sea levels; and
 - Making recommendations to the governor and legislature.
- ▶ Not funded by the previous administration.
- ▶ Ceased to exist by operation of law on June 30, 2011.

Legislative History: Act 73 (2010)

- ▶ Legislature's findings were substantially similar to the findings in Act 234.
- ▶ Increased the per-barrel tax on petroleum products.
- ▶ Funded greenhouse gas emissions reduction task force (Act 234) and the climate change task force (Act 20).
- ▶ One of six enumerated purposes of the Act:
 - “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.”
- ▶ “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.”

Climate Change Adaptation Bill

- ▶ Builds on Past Legislative Directives and the New Day Plan
- ▶ Uses existing authorities
- ▶ Amends the Statewide Planning System
- ▶ Broad Stakeholder Consultation
- ▶ **Purpose:** 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.

Stakeholders Consulted

Building Industry Association; City and County of Honolulu, Department of Planning & Permitting; City and County of Honolulu, Mayor's Office; Commission on Water Resource Management; Community Stakeholders; County of Hawaii, Green Team; County of Hawaii, Planning Department; County of Kauai, Office of Economic Development; County of Kauai, Planning Department; County of Maui, Department of Planning; County of Maui, Department of Water Supply; County of Maui, Environmental Coordinator's Office; Dept. of Agriculture, Aquaculture Development Program; Dept. of Business, Economic Development and Tourism; Dept. of Health, Clean Air Branch; Dept. of Health, Environmental Health Administration; Dept. of Health, Environmental Planning Office; Dept. of Health, Health Resources Division; Dept. of Health, Polluted Runoff Control Program; Dept. of Land & Natural Resources, Division of Aquatic Resources; Dept. of Land & Natural Resources, Division of Forestry and Wildlife; Dept. of Land & Natural Resources, Office of Conservation and Coastal Lands; Dept. of Transportation, Harbors Division; Dept. of Transportation, Statewide Transportation Planning Office; East-West Center; Enterprise Honolulu; Environmental Council; Harold Castle Foundation; Hawaii Chamber of Commerce; Hawaii Community Foundation; Hawaii Harbors Users Group; Hawaii State Climate Office; Hawaii Tourism Authority; Hawaiian Electric Company; Hawaiian Islands Humpback Whale National Marine Sanctuary; 2; Honolulu Board of Water Supply; Island Insurance; Ka'ala Farm; Kako'o'oiwi; Land Use Research Foundation; Ma'o Farms; Marine and Coastal Zone Advocacy Council (MACZAC); NOAA Office of National Marine Sanctuaries, Pacific Islands Region; NOAA Office of Ocean & Coastal Resource Management; NOAA Pacific Services Center; Oahu Metropolitan Planning Organization; Office of Hawaiian Affairs; Office of Planning; Office of Planning, Coastal Zone Management Program; Office of Senator Clarence Nishihara; Office of Senator Mike Gabbard; Pacific Climate Information System; Pacific Islands Climate Change Cooperative; Pacific Islands Ocean Observing System; Pacific Island Fisheries Group; Pacific Regional Integrated Science and Assessment Program; Public Utilities Commission; State Civil Defense; The Nature Conservancy, Hawaii; U. S. Army; U.S. Army Corps of Engineers, Honolulu District; University of Hawaii, Center for Island Climate Adaptation & Policy; University of Hawaii, Department of Geography; University of Hawaii, Hawaii Energy Policy Forum; University of Hawaii, Kamakakūokalani Center for Hawaiian Studies; University of Hawaii, School of Ocean & Earth Science & Technology; University of Hawaii, Sea Grant College Program; University of Hawaii, Social Science Research Institute; Urban Land Institute-Hawaii; Waikiki Improvement Association; Western Pacific Regional Fishery Management Council; Youth Representatives

Climate Adaptation Priority Guideline

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

Climate Adaptation Priority Guideline (cont.)

- ▶ **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;
- ▶ 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;
- ▶ 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;
- ▶ 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
- ▶ Encourage planning and management of the natural and built environments that effectively **integrates** climate change policy.

Statewide Planning System

Part I: Overall Theme, Goals, Objectives and Policies

Population

Economy

Physical environment

Facility systems

Socio-cultural advancement

Part III: Priority Guidelines

Economic

Population Growth

Crime and criminal justice

Affordable housing

Education

Sustainability

Climate Change Adaptation

Part II: Statewide planning system

Functional plans

- Define and implement Parts I and II
- Identify priority issues
- Implementing actions

County general plans

- Zoning
- SMA Permit
- District Boundary Amendments

State programs

- CIP
- CZM
- LUC
- BLNR

Possible Next Steps

- ▶ Risk and Vulnerability Assessments
- ▶ Refining permitting programs to account for climate change
- ▶ Zoning development away from sensitive and hazard-prone areas
- ▶ Creating setbacks or rolling easements
- ▶ Restricting the use of shore protection structures
- ▶ Minimizing extent of impervious surfaces
- ▶ Establishing buffers around natural features
- ▶ Instituting or strengthening building codes in flood- and erosion-prone areas

Adapting to Climate Change: A Planning Guide for State Coastal Managers, NOAA (2010), available at <http://coastalmanagement.noaa.gov/climate/docs/adaptationguide.pdf>.

Examples of Planned Adaptation by Sector

Sector	Adaptation option/strategy
Water	Expanded rainwater harvesting; water storage and conservation techniques; water reuse; desalination; water-use and irrigation efficiency
Agriculture	Improved land management, e.g. erosion control and soil protection through tree planting
Infrastructure	Relocation; seawalls and storm surge barriers; dune reinforcement; land acquisition and creation of marshlands/wetlands as buffer against sea level rise and flooding; protection of existing natural barriers
Human Health	Heat-health action plans; emergency medical services; improved climate-sensitive disease surveillance and control; safe water and improved sanitation
Transportation	Realignment/relocation; design standards and planning for roads, rail and other infrastructure to cope with warming and drainage
Energy	Energy efficiency; use of renewable sources; reduced dependence on single sources of energy

Selected State Climate Change-Related Adaptation Initiatives

- ▶ **Oahu Metropolitan Planning Organization**, Transportation Asset Climate Change Risk Assessment
http://www.oahumpo.org/reports/transportation_vulnerability_due_to_climate_change.html
- ▶ **Department of Land and Natural Resources**, The Rain Follows the Forest: A Plan to Replenish Hawaii's Source of Water <http://hawaii.gov/dlnr/chair/pio/nr/2011/The-Rain-Follows-the-Forest.pdf>
- ▶ **University of Hawaii Sea Grant College Program and Department of Land and Natural Resources**, Kailua Beach and Dune Management Plan
http://www.cakex.org/sites/default/files/kailua_beach_mgmt_plan.pdf
- ▶ **Center for Island Climate Adaptation & Policy, Office of Planning & NOAA**, Building the Foundation for a Hawaii State Adaptation Plan. *In progress.*
- ▶ **US Army Corps of Engineers, Office of Planning, City & County of Honolulu, Center for Island Climate Adaptation & Policy, and NOAA**, Phase 1, State of Hawaii Climate Change Risk and Vulnerability Assessment. *In progress.*

Mahalo!

Jesse K. Souki
Director, Office of Planning
State of Hawaii

<http://hawaii.gov/dbedt/op/>
(808) 587-2833
jesse.k.souki@dbedt.hawaii.gov

Social Media

Facebook: State of Hawaii Office of
Planning
Twitter: @HawOfcPlanning