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ECONOMIC DEVELOPMENT & TOURISM**

**DEPT. COMM. NO. 491**

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July 7, 2021

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

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

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

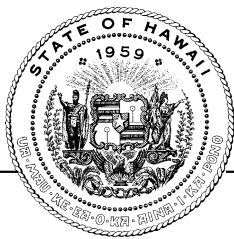
For your information and consideration, I am transmitting a copy of the *Hawai'i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2020-2030)*, as required by Act 146, Session Laws of Hawai'i 2019. In accordance with Section 93-16, Hawai'i Revised Statutes, I am also informing you that the *Hawai'i 2050 Sustainability Plan* may be viewed electronically at: <http://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/> and <https://hawaii2050.hawaii.gov>, and <https://planning.hawaii.gov>.

With aloha,

  
Mike McCartney

Enclosure

c: Legislative Reference Bureau



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DAVID Y. IGE  
GOVERNOR

MARY ALICE EVANS  
DIRECTOR  
OFFICE OF PLANNING

June 30, 2021

The Honorable Ronald D. Kouchi  
President and Members  
of the Senate  
Hawai'i State Capitol, Room 409  
Honolulu, Hawai'i 96813

The Honorable Scott K. Saiki  
Speaker and Members of the  
House of Representatives  
Hawai'i State Capitol, Room 431  
Honolulu, Hawai'i 96813

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

Thank you for this opportunity to revise and update the Hawai'i 2050 Sustainability Plan to serve as the State of Hawai'i's climate and sustainability strategic action plan for the 2020-2030 decade. The Office of Planning appreciates this opportunity to assist the Hawai'i State Legislature with policy research, analysis, and strategic action planning for climate change adaptation and sustainable development solutions for the State of Hawai'i.

For your information and consideration, we are submitting the updated "Hawai'i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2020-2030)," as required by Act 146, Session Laws of Hawai'i 2019, codified as Hawai'i Revised Statutes §226-65. In accordance with Hawai'i Revised Statutes §93-16, we are also informing you that the report may be viewed electronically at: <https://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/>, as well as <https://hawaii2050.hawaii.gov>, and the Office of Planning's website.

Mahalo,

*Mary Alice Evans*

Mary Alice Evans  
Director,  
State of Hawai'i Office of Planning

*Danielle M. M. Bass*

Danielle M. M. Bass  
State Sustainability Coordinator,  
State of Hawai'i Office of Planning

Enclosure

CC: Governor David Y. Ige  
Lt. Governor Joshua B. Green  
Legislative Reference Bureau  
Legislative Auditor

Department of Budget and Finance  
Hawai'i State Library System  
University of Hawai'i Hamilton Library  
Hawai'i State Archives





# Hawai'i 2050

## SUSTAINABILITY PLAN

Charting a Course for the Decade of Action (2020-2030)



## Hawai'i 2050 Sustainability Plan

Charting a Course for the Decade of Action (2020–2030)

June 2021

A publication of the Hawai'i State Office of Planning, pursuant to Act 146, Session Laws of Hawai'i 2019.

### Ua Mau ke Ea o ka 'Āina i ka Pono

*The Life of the Land is Perpetuated in Righteousness*



#### ABOUT THE VISUAL DESIGN, by Stephanie Chang Design Ink:

Ancestral wisdom continues to be a source of inspiration throughout. Our ancient water system, built and cultivated throughout ahupua'a, was in graceful alignment with natural weather systems and human need; its design represents whole system health, everything in relationship to each other, kuleana. The Plan's key image (seen here on this page) served as the root for resulting graphic elements which support and amplify the plan's incredible content and ultimately, inspiration for your solutions. The Plan's color system was inspired by artist Bernice Akamine's brilliant color wheel, created using native plants to create Na Waiho'olu'u Hawai'i, colors that our kanaka kupuna grew, gathered, created, used, viewed, and enjoyed. Mahalo to Kamaka'aina Siepp of The Color Garden for sharing this 'ike with me.



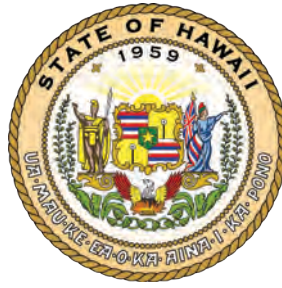
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## MESSAGE FROM THE GOVERNOR



Recognizing the Publication, Revision, and Decennial Update of the  
Hawai'i 2050 Sustainability Plan, Charting a Course for the Decade of Action (2020-2030)

**Sustainability is not simply a goal; it is a commitment and a responsibility for all of us throughout the State of Hawai'i.** We are all connected to Hawai'i's sustainable future in everything that we do — connected as a family, connected with our communities, and connected to our 'āina. Knowing this, we must protect Hawai'i for our children and for their future. We, as a state, must continue to actively work on the sustainable development and climate adaptation of our islands without compromising the ability of future generations of Hawai'i to thrive.

This decennial update of the Hawai'i 2050 Sustainability Plan serves as our State's climate and sustainability strategic action plan moving forward. This update will guide the crucial 2020-2030 Decade of Action which the United Nations declared to accelerate sustainable solutions for our biggest challenges. Hawai'i's economic recovery from the COVID-19 global pandemic, as recommended by this updated Hawai'i 2050 Sustainability Plan, must be central to our shared responsibility and climate resilience efforts over this Decade of Action. Finally, this plan furthers my Sustainable Hawai'i Initiatives – which aim to protect Hawai'i's watersheds and nearshore waters; prevent, detect and control invasive species; double local food production; and reach 100 percent renewable energy use in the electricity sector by the year 2045.

I applaud the staff of the State of Hawai'i's Statewide Sustainability Program within the State's Office of Planning and all State departments and staff who participated in this plan and recognize our collective commitment to coordinate, develop, and promote policies and programs that assist in meeting Hawai'i's statewide sustainability and climate policies and goals. Mahalo for working diligently to develop this living document.

**I remain committed to statewide sustainability and climate adaptation and will continue to work with the Legislature, counties, private sector and the community to achieve our sustainability and climate resiliency goals.**

Together, we can do great things.

With warmest regards,



A handwritten signature in black ink that reads 'David Y. Ige'.

**David Y. Ige**  
Governor  
State of Hawai'i



# ALOHA!

**It is our pleasure to share this important document, the *Hawai'i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2020-2030)* with you.**

The State of Hawai'i's Office of Planning has the unique charge to work collaboratively with state and county agencies and facilitate a collective effort to achieve shared statewide sustainability and climate resilience goals for Hawai'i.

We are honored to deliver the update of the *Hawai'i 2050 Sustainability Plan*, to serve as our State's climate and sustainability strategic action plan moving forward, pursuant to Hawai'i Revised Statutes §226-65.

**We are committed to coordinating Hawai'i's statewide sustainability and climate resilience goals with the recent establishment of the first Statewide Sustainability Program in 2020, pursuant to Hawai'i Revised Statutes §225M-8.**

**The United Nations declared this important decade as the "Decade of Action," to accelerate sustainable solutions for our biggest challenges worldwide** – ranging from poverty and gender inequities to climate change, inequality and closing the finance gap. In Hawai'i, we are witnessing the effects of climate change right in front of us: we feel the rising temperatures; we experience increased severe storms and hazardous flooding throughout our islands; we see our coastlines eroding and our shoreline inundated; and we encounter the effects of drought and increased wildfires in our communities.

**Hawai'i's climate is changing, and we must act together to incorporate climate resilience and sustainable development in our everyday lives.**

This *Hawai'i 2050 Sustainability Plan* was developed by conducting an extensive statewide public engagement, consistent with a community-driven approach, in addition to collaborating with state and county stakeholder agencies to create this plan. As a living document, the *Hawai'i 2050 Sustainability Plan* has evolved throughout the decades. It is a shared vision that this plan will bring a renewed focus on the implementation of Hawai'i's sustainable development and climate resilience.

We want to express our sincere thanks to the members of the public who participated and contributed their time to share personal feedback. We thank the many private and non-governmental partners who participated in this update and shared their professional challenges, success stories, and vision for an equitable, resilient, and sustainable Hawai'i. We share our deep mahalo to the many state and county agencies and government officials who work daily advancing Hawai'i's environmental, social, and economic sustainability and climate resilience, and have contributed their intentions such that the *Hawai'i 2050 Sustainability Plan* might facilitate their role to address gaps, and implement actionable solutions to these challenges.

**The State of Hawai'i's Office of Planning and the Statewide Sustainability Program will continue to work actively on the sustainable development and climate adaptation of the state to meet the needs of the present without compromising the ability of future generations of Hawai'i to meet their own needs.**



**Mary Alice Evans**  
Director  
Office of Planning



**Danielle M. M. Bass**  
State Sustainability Coordinator  
Statewide Sustainability Program

# ACKNOWLEDGMENTS

## E ala! E alu! E kuilima!

The Office of Planning would like to acknowledge the many individuals, organizations, and state and county agencies that contributed to the development of this plan.

**Mahalo to the Hawai'i 2050 Sustainability Plan project team** who supported the development of this plan, led by Danielle Bass with support from Brittaney Key of the State of Hawai'i Office of Planning's Statewide Sustainability Program, the ICF team lead by Susan Asam and Leslie Chinery with support from Brad Hurley, Jamie Liu, Mollie Carroll, Samantha Heitsch, Grace Tamble, and Eliza Puritz. Mahalo to Neil Hannahs for providing support throughout this project. Mahalo to Jonathan Scheuer for serving as lead facilitator through the public engagement sessions and providing technical support throughout this project. Mahalo to Stephanie Chang for the graphic design and layout of this plan.

### **Mahalo to the state and county agencies who provided review, inputs, and other participation in development of the plan, including:**

State of Hawai'i Office of the Governor	Department of Labor and Industrial Relations
Office of the Lieutenant Governor	Department of Land and Natural Resources (DLNR)
Members of the Hawai'i State Legislature	Commission on Water Resource Management
Department of Accounting and General Services	DLNR – Division of Aquatic Resources
State Procurement Office	DLNR – Engineering Division
Department of Agriculture	DLNR – Division of Forestry and Wildlife
Agribusiness Development Corporation	DLNR – Land Division
Department of Business, Economic Development and Tourism (DBEDT)	DLNR – Division of State Parks
DBEDT – Business Development and Support Division	Hawai'i Climate Change Mitigation and Adaptation Commission
DBEDT – Creative Industries Division	Hawai'i Invasive Species Council
DBEDT – Hawai'i Broadband Initiative	Kaho'olawe Island Reserve Commission
DBEDT – Research and Economic Analysis Division	DLNR – Office of Conservation and Coastal Lands
Hawai'i Community Development Authority	Department of Transportation
Hawai'i Housing Finance and Development Corporation	O'ahu Metropolitan Planning Organization
Hawai'i State Energy Office	University of Hawai'i
Hawai'i Technology Development Corporation	UH – School of Ocean and Earth Science and Technology
Hawai'i Tourism Authority	City and County of Honolulu Office of the Mayor
Land Use Commission	Members of the Honolulu City Council
Natural Energy Laboratory of Hawai'i Authority	City and County of Honolulu – Board of Water Supply
State of Hawai'i Office of Planning – Coastal Zone Management Program	City and County of Honolulu – Department of Environmental Services
State of Hawai'i Office of Planning – Land Use Division	City and County of Honolulu – Department of Planning and Permitting
Public Utilities Commission	City and County of Honolulu – Office of Climate Change, Sustainability, and Resilience
Hawai'i Emergency Management Agency	City and County of Honolulu – Office of Economic Revitalization
State Disaster Recovery Coordinator	County of Hawai'i Office of the Mayor
State of Hawai'i Office of Homeland Security	Members of the Hawai'i County Council
Department of Education	County of Hawai'i – Department of Planning
Department of Hawaiian Home Lands	County of Hawai'i – Department of Research and Development
Department of Health (DOH)	County of Hawai'i – Department of Environmental Management
DOH – Chronic Disease Prevention and Health Promotion Division	County of Kaua'i Office of the Mayor
DOH – Clean Air Branch	Members of the Kaua'i County Council
DOH – Clean Water Branch	County of Kaua'i – Department of Planning
DOH – Hazard Evaluation and Emergency Response Office	County of Kaua'i – Department of Public Works
DOH – Primary Prevention Branch	County of Kaua'i – Kaua'i Emergency Management Agency
DOH – Safe Drinking Water Branch	County of Kaua'i – Office of Economic Development
DOH – Solid and Hazardous Waste Branch	County of Maui Office of the Mayor
DOH – Wastewater Branch	Members of the Maui County Council
Department of Human Services	County of Maui – Department of Environmental Management
Hawai'i Public Housing Authority	County of Maui – Department of Planning
State Homelessness Coordinator	County of Maui – Department of Water Supply
State Commission on the Status of Women	County of Maui – Office of Climate Action, Sustainability, and Resilience



**Mahalo to all the individuals and organizations that helped develop the “Sustaining Hawai‘i” series, showcasing sustainability and resilience in action across the state, including:**

State of Hawai‘i Office of the Governor	Members of the Hawai‘i County Council	Hawai‘i Community Foundation
Members of the Hawai‘i State Legislature	County of Kaua‘i Planning Department	Hawai‘i Farm Bureau
State of Hawai‘i DLNR, Division of Aquatic Resources	Kaua‘i Emergency Management Agency	Kō Hana Distillers
State of Hawai‘i DLNR, Division of State Parks	Members of the Maui County Council	Lāna‘i Community Health Center
State of Hawai‘i Department of Transportation	County of Maui – Office of Climate Action, Sustainability, and Resilience	Ma Ka Hana Ka ‘Ike
Hawai‘i State Energy Office	‘Āina Momona	Moloka‘i Homestead Farmers Alliance
Hawai‘i Tourism Authority	AmeriCorps Volunteers in Service to America	Pacific Biodiesel
City and County of Honolulu Board of Water Supply	Andrew Richard Hara	Pu‘uhonua o Puna
City and County of Honolulu Office of Climate Change, Sustainability, and Resiliency	Friends of Hanauma Bay	U.S. Green Building Council – Hawai‘i Chapter
	Hawai‘i Association of Watershed Partnerships	Wai‘anae Coast Comprehensive Health Center
	Hawai‘i Cattlemen’s Council	Windward Zero Waste School Hui

**Mahalo to many people who lent their hands in many different ways, including participants in the virtual public information sharing sessions** including the public and community members from the islands of Hawai‘i, Maui, Molokai, Lāna‘i, Kaho‘olawe, O‘ahu, and Kaua‘i, State and County agencies as previously acknowledged, and participants from the following organizations, including:

350 Hawai‘i	Hawai‘i Medical Services Association	PBR Hawai‘i
AECOM	Hawai‘i Pacific Health	Pūlama Lāna‘i
AES Hawai‘i	Hawai‘i Pacific University	Retail Merchants of Hawai‘i
AHL	Hawai‘i Philanthropy Forum	Roth Ecological Design International
Aloha Harvest	Hawai‘i Primary Care Association	Sierra Club of Hawai‘i
Aloha United Way	Hawai‘i Public Health Institute	SSFM Hawai‘i
Arizona State University	Hawai‘i Sea Grant	Surfrider Foundation-Hawai‘i Region
Bank of Hawai‘i	Hawai‘i Youth Climate Coalition	Sustainable Coastlines of Hawai‘i
Blue Zones Project Hawai‘i	Hawai‘i Appleseed Center for Law and Economic Justice	Sust‘ainable Moloka‘i
Building Industry Association of Hawai‘i	Hawaiian Airlines	Tetrattech Hawai‘i
Building Owners and Managers Association of Hawai‘i	Hawaiian Electric Company	The Healy Foundation
Chamber of Commerce Hawai‘i	Hawaiian Telcom, Inc.	The Nature Conservancy of Hawai‘i
Chaminade University of Honolulu	Healthcare Association of Hawai‘i	The Queen’s Health Systems
Conservation Council for Hawai‘i	HHF	Trust for Public Land Hawai‘i
Conservation International Hawai‘i	Historic Hawai‘i Foundation	U.N. Department of Economic and Social Affairs – Division of Sustainable Development
Earth Justice Mid-Pacific Regional Office	ILWU Hawai‘i	U.S. Green Building Council – Hawai‘i Chapter
East West Center	Integral Group	U.S. Department of Agriculture – Hawai‘i Office
Elemental Excelerator	Interstate Restoration	U.S. Environmental Protection Agency – Region 9
Environmental Caucus of Hawai‘i	Island Signal	U.S. Federal Aviation Administration – Western Pacific Region
Faith Action Environmental Justice Task Force	Kamehameha Schools	U.S. Federal Emergency Management Agency – Region 9
First Hawaiian Bank	Kanu Hawai‘i	U.S. Federal Highways Administration – Hawai‘i Division
Hawai‘i Alliance for Community Based Economic Development	Kaua‘i Island Utility Cooperative	U.S. Fish and Wildlife Service – Pacific Region
Hawai‘i Alliance of Nonprofit Organizations	Kawanui Farm	U.S. Geological Survey – Pacific Region
Hawai‘i Bicycling League	Kohala Institute	U.S. Housing and Urban Development- Honolulu Field Office
Hawai‘i Cattlemen’s Council	Kokua Hawai‘i Foundation	U.S. Indo – Pacific Command
Hawai‘i Children’s Action Network	Kualoa Ranch	U.S. National Oceanic and Atmospheric Association – Pacific Islands Region
Hawai‘i Community Foundation	Kupu Hawai‘i	Ulupono Initiative
Hawai‘i Conservation Alliance	LGBT Caucus of Hawai‘i	University of Hawai‘i – Hilo
Hawai‘i Electric Vehicle Association	Mari’s Gardens	University of Hawai‘i – Mānoa
Hawai‘i Energy	Marriott International	University of Hawai‘i – West O‘ahu
Hawai‘i Farm Bureau	Maui Economic Opportunity, Inc.	University of Hawai‘i Economic Research Organization
Hawai‘i Farmers Union United	New York University	Urban Fabrick
Hawai‘i Food Industry Association	Office of Hawaiian Affairs	Vulcan
Hawai‘i Foreign Trade Zone 9	Ola Hawai‘i	Wastewater Alternatives and Innovations
Hawai‘i Gas	One World One Water	WATG
Hawai‘i Green Growth	Pacific Biodiesel	William S. Richardson School of Law
Hawai‘i Institute for Human Rights	Pacific Gateway Center	Zero Waste Oahu
	Parents and Children Together	

## LIST OF ACRONYMS

<b>ADC</b>	Agribusiness Development Corporation	<b>HRS</b>	Hawai'i Revised Statutes
<b>AFOLU</b>	Agriculture, Forestry, and Land Use	<b>HSEO</b>	Hawai'i State Energy Office
<b>ALICE</b>	Asset Limited, Income Constrained, Employed	<b>HTA</b>	Hawai'i Tourism Authority
<b>BOE</b>	Board of Education	<b>IECC</b>	International Energy Conservation Code
<b>BWS</b>	Board of Water Supply	<b>IPCC</b>	U.N. Intergovernmental Panel on Climate Change
<b>CARES Act</b>	Coronavirus Aid, Relief, and Economic Security Act	<b>IPPU</b>	Industrial Processes and Product Use
<b>COVID-19</b>	Coronavirus Disease 2019	<b>IUCN</b>	International Union for Conservation of Nature
<b>CO<sub>2</sub></b>	Carbon Dioxide	<b>LEED</b>	Leadership in Energy and Environmental Design
<b>CWRM</b>	Commission on Water Resource Management	<b>LGBTQ+</b>	Lesbian, Gay, Bisexual, Transgender, and Queer
<b>CZM</b>	Coastal Zone Management Program	<b>MWh</b>	Megawatt Hour
<b>DAR</b>	Division of Aquatic Resources	<b>NCRS</b>	Natural Resources Conservation Service
<b>DBEDT</b>	Department of Business, Economic Development & Tourism	<b>RPS</b>	Renewable Portfolio Standard
<b>DHHL</b>	Department of Hawaiian Home Lands	<b>OP</b>	Office of Planning
<b>DLNR</b>	Department of Land and Natural Resources	<b>SB</b>	Senate Bill
<b>DOE</b>	Department of Education	<b>SCR</b>	Senate Concurrent Resolution
<b>DOH</b>	Department of Health	<b>SDG</b>	Sustainable Development Goal
<b>EBT/ SNAP</b>	Electronic Benefit Transfer/ Supplemental Nutrition Assistance Program	<b>SLH</b>	Session Laws of Hawai'i
<b>EEPS</b>	Energy Efficiency Portfolio Standard	<b>TOD</b>	Transit-Oriented Development
<b>EPA</b>	Environmental Protection Agency	<b>TRHT</b>	Truth, Racial Healing, and Transformation
<b>ESSA</b>	Every Student Succeeds Act	<b>UN</b>	United Nations
<b>FDA</b>	Food and Drug Administration	<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>GDE</b>	Groundwater Dependent Ecosystems	<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>GDP</b>	Gross Domestic Product	<b>ZEV</b>	Zero-Emission Vehicle
<b>GHG</b>	Greenhouse Gas		
<b>GWh</b>	Gigawatt Hour		
<b>HB</b>	House Bill		
<b>HDOA</b>	Hawai'i Department of Agriculture		
<b>HCR</b>	House Concurrent Resolution		



## GLOSSARY OF HAWAIIAN WORDS & PHRASES

This list provides the following words, phrases, and their corresponding definitions used in this document. The translations are shortened from Ulukau, the Hawaiian Electric Library.<sup>1</sup>

**Ahupua‘a** means a land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (ahu) of stones surmounted by an image of a pig (pua‘a), or because a pig or other tribute was laid on the altar as tax to the Chief. The boundaries of an ahupua‘a are based on the region’s watersheds.

**‘Āina** means land, earth.

**‘Āina momona** means rich, abundant, productive, fertile lands which sustain life.

**‘Āina Pono** means righteous meal, or good meal.

**Aloha** means affection, love, compassion for others. The phrase also serves as Greetings, Hello, Good Bye, Farewell.

**Hālau hula** means a school or hall in which the Hawaiian dance form called hula is practiced, hula school.

**Hāwai** (*Neritina granosa*) means a freshwater snail endemic to Hawai‘i.

**Holomua** means progress, or to move forward.

**‘Ike** means knowledge, or wisdom.

**Kama‘āina** means a native-born, one born in a place, host.

**Kānaka Maoli** means Native Hawaiians.

**Kākou** means we (inclusive, three or more), ours.

**Kapu** means forbidden, sacred.

**Keiki** means child or children.

**Kuleana** means right, privilege, concern, responsibility.

**Ko‘a** means coral.

**Kumulipo** means origin, or source of life; and is the name of the Hawaiian creation chant.

**Kupu** means to sprout, or to grow.

**Lo‘i** means irrigated terrace, especially for taro.

**Lo‘i Kalo** means taro terrace.

**Loko I‘a** means Hawaiian fishponds.

**Ma kai** means toward the ocean.

**Maka‘āinana** means people that attend the land.

**Mākeke** means market.

**Māla** means garden, plantation, patch, or cultivated field.

**Mālama ‘āina** means to care for the land.

**Mālama Hawai‘i** means to care for Hawai‘i.

**Mālama Honua** means to care for the Earth.

**Mana‘o** means a thought or belief.

**Ma uka** means inland or toward the upland.

**Momona** means fertile, or rich, as soil.

**‘Ōlelo** means language or speech.

**‘Ōlelo Hawai‘i** means Hawaiian language.

**‘O‘opu** means a type of freshwater fish or goby, which generally describes any of the four endemic or one indigenous species in Hawai‘i. [‘O‘opu hi‘u kole (*Lentipes concolor*), ‘O‘opu nōpili (*Sicyopterus stimpsoni*), ‘O‘opu nākea (*Awaous guamensis*), ‘O‘opu naniha (*Stenogobius hawaiiensis*), and ‘O‘opu ‘akupa (*Eleotris sandwicensis*)]

**‘Ōpae** means a type of freshwater shrimp, which generally describes either of the two endemic shrimp species in Hawai‘i. [‘Ōpae kala‘ole (*Atyoida bisulcata*), and ‘Ōpae ‘oeha‘a (*Macrobrachium grandimanus*)]

**Pono** means goodness, uprightness, morality, moral qualities, correct or proper procedure, excellence, equity, fair, righteous, welfare, and wellbeing.

**Pu‘uhonua** means place of refuge.

**Pae‘āina Hawai‘i** means the Hawaiian Islands.

**Wahi Kapu** means sacred place.

**Wahi Pana** means legendary place.

**Wahine** means woman.

**Wāhine** means women, the plural of woman.

<sup>1</sup> Available online at: <http://wehewehe.org>.

## GLOSSARY OF HAWAIIAN PROVERBS

### ‘Ōlelo No‘eau

The following list provides the Hawaiian proverbs and their corresponding definitions used in this document. Integrating Hawaiian proverbs and poetry raises awareness of ‘Ōlelo Hawai‘i and ‘Ōlelo No‘eau, as well as cultivates appreciation for the Hawaiian cultural ethos of environmental guardianship. The ‘Ōlelo No‘eau referenced herein are from the collection in *‘Ōlelo No‘eau: Hawaiian Proverbs & Poetical Sayings* – collected, translated, and annotated by Mary Kawena Pukui.

#### **‘A‘ohe hana nui ke alu ‘ia**

*No task is too big when done together by all.*

(‘Ōlelo No‘eau #142)

#### **E ala! E alu! E kuilima!**

*Up! Together! Join Hands!*

A call to come together to tackle a given task.

(‘Ōlelo No‘eau #258)

#### **E kuahui like i ka hana**

*Let everybody pitch in and work together.*

(‘Ōlelo No‘eau #323)

#### **Hahai no ka ua i ka ululā‘au**

*Rains always follow the forest.*

The rains are attracted to forest trees. Knowing this Hawaiians hewed only the trees that were needed.

(‘Ōlelo No‘eau #405)

#### **Ma ka hana ka ‘ike**

*In working one learns.*

(‘Ōlelo No‘eau #2088)

#### **Ua mau ke ea o ka ‘āina i ka pono**

*The life of the land is preserved in righteousness.*

(‘Ōlelo No‘eau #2829)

In addition to the ‘Ōlelo No‘eau referenced above, the following Hawaiian proverbs and their corresponding definitions were also used in during the virtual public information sharing sessions and public outreach for this *Hawai‘i 2050 Sustainability Plan*.

#### **‘A‘ohe pu‘u ki‘eki‘e ke ho‘ā‘o ‘ia e pi‘i**

*No cliff is so tall that it cannot be scaled.*

No problem is too great when one tries hard to solve it.

(‘Ōlelo No‘eau #209)

#### **Hili hewa ka mana‘o ke ‘ole ke kūkākūkā**

*Ideas run wild without discussion.*

Discussion brings ideas together into a plan.

(‘Ōlelo No‘eau #993)



# E KUAHUI LIKE I KA HANA

*Let Everyone Pitch In And Work Together*

**The State of Hawai‘i has a strong history and positive momentum across a range of public and private efforts to set the state on a course toward climate resilience, and economic, social, and environmental sustainability.** Existing State policies, State and County agency programs, and voluntary initiatives such as the Aloha+ Challenge and the Sustainable Hawai‘i Initiative are driving progress, while the United Nations' Sustainable Development Goals (SDGs) have created a destination in the form of a globally unified set of 17 targets.

Concurrently, the state's isolation and finite resources have limited the affordable access to housing, utilities, transportation, and food for many of Hawai‘i's residents. The recent COVID-19 global pandemic exacerbated many of these economic and social challenges. Environmental impacts from pollution and invasive species continue to threaten our islands' native biodiversity, while Hawai‘i's changing climate unfolds. Climate change in Hawai‘i will exacerbate these existing problems and inflict more statewide challenges including sea level rise, drought, wildfires, hurricanes, precipitation loss, rising temperatures, and increased risks to public health.

**These disruptions and challenges offer an opportunity to rethink how and where we invest – to identify needed adjustments to promote local food production, climate resilience, green infrastructure, resource management, affordable housing, and more.**

As we do so, we can draw inspiration and guidance from well-adapted traditional Hawaiian ahupua‘a values and practices that foster a systems approach to stewardship, sustainable well-being, and intergenerational equity (the duty of present generations to support future generations).

**To create a vibrant, resilient economy, a healthy quality of life grounded in a multi-ethnic culture and Kānaka Maoli values, and healthy natural resources—we need a shared understanding of our goals and the actions required to achieve them.** Within this context, the State of Hawai‘i is updating and revising the scope of its *Hawai‘i 2050 Sustainability Plan* to serve as the State's climate and sustainability strategic action plan, pursuant to Hawai‘i Revised Statutes §226-65.

This plan includes specific priority strategies and actions to advance economic, social, environmental sustainability, and climate resilience in Hawai‘i over this decade. This *Hawai‘i 2050 Sustainability Plan* describes the existing statewide efforts in relation to the UN SDGs and presents the State's current commitments to guide the coordination and implementation of the State's sustainability and climate adaptation goals, principles, and policies.

**This plan captures and will help refocus the momentum statewide created through past and ongoing initiatives, helping to guide us forward to a more prosperous, equitable, resilient, and sustainable future. This is an inclusive journey toward a shared vision of the Hawai‘i that we want to live in and pass on to future generations. Achieving this vision will require a kākou effort, with all of Hawai‘i's government agencies, businesses, nonprofit organizations, and citizens to pitch in and work together.**

# EXECUTIVE SUMMARY

## Hawai‘i 2050 Sustainability Plan

### Charting a Course for the Decade of Action (2020–2030)

The United Nations designated 2020–2030 as the “Decade of Action,” a time to accelerate progress toward achieving the Sustainable Development Goals (SDGs), a globally unified set of 17 targets. **The people of Hawai‘i are committed to and have built positive momentum toward achieving these goals across a range of public and private efforts to achieve the SDGs by 2030.** In coordination with existing State policies, State and County agency programs, and voluntary initiatives such as the Aloha+ Challenge and the Sustainable Hawai‘i Initiative, this *Hawai‘i 2050 Sustainability Plan* recommends additional actions to achieve near-term solutions for Hawai‘i’s climate resilience and economic, social, and environmental sustainability.

To cultivate a vibrant, resilient economy, a healthy quality of life grounded in a multi-ethnic culture and Kānaka Maoli values, and healthy natural resources—we need a shared understanding of our goals and the actions required to achieve them. While the COVID-19 global pandemic underscored Hawai‘i’s economic and community vulnerabilities and inequities with regard to ensuring basic necessities including food security, housing affordability, and household financial security—it also provided a unique opportunity to **rethink and recalibrate Hawai‘i’s “new normal” through an equitable, resilient, and sustainable recovery.**

To inform the evolution of Hawai‘i’s “new normal,” and consistent with a community-driven approach, this updated plan employed an extensive engagement and outreach process that included two public surveys, multiple stakeholder interviews, and nine virtual public information-sharing sessions. **This public engagement process identified climate action as the top sustainability priority to achieve within this decade, followed by sustainable cities and communities and clean and affordable energy, and the need to increase Hawai‘i’s local food production and food security.**

Input from this extensive public engagement informed the development of this plan by providing insights into a shared vision for Hawai‘i’s sustainable economic recovery. The dialogue with stakeholders and the public recognized actions that organizations are already taking to achieve the SDGs, identified policy and program gaps, and recommended actions to enhance sustainability and climate change adaptation in Hawai‘i.

This updated plan fulfills the revised the scope of the *Hawai‘i 2050 Sustainability Plan* to serve as the State’s climate and sustainability strategic action plan, pursuant to Hawai‘i Revised Statutes §226-65. **Hawai‘i has made significant sustainability commitments through laws, policies, and plans that reflect our local values.** For the first time, this updated plan presents Hawai‘i’s commitments as a collective whole and aligned with the SDGs. There is much work yet to be done to achieve these sustainability and climate goals and commitments.

**This plan identifies 8 focus areas with 38 strategies and more than 250 recommended actions that point to what is urgent to undertake over this decade.** These focus areas align with priorities identified through public and stakeholder engagement, as well as ongoing commitments the State has made as described in this plan.

## FOCUS AREAS FOR THE DECADE OF ACTION:

- 1 Promote a Sustainable Economic Recovery** through strategies that support local agriculture, green workforce development and education, and sustainable and regenerative tourism.
- 2 Reduce Greenhouse Gas Emissions** by continuing to monitor the state's emissions and reduce greenhouse gas (GHG) emissions through strategies in the energy, transportation, agriculture and waste sectors.
- 3 Improve Climate Resilience** by continuing to monitor and adapt to climate impacts and take actions to increase the resilience of the natural and built environments and their occupants.
- 4 Advance Sustainable Communities** through strategies that improve land use and access to green space, advance sustainable practices in schools, and encourage sustainable buildings and infrastructure.
- 5 Advance Equity** by ensuring equitable access to resources, addressing affordable housing and homelessness crises, and improving gender equity.
- 6 Institutionalize Sustainability Throughout Government** by increasing the government's capacity through institutionalized collaboration to address sustainability and greening government operations.
- 7 Preserve the Natural Environment,** including a focus on clean water, marine resources and ecosystems, and natural resource protection.
- 8 Perpetuate Traditional Ecological Knowledge and Values** as Hawai'i collectively tackles these sustainability and climate challenges.

## ULTIMATELY, A SUCCESSFUL DECADE OF ACTION IN HAWAI'I WILL REQUIRE:

- Strategic prioritization of limited resources. When prioritizing investments, funders should evaluate whether the activity contributes to one or more SDG, is ready for action (e.g., existing targets, policies, plans, and/or partnerships are in place), addresses an urgent need, directly or indirectly addresses equity, explicitly protects Hawai'i's local values, and will benefit local residents.
- Identification and commitment from lead and supporting actors. There are opportunities for everyone (elected officials, state agencies, counties, the private sector, community organizations, students, and residents) to lead or support efforts to achieve these strategies. Collaboration is essential.
- Development of metrics to define success and then enable measurement and tracking of our progress. Defined endpoints and metrics for success will make it possible to measure advancements and identify where gaps remain; in some cases, targets and metrics have already been identified whereas a collective vision will need to be developed in other cases.
- A realistic timeline to work toward. We can move quickly to start some strategies, for which sustained efforts will be necessary to make steady, incremental progress. Other sustainability and climate strategies may require significant upfront planning, buy-in from disparate parties, and securing financial support before a swift and dramatic change can be made. Establishing clear and feasible timelines that set out incremental milestones will ensure greater success.

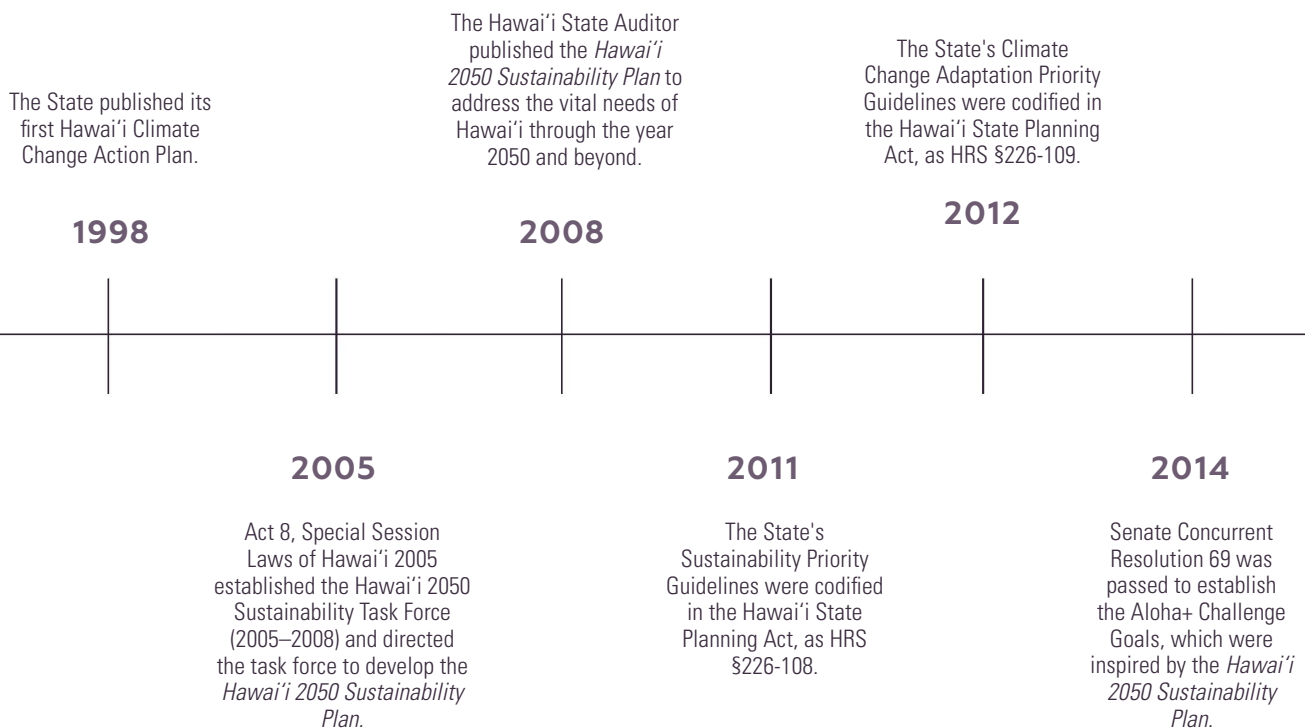
**Let's work together to achieve an equitable, resilient, and sustainable Hawai'i!**



# HAWAI'I'S SUSTAINABILITY & CLIMATE JOURNEY

*Let Everyone Pitch In And Work Together*

**This updated Hawai'i 2050 Sustainability Plan is not the state's first step on the journey toward a sustainable future:**



The Hawai'i Climate Change Mitigation and Adaptation Commission was established by HRS §225P-3.

and

Hawai'i became the first state in the nation to enact legislation committing to the United Nations Paris Agreement, through the enactment of Act 32, Session Laws of Hawai'i 2017.

2017

Act 146, Session Laws of Hawai'i 2019, codified as HRS §226-65, amended the scope of the *Hawai'i 2050 Sustainability Plan* to serve as the State's climate and sustainability strategic action plan to determine future actions guiding coordination and implementation of sustainability and climate adaptation goals, principles, and policies. The law directs the State of Hawai'i's Office of Planning to update the *Hawai'i 2050 Sustainability Plan* every 10 years.

2019

The State of Hawai'i became the first state in the nation to declare a climate emergency by adopting Senate Concurrent Resolution 44.

The Hawai'i State Legislature passed House Bill (HB) 1149<sup>1</sup> and HB 1318,<sup>1</sup> which together, consolidate government land use functions of different agencies in order to improve the coordination of state government to work more efficiently to achieve the state's sustainability and climate change goals for a more abundant future for the people of Hawai'i, and renames the Office of Planning to the "Office of Planning and Sustainable Development."

This document, the updated *Hawai'i 2050 Sustainability Plan*, was released.

2021

2018

The State's Greenhouse Gas Sequestration Task Force was established through HRS §225P-4, to increase greenhouse gas sequestration.

and

The Hawai'i State Auditor, with the assistance of the State of Hawai'i's Office of Planning, undertook a 10-year measurement of the 2008 *Hawai'i 2050 Sustainability Plan* that evaluated the plan's progress between 2008 and 2017.

2020

The State of Hawai'i's Office of Planning was revised by Act 45, Session Laws of Hawai'i 2020, to provide statewide sustainability, climate adaptation, and sea level rise adaptation planning and coordination.

The State officially established the state's first Statewide Sustainability Program also through Act 45, codified as Hawai'i Revised Statutes §225M-8, to provide statewide sustainability and climate adaptation planning and coordination. The Statewide Sustainability Program is directed to develop, organize, and promote policies and programs that assist in the meeting of Hawai'i's numerous sustainability and climate policies and goals.

<sup>1</sup> At the date of publication, the bills from the 2021 legislative session referenced herein were passed by the Hawai'i State Legislature and transmitted to the Governor for consideration.

# The State of Hawai'i's Legal and Statutory Sustainability Targets

The State of Hawai'i has enacted and codified many legal and statutory targets to prepare for and transition Hawai'i toward its sustainable and climate-resilient future.

## **BY:    TARGET:**

- 2000    Statewide Recycling Goal** HRS §342G-3  
Establishes a statewide goal to reduce the solid waste stream prior to disposal by **50%** through source reduction, recycling, and bioconversion by January 1, 2000
- 2010    Statewide Renewable Portfolio Standard** HRS §269-92  
Requires each electric utility company that sells electricity for consumption in the state to establish a renewable portfolio standard of **10%** of its net electricity sales by December 31, 2010.
- 2015    Statewide Renewable Portfolio Standard** HRS §269-92  
Requires each electric utility company that sells electricity for consumption in the State to establish a renewable portfolio standard of **15%** of its net electricity sales by December 31, 2015.
- 2020    Statewide Greenhouse Gas Emissions Limit** HRS §342B-71  
Establishes a statewide greenhouse gas emissions cap to be **equal to or below** the level of the statewide greenhouse gas emissions in 1990 by the year 2020.
- Statewide Prohibition of Coal Power** HRS §269-48  
Prevents the State Public Utilities Commission from approving new, renewed, or extending power proposals within the state to burn or consume coal to generate electricity beginning June 30, 2020.
- Statewide Renewable Portfolio Standard** HRS §269-92  
Requires each electric utility company that sells electricity for consumption in the state to establish a renewable portfolio standard of **30%** of its net electricity sales by December 31, 2020.
- 2022    Statewide Ban of Coal Power for Electricity Generation** HRS §342B-36  
Concludes **all** coal burning within the state on December 31, 2022.
- 2025    Statewide Departmental Procurement Benchmarks: Locally Produced Food** HB 817, 2021\*  
Requires each State department to ensure that **10%** of the produce purchased by that department consists of fresh local agricultural products or local value-added, processed, agricultural, or food products by January 1, 2025.
- 2030    Statewide Energy Efficiency Portfolio Standards** HRS §269-96  
Requires that **4,300** gigawatt hours (GWh) of electricity use be reduced by 2030.
- Double Local Food Production** Act 151, Session Laws of Hawai'i 2019  
Directs the State Department of Agriculture to develop a strategic plan to **double** local food production and increase food exports by 2030.
- Statewide Renewable Portfolio Standard** HRS §269-92  
Requires each electric utility company that sells electricity for consumption in the state to establish a renewable portfolio standard of **40%** of its net electricity sales by December 31, 2030.

## **BY: TARGET:**

**2030**

(Continued)

### **Clean Transportation Goal: State Fleet Transition to Zero Emission Vehicles** HB 552, 2021\*

Requires the transition of **100%** of the State's fleet that are light-duty motor vehicles passenger cars to be zero-emission vehicles by December 31, 2030.

### **Local Farm to School Meal Goal** HB 767, 2021\*

Requires the State Department of Education to serve **30%** of food served in public schools to consist of locally sourced products by 2030.

### **Statewide Departmental Procurement Benchmarks: Locally Produced Food** HB 817, 2021\*

Requires each State department to ensure that **18%** of the produce purchased by that department consists of fresh local agricultural products or local value-added, processed, agricultural, or food products by January 1, 2030.

**2035**

### **Hawai'i Public Schools Net-Zero Energy Goal** HRS §302A-1510

Requires the State Department of Education to become **net-zero** in energy use, producing as much renewable energy as it consumes across all public school facilities by January 1, 2035.

### **University of Hawai'i Net-Zero Energy Goal** HRS §304A-119

Requires the University of Hawai'i to become **net-zero** in energy use, producing as much renewable energy as it consumes across all campuses by January 1, 2035.

### **Clean Transportation Goal: State Fleet Transition to Zero Emission Vehicle** HB 552, 2021\*

Requires the transition of **100%** of the State's fleet for all other light-duty motor vehicles to be zero-emission vehicles by December 31, 2035.

### **Statewide Departmental Procurement Benchmarks: Locally Produced Food** HB 817, 2021\*

Requires each State department to ensure that **26%** of the produce purchased by that department consists of fresh local agricultural products or local value-added, processed, agricultural, or food products by January 1, 2035.

**2040**

### **Statewide Renewable Portfolio Standard** HRS §269-92

Requires each electric utility company that sells electricity for consumption in the state to establish a renewable portfolio standard of **70%** of its net electricity sales by December 31, 2040.

### **Statewide Departmental Procurement Benchmarks: Locally Produced Food** HB 817, 2021\*

Requires each State department to ensure that **34%** of the produce purchased by that department consists of fresh local agricultural products or local value-added, processed, agricultural, or food products by January 1, 2040.

**2045**

### **Reclaimed Water in State and County Facilities** HRS §174C-31 (g) (6)

Requires the use of reclaimed water in **100%** of State and County facilities, except for drinking and potable water uses, by December 31, 2045.

### **Zero Emissions Clean Economy Target** HRS §225P-5

Establishes a statewide target to sequester more atmospheric carbon and greenhouse gases than emitted within the state as quickly as practicable, but no later than 2045.

### **Statewide Renewable Portfolio Standard** HRS §269-92

Requires each electric utility company that sells electricity for consumption in the state to establish a renewable portfolio standard of **100%** of its net electricity sales by December 31, 2045.

### **Statewide Departmental Procurement Benchmarks: Locally Produced Food** HB 817, 2021\*

Requires each State department to ensure that **42%** of the produce purchased by that department consists of fresh local agricultural products or local value-added, processed, agricultural, or food products by January 1, 2045.

**2050**

### **Statewide Cesspool Conversion** HRS §342D-72

Requires the mandatory upgrade, conversion, or connection of **all** cesspools statewide (over 88,000 cesspools) by January 1, 2050.

### **Statewide Departmental Procurement Benchmarks: Locally Produced Food** HB 817, 2021\*

Requires each state department to ensure that **50%** of the produce purchased by that department consists of fresh local agricultural products or local value-added, processed, agricultural, or food products by January 1, 2050.



## The Aloha+ Challenge

Inspired by the 2008 publication of Hawai'i 2050 Sustainability Plan, and the Micronesian Challenge, the State of Hawai'i adopted Senate Concurrent Resolution 69 in 2014 establishing the Aloha+ Challenge goals. Unlike the legal and statutory targets presented in the previous section, the Aloha+ Challenge Goals are not legally codified but set informal, integrated goals and six ambitious targets to be achieved by 2030.

### By 2030:

- 1. Clean Energy:** Achieve 70% clean energy, with 40% from renewable sources and 30% from efficiency, with a view toward 100% renewable energy by 2045.
- 2. Local Food:** At least double the local food production with a goal of 20–30% of food consumed being grown locally.
- 3. Natural Resource Management:** Reverse the trend of natural resource loss mauka to makai by increasing watershed protection, community-based marine management, invasive species prevention and control, increasing freshwater capacity, and restoration of native species.
- 4. Waste Reduction:** Reduce the solid waste stream prior to disposal by 50%, through source reduction, recycling, and bioconversion.
- 5. Smart Sustainable Communities:** Increase livability and resilience in the built environment through planning and implementation at the state and county levels.

## The Sustainable Hawai'i Initiative

In September 2016, the State of Hawai'i hosted the International Union for Conservation of Nature (IUCN) World Conservation Congress, with more than 10,000 participants from 192 countries. At this meeting, the State announced its Sustainable Hawai'i Initiative, which focuses on conservation and environmental sustainability. These commitments are not legally binding and may be updated or replaced by commitments codified in law.

### Sustainable Hawai'i Commitments:

- 1. Double local food production** by 2020
- 2. Implement the Interagency Biosecurity Plan** by 2027
- 3. Protect 30% of Hawai'i priority watersheds** by 2030
- 4. Effectively manage 30% of Hawai'i nearshore ocean waters** by 2030
- 5. Achieve 100% renewable energy** by 2045







# THE UPDATE PROCESS

## FOR THE HAWAII 2050 SUSTAINABILITY PLAN

The State of Hawai'i Office of Planning began a process to update the *Hawai'i 2050 Sustainability Plan* during Earth Week in 2020, at the outset of the COVID-19 global pandemic. As the pandemic stretched on and development of the plan progressed, it became increasingly clear that a sustainable economic recovery must be central to Hawai'i's sustainability and climate resilience efforts over this decade.

Consistent with a community-driven approach, this update relied on input from stakeholders and the public through an engagement process that involved two surveys, nine virtual information-sharing sessions, interviews with stakeholders, and a broad public outreach effort. Input from these engagements informed the development of this plan by providing insights into a shared vision for a sustainable economic recovery, recognizing actions that various organizations are already taking to achieve the SDGs, discussing policy and program gaps, and identifying actions to enhance sustainability and climate change adaptation in Hawai'i.

The Office of Planning reviewed more than 150 existing laws, plans, policies, programs, and strategies relevant to sustainability and climate change in Hawai'i to determine how their activities and recommendations align with the 17 SDGs and identify gaps where individual SDGs are not being addressed by existing efforts. Based on the findings of this review and the public input gathered during the surveys and information-sharing sessions, the Office of Planning then developed an initial list of recommended actions for the 2020–2030 timeframe. A draft plan was shared with stakeholders throughout State and County government agencies to solicit feedback and input on priority focus areas. Ultimately, the Office of Planning identified a set of near-term priority focus areas based on pressing climate resilience and economic, social, and environmental issues, this plan's extensive stakeholder feedback and public outreach process, and State initiatives and priorities. The selection process prioritized actions that address multiple SDGs, have strong support from stakeholders and the public, and can be implemented in this decade (between 2020 and 2030).

2

**Public surveys**

9

**Public Virtual Information Sharing Sessions**

230

**Participating agencies, organizations,  
and nonprofits**

150

**Existing plans, policies, programs, strategies**

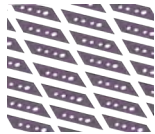
17

**U.N. Sustainable Development Goals (SDGs)**

## Feedback from Public Engagement

This plan aims to be useful to the many changemakers in Hawai'i whose actions have and will continue to help achieve its goals, including (but not limited to): elected officials, state agencies, county governments, community organizations, businesses, students and youth, and residents. Any one individual may represent several of these groups and may use different elements of this plan for different uses (for example, a nonprofit organization may find the content valuable in supporting their grant-writing efforts while elected officials and governmental entities may gain a clearer picture of what policies or actions are considered to be more urgent). As such, it was a critical time to engage with the public on a shared vision for an equitable, climate resilient, and sustainable Hawai'i.

Through nine virtual public information sharing sessions and two public outreach surveys, the Office of Planning solicited input from Hawai'i residents regarding their vision for a sustainable economic recovery from the COVID-19 global pandemic as well as current policy gaps or barriers to achieving Hawai'i sustainable future.



### **Key concepts shared by public participants that emerged that are essential to Hawai'i sustainable economic recovery included:**

- Hawai'i has unique challenges but also unique opportunities.
- Hawai'i can look to the past for lessons for the future. Hawai'i can benefit from the value in contemporary restoration of cultural practices.
- Hawai'i can serve as an example for other islands by modeling sustainability.
- Hawai'i should pursue goals that increase equity and/or explicitly address equity issues in their implementation.
- The COVID-19 global pandemic had disproportionate impacts on ALICE® (Asset Limited, Income Constrained, Employed) households and communities, highlighting a need to invest more resources and support in those communities.
- The COVID-19 global pandemic has highlighted food security issues and the need to support local agriculture.



### **In addition, these public sessions and the feedback provided by the public participants identified where and how Hawai'i needs to focus its efforts to address these challenges and opportunities:**

- Boost childcare, eldercare, and education, and offer support for women whose jobs and family roles were negatively impacted by the COVID-19 global pandemic.
- Rebuild the workforce by empowering youth, investing in green and clean energy workforce development, and upskilling the labor force to compete in the global market through initiatives such as strengthened broadband for remote work.
- Pursue innovative opportunities in the clean energy and agricultural sectors to enhance economic growth, workforce development, and food security.
- Rely less on imports while making better use of existing local resources—including local agriculture—to develop a circular economy to become more self-sufficient.
- Build the economy to serve and be driven by local populations (for example, through local food production).



# RECOMMITTING TO A SUSTAINABLE FUTURE

This update serves as a checkpoint and an opportunity for recommitment, especially in light of the vulnerabilities further highlighted by the COVID-19 global pandemic. Now more than ever it is clear that Hawai‘i needs to become more resilient, adaptable, equitable, and economically diversified. As Hawai‘i recovers and builds back stronger from the pandemic, the State can redefine a more sustainable and resilient way of life that can protect us against future risks, including those from climate change.

This plan pursues outcomes reflected with a Kānaka Maoli worldview to mālama ‘āina and mālama Honua and contemporary restoration of cultural practices, along with existing state policies (including the Hawai‘i State Planning Act and Functional Plan objectives), the Aloha+ Challenge goals, the Sustainable Hawai‘i Initiative goals, and other sustainability and climate resilient laws, policies, and initiatives.

## **We are not starting from scratch.**

This updated *Hawai‘i 2050 Sustainability Plan* is aligned with the SDGs, which provides a pathway to achieving a better and more sustainable future for all, and this plan plays a key role in achieving those goals, guiding economic diversification and development toward sustainability while harnessing innovation and creativity to build resilience to climate change and other future risks.

Developed with collaboration and input from stakeholders around the state, this updated plan provides recommendations for priority action areas over this decade that will help advance these goals. This plan does not provide a step-by-step guide for what each individual and organization can and should do. It is time to draw upon your networks, ‘ike, and enthusiasm to take the steps needed to achieve these goals to continue to mālama Hawai‘i for the benefit of Hawai‘i’s future generations.

## **“Sustainability” means achieving the following:**

- Respect of culture, character, beauty, and history of the state’s island communities;
- Striking balance between economic, social, community, and environmental priorities; and
- Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

(Hawai‘i Revised Statutes §226-2)

This plan identifies 8 focus areas with 38 strategies and more than 250 recommended actions that that will help Hawai'i become more equitable, climate resilient, and sustainable during this Decade of Action. These focus areas align with priorities identified through public and stakeholder engagement, as well as ongoing commitments the State has made as described in this plan.

### The 8 recommended focus areas for the Decade of Action:

- 1 Promote a Sustainable Economic Recovery** through strategies that support local agriculture, green workforce development and education, and sustainable and regenerative tourism.
- 2 Reduce Greenhouse Gas Emissions** by continuing to monitor the state's emissions and reduce greenhouse gas (GHG) emissions through strategies in the energy, transportation, agriculture and waste sectors.
- 3 Improve Climate Resilience** by continuing to monitor and adapt to climate impacts and take actions to increase the resilience of the natural and built environments and their occupants.
- 4 Advance Sustainable Communities** through strategies that improve land use and access to green space, advance sustainable practices in schools, and encourage sustainable buildings and infrastructure.
- 5 Advance Equity** by ensuring equitable access to resources, addressing affordable housing and homelessness crises, and improving gender equity.
- 6 Institutionalize Sustainability Throughout Government** by increasing the government's capacity through institutionalized collaboration to address sustainability and greening government operations.
- 7 Preserve the Natural Environment,** including a focus on clean water, marine resources and ecosystems, and natural resource protection.
- 8 Perpetuate Traditional Ecological Knowledge and Values** as Hawai'i collectively tackles these sustainability and climate challenges.

# HAWAI‘I'S COMMITMENT TO THE SDGS

The United Nations 2030 Agenda for Sustainable Development identified 17 SDGs that represent an urgent call for global action to end poverty, improve health and education, reduce inequality, and spur economic growth, while tackling climate change and preserving natural resources. The United Nations designated 2020–2030 as the “Decade of Action,” a time to accelerate progress toward the SDGs through sustainable solutions in order to achieve the goals by 2030 (United Nations 2021). There is a renewed sense of urgency to reduce emissions to mitigate the impacts of climate change and meet the goals of the United Nations Paris Agreement to limit global warming to well below 2 degrees Celsius, preferably to 1.5 degrees Celsius, above pre-industrial levels (IPCC 2018). The UN SDGs provide a framework to work in alignment with the goals of the Paris Agreement.

This plan uses the SDGs as a framework for assessing the State’s current commitments to sustainability and priority actions to take over the coming decade. The SDGs also form the framework of Hawai‘i’s Aloha+ Challenge, a voluntary initiative that sets six statewide sustainability targets by 2030.

Hawai‘i enters the Decade of Action with tremendous progress underway. The COVID-19 global pandemic marked both a moment of crisis and a moment of opportunity for Hawai‘i’s adaptive change, with the SDGs serving as a focal point to guide us toward a sustainable economic recovery.

## The Role of Local Plans in Advancing Sustainability and Climate Resilience

The County General Plans and the *Hawai‘i 2050 Sustainability Plan* are foundationally related within the Hawai‘i State Planning Act. Both planning requirements are codified within Part II, the Implementation Section of the Hawai‘i State Planning Act, and more importantly, the County General Plans serve as a foundation for county planning. The current and future efforts to integrate the UN Sustainable Development Goals, Hawai‘i’s legal and statutory sustainability targets, sustainable development, and climate resilience into County General Plans can continue to play a pivotal role in county land use planning. Other local plans and directives directly address climate change. In 2019, the Hawai‘i County Council adopted Resolution 322-19, similarly the Maui County Council adopted Resolution 19-209, both declaring a Climate Emergency (County of Hawai‘i 2019, County of Maui 2019). Honolulu Mayor’s Directive 18-2 requires “all City departments and agencies to take a proactive approach to reduce greenhouse gas emissions and adapt projects to the physical impacts of climate change.”

Examples of these plans include:



**The County of Hawai‘i General Plan 2040** is being drafted to contain goals, measurable sustainability objectives, and policies and actions to achieve these sustainability objectives. The draft plan is structured using a sustainability framework to guide the development of the plan. The County of Hawai‘i’s draft General Plan 2040 incorporates both climate change mitigation and adaptation strategies, and is intended to respect the culture, character, beauty and history of the Island of Hawai‘i while attempting to integrate balance between environmental stewardship, social and community equity and economic sufficiency in order to meet the needs of the present without compromising the ability of future generations of the island to meet their own needs.



**The County of Hawai‘i Climate Action Plan** is also concurrently being drafted to include sectoral suggestions to: reduce emissions, including requiring owners and managers of multi-family dwellings and multi-tenant commercial buildings to provide recycling; promote a circular economy that is designed to minimize pollution, extraction of fossil fuels, and raw materials; support using financial mechanisms to incentivize waste reduction; proposes County codes in ways that maximize landfill diversion such as requiring recycling at State and County offices, eliminating the sale of Styrofoam and single use plastics, and prohibiting the disposal of organic waste at landfills; and promote pollution prevention and the adoption of sustainable practices by companies, communities, governmental organizations, and individuals.



**The Maui Island Plan**, adopted in 2012, reviews factors that influence the physical, social, and economic development of the island. The plan addresses key environmental, housing, and economic development issues to provide recommendations to protect the community and future generations. Similarly, the **West Maui Community Plan** provides long-term vision for the community and is intended to serve as a policy guide for County agencies.



**The Lānaʻi Community Plan** and the **Molokaʻi Island Community Plan** explore island specific challenges and opportunities regarding future sustainability. The plans then provide a strategic framework to guide policies and actions needed to address the major issues identified in the near future.



**The City and County of Honolulu's General Plan** includes policies to:

- Protect freshwater resources including stream retention, pollution protection, and designing surface drainage and flood control systems in a way that will help preserve their natural settings.
- Retain the viability of agriculture on Oʻahu including sufficient land retention, diversification, and job creation.
- Support education for all age groups, employable skills education, research institutions, and to make Honolulu an education center for the Pacific.
- Meet housing objectives to 1) ensure a balanced mix of housing opportunities and choices for all residents at prices they can afford, 2) minimize speculation in land and housing, and 3) provide residents with a choice of living environments that are close to employment, recreation, and commercial centers and are adequately served by transportation networks and public utilities.

The County's long-range planning documents (ROH Chapter 24) contain policies to reduce contamination and non-point source pollution, increase water conservation, protect sensitive wetland environments, and are consistent with the Honolulu Board of Water Supply's Watershed Management Plans (ROH Chapter 30). These County long-range development plans address K-12 school facilities and those in potential growth areas support coordinated capacity planning, and co-location with parks and shared use facilities with parks whenever feasible. Long-range planning documents include policies that promote agriculture for the ʻEwa, Koʻolau Poko, Koʻolau Loa, North Shore, Waiʻanae, and Central Oʻahu regions.



**The City and County of Honolulu Climate Action Plan (2020-2025)** serves as a roadmap over 5 years aimed at reducing Honolulu's biggest emitting sectors—transportation networks, building operations, and waste systems with 9 distinct strategies and 47 measurable actions.



**The Oʻahu Resilience Strategy** describes key action items to combat and prepare for the most devastating effects of climate change. Core action items include developing and implementing climate adaptation strategies and fostering a widespread understanding of the threats of climate change to Hawaiʻi. The strategy also recommends partnerships and liaisons to leverage volunteer and nonprofit assets and improve resilience.



**The Kauaʻi Kākou, Kauaʻi County's General Plan** was recently published in 2018. The General Plan is based on the community's vision and goals for Kauaʻi's future: that Kauaʻi will be a sustainable island, a unique and beautiful place, a healthy and resilient people, and an equitable place with opportunity for all. The Kauaʻi County General Plan's vision of a sustainable island describing the overarching goal to grow responsibly to meet the needs of current and future generations without depleting resources. According to the General Plan, Kauaʻi residents widely agreed that sustainability should drive the planning for the future. The Kauaʻi County General Plan explains that sustainable development does not endanger the natural systems that support life: air, water, soil, and living organisms. Sustainable development means meeting the basic needs of society and extending to all people the opportunity to satisfy their aspirations for a better life. As the plan explains, sustainable development means integrating economic and environmental considerations in policy and decision-making.



# OVERVIEW OF THIS NEXT SDG SECTION

This section of the plan provides an overview of existing commitments Hawai'i has made toward each of the 17 SDGs, with a focus on existing laws, policies, and strategic plans. The list of laws, policies and plans is not exhaustive, but rather is intended as a representative sample demonstrating Hawai'i's commitment for each SDG, or its readiness to address each SDG based on existing policy structures and legal commitments.

The policy structures and legal instruments provide a framework for action. It is also important to consider how this framework is being used to advance climate change and sustainability goals, monitor results, and continue to evolve state programs.

This section is organized around the 17 SDGs. While presented as individual sections below, the 17 SDGs are interdependent: implementing actions under one goal can contribute to progress under many others.



## **Each SDG section includes two components:**

1

The Overview describes the importance of the SDG to the state of Hawai'i, including Hawai'i's challenges and opportunities associated with each SDG.

2

Hawai'i's Commitments to Address SDG summarizes the key laws, policies, and strategic action plans that currently address each SDG. This section demonstrates Hawai'i's commitment to the SDG and identifies relevant voluntary initiatives and informal targets that have been set through agency policies, county governments, statewide initiatives, or strategic plans.







# NO POVERTY

## Sustainable Development Goal 1

End poverty in all its forms everywhere

This UN goal includes targets that address:

- Reducing extreme poverty
- Halving the number of people living in poverty
- Ensuring social protection systems are in place to cover poor and vulnerable populations
- Ensuring equal rights to economic resources and access to basic services, property, natural resources, and technology
- Reducing vulnerability and exposure to climate-related extreme events and other disasters

## Overview

Many of Hawai'i's residents struggle to afford housing, utilities, transportation, healthcare, and food. Hawai'i has the nation's highest rate of homelessness per capita, with an estimated 15,000 homeless individuals throughout the state (State of Hawai'i 2019). The COVID-19 global pandemic has exacerbated existing economic stressors, dramatically decreased visitor arrivals, prompted unprecedented business closures, and increased unemployment throughout the state. As a result, ALICE® (Asset Limited, Income Constrained, Employed) households have increased dramatically.

In addition to the stressors related to the COVID-19 global pandemic that have exacerbated existing economic hardships, Hawai'i is also experiencing increased impacts from climate change, such as flooding, sea level rise, drought, and rising temperatures, that place further pressure on vulnerable populations and communities.

The State's most recent (2018) Self-Sufficiency Income Standard estimates found that two of the five family composition groups (one adult, one child, and one adult, two children) were below self-sufficiency income needs (DBEDT 2019). Further, limited access to broadband technology constrains economic access for all.

## Hawai'i's Commitments to Address SDG 1



### EXISTING STATE LAWS & POLICIES

#### **Hawai'i Revised Statutes §226-19 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Housing**

Defines state policy objectives for advancing opportunities for affordable housing and the orderly development of residential areas sensitive to community needs and other land uses.

#### **Hawai'i Revised Statutes §226-22 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Social Services**

Sets objectives to improve public and private social services to enable self-reliance and well-being.

#### **Hawai'i Revised Statutes §226-106 of the Hawai'i State Planning Act: Priority Guidelines for the Provision of Affordable Housing**

Prioritizes the need and access for affordable housing as a priority guideline for the Hawai'i State Planning Act to address as an issue of statewide concern.

#### **Hawai'i Revised Statutes §201-3 (a)(5): Specific Research and Promotional Functions of the Department of Business, Economic Development, and Tourism**

Requires the Department of Business, Economic Development, and Tourism (DBEDT) to establish and biennially update self-sufficiency income standards, the amount of money individuals and families require to meet their basic needs without subsidies.



### STRATEGIC PLANS

#### **Hawai'i Housing Planning Study (2019)**

Serves as a comprehensive assessment of housing markets in Hawai'i to provide housing partners with relevant and crucial information.

#### **Affordable Rental Housing Report and Ten-Year Plan (2018)**

Provides policymakers with a plan to achieve the affordable rental housing goal of 22,500 units by December 31, 2026 laid out in Act 127 (Session Laws of Hawai'i 2016).

Developed a baseline of affordable rental units currently in the planning stages or under development, implementing actions, and measures of effectiveness to guide achievement of the affordable rental housing goals.

Provides next step recommendations on ways to support affordable rental housing in the state.

#### **Housing Functional Plan (2017)**

Provides specific strategies, policies, and priority actions to address the current housing shortage in Hawai'i through a statewide planning system.

Guides the implementation of the Hawai'i State Plan housing goals and objectives.

Covers four priority areas, which include expanding and preserving rental housing opportunities, increase homeownership, addressing barriers to residential development, and maintaining a housing information system.

Includes clearly defined problem statements followed by objectives, policies, implementing actions and accessory details such as lead organization, budget estimates, start date and measures of effectiveness.



# SUSTAINING HAWAII



Over **15%** of Hawai'i's residents living in a lava flow hazard zone make less than \$30,000 a year (HIEMA 2018a). Low income is among the major risk factors for an individual's disaster resiliency, as are community level components like physical infrastructure. However, community resiliency also involves another critical component: social capital. In fact, this element can be an even better predictor of efficient disaster recovery than economic characteristics (Aldrich & Meyer 2015).

**In May 2018, “fissure 8,” officially named “Ahu‘ailā‘au,” opened in the Puna district of Hawai‘i Island, marking the start of an unprecedented eruption in modern Hawai‘i** for its size and extent of the damage (NPS 2018). While considered an economically disadvantaged area, behind that economic picture Puna is greatly abundant in social capital, and the community's leverage of its interpersonal strengths was key to weathering the Kilauea eruption (County of Hawai‘i 2020). The epitome of this could be seen in Pu‘uhonua o Puna, or “The Hub”: a spontaneous organization by Puna residents to give evacuees the support they needed during the eruption. Aptly named, Pu‘uhonua o Puna offered people a place of refuge and sense of belonging, and personal networks were utilized to great effect to meet almost any need as it arose. An awareness of the mental and physical toll of the eruption led to organizing support like art and music therapy, massage, and healthcare screenings. Hot meals, made by partners like World Central Kitchen, were offered with a flexibility suited to families. A mobile showering unit on loan from Project Vision gave a much-needed place to refresh, and led to grassroots fundraising and purchase of a unit dedicated to Hawai‘i Island. Underpinning everything was a spirit of service, generosity, and dedication as volunteers and evacuees alike—and oftentimes they were one and the same—rose up to help and support fellow community members. Pu‘uhonua o Puna also built up a new generation of local leadership, ready to apply lessons learned from The Hub to catalyze further capacity-building efforts. Even two years later, this experience provided a template for other organizations like Vibrant Hawai‘i to scale the solution and deliver a COVID-19 global pandemic response island wide. This shows that with a strong social network, communities are far more capable than pure economics would belie, and when given the tools and a chance, they can and will direct their own resiliency trajectory.



Photo Left: Volunteers from Pu‘uhonua o Puna at the hub's food pantry distributing emergency food and supplies to evacuees and residents affected by the 2018 Kilauea lava eruption. Photo Credit: Harry Durgin.

Photo Right: Fissure 8, officially named Ahu‘ailā‘au, from the 2018 Kilauea lava eruption. Photo Credit: Andrew Richard Hara.









# ZERO HUNGER

## **Sustainable Development Goal 2**

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

This UN goal includes targets for ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture.

### **Overview**

Hawai'i relies heavily on imported food, due to challenges associated with local food production (including the cost of land and labor, lack of available capital, lack of investment, lack of infrastructure, and competition with subsidized and/or less regulated agriculture). Hawai'i imports approximately 85–90% of its food and is particularly reliant on imports for eggs, milk, and livestock (Office of Planning 2012). However, the state is located thousands of miles from its imported food sources, which creates vulnerability at the supply-chain level. The COVID-19 global pandemic increased awareness of the state's heavy reliance on imported food.

From an economic standpoint, it is less expensive to import food than to grow it locally. Moreover, demand for local food is limited as many consumers are not aware of the benefits of locally grown food or have difficulty identifying it in markets (Office of Planning 2012). Additionally, many residents of Hawai'i already struggle to afford food at current prices. This has been exacerbated due to the pandemic. As of March 2021, a University of Hawai'i study found that 58% of Hawai'i families experience food insecurity, and 15% report not having enough food sometime or often in the previous week (Pruitt et al. 2021). Furthermore, about 370,000 (approximately 26%) of Hawai'i residents live in food deserts, which means they live more than one mile (if in urban areas) or more than 10 miles (if in rural areas) from grocery stores with access to fresh foods, and thus may rely more on processed or fast foods that have less nutritional content (Brace et al. 2020).

Achieving this SDG will bring multiple benefits. Sustainable local food production can enhance the livelihood of local farmers, reduce emissions from transporting food long distances to Hawai'i, and improve the resilience of communities to economic shocks such as climate-related storm events, public health crises, natural disasters, or other supply chain disruptions. Strategic capital investment and policies could address and remove some of the barriers to local food production (these recommendations are found on page 98 of this plan).

## Hawai'i's Commitments to Address SDG 2



### EXISTING STATE LAWS & POLICIES

#### **Hawai'i Revised Statutes §226-7 of the Hawai'i State Planning Act: Objectives and Policies for the Economy—Agriculture**

Encourages the purchase and use of locally grown food.  
Assures the availability of suitable farmland with adequate water resources.  
Supports diversified agriculture.  
Increases opportunities for an agricultural education and livelihood.  
Increases the use of traditional Hawaiian farming systems and traditional Hawaiian crops.

#### **Hawai'i Revised Statutes Chapter 205, Part III: Important Agricultural Lands**

Declares that the people of Hawai'i have a substantial interest in the health and sustainability of agriculture as an industry in the state.  
Defines important agricultural lands and protects those lands from use for non-agricultural purposes.  
Identifies a compelling state interest in conserving the state's agricultural land resource base and assuring the long-term availability of agricultural lands for agricultural use.

#### **Act 151, Session Laws of Hawai'i 2019**

Requires development of a strategic action plan to achieve doubling food production goal and equivalent consumption.



### STRATEGIC PLANS

#### **Department of Agriculture Strategic Plan to Double Local Food Production and Increase Food Exports by 2030**

Will outline strategic actions to achieve the state's doubling food production target.

#### **Good Food for All: Advancing Health Equity through Hawai'i's Food System (2018)**

Identifies strategies for improving food security in Hawai'i.

#### **Statewide Agricultural Land Use Baseline (2015)**

Updates a 1980 survey and provides current information and maps on the locations of Hawai'i's farms and ranches. The baseline study is intended to help industry, government and the community in making decisions that affect agriculture land use in the state.

#### **Office of Planning's Increased Food Security and Food Self-Sufficiency Strategy (2012)**

Defines three strategic objectives:

- 1) increase demand for and access to locally grown foods,
- 2) increase production of locally grown foods, and
- 3) provide policy and organizational support to meet food self-sufficiency needs.



### VOLUNTARY INITIATIVES

The Aloha+ Challenge includes an overarching goal to at least double local food production by 2030, with 20–30% of food consumed grown locally. The initiative includes five underlying indicators to support this goal.



# SUSTAINING HAWAI‘I



According to the USDA, **93% of farms in Hawai‘i were family-owned in 2017** (USDA 2017b). Hawai‘i’s agricultural sector is predominantly small, family-owned farms and ranches, with over 60% of all operations making less than \$10,000 in annual sales (USDA 2017b). To meet the State’s target of doubling local food production by 2030, much work will be needed to support these families in scaling up production.

**Agriculture is particularly prominent on Hawai‘i Island, whose farms make up nearly half of all state agricultural sales (USDA 2017a).** Thus, when the COVID-19 global pandemic left agricultural producers hard-hit, the County of Hawai‘i partnered with the Hawai‘i Farm Bureau to create the Big Island Rural Agricultural Industries Distribution and Growing Enterprise Strategies (BRIDGES) Program: a dual-focus program to address the burgeoning food insecurity while supporting the island’s agricultural industry (Truesdale 2021). The program received funding from the County of Hawai‘i, private donors, and federal CARES funding to keep producers on the island growing while securing food for families impacted by the pandemic (Truesdale 2021). To provide more assistance to the community, the State of Hawai‘i temporarily expanded the “DA BUX” (Double Bucks) program—which matches SNAP recipients’ dollars up to \$10 a day when buying local produce—and doubled this match to \$25 a day and included the purchase of local ground beef and eggs (Ulupono Initiative 2020). Although both BRIDGES and the DA BUX expansion ended in December 2020, SB 512 was passed during the 2021 Legislative Session to provide a permanent revision of the DA BUX program which removes the dollar-amount cap and allows for local healthy proteins to be added to the program’s eligibility list (Hawai‘i State Legislature 2021a).<sup>\*</sup> The success and popularity of these programs garnered awareness to ensure equitable food access, as well as highlighted the importance of increasing market demand for local agricultural products in order to achieve the State’s sustainability target to double local food production by 2030.



Photo Left: Tomato farm on Hawai‘i Island. Photo Credit: Hawai‘i Farm Bureau.

Photo Right: Farm-to-Table produce farm in Waimea, Hawai‘i Island.  
Photo Credit: State of Hawai‘i, Hawai‘i Tourism Authority.

<sup>\*</sup>At the date of publication, the bills from the 2021 legislative session referenced herein were passed by the Hawai‘i State Legislature and transmitted to the Governor for consideration.









# GOOD HEALTH AND WELL-BEING

## Sustainable Development Goal 3

Ensure healthy lives and promote well-being for all at all ages

UN targets related to this goal include:

- Reducing the negative impacts of environmental factors on health
- Combating communicable and non-communicable diseases through improved and expanded prevention, and the support of research and development for vaccines and medicines
- Achieving universal healthcare coverage and access to essential healthcare services
- Expanding the availability of mental health resources, substance abuse treatment, and sexual and reproductive healthcare services

## Overview

Hawai'i is often considered one of the healthiest states in the nation, in part due to high public health funding, air quality, and low prevalence of obesity relative to the rest of the United States. In addition, Hawai'i's Prepaid Health Care Act of 1974 increased access to affordable, quality healthcare. Less than 4% of Hawai'i's residents lack health insurance. However, this rate increases for Native Hawaiians to about 15% (Creamer 2019a). Upwards of 25% of non-Hawaiian Pacific Islanders were without health insurance as of 2013 (DOH 2020). A recent federal law was passed through the COVID-19 Economic Relief legislation signed in 2020, which reinstated that citizens of the Marshall Islands, Federated States of Micronesia, and Palau are entitled to federal Medicaid coverage, throughout the U.S., and especially in Hawai'i (Public Law 116-260). This expanded community access to healthcare services during the COVID-19 pandemic, and assisted Hawai'i-based community healthcare providers to deliver additional treatment to these vulnerable communities.

Other health disparities have been documented across socioeconomic groups in Hawai'i. The federal Centers for Disease Control and Prevention found that residents of Hawai'i living in high-income zip codes have average lifespans about 10 years longer than those living in low-income zip codes (DOH 2020).

Widespread health challenges remain, particularly the high rates of diabetes. About half of Hawai'i's residents are at risk of developing diabetes or currently have it (DOH 2020). This is tied in part to the issues described under SDG 2 above: food security is an issue for 58% of Hawai'i residents (Pruitt et al. 2021). Additionally, residents who receive food assistance through Hawai'i's emergency food relief system often receive donated foods that have high levels of fat and sugar and poor nutritional quality, impacting residents who receive food assistance (Creamer 2019a).

Other health challenges include lack of access to mental health services, rising e-cigarette use by youth, public health impacts from climate change (such as heavy rain, flooding, sea level rise, and hurricanes), and poor diet and exercise trends. There is also a dearth of detox facilities to help treat those with drug- and alcohol-related disorders (DOH 2020). Notably, Hawai'i was ranked among the 10 worst states in the United Health Foundation 2018 Report in two categories: excessive drinking and Tdap (Tetanus, Diphtheria, and Pertussis) immunizations (Creamer 2019b).

## Hawai'i's Commitments to Address SDG 3



### EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-20 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Health**

Includes provisions for improving access to physical and mental health treatment, including substance abuse, preventing contamination by pesticides and hazardous substances, and reducing health disparities among disproportionately affected demographics.

**Hawai'i Revised Statutes Chapter 321—Department of Health**

Directs the development of environmental goals and objectives to ensure that air quality, land, coastal waters, inland waters, and groundwater are protected. (§321-1.1: Development of environmental goals and objectives)

Organizes environmental protection programs to improve the coordination of environmental planning and oversight. (§321-1.1: Development of environmental goals and objectives)

Outlines the powers, duties, and functions of the Department of Health relating to preventative medicine (§321-31), dental health needs (§321-62), nutrition training and education (§321-81), children's mental health services (§321-171), substance abuse prevention, rehabilitation, treatment, education, and research (§321-193), and maternal and child health (§321-321), among other areas.



### STRATEGIC PLANS

**State Health Improvement Plan, Healthy Hawai'i 2020: A Community Health Plan (2020)**

Includes goals, strategies, and actions that address health and well-being, disease prevention, healthy lifestyles, healthy environment, and physical and mental healthcare. Identifies community health needs of Hawai'i communities with special attention paid to health disparities and the needs of vulnerable populations.

**Healthy Hawai'i Strategic Plan 2030 (2020)**

Serves as a ten year strategic plan to prevent and reduce the burden of chronic disease in Hawai'i and reinforces the following chronic disease prevention and management strategic plans for the state: Hawai'i Asthma Plan 2030, Hawai'i Cancer Plan 2030, Hawai'i Diabetes Plan 2030, Hawai'i Heart Disease and Stroke Plan 2030, Hawai'i Physical Activity and Nutrition Plan 2030, and the Hawai'i Tobacco Prevention and Control Plan 2030.

**2016-2020 Tobacco Use Prevention and Control in Hawai'i: Five-Year Strategic Plan (2016)**

Identifies the priority populations, people using tobacco at the highest rate in Hawai'i, and measurable objectives to achieve by 2020.

Outlines strategies, recommended community activities and targeted outputs, and key outcome indicators to measure progress towards achieving health equity.

**Hawai'i Coordinated Chronic Disease Framework Plan (2014)**

Identifies an integrated approach and is meant to be used as a guide to enable coordination of multiple programs across common risk factors, interventions, and strategies.

**Hawai'i Physical Activity and Nutrition Plan (2013)**

Identifies priority objectives to integrate physical activity and nutrition into the daily lives of the people of Hawai'i.



### VOLUNTARY INITIATIVES

Partnerships with the State and community-based health care providers have contributed to the delivery of a broad range of services at schools including co-located health centers, skilled nursing, immunization clinics, and screening events to address student health needs. Primary prevention strategies to develop student skills, knowledge, and positive health behaviors are reinforced by the Wellness Guidelines and include nutritious school meal programs, comprehensive health education, and standards-based physical education programs (DOE 2021). Educational attainment has also been shown to improve public health and health equity.



# SUSTAINING HAWAII



**There are 322.6 practicing doctors in Hawai‘i for every 100,000 people** (HRSA 2020). Although Hawai‘i is a top-ranked state in this regard, the fact remains that healthcare providers are distributed unevenly across the state and not everyone can afford healthcare (HRSA 2020, KFF 2019). Increasing physical and financial access to healthcare for all residents will need to be a continued priority to ensure a sustainable Hawai‘i.



**As the island’s only Federally Qualified Health Center, Lāna‘i Community Health Center serves as a cornerstone of continued efforts to provide healthcare services to Lāna‘i’s residents** (HRSA 2021). Lāna‘i Community Health Center’s goal is to provide “culturally sensitive, holistic, patient-centered” care, offering services like language translation, behavioral health, obstetrics, internet access, and assistance in applying for public benefits. As a Federally Qualified Health Center, these services are available for everyone regardless of their ability to pay for medical care. In a place with very limited medical facilities—the island only has one ambulance and four beds in its emergency room at Lāna‘i Community Hospital—and considering that over three-fifths of Lāna‘i Community Health Center’s patients are low-income, having affordable access to primary and specialty health services and assistance in navigating the healthcare system is paramount for community members (Wu 2020, Meyers 2020, Lāna‘i Community Health Center 2020). Lāna‘i Community Health Center further expands its reach to patients through its telehealth program, for which it has been nationally recognized, and providing education to the community on important wellness topics in an approachable, culturally sensitive way (Lāna‘i Community Health Center 2020, HIMSS 2018). During the COVID-19 global pandemic, coordinating and managing patient care became even more imperative to avoid overwhelming Lāna‘i’s medical system. Lāna‘i Community Health Center worked together with the other Lāna‘i medical agencies to provide COVID 19 testing and vaccine distribution, assisted with contact tracing challenges, and provided community education and translated outreach materials to increase vaccine buy-in (Grossman 2021). Lāna‘i Community Health Center was also designated to receive COVID 19 vaccine doses to increase access for underserved populations, and by June 2021, Lāna‘i Community Health Center and other providers were able to provide COVID-19 vaccinations to nearly 70% of the island’s population (KITV 2021, Cerizo 2021, U.S. Census Bureau 2011). Lāna‘i’s vaccine campaign demonstrated the impact of targeted resources delivered through trusted, local organizations, and although health inequalities still persist for Lāna‘i’s residents, Lāna‘i Community Health Center remains committed to bringing care to and advocating for the needs of its patients in order to reduce those disparities.

Photo Left: Volunteers at Lāna‘i community COVID-19 vaccine distribution event.  
Photo Credit: Lāna‘i Community Health Center.

Photo Right: Lāna‘i Community Health Center, Lāna‘i Island.  
Photo Credit: Lāna‘i Community Health Center.









# QUALITY EDUCATION

## Sustainable Development Goal 4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

This UN goal promotes widespread “inclusive and equitable” education and educational opportunities for all ages and involves targets that address:

- Achieving widespread literacy and numeracy
- Ensuring the equal access of all genders, abilities, and racial and ethnic backgrounds to quality pre-primary, primary, secondary, and tertiary education including technical school, vocational training, and university
- Educating all learners with the knowledge and skills necessary to promote sustainable development
- Improving access to quality education by upgrading learning facilities to be inclusive to all, increasing the number of qualified teachers, and expanding the number of scholarships available to developing countries

## Overview

Measures of educational quality and performance from Hawai‘i’s Every Student Succeeds Act (ESSA) report show disparities between racial and socioeconomic subgroups of students, with Native Hawaiian, Pacific Islander, disabled, economically disadvantaged, English learner, homeless, and students in foster care showing lower proficiencies in language arts, mathematics, and science; lower graduation rates; lower college-going rates; and higher chronic absenteeism rates than the average “all students” group or their white counterparts (DOE 2020b). However, National Assessment of Educational Progress (NAEP) scores and other measures of academic success (e.g., the number of Advanced Placement exam takers, percent of 12th graders completing a Career and Technical Education program of study, etc.) have shown improvement in recent years (2016–2019) (DOE 2020a).

To continue improvement, major focuses for this goal are on improving teacher recruitment and retention and increasing revenue sources for secondary education.

The challenge of providing both remote and in-person K-12 instruction when the COVID-19 global pandemic struck Hawai‘i highlighted the increased need for broadband connectivity and digital equity throughout the state.

## Hawai'i's Commitments to Address SDG 4



### EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-21 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Education**

Outlines educational priorities within the state, including accessible educational opportunities.

**The University of Hawai'i Strategic Directions**

Includes targets to:

Increase the educational capital of the state by increasing the participation and completion of students, particularly Native Hawaiians, low-income students and those from underserved regions and populations and preparing them for success in the workforce and their communities.

Increase the percentage of working age adults with two-or four- year degrees to 55% by 2025.

**The University of Hawai'i Executive Policy 4.202: System Sustainability**

Requires the university system to develop goals, metrics, and plans that address a comprehensive sustainability strategy in operations, curriculum, research and scholarship, campus and community engagement, and cultural connections.

**State of Hawai'i Board of Education – K-12 Literacy Policy 102-2**

Defines the literacy standards all students must meet to be deemed literate.

Dictates that schools must provide a "balanced and comprehensive reading and writing program."

Mandates schools have an effective early reading and writing program, and that students identified by the department as not proficient receive necessary assistance and support.

**State of Hawai'i Board of Education- Sustainability Policy 301-9**

Mandates the department to establish regulations and guidelines that include incorporating the importance of sustainability and environmental stewardship at the classroom level.



### STRATEGIC PLANS

**Hawai'i State Literacy Plan: 2020 (2020)**

Developed in partnership with state, university system, and community organizations. Provides comprehensive guidance and best practices for enhancing literacy across the state.

**Hawai'i State Department of Education and Board of Education Strategic Plan: 2017–2020 (2016)**

Outlines specific goals, objectives, and actions to pursue educational goals in the state through 2020, including:

Increase Hawai'i's graduation rate to 90% by 2025, which would make the state's on-time graduation rate one of the highest in the nation.

Ensure 55% of working age adults (25–64 years old) have a two- or four-year college degree by the year 2025. This is supported by the Hawai'i P-20 Partnerships for Education.

**Hawai'i Green Workforce: A Baseline Assessment (2010)**

Provides a framework for assessing green jobs in the private sector.

Defines green jobs as those that engage in at least one of five core green areas: (1) Generate clean, renewable, sustainable energy; (2) Reduce pollution and waste, conserve natural resources, recycle; (3) Energy efficiency; (4) Education, training and support of a green workforce; and (5) Natural, environmentally-friendly production.



### VOLUNTARY INITIATIVES

The Aloha+ Challenge includes multiple education-related goals to be achieved by 2030. These include ensuring access to inclusive, quality education for all people, providing learner-driven educational experiences that ensure all learners acquire the knowledge and skills needed to thrive and build a sustainable future; providing 'āina-based education and stewardship opportunities that foster connection to land, 'ohana, and communities; and creating pathways for local-global servant leadership.

The State of Hawai'i's Department of Labor and Industrial Relations developed the Hawai'i Green Jobs Initiative and accompanying portal, which provides services for job seekers and employers as well as access to green training programs (DLIR 2021).



# SUSTAINING HAWAII



From 2013 to 2017, **48.4%** of Hawai'i-born residents who moved out-of-state did so for job-related reasons (DBEDT 2021a). This phenomenon, known as “brain drain,” is especially prevalent in younger residents, and while the causes of outmigration are varied, evidence suggests that the types and availability of jobs outside of Hawai'i are a prime factor (DBEDT 2021a).

**Ma Ka Hana Ka 'Ike** (in working one learns) is the 'Ōlelo No'eau for the current day educational term describing “experiential learning.” Based in Hāna, Maui, Ma Ka Hana Ka 'Ike is also a nonprofit providing youth vocational training through construction and agriculture apprenticeship programs and a lo'i restoration and ku'i kalo program.

Community needs and the interests of apprentices guide the specific projects within each program. Past undertakings include constructing “age-in-place” modifications to kūpuna homes, restoring once productive agricultural landscapes for community wellbeing and sustenance, and ongoing revitalization of cultural and place-based practices, including 'ōlelo Hawai'i and Hāna regionalisms. Even after the COVID-19 global pandemic shut down in-person training, Ma Ka Hana Ka 'Ike adapted, and apprentices directed their own at-home projects (with virtual support from organization staff) to take ownership of their role in their families' well-being. Furthermore, even though some effects of the pandemic were tempered by Hāna's robust subsistence economy and tight knit culture, unmet needs remained and Ma Ka Hana Ka 'Ike worked with partners to provide for them, including through food distribution and a Certified Nursing Assistant training program. In sum, the organization's focus is on fostering service, connection to community, and self-esteem in apprentices through community capacity-building, while giving them marketable skills and introduction to career pathways for success. In a tourism-heavy economy, this exposure to other job fields and linking such jobs to community needs—empowers apprentices to direct their own futures and that of their home. Many apprentices remain in or return to Hāna after finishing their apprenticeships, with several becoming apprentice trainers themselves and other leaders in the community. Hence, Ma Ka Hana Ka 'Ike demonstrates the success of investing in community to sustain community, and the strength of a community's ties to one another is key to its resiliency.



Photo Left: Ma Ka Hana Ka 'Ike's three core programs include Mālama Hāloa, Mahele Farm, and its foundational Building Program; each aptly equipped to provide vocational training and educational opportunities to Hāna youth. Photo Credit: Ma Ka Hana Ka 'Ike.

Photo Right: Hāna Town and Hāna Bay of the island of Maui.  
Photo Credit: State of Hawai'i, Hawai'i Tourism Authority.







# GENDER EQUALITY

## Sustainable Development Goal 5

Achieve gender equality and empower all women and girls

UN targets to achieve gender equality and empower women include:

- Ending all forms of discrimination and violence against women everywhere in both public and private spheres
- Supporting women's meaningful participation in all levels of decision-making in political, economic, and public life
- Ensuring equal access for women to property ownership, financial services, economic resources, and technological resources to promote empowerment of women
- Certifying universal access to sexual and reproductive healthcare and reproductive rights as agreed to in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for action

## Overview

Gender equality in Hawai'i has advanced in recent years. Hawai'i has the second-highest gender earnings ratio out of all states and ranks eighth in the United States for the number of women elected to office (AAUW 2020). While better than the national average, women in Hawai'i make about 83 cents for every dollar earned by men and about 9% of women in Hawai'i live in poverty (NWLC 2021).

Native Hawaiian women are particularly vulnerable to inequalities. They have the highest rates of infant mortality in Hawai'i, high rates of post-partum depression, high health risks such as obesity and cancer, and lower levels of business ownership compared with other demographics (OHA 2018). Further, pay equity remains an issue: Native Hawaiian women earn 70 cents for every dollar a man makes and 79 cents for every dollar a Native Hawaiian man makes (Commission on the Status of Women 2020).

The Hawai'i State Commission on the Status of Women notes in Hawai'i's first report on sex trafficking survivors that sex trafficking is a problem of significant concern. Survivors of sex trafficking may be disproportionately Native Hawaiian women and girls due to land dispossession, exposure to sexual violence, cultural dislocation, intergenerational trauma, and ongoing inequities (ASU 2019).

Women's wellbeing and livelihoods in Hawai'i were particularly at risk during the COVID-19 global pandemic. Women have been disproportionately impacted during the pandemic as increased demands for caregiving, childcare, and household services have fallen more on the shoulders of women. Recent national statistics report women represented 60% of workers that were laid off due to the pandemic. Women in Hawai'i are at the forefront of impacted industries such as tourism and other service industries, which indicates the national unemployment trends by gender are likely to apply in Hawai'i. The global pandemic has exacerbated these existing stressors on women. Additionally, women have experienced increased incidence of domestic violence, sex trafficking, sexual harassment, coercion by landlords, and interruptions to health services (Commission on the Status of Women 2020).



## Hawai'i's Commitments to Address SDG 5



### EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes Chapter §226-6  
(b) (16): Hawai'i State Planning Act: Objectives and Policies for the Economy—In General**

Sets goal to provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.

**Hawai'i Revised Statutes Chapter §226-24: Hawai'i State Planning Act: Objectives and Policies for Socio-cultural Advancement—Individual Rights and Personal Well-Being**

Sets objective to uphold and protect the national and state constitutional rights of every individual and assure access to legal assistance, consumer protection, and other public services, while ensuring equal opportunities for individual participation in society.

**Hawai'i Revised Statutes Chapter 368: Civil Rights Commission**

Prevents discrimination on the basis of race, color, religion, age, sex, including gender identity or expression, sexual orientation, marital status, national origin, ancestry, or disability in employment, housing, public accommodations, or access to services receiving state financial assistance.

**Hawai'i Revised Statutes Chapter 378: Employment Practices**

Prevents discriminatory practices, including on the basis of sex.

**Hawai'i Revised Statutes Chapter 489: Discrimination in Public Accommodations**

Outlaws discriminatory actions that deny, or attempt to deny, a person full and equal enjoyment of publicly available goods, resources, and accommodations.

**Hawai'i Revised Statutes Chapter 515: Discrimination in Real Property Transactions**

Identifies and outlaws discriminatory practices related to real estate transactions.



### STRATEGIC PLANS

**A Feminist Economic Recovery Plan for COVID-19 (2020)**

Lays out a framework to re-examine the status quo to value unpaid work and address other key issues for gender equality in Hawai'i.

**Hawai'i Civil Rights Commission Annual Reports (2020)**

Annual report on Hawai'i's commitment to strong state civil rights laws by rebuilding capacity, maintaining, and restoring resources for state civil rights law enforcement.

**Haumea: Transforming the Health of Native Hawaiian Women and Empowering Wāhine Well-Being (2019)**

Examines history and strategies for progress for Native Hawaiian women on the basis of mental and emotional wellness, physical health, motherhood, partner violence and incarceration, economic well-being, and leadership and civic engagement.

# SUSTAINING HAWAII



A March 2021 University of Hawai'i study found that during the COVID-19 global pandemic, 58% of Hawai'i families with children were food insecure, with 15% reporting that they did not have enough food in the past week. This study also identified that food insecurity impacts were more significant for low-income families, and households in rural areas. The study further found that 76% of families who identified as food insecure lost employment due to the COVID-19 global pandemic.

**Wai'anae Coast Comprehensive Health Center is one of several organizations tackling food insecurity in O'ahu.** With their "food is medicine" philosophy, Wai'anae Coast Comprehensive Health Center sought to increase Wai'anae Coast communities' access to nutritious foods for all budgets through initiatives such as the "Double Bucks" Mākeke Farmers Market program for EBT/SNAP recipients, local produce prescriptions for patients with nutrition-related chronic diseases, and Keiki Food Pantries. Their work fills a critical need: even prior to the COVID-19 global pandemic, food insecurity was a significant concern for the Wai'anae Coast, and the health center distributed 250,000 pounds of food in 2019. However, due to impacts from the COVID-19 global pandemic, 2,400,000 pounds of food were distributed in March-December 2020 alone—nearly a tenfold increase. This increased community need caused the Wai'anae Coast Comprehensive Health Center to include a larger warehouse facility to provide additional community assistance and provide food preservation and storage capabilities. This increased capacity was made possible due to support from private donors such as Honu'apo and No Kid Hungry, federal CARES funding, and long-standing partnerships with local farmers, the Hawai'i Foodbank, and the Hawai'i Food Service Alliance. To further address community food insecurity and resiliency challenges, Wai'anae Coast Comprehensive Health Center plans to establish an emergency food storage facility on the Wai'anae Coast, although these plans were paused to focus on the demands brought on by the COVID-19 global pandemic.



Photo Left: Community food distribution to families in need of food assistance during the COVID-19 global pandemic. Photo Credit: Wai'anae Coast Comprehensive Health Center.

Photo Right: Wai'anae Coast Comprehensive Health Center.  
Photo Credit: Wai'anae Coast Comprehensive Health Center.









# CLEAN WATER AND SANITATION

## Sustainable Development Goal 6

Ensure availability and sustainable management of water and sanitation for all

This UN goal is to ensure the availability and sustainable management of water and sanitation for all and includes targets that address the following:

- Achieving universal continuous access to safe drinking water and sanitation by promoting water-use efficiency and sustainable water withdrawals
- Integrating smart water resource management at all levels
- Increasing water use efficiency across sectors

## Overview

The State of Hawai'i's Commission on Water Resources Management and the Department of Health's Clean Water Branch, Safe Drinking Water Branch, and Wastewater Branch work to protect surface and ground water quality in Hawai'i. Ground water is the primary source of Hawai'i residents' drinking water. The quality of surface water protects and maintains natural ecosystems for shellfish, fish, and other wildlife, and allows for recreational activities near water sources, particularly important for the tourism industry in Hawai'i. Surface water also provides about 5% of Hawai'i's drinking water supply. In 2018, 100% of Hawai'i's residents and visitors were served drinking water that fell below all maximum contaminant levels, and the compliance rates consistently exceed 95% (DOH 2019b).

The Wastewater Branch is working toward the upgrade and elimination of cesspools. Cesspools release untreated domestic wastewater, nitrogen, and phosphorus, which can cause health issues, negative impacts to water quality, and harm to aquatic ecosystems such as coral reefs. As of 2019, there were approximately over 88,000 cesspools that pose a risk to Hawai'i's water resources (DOH 2019b).

In Hawai'i, clean water concerns also relate to the exercise of traditional and customary Native Hawaiian practices. Traditional and customary practices that depend on adequate flow (of both surface and ground waters) range from drinking water from natural sources, the gathering of stream species (like 'o'opu, 'ōpae, and hīhīwai), practicing aquaculture in natural and modified pools and fishponds (loko i'a), irrigation of taro (kalo) in flooded fields and other crops, and the use of water in ceremonial practices. These depend on healthy water (e.g., sufficient volume, free from contaminants, and suitable temperature).

## Hawai'i's Commitments to Address SDG 6



### EXISTING STATE LAWS & POLICIES

Hawai'i Revised Statutes §226-15: Objectives and Policies for Facility Systems—Solid and Liquid Wastes	Describes wastewater treatment requirements for the state.
Hawai'i Revised Statutes §226-16 of the Hawai'i State Planning Act: Objectives and Policies for Facility Systems—Water	Covers sustainable water management, including wastewater/runoff reuse, water for agricultural use, and water conservation.
Hawai'i Revised Statutes §174C-31(g)(6): Hawai'i Water Plan Objectives	Requires that 100% of State and County facilities recycle water by 2045, with the exception of potable and drinking water.
Hawai'i Revised Statutes §342D-72: Cesspools; Mandatory Upgrade, Conversion, or Connection	Requires the conversion of all cesspools by 2050.
Act 169, Session Laws of Hawai'i 2016: Relating to Water Audits	Requires standardized annual water audits of public water systems, and the Commission of Water Resource Management shall provide technical assistance.
Hawai'i Revised Statutes Chapter 174: State Water Code	<p>Outlines a program of comprehensive water resources planning to address the problems of supply and conservation of water for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses, with adequate provisions for the protection of traditional and customary Hawaiian rights, and the protection of fish and wildlife, ecological balance, and scenic beauty.</p> <p>Protects reservations of water for current and foreseeable development and use of water by DHHL, consistent with Section 221 of the Hawaiian Homes Commission Act. Current and foreseeable uses are part of the reservation and are required to have the full protections of being a Public Trust use of water. (HRS §174C-101(a)).</p> <p>All Water Use Permits issued in Water Management Areas are subject to the rights of the Department of Hawaiian Home Lands (DHHL) as provided in section 221 of the Hawaiian Homes Commission Act (§174C-49(a)(7)).</p>



### STRATEGIC PLANS

State of Hawai'i Commission on Water Resource Management (CWRM) Hawai'i Water Plan (2021)	Consists of five discrete plans that each serve as guidance for the commission.
Department of Health (DOH) State Health Improvement Plan, Healthy Hawai'i 2020: A Community Health Plan. Environmental Health (2020)	<p>Includes a goal to increase the percent of community water systems that provide drinking water that meets all applicable health-based drinking water standards to 99%.</p> <p>Includes goals to increase the percentage of wastewater treatment plants in full compliance to 95% and increase the percentage of water reuse to 20%.</p>
State Water Projects Plan (2020)	Provides a framework for planning and implementation of water development programs to meet projected demands for State projects over a 20-year planning horizon.
CWRM Water Resource Protection Plan Update (2019)	The objective of this plan is to protect and sustain ground and surface water resources, watersheds, and natural stream environments statewide. Such protection requires a comprehensive study of occurrence, sustainability, conservation, augmentation, and other resource management measures.
DOH Water Quality Plan (2019)	Outlines the regulations, standards, and resource management policies that define the quality to be maintained in ground- and surface-water resources.
DOH Water Reuse Task Force Report (2019)	Identifies barriers and solutions to expanding water reuse in the state of Hawai'i.
HDOA Agricultural Water Use and Development Plan (2019)	Provides a long-range management plan that assesses state and private agricultural water use, supply and irrigation water systems. The plan is intended to be a master irrigation inventory plan which identifies system rehabilitation needs and prioritizes system repair.
Hawai'i Water Conservation Plan (2013)	Identifies and implements water use and delivery efficiency measures to conserve the fresh water resources of the state.
The Rain Follows the Forest (2011)	Identifies priority watersheds and outlines on-the-ground actions and projects required to protect and sustain Hawai'i's critical water sources.
County Water Use and Development Plans	These plans are prepared by each county to inventory all projected water demands within the county and ensure that the future water needs of the county are met. These county plans should set forth the allocation of water to land use in that county and maintain consistency with county zoning and land use policies. The plans serve to inform future land use planning and provide guidance to the Commission for decision-making on water allocations and water reservation requests.

# SUSTAINING HAWAII



It's estimated Hawai'i will need **529 million gallons** of fresh water a day from its aquifers in 2030 (Hawai'i Community Foundation 2015). Fresh water is a critical resource on an island, something Kānaka Maoli have long known and respected in their traditional laws, community organization, and religious beliefs. To ensure the sustainability of our island communities, similar care must be taken to protect freshwater sources, particularly as water security is being challenged by a growing population, aging water infrastructure, pollution, invasive species, and climate change.

**As the largest groundwater user on O'ahu, the Honolulu Board of Water Supply is aware of this kuleana to conserve water supplies (Board of Water Supply 2016).** Their 2016 Water Master Plan is one of several BWS initiatives to ensure they can provide water sustainably. They are also part of the Hawai'i Fresh Water Initiative, a collaboration of government, academic, nonprofit, and private sector organizations to address water security. Based on the Hawai'i Fresh Water Initiative's findings in their 2016 Blueprint for Action, the Honolulu Board of Water Supply aligned their Water Master Plan priorities with the Hawai'i Fresh Water Initiative's recommended focus areas: water conservation, aquifer recharge, and wastewater reuse. Examples of this in the Water Master Plan include a proactive leak detection team to reduce water loss, continued commitment to eight watershed partnerships (to protect water from mauka to makai), and plans to expand the capacity of the Honouliuli Wastewater Recycling Facility to at least **16 million gallons** a day. The Honolulu Board of Water Supply also utilizes a stakeholder advisory group for community feedback and representation. This group's input was responsible for the inclusion of a dedicated water supply sustainability section in the plan. Together, this comprehensive planning and community involvement furthers to provide safe water for O'ahu's residents.



Photo Left: Recycled water is delivered to users through a system of pipes separate from the drinking water distribution system. It is safe for human contact, but it is not intended for drinking. All pipes and fixtures using recycled water are easily identifiable by their distinctive purple color. Photo Credit: City and County of Honolulu Board of Water Supply.

Photo Right: A watershed is a diverse and highly organized ecosystem which specializes in the capturing of rain and atmospheric moisture from the air and sky. They are usually located in high mountains or valleys, which then divert the water into rivers and streams. Watersheds are composed of several layers of dense vegetation. O'ahu's watershed can also be described as a Hawaiian rain forest, which captures and saves large amounts of water.

Photo Credit: City and County of Honolulu Board of Water Supply.







# AFFORDABLE AND CLEAN ENERGY

## Sustainable Development Goal 7

Ensure access to affordable, reliable, sustainable, and modern energy for all

The objective of this UN goal is to ensure universal access to “reliable, sustainable and modern energy services.” Targets to achieve this goal include:

- Promoting investment in energy infrastructure and clean energy technology, with particular emphasis on least developed countries
- Improving global energy efficiency
- Increasing the share of renewable energy in the global energy mix

## Overview

Ensuring affordable, reliable, clean, renewable, and sustainable energy is critical, due to Hawai‘i’s isolated location and vulnerability to fluctuating energy prices and supply disruptions. Hawai‘i depends more on imported petroleum for its energy needs than any other state and has the highest average retail price of electricity in the nation given the state’s lack of domestic oil, natural gas, or coal resources. In 2018, petroleum accounted for roughly 84% of Hawai‘i’s energy consumption (see Figure 1), compared to about 1% for the United States as a whole. In Hawai‘i, the air transportation sector accounts for the highest percentage of petroleum use, largely due to the tourism industry and the military, followed by ground transportation. In 2021, HB 683\* passed the Hawai‘i State Legislature to create a sustainable aviation fuel program within the Hawai‘i Technology Development Corporation to provide matching grants to Hawai‘i small business developing products related to sustainable aviation fuel or greenhouse gas reduction from commercial aviation operations.

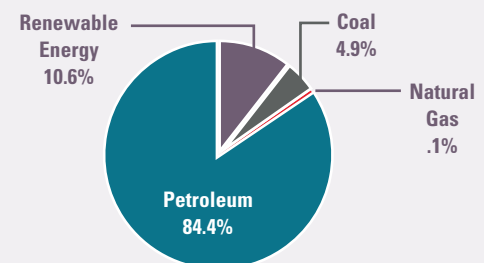
The energy sector is the largest source of emissions in Hawai‘i, accounting for 87% of total emissions. Emissions from transportation accounted for the largest share of energy sector emissions in 2016. Emissions from stationary energy combustion are the second largest source of energy sector emissions, driven largely by emissions from electric power plants, petroleum refineries, and industry.

While decarbonizing the electricity sector will greatly reduce Hawai‘i’s dependence on imported oil, electrification of the transportation sector and investments in alternative vehicle fuels are required for a complete shift away from fossil fuels for energy and transportation. Ensuring local, renewable sources of energy will not only lower energy costs for end-users in all sectors of the economy, but also increase Hawai‘i’s long-term energy security.

In regard to energy efficiency in buildings, Hawai‘i scored 16th in state efficiency and 7th in net incremental electricity savings nationwide on the 2019 State Energy Efficiency Scorecard published by the American Council for an Energy-Efficient Economy. The State passed minimum efficiency standards that help residents in Hawai‘i save money on utility bills. However, there is still room to improve in developing policies for state government initiatives, transportation, low-income programs, energy efficiency program funding and spending, and codes and standards.

\*At the date of publication, the bills from the 2021 legislative session referenced herein were passed by the Hawai‘i State Legislature and transmitted to the Governor for consideration.

Figure 1: Hawai‘i Energy Consumption by Source in 2018



Source: HSEO (2020) Notes: Renewables include biomass, hydroelectric power, and other renewable sources such as solar and wind. Petroleum includes jet fuel, residual fuel, distillate fuel oil, HGL, and other petroleum sources.



## Hawai'i's Commitments to Address SDG 7



### EXISTING STATE LAWS & POLICIES

Hawai'i Revised Statutes §226-10 of the Hawai'i State Planning Act: Objectives and Policies for the Economy—Potential Growth and Innovative Activities	Details objectives related to potential growth of the economy including diversification, innovation, and job growth. Policies to achieve these objectives include promoting renewable energy development and accelerating the development of new energy-related industries based on wind, solar, ocean and underground resources.
Hawai'i Revised Statutes §226-18 of the Hawai'i State Planning Act: Objectives and Policies for Facility Systems—Energy	Ensures the short- and long-term provision of adequate, reasonably priced, dependable energy services to accommodate demand. Includes policies to achieve the objectives of an energy system that is secure, dependable, affordable, and contributes to the reduction of GHG emissions from energy supply. Policies include supporting the development of renewable energy sources, adopting energy-efficient practices, and promoting alternative fuels.
Hawai'i Revised Statutes §196-9: Energy Efficiency and Environmental Standards for State Facilities, Motor Vehicles, and Transportation Fuel	Requires state agencies incorporate and implement energy-efficiency measures, and energy efficient equipment in state facilities.
Hawai'i Revised Statutes §196-10: Hawai'i Renewable Hydrogen Program	Details the program to manage the state's transition to a renewable hydrogen economy, including implementation plans.
Hawai'i Revised Statutes §225P-5: Zero Emissions Clean Economy	Sets a statewide target to sequester more atmospheric carbon and GHGs than emitted within the state as quickly as practicable, but no later than 2045.
Hawai'i Revised Statutes §269-92: Renewable Portfolio Standards	Achieve a 100% renewable portfolio standard (RPS) by 2045 and a 40% RPS by 2030.
Hawai'i Revised Statutes §269-96: Energy Efficiency Portfolio Standards	Requires the Public Utilities Commission to establish energy-efficient portfolio standards, including a 30% reduction in energy use by 2030 through energy efficiency.
Hawai'i Revised Statutes §302A-1510(a): Sustainable Schools Initiative	Achieve net-zero energy use in all public school facilities by 2035.
Hawai'i Revised Statutes §304A-119: UH Net-Zero Energy	Achieve net-zero energy use at all University of Hawai'i campuses by 2035. Ensure the short-and-long-term provision of adequate, reasonably priced, dependable energy services to accommodate demand.
Hawai'i Revised Statutes §342B-71: Greenhouse Gas Emissions Limits	Limited statewide GHG emissions to be equal to or below 1990 levels by 2020, excluding emissions from airplanes.



### STRATEGIC PLANS

Hawai'i State Energy Office's Annual Report (2020)	Identifies priority objectives and policies relating to clean energy, energy resilience, renewable energy deployment, energy efficiency, clean transportation, stakeholder and community education, outreach, and engagement, and data analytics.
Hawai'i Water Energy Nexus Report (2017)	Describes the relationship between water and energy use in Hawai'i, and encourages the development and implementation of water conservation programs protecting Hawai'i's fresh water resources, while considering the implications of energy uses in the water and wastewater industries.
Hawai'i Statewide Comprehensive Economic Development Plan (2016)	Provides a blueprint for future economic development across the state and all economic sectors, including energy. Sets a goal that Hawai'i is less dependent on imported carbon-based energy with shared access to renewable energy benefits and is on track to meet the state's goal of 100% clean energy by 2045. Objectives include updating the electrical grid infrastructure, improving awareness and understanding of energy resources, and expanding energy efficiency and sustainability practices.
The Department of Hawaiian Home Land's Ho'omalua Energy Policy (2011)	Supports Native Hawaiians and the broader community in working together to lead Hawai'i's effort to achieve energy self-sufficiency and sustainability.



### VOLUNTARY INITIATIVES

The Aloha+ Challenge includes a goal to achieve 70% clean energy, with 40% from renewable sources and 30% from efficiency, with a view towards 100% renewable energy by 2045.

The Sustainable Hawai'i Initiative includes a commitment to achieve 100% renewable electricity by 2045.



# SUSTAINING HAWAII



**In 2015, Hawai'i became the first state in the country to make the commitment to achieve a 100% electricity renewable portfolio standard by 2045.**

Concurrently, the State of Hawai'i established a similar energy goal for the University of Hawai'i System to achieve net-zero energy use by 2035, meaning the university system would produce as much renewable energy as it consumes across its 10 campuses (Hawai'i Revised Statutes §304A-119).

**Hawai'i's own Leeward Community College became one of the first net zero campuses in the United States.** In July 2020, the campus generated 97% of energy through on-site photovoltaic systems, including solar shade canopies, rooftop arrays, and distributed energy storage (UH News 2020a). By January 2021, the University of Hawai'i Maui College also became **one of the first campuses in the nation** to generate 100% of its energy from on-site solar photovoltaic systems coupled with battery storage (UH News 2021).



The State of Hawai'i is committed to lead and transform Hawai'i's energy use. In addition to these energy commitments, the State also enacted energy efficiency portfolio standards, which require that 4,300 gigawatt hours (GWh) of electricity use be reduced statewide by 2030 (Hawai'i Revised Statutes §269-96).

The Hawai'i State Energy Office tracks and reports on electricity purchased by state agencies as part of the "Lead By Example" initiative. Between 2005 and 2019, Hawai'i State agencies **reduced their electricity use by 17.5%**. This was made possible in part through the government's performance contracting program. Since the performance contracting program was introduced in 1996, State and County government agencies **saved an estimated \$1.1 billion in energy costs** over the life of the contracts. The State of Hawai'i's success garnered national recognition by achieving the Race to the Top Award for 8 consecutive years between 2012 and 2019. This national accolade recognizes the state with the highest per capita investment in performance contracting projects, awarded by the Energy Services Coalition.

As of June 2020, all of Hawai'i's counties have successfully adopted the 2015 International Energy Conservation Code (IECC) with Hawai'i amendments (as amended) (HSEO 2020). The estimated net energy savings from this statewide adoption is 1,083,590 MWh in 2029 (year 10); 1,991,059 MWh in 2032; and 4,702,738 MWh in 2038 (year 20). These estimated energy savings are greater for commercial buildings, which are expected to save about 33%. The energy savings estimates will also rise as a result of additional amendments adopted by the counties (DBEDT 2016).

The Intergovernmental Panel on Climate Change (IPCC) underscores that a "rapid and far-reaching" sustainable transition in land, energy, buildings, transport, and cities is needed to meet global carbon reduction goals to limit global warming to 1.5°C. Buildings account for almost 40% of global energy-related CO<sub>2</sub> and will play a major role in a sustainable transformation (IPCC 2018). To meet global decarbonization goals within the buildings sector, the International Energy Agency recommends that almost all existing buildings undergo a single in-depth retrofit by 2050 and new construction meet stringent efficiency standards. Building energy codes covering new and existing buildings are the fundamental tool to drive this change (IEA 2021).

It is important to recognize the role of the built environment, especially since buildings are a key component in the fabric of cities and the building and construction sector provides opportunities to contribute to achieving the UN SDGs. Green buildings play an important role in the sustainable development of cities, communities, and neighborhoods by reducing energy and waste consumption; conserving water; prioritizing the use of safer materials; and lowering the exposure to toxins. Applying these sustainable development principles locally in the design, construction, retrofitting, and operation in Hawai'i's buildings will help transform local energy use, reduce GHG emissions, adapt to climate change, and create sustainable and thriving communities.

Photo Left: Leeward Community College Net Zero Energy Campus on the island of O'ahu.  
Photo Credit: University of Hawai'i.

Photo Right: University of Hawai'i-Maui College Net Zero Energy Campus on the island of Maui.  
Photo Credit: University of Hawai'i.





# DECENT WORK AND ECONOMIC GROWTH

## Sustainable Development Goal 8

Promote sustained, inclusive, and sustainable economic growth,  
Full and productive employment, Decent work for all

Targets related to the UN Decent Work and Economic Growth goal include:

- Sustaining economic growth and economic productivity through innovation, diversification, and increased access to financial institutions, particularly in developing countries
- Achieving “full and productive” employment in safe and secure working environments across all genders, abilities, and ages
- Eradicating forced labor in all forms, including human trafficking and child labor

## Overview

Key economic sectors for Hawai‘i include tourism, defense, creative economy, and agriculture. Based on gross domestic product (GDP), the top five industries in Hawai‘i (as of 2019) were real estate, rental, and leasing; government; accommodation and food services; health care and social assistance; and retail trade (DBEDT 2020c).

Prior to the COVID-19 global pandemic, Hawai‘i had the lowest unemployment rate in the nation (BLS 2018). The pandemic has exacerbated existing economic stressors, causing a dramatic reduction in tourism and prompting unprecedented business closures and increased unemployment. Unemployment in the state peaked in April 2020 at nearly 24%, largely due to stress in the hospitality and food/service industries (Associated Press 2020). The state’s labor underutilization rate—which includes the unemployed, involuntary part-time workers (i.e., workers employed part-time for economic reasons), and those marginally attached to the labor force—was 19.4% in 2020 (BLS 2021). This was dramatically higher than the state’s previous unemployment rates: from 1990 to 2018, unemployment was highest in 2011 at 7.0% and lowest in 2017 at 2.4% (DBEDT 2020a).

Some populations face unique challenges. For example, older workers and people with health issues or disabilities may have difficulties finding a job or teleworking, and because these groups are more vulnerable to COVID-19 they may have to weigh protecting their health or preserving their job. Many women have also had to take on additional unpaid labor, such as childcare.

A sustainable Hawai‘i cannot occur without a sustainable economy. There is a unique opportunity to plan for and design a post-COVID sustainable economic recovery, by diversifying and strengthening Hawai‘i’s economic clusters and encouraging a regenerative, and environmentally and culturally sustainable tourism industry. The tourism industry has tremendous potential to make progress by reducing its consumption of land, water, energy, and other natural resources, as well as taking a leadership role in protecting our natural areas.



## Hawai'i's Commitments to Address SDG 8



### EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-6 of the Hawai'i State Planning Act: Objectives and Policies for the Economy**

Details provisions for achieving full employment and economic growth including promoting Hawai'i as an attractive market for investment, penetrating new markets for Hawai'i's products and services, foster cooperation between government and private sectors in developing employment and economic growth, and increasing communication with the educational community to ensure a curriculum that is relevant to Hawai'i's job market.

**Hawai'i Revised Statutes §226-7 of the Hawai'i State Planning Act: Objectives and Policies for the Economy —Agriculture**

Details economic objectives relating to the agriculture section including diversifying agriculture and managing natural resources.

**Hawai'i Revised Statutes §226-8 of the Hawai'i State Planning Act: Objectives and Policies for the Economy —Visitor Industry**

Directs economic planning toward the achievement of a visitor industry that supports steady growth for the state.

**Hawai'i Revised Statutes §226-9 of the Hawai'i State Planning Act: Objectives and Policies for the Economy —Federal Expenditures**

Promotes the development of federally supported activities in Hawai'i.  
Encourages federal expenditures in Hawai'i that generate long term employment.

**Hawai'i Revised Statutes §226-10 of the Hawai'i State Planning Act: Objectives and Policies for the Economy —Potential Growth and Innovative Activities**

Details objectives related to potential growth of the economy including diversification, innovation, and job growth.

**Hawai'i Revised Statutes §226-103 of the Hawai'i State Planning Act: Economic Priority Guidelines**

Establishes priority guidelines for economic growth, business expansion, and economic diversification.

**Hawai'i Revised Statutes §226-108 of Hawai'i State Planning Act: Sustainability Priority Guidelines**

Promotes a diversified and dynamic economy.  
Encourages balancing economic, social, community, and environmental priorities.



### STRATEGIC PLANS

**Hawai'i Defense Economy Action Plan (2021)**

Recognizes the role of Hawai'i's unique relationship with the military and the role this partnership can play in economic development.

**Hawai'i Tourism Authority Strategic Plan: 2020-2025 (2020)**

Identifies strategies for expanding and diversifying the tourism market.  
Establishes goals for each of the four pillars covered in the plan: natural resources, Hawaiian culture, community, and brand marketing.  
Establishes objectives, milestones, and measures to track the achievement of these goals.

**University of Hawai'i Strategic Directions (2018)**

Identifies opportunities to align education with job creation and economic diversification by leading the development of a \$1 billion innovation, research, education and training enterprise that addresses the challenges and opportunities faced by Hawai'i and the world.

**Hawai'i Statewide Comprehensive Economic Development Strategy (2016)**

Provides a blueprint for future economic development across the state and all economic sectors including diversification of the tourism industry.  
The National Security and Hospitality and Tourism cluster includes redefining Hawai'i as a destination of choice, identifying new tourism markets, supporting training programs for local residents to expand the workforce pipeline.



### VOLUNTARY INITIATIVES

The Aloha+ Challenge includes targets for sustainable tourism (continue to develop policies and initiatives to promote sustainable business practices that invest in Hawai'i's natural and cultural resources and support local job creation and thriving communities) and innovation and entrepreneurship (foster an ecosystem of innovation, research, education, and entrepreneurship that creates living-wage jobs and a diversified economy).

# SUSTAINING HAWAII



**10,424,995** tourists visited Hawai‘i in 2019 (HTA 2020b). Tourism is a major contributing sector of Hawai‘i’s economy, but there is no doubt that increased visitor numbers can also intensify strain on local communities and ecosystems. Sustainable tourism is often seen as a solution to address these effects.

**Hā‘ena State Park on Kaua‘i turned to its community in a collaborative process to lessen the impacts of tourism and reform the park’s management plan.** While the park is a wahi pana, wahi kapu, and an area of ecological significance, it also struggled with overcrowding and vehicle congestion as one of Hawai‘i’s busiest state parks (DLNR 2018). This crowding effectively pushed local residents out of a storied place in their own community. In response, the Hā‘ena State Park Master Plan engagement coordinated with the community and developed a plan to balance recreational use with natural and cultural resource protection and restoration. Community stakeholders and cultural practitioners continue to have an important role in plan implementation and park management, including through a community advisory committee and a future cultural advisory group. Other outcomes included a daily visitor limit of 900 (not counting cultural practitioners or special user groups), a parking reservation system for out-of-state visitors, a new boardwalk through the park’s lo‘i, a permeable parking lot with integrated shuttle stop, and interpretive signage and staffing. While it took an unprecedented flood in 2018 and subsequent State emergency funding to fast-track these actions, a plan that normally would have taken years to implement was instead largely implemented within 12 months, and the Hā‘ena State Park Master Plan became an example to mitigate tourism impacts on local communities and provide a higher quality experience with the natural environment.



Photo Left: Ke‘e Beach in Hā‘ena State Park on Kaua‘i Island.

Photo Credit: State of Hawai‘i Department of Land and Natural Resources, Division of State Parks.

Photo Right: Lo‘i Kalo in Hā‘ena State Park on Kaua‘i Island.

Photo Credit: State of Hawai‘i Department of Land and Natural Resources, Division of State Parks.









# INDUSTRY, INNOVATION, AND INFRASTRUCTURE

## Sustainable Development Goal 9

Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

This SDG's targets include:

- Improving the sustainability and equity of all existing and future infrastructure
- Promoting sustainable industrialization that encourages innovation
- Increasing access to technology and supporting technology development

## Overview

Hawai'i's infrastructure (including airports, bridges, coastal areas, dams, energy systems, ports, roads, schools, solid waste, stormwater, wastewater, and drinking water) is aging. A lack of sufficient funding for infrastructure, along with population, economic, and development growth, has made it challenging to effectively maintain and improve infrastructure (ASCE, 2019). Water main breaks, flood water damage, degradation of coastal highways, loss of property from coastal erosion, and beach and park closures from brown water advisories can all occur or happen more frequently due to deteriorating infrastructure (ASCE, 2019). Climate-influenced changes (e.g., sea level rise and increased coastal erosion, more frequent and intense hurricanes, higher king tides, and extreme weather events causing heavy rainfall, storm surge, and/or wind) are further stressing these assets (ASCE, 2019).

Hawai'i has an opportunity to incorporate green infrastructure as an adaptation strategy. This includes design concepts such as installation of more vegetation and permeable surfaces, which can decrease urban temperatures, reduce carbon emissions, improve air quality, increase urban tree canopy, and capture water to replenish the water table.

Residents who live near green infrastructure also experience positive health impacts, such as a lower likelihood of heart and respiratory issues, improvements to mental health, and better overall quality of life.

## Hawai'i's Commitments to Address SDG 9



### EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-10 of the Hawai'i State Planning Act: Objectives and Policies for the Economy—Potential Growth and Innovative Activities**

Details objectives related to potential growth of the economy including diversification, innovation, and job growth.

**Hawai'i Revised Statutes §226-10.5 of the Hawai'i State Planning Act: Objectives and Policies for the Economy—Information Industry**

Includes provisions to attain high-speed wireless communication, facilitate innovative businesses, encourage job creation located in Hawai'i, ensure that new economic growth meets the needs of Hawai'i's people, and provide opportunities for Hawai'i residents to be upwardly mobile in the information industry.

**Hawai'i Revised Statutes §226-17 of the Hawai'i State Planning Act: Objectives and Policies for Facility Systems—Transportation**

Includes provisions on multimodal and mass transportation systems, including planning transportation systems to promote the use of alternative fuels.



### STRATEGIC PLANS

**Hawai'i Highways Climate Adaptation Action Plan (2021)**

Summarizes research on how climate change will impact Hawai'i roadways. Outlines strategies to achieve greater network resilience in the face of long-term environmental risks.

**Hawai'i Broadband Strategic Plan (2020)**

Provides information and a framework for the creation of policies and programs to address the challenges faced in meeting the State's broadband goals.

**Statewide Coastal Highway Program Report (2019)**

Provides a scientifically rigorous methodology to assess and rank the susceptibility of the State of Hawai'i's coastal roads to erosion and structural degradation due to ocean hazards such as waves, currents, tides, and sea level rise.

**State of Hawai'i 2018 Hazard Mitigation Plan (2018)**

Identifies action plans to achieve the six broad hazard mitigation goals. The first goal in the hazard mitigation plan includes "reduc[ing] the long-term vulnerability of Hawai'i's people... including State-owned or operated buildings, infrastructure and critical facilities."

**Hawai'i Statewide Comprehensive Economic Development Plan (2016)**

Provides a blueprint for future economic development across the state and all economic sectors. Emphasizes the importance of continued innovation and infrastructure improvement across the economy, including providing technological innovation and entrepreneurship in healthcare, and improving the infrastructure of the tourism sector to balance the needs of visitors and residents.

**SustainableHNL Sustainable Management Plan (2016)**

Provides the framework for a management plan rooted in the best practices of sustainability that can serve as a model in design and process for State-run airports. Conducts a comprehensive analysis of how and where sustainability management is implemented into long-term planning at HNL.



### VOLUNTARY INITIATIVES

The University of Hawai'i, in partnership with the private sector and state government, launched Hawai'i's Innovation Initiative to build a thriving innovation, research, education and training enterprise in Hawai'i.

# SUSTAINING HAWAII



Over \$4.4 billion worth of imports passed through Hawai'i customs in 2019 (DBEDT 2020b). Hawai'i depends largely on goods shipped in from out-of-state: for example, **85-90% of our food supply is sourced from outside of Hawai'i** (Office of Planning 2012). **However, this reliance leaves Hawai'i vulnerable as disasters and emergencies can disrupt supply chains.**

The COVID-19 global pandemic rapidly highlighted Hawai'i's vulnerability. In March 2020, the onset of intense demand for hand sanitizer created an enormous gap between the supply and demand of sanitizer. In response, Kō Hana Distillers, an O'ahu distillery better known for its premium rum, with the assistance of the state of Hawai'i, approached the federal Food and Drug Administration (FDA) to for approval to produce high-proof alcohol as a base for sanitizer from distilling Hawai'i-grown sugarcane. Other local businesses throughout Hawai'i joined Kō Hana by supplying bottles, labels, boxes, ingredients, oversight, and labor—completing the manufacturing process and, together, creating the first locally made FDA-registered hand sanitizer in Hawai'i. Within a few weeks, the sanitizer was ready for distribution and the State of Hawai'i, along with several nonprofits, helped coordinate the logistics to disperse bottles of sanitizer into the community as quickly as practical. First responders, hospitals, schools, kūpuna, correctional facilities, and homeless all received donations. By December 2020, Kō Hana had locally produced over 50,000 gallons of hand sanitizer for the people of Hawai'i. The distillery also planted nearly 300 new acres of sugarcane, ensuring sanitizer remains a permanent addition to Hawai'i's locally manufactured products.



Photo Left: Volunteers deliver FDA-approved hand sanitizer that was locally produced and manufactured by Kō Hana Hawaiian Agricolt Rum Distillery to fill the supply gap and provide sanitizer to Hawai'i hospitals, first responders, correctional facilities during the COVID-19 pandemic. Photo Credit: State of Hawai'i.

Photo Right: Kō Hana sugar cane field in Kunia on the island of O'ahu. Photo Credit: Kō Hana Distillers.







# REDUCE INEQUALITIES

## Sustainable Development Goal 10

Reduce inequality within and among countries

This UN goal seeks to reduce intercountry and intracountry inequalities and includes targets that address:

- Promoting appropriate legislation and policies to achieve greater equality
- Supporting the political, social, and economic inclusion of all peoples regardless of age, gender, ability, race, ethnicity, or economic status

### Overview

Inequality in Hawai'i manifests in a number of ways, including Native Hawaiians facing greater hardships and being further from attaining the outcomes of the SDGs. As mentioned under SDG 3, 15% of Native Hawaiians do not have health insurance (compared with 4% of the population as a whole). Overall, health outcomes are worse than average for Native Hawaiians, other Pacific Islanders, the mentally ill, and the poor.

Hawai'i also has a long history and continuing history of ensuring equal rights for the lesbian, gay, bisexual, transgender, and queer (LGBTQ+) community and passed marriage equality legislation in 2013. Hawai'i was also one of the first states to ban conversion therapy for minors, ban gay/trans-panic as an affirmative defense, and expanded gender markers on State IDs and driver's licenses to include "X" for a non-binary option. However, LGBTQ+ residents are more likely to face health inequities (such as higher likelihood of chronic diseases and poor mental health) due to discrimination in the healthcare system and higher rates of domestic abuse (DOH 2017).

Achievements in other SDGs may positively impact SDG 10, and reducing inequalities will support the achievement of other SDGs.



## Hawai'i's Commitments to Address SDG 10



### EXISTING STATE LAWS & POLICIES

Hawai'i Marriage Equality Act of 2013	Legalized same-sex marriage in the state.
Act 148, Session Laws of Hawai'i 2019: Relating to Gender Identification	Expanded gender options applicable to driver's licenses and state identification cards to include a non-binary option of "X."
Hawai'i Revised Statutes Chapter §226-6 (b)(16): Hawai'i State Planning Act: Objectives and Policies for the Economy—In General	Sets goal to provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.
Hawai'i Revised Statutes Chapter §226-24: Hawai'i State Planning Act: Objectives and Policies for Socio-cultural Advancement—Individual Rights and Personal Well-Being	Sets objective to uphold and protect the national and state constitutional rights of every individual and assure access to legal assistance, consumer protection, and other public services, while ensuring equal opportunities for individual participation in society.
Hawai'i Revised Statutes Chapter 368: Civil Rights Commission	Sanctions the submissions of complaints in regards to discrimination or discriminatory practices.
Hawai'i Revised Statutes Chapter 378: Employment Practices	Prohibits discrimination in employment. Clearly defines terms relating to potential discrimination.
Hawai'i Revised Statutes Chapter 489: Discrimination in Public Accommodations	Outlaws discriminatory actions that deny, or attempt to deny, a person full and equal enjoyment of publicly available goods, resources, and accommodations.
Hawai'i Revised Statutes Chapter 515: Discrimination in Real Property Transactions	Identifies and outlaws discriminatory practices related to real estate transactions.



### STRATEGIC PLANS

Hawai'i Civil Rights Commission Reports (2020)	Annual reports on Hawai'i's commitment to strong State civil rights laws by rebuilding capacity, maintaining, and restoring resources for State civil rights law enforcement.
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# SUSTAINING HAWAII



## **All water in Hawai'i is held as a public trust**

(Hawai'i Const. art. XI). A key feature of Hawai'i law, this is an inheritance from Kānaka Maoli culture and principles where private ownership of water was unthinkable and instead managed for the benefit of all. However, the state's plantation legacy and oversight of this public trust ethic means that the reality of water use is far more contentious and often culminates in notoriously prolonged lawsuits (Sproat 2009).

**The 2017 Waimea Watershed Agreement stands out for being Hawai'i's first major water dispute resolved without litigation,** an accomplishment made even more significant by its disparate signatories. Pō'ai Wai Ola (a "taroroots" organization representing community members and cultural practitioners), the State Agribusiness Development Corporation (ADC), the Kaua'i Island Utility Cooperative (KIUC), the Kekaha Agriculture Association (KAA), and the Department of Hawaiian Home Lands (DHHL) all signed the agreement after a year of formal mediation (Henkin 2017).

At the center of the case was Waimea River: from its headwaters in Alaka'i Swamp, through the "Grand Canyon of the Pacific," and into the Pacific Ocean, the river is a major water source that once supported an expansive lo'i system, and yet by 2013 had become so low and silt-filled due to upstream diversions that a 15-foot swimming hole had disappeared (Earthjustice 2013). Every party had its own design for beneficial use of the water, but at the suggestion of mediation by the State Commission on Water Resources, and with diligent effort by a communally respected figure (who eventually became the case's mediator), everyone found they agreed with the following cornerstone: above all, Waimea River should be allowed to flow ma uka to ma kai, and total diversion of the water must never happen again. With common ground established, conversation could begin, and this founding principle evolved into the first of the agreement's "Statement of Guiding Principles" (Earthjustice 2013).

The outcome was a compromise that managed to cede important wins to all stakeholders. Millions of gallons of water would be restored to Waimea River, allowing for minimum instream flows through its entirety to support stream ecosystems and traditional cultural practices (Henkin 2017). Hawaiian homesteads on DHHL land in Waimea, which had remained undeveloped due in part to lack of water, would have water specifically reserved for them for the first time since 1921 (DHHL 2017). KIUC would have the opportunity to develop a pumped-storage hydro "battery" using water from Waimea River, which if advanced would diversify Kaua'i's renewable energy portfolio and provide for infrastructure necessary to develop the Waimea homesteads (DHHL 2017). Finally, ADC and KAA could continue utilizing existing ditch irrigation systems from the river for agriculture (Mediation Agreement 2017). This remarkable feat of negotiation and cooperation is considered "historic," and it shows that zero-sum outcomes aren't inevitable: that by setting aside ultimatums, exhibiting empathy, and being willing to listen, even opposed parties can come to terms and a resolution found.



Photo Left: Waimea River, Kaua'i Island.

Photo Credit: State of Hawai'i Department of Land and Natural Resources.

Photo Right: Waimea River, Kaua'i Island.

Photo Credit: State of Hawai'i, Hawai'i Tourism Authority.









# SUSTAINABLE CITIES AND COMMUNITIES

## Sustainable Development Goal 11

Make cities and human settlements inclusive, safe, resilient, and sustainable

The core tenets of an “inclusive, safe, resilient, and sustainable” city or community as defined by this UN goal are as follows:

- Affordable housing
- Access to public spaces
- Sustainable transportation systems, including public transport
- Safe cultural and natural heritage
- Protected against losses related to natural disasters
- Reduced adverse per capita environmental impact of cities (air quality, waste management)

## Overview

Residents of Hawai‘i celebrate access to public spaces, beaches, and the ocean, and prioritizing the vitality of cultural and natural heritage. There is significant work to be done, however, to increase mobility and accessibility, provide increased access to affordable housing, and increase the economic wellbeing of households.

In Hawai‘i, Maui and Kaua‘i islands, smart growth and transit-oriented development (TOD) principles are being planned to encourage quality growth and vibrant mixed-use neighborhoods in urban or rural centers. In O‘ahu’s urban areas, the State of Hawai‘i in partnership with the City and County of Honolulu is working on TOD around its rail corridor. This effort aims to provide more green and public gathering spaces, safer streets, and less pollution and noise, all while being sensitive to the needs of the neighboring community. Honolulu also recently published a guide outlining design principles that can help develop policy and regulations for urban areas that may be vulnerable to climate change hazards. All four counties have made commitments to use 100% renewable fuel sources for public ground transportation by 2045.

Sustainable development of buildings and the use of green infrastructure help to mitigate the environmental impact of cities. The State of Hawai‘i has requirements for sustainable development of State buildings, including LEED certification and water recycling and reclamation. Further, the use of green infrastructure has many co-benefits for communities, including enhancing livability, improving physical and mental health, sequestering CO<sub>2</sub> from the atmosphere, improving air quality, slowing and filtering stormwater runoff, reducing flooding and soil erosion, and reducing the urban heat island effect. Honolulu lost nearly 5% of total urban tree canopy over four years. The City and County of Honolulu in collaboration with Kaulunani Urban Forestry program are working to reverse this trend and have produced a tree canopy assessment to use as a baseline and have pledged to increase the urban tree canopy to 35% by 2035.

Hawai‘i has some of the best air quality in the nation. Some air pollution issues may still occur due to the presence of automobiles, and the Department of Health continues to regulate and monitor air pollution sources. As seen during the 2014-2015, 2016, and 2018-2019 lava eruptions from Kilauea Volcano on Hawai‘i Island can also occasionally experience volcanic smog, or vog, a mixture of atmospheric aerosols and volcanic gases that can have harmful health effects. While the State cannot control the formation of vog, it can reduce health risks by closing highly exposed trails when necessary and educating the public about proper protective actions.





## EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-13 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment—Land, Air, and Water Quality**

Includes policy to improve air quality to enhance the health and well-being of Hawai'i's people.

**Hawai'i Revised Statutes §226-17 of the Hawai'i State Planning Act: Objectives and Policies for Facility Systems—Transportation**

Identifies objectives and policies for transportation facility systems, including the enhancement of the public transit system to accommodate growth and the integration of an efficient multi-modal transportation system.

**Hawai'i Revised Statutes §226-19 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Housing**

Defines state policy objectives for advancing opportunities for affordable housing and the orderly development of residential areas sensitive to community needs and other land uses.

**Hawai'i Revised Statutes §226-106 of the Hawai'i State Planning Act: Priority Guidelines for the Provision of Affordable Housing**

Prioritizes the need and access for affordable housing as a priority guideline for the Hawai'i State Planning Act to address as an issue of statewide concern.

**Hawai'i Revised Statutes §196-9: Energy Efficiency and Environmental Standards for State Facilities, Motor Vehicles, and Transportation Fuel**

Directs agencies to design buildings and facilities to meet high-level LEED standards, and to purchase fuel-efficient and alternative fueled vehicles whenever possible.

**Act 127, Session Laws of Hawai'i 2016: Relating to Housing**

Established a goal of developing 22,500 affordable rental units statewide to be ready for occupancy by December 31, 2026, and a Special Action Team on Affordable Rental Housing to recommend actions to achieve the goal.



## STRATEGIC PLANS

**State of Hawai'i Hazard Mitigation Plan (2018)**

Outlines a long-term strategy for the state to reduce risk and losses from future natural hazard events.

Serves as a technical reference for updates to local county hazard mitigation plans that integrates best available data and climate science.

Provides a robust risk assessment that expands upon the number and type of assets assessed in the 2013 Hazard Mitigation Plan.

**State of Hawai'i Strategic Plan for Transit-Oriented Development (2018)**

Guides the implementation of transit-oriented development projects including the development of affordable housing.

Based on seven principles of transit-oriented development, including prioritizing projects in areas served by public transit, creating effective partnerships, maximizing the co-location of state facilities, developing affordable housing, engaging in equitable development, using sustainable building practices, and investing in critical infrastructure.

**State of Hawai'i Affordable Rental Housing Report and Ten-Year Plan (2018)**

Developed a baseline of affordable rental units currently in the planning stages or under development, implementing actions, and measures of effectiveness to guide achievement of the affordable rental housing goals.

Provides next step recommendations on ways to support affordable rental housing in the state.

**Housing Functional Plan (2017)**

Guides the implementation of the Hawai'i State Plan housing goals and objectives.

Covers four priority areas, which include expanding and preserving rental housing opportunities, increase homeownership, addressing barriers to residential development, and maintaining a housing information system.

Includes clearly defined problem statements followed by objectives, policies, implementing actions and accessory details such as lead organization, budget estimates, start date and measures of effectiveness.



## VOLUNTARY INITIATIVES

The Aloha+ Challenge includes a Smart Sustainable Communities target to increase livability and resilience in the built environment through planning and implementation at the state and county levels.

# SUSTAINING HAWAII



In 2017, ground transportation alone accounted for about **20%** of Hawai'i's greenhouse gas emissions (DOH 2021a). Meeting the State's Zero Emissions Clean Economy Target will require significant greenhouse gas emission reduction in this area, which in turn will require a multi-pronged approach of increasing multimodal active transportation, zero emission vehicle use, and increased use of alternative fuels.

**Maui-based Pacific Biodiesel is currently the only commercial biofuel producer in Hawai'i and the nation's longest operating biodiesel producer, with locations on 3 islands.** Pacific Biodiesel produces nearly **5.5 million** gallons of biodiesel annually from waste oil, largely sourced from restaurants across the islands (Pacific Biodiesel 2019a). This circular economic model to sustainably manage and recycle food waste converts fats, oils and grease (FOG) into fuels. Through a community-based recycling program, **"Restaurants 4 Renewables"** in Hawai'i County, Maui County, and the City and County of Honolulu, the company collects and converts used cooking oil into renewable energy from **over 900 local restaurants, hotels, and other food service operations**. Converting used cooking oil and grease trap waste into biodiesel diverts waste from landfills and provides a locally-produced fuel that generates approximately **74%** fewer lifetime greenhouse gas emissions than traditional petroleum diesel (U.S. DOE n.d.).

In order to support an end-to-end, 100% local production process, Pacific Biodiesel began a 115-acre project in 2017 to grow sunflowers to increase its local fuel source supply—and made history by being the largest biofuel crop project in the state of Hawai'i and the only biofuel farming operation in the state running on 100% renewable fuel (Penniman 2018). In 2019, the Hamakua Energy power generation facility, which provides up to 22% of Hawai'i Island's generating capacity, diversified its fuel sourcing by using biodiesel fuel to reduce the facility's dependence on fossil fuels and advance Hawai'i Island's energy independence and energy security (PBN 2019).



Photo Left: With a production capacity of 5.5 million gallons annually, Pacific Biodiesel's refinery on Hawai'i Island utilizes state-of-the-art distillation technology to produce the nation's highest quality biodiesel. All the fuel produced at this facility is sold within the state of Hawai'i. Photo Credit: Pacific Biodiesel.

Photo Right: Pacific Biodiesel's business model focuses on recycling with a zero-waste philosophy that incorporates development of value-added co-products. In 2017 the company began farming sunflowers and other biofuel crops on the island of Maui—supporting local energy diversification and resilience, and carbon sequestration. Photo Credit: Pacific Biodiesel.







# RESPONSIBLE CONSUMPTION AND PRODUCTION

## Sustainable Development Goal 12

Ensure sustainable consumption and production patterns

This UN SDG seeks to improve sustainable consumption and production by:

- Promoting the adoption of sustainable consumption practices and sustainable public procurement practices
- Mitigating emissions from solid waste by reducing waste generation and diverting waste
- Reducing food waste

## Overview

Hawai'i is relatively sustainable when it comes to food waste, discarding 356 pounds of food per year per person compared to 429 pounds on the continental United States. For the most part, food waste in Hawai'i either goes through incineration or into the landfill. There are opportunities to increase other methods of food recovery, such as through composting or source reduction. These methods could also result in pollution or greenhouse gas reductions by reducing the amount of particles and emissions produced by landfills and combustion.

Each of the counties throughout the State of Hawai'i have laws and initiatives to reduce plastics and are proceeding somewhat differently (DOH 2020).

There is an opportunity in the wake of the COVID-19 global pandemic to reevaluate waste management practices, including encouraging the tourism industry to adopt sustainable practices, as consumer behaviors adapt to the "new normal" that has formed from statewide stay-at-home orders. In 2020, there were 47 certified sustainable eco-tourism businesses. Further sustainability in the tourism sector could position Hawai'i as a global leader in that sector.

## Hawai'i's Commitments to Address SDG 12



### EXISTING STATE LAWS & POLICIES

Hawai'i Revised Statutes §226-14 of the Hawai'i State Planning Act: Objectives and Policies for Facility Systems

Includes provisions to ensure the success of Hawai'i's waste systems and encourages design to support the prudent use of resources.

Hawai'i Revised Statutes §103D-1005: Encouraging the use of Recycled Products through the Hawai'i Public Procurement Code

Encourages purchasing preference for products containing recycled materials.

Hawai'i Revised Statutes §342G-2: Solid Waste Management Priorities

Prioritizes solid waste management practices and processing methods in the order of source reduction, recycling and bioconversion, and landfilling and incineration.

Hawai'i Revised Statutes §342G-3: Solid Waste Management Goals

Required waste diversion rates of 25% by 1995 and 50% by 2000, as well as a reduction of 25% of office paper generation by 1995 from a 1990 baseline.

Hawai'i Revised Statutes §342G-41: Goals for Procurement of Recycled Products

Requires purchasing preference for recycled material products that are designed for durability.

Hawai'i Revised Statutes §342G-45: Paper Recovery

Requires state and county agencies to establish office paper and other materials recovery programs.

Hawai'i Revised Statutes §342G-82: Advance Disposal Fee on Imported Glass Containers

Set a fee for advance disposal for every glass container importer.

Hawai'i Revised Statutes §342G-102: Deposit Beverage Container Fee

Set a fee of 5 cents per deposit on beverage containers manufactured within or imported to the state.



### STRATEGIC PLANS

State of Hawai'i Office of Solid Waste Management Annual Report (2021)

Discusses solid waste management practices and methods for source reduction, recycling and bioconversion, and landfilling or incineration.

State of Hawai'i Plastic Source Reduction Working Group Report (2020)

Provides statewide recommendations and methods to improve the processes to reuse, reduce, recycle, and recover plastic waste.



### VOLUNTARY INITIATIVES

The Aloha+ Challenge has six goals for solid waste reduction: 1) increased total solid waste diversion, 2) decreased total solid waste generation, 3) increased recycling, 4) more source reduction, 5) increased reuse, and 6) increased waste to energy. The initiative's goal is a 70% reduction in waste by 2030.



# SUSTAINING HAWAII



Decaying organic waste emits methane, a greenhouse gas with at least **twenty-eight times** more global warming potential than carbon dioxide (EPA 2020). There are also valuable nutrients in organic waste that are lost when it is sent to landfills and incinerators. Composting (turning organic material into rich soil through decomposer organisms) sequesters CO<sub>2</sub> and these valuable nutrients from organic waste in the soil. This sustainable practice reduces greenhouse gas emissions while improving soil health.

**The Windward Zero Waste School Hui is a nonprofit on O'ahu working to reduce waste levels, recover these nutrients, and generate revenue for five Kailua-Kalāheo Complex schools through on-site composting.** Siting compost production on school grounds eliminates waste transportation emissions and allows students to learn about soil science, ecology, environmental stewardship, and green careers. Windward Zero Waste School Hui also farms earthworms on the campuses for compost needs and sales, and compost and worms are sold to community members and local farmers. In total, Windward Zero Waste School Hui composted 47,164 pounds of waste across the five schools in 2020 (note: this number is low due to COVID-19 global pandemic school closures; since this organization previously composted **108,703 pounds** of waste in 2019), and the combined compost soil and worm sales generated **\$46,504**—100% of which went directly to the schools. This is significant since over **37%** of students in the Kailua-Kalāheo Complex were deemed economically disadvantaged in the 2017-2018 school year, and research has shown that increasing spending per student correlates with higher wages and lower poverty rates in adulthood (DOE 2019, Jackson et al. 2016). In addition to their waste reduction benefits, Windward Zero Waste School Hui's compost programs provide additional revenue for greater student investment, a welcomed resource as schools face budget challenges and the amount of economically disadvantaged students increases from the impacts of the COVID-19 global pandemic.



Photo Left and Right: On-site composting at Enchanted Lake Elementary School, in Kailua, O'ahu, one of the public schools participating in the Windward Zero Waste School Hui, which teaches children zero waste and resource recovery practices.

Photo Credit: State of Hawai'i Office of Planning.









# CLIMATE ACTION

## Sustainable Development Goal 13

Take urgent action to combat climate change and its impacts

This goal includes targets to reduce greenhouse gas emissions, increase resilience, and adapt to the impacts of climate change

### Overview

Efforts to understand, mitigate, and adapt to the impacts of climate change are critical due to Hawai'i's isolated geography, unique cultural heritage, and heavy reliance on the tourism industry. Hawai'i anticipates an estimated 3.2 feet of sea level rise by 2100. Climate change impacts, such as sea level rise and more frequent and intense extreme weather events (hurricanes, flood, droughts), pose an increasing threat to infrastructure and communities. Sea level rise is especially hazardous as it will affect many critical transportation systems, such as regional highways, airports, and harbors. Hawai'i has seen an increase in extreme rainfall events from 1940 to present in addition to an increase in more consecutive dry days (USGCRP 2018).

The Fourth National Climate Assessment projects the impacts of rising sea levels and other climate change impacts will result in the loss of 550 cultural sites in Hawai'i, more than 6,500 structures becoming unusable, and roughly 20,000 displaced residents. According to the State of Hawai'i's Sea Level Rise Vulnerability and Adaptation report, statewide losses due to climate change are projected to total more than \$19 billion (USGCRP 2018).

Hawai'i Revised Statutes §342B-71 enacted a statewide target to reduce GHG emissions to 1990 levels by 2020. Total GHG emissions in Hawai'i in 2017 were 17.87 million metric tons of carbon dioxide equivalent (MMT CO<sub>2</sub>e), roughly 8% lower than 1990 levels. Statewide projections indicated Hawai'i was on track to meet the GHG emissions target by 2020.

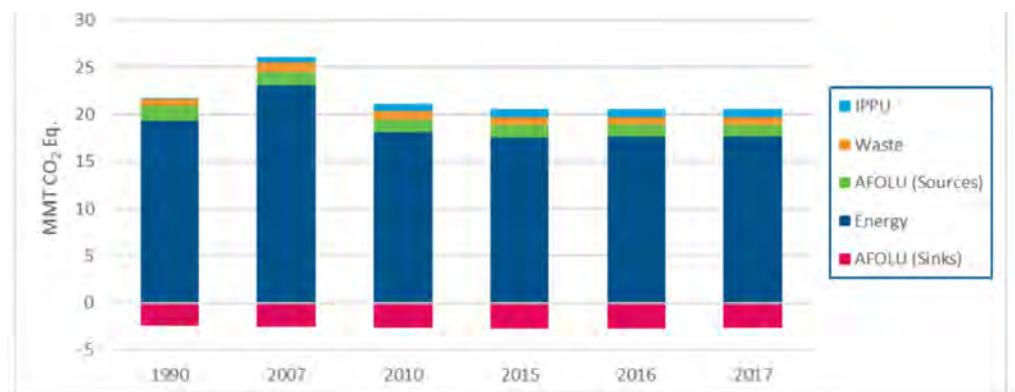


Figure 2: Hawai'i GHG Emissions by Sector for 1990, 2007, 2010, and 2015-2017. Source: Hawai'i State DOH (2021)

Figure 2 shows emission trends by sector for each year that Hawai'i has conducted a GHG inventory. The energy sector is the largest source of emissions in Hawai'i, accounting for 86% of total emissions. Emissions from transportation accounted for the largest share of energy sector emissions in 2017, followed by stationary energy combustion emissions largely driven by emissions from electric power plants, petroleum refineries, and industry. Agriculture, forestry, and other land use (AFOLU), waste, and industrial processes and product use (IPPU) sectors accounted for 6, 4, and 4% of total emissions, respectively in 2017 (DOH 2021a).

AFOLU is the only sector that overall, sequesters carbon dioxide from the atmosphere. Healthy native forests and sustainable agricultural practices are essential to stabilizing soil organic carbon which accounts for over half of the carbon dioxide stored in Hawai'i's terrestrial ecosystems (Selmants et al. 2017).

The State of Hawai'i is committed to reducing GHG emissions, adapting to climate change, and incorporating climate change considerations into decision-making. In April 2021, the State of Hawai'i adopted Senate Concurrent Resolution 44, and became the first state in the United States to declare a climate emergency.

## Hawai'i's Commitments to Address SDG 13



### EXISTING STATE LAWS & POLICIES

Hawai'i Revised Statutes §226-13 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment	Includes provisions to reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.
Hawai'i Revised Statutes §226-65 of the Hawai'i State Planning Act: Hawai'i 2050 Sustainability Plan	Specifies that the Hawai'i 2050 Sustainability Plan will serve as the State's climate and sustainability strategic action plan. Requires the State of Hawai'i Office of Planning to update the Hawai'i 2050 Sustainability Plan every 10 years.
Hawai'i Revised Statutes §226-109 of the Hawai'i State Planning Act: Climate Change Adaptation Priority Guidelines	Promotes sector resilience by encouraging the identification of climate change threats, the assessment of potential consequences, and the evaluation of adaptation.
Hawai'i Revised Statutes §225M-2 (b) (6): Office of Planning; Responsibilities; Coastal and Ocean Policy Management and Sea Level Rise Adaptation Coordination	Requires the State of Hawai'i Office of Planning to provide coastal and ocean policy management, and sea level rise adaptation coordination. Carries out the lead agency responsibilities for the Hawai'i Coastal Zone Management program, as specified in Chapter 205A.
Hawai'i Revised Statutes §225M-2 (b) (9): Office of Planning; Responsibilities; Climate Adaptation and Sustainability Planning and Coordination	Requires the State of Hawai'i Office of Planning to develop, monitor, and evaluate strategic climate adaptation plans and actionable policy recommendations for the State and counties addressing expected statewide climate change impacts and provide planning and policy guidance and assistance to state and county agencies regarding climate change and sustainability.
Hawai'i Revised Statutes §225M-8: Statewide Sustainability Branch	Requires the Statewide Sustainability Program to develop, organize, and promote policies and programs that assist in the meeting of Hawai'i's numerous sustainability and climate policies and goals.
Hawai'i Revised Statutes §225P-3: Hawai'i Climate Change Mitigation and Adaptation Commission	Establishes the State of Hawai'i Climate Mitigation and Adaptation Commission, which is administratively attached to the Department of Land and Natural Resources. Coordination of this advisory commission is headed jointly by two co-chairs: the Chairperson of the Board of Land and Natural Resources and the Director of the State of Hawai'i's Office of Planning, or their designees.
Hawai'i Revised Statutes §225P-4: Greenhouse Gas Sequestration Task Force	Establishes the State of Hawai'i Greenhouse Gas Sequestration Task Force, which is administratively attached to the State of Hawai'i Office of Planning, charged with a number of statutory objectives, which among other responsibilities, include: identifying the potential to improve soil health, and increasing greenhouse gas sequestration in the agricultural, aquacultural, urban, and natural environments.
Hawai'i Revised Statutes §225P-5: Zero Emissions Clean Economy Target	Sets a statewide target to sequester more atmospheric carbon and GHGs than emitted within the state as quickly as practicable, but no later than 2045.
Hawai'i Revised Statutes §342B-71: Greenhouse Gas Emissions Limit	Limited statewide GHG emissions to be equal to or below 1990 levels by 2020, excluding emissions from airplanes.
Hawai'i Revised Statutes §342B-72: Greenhouse Gas Emissions Limit, Rules	Established source category-specific GHG limits. Requires conducting statewide GHG inventories, verification, and reporting to track progress.
Act 32, Session Laws of Hawai'i 2017	Directed the State of Hawai'i to expand strategies and mechanisms to reduce statewide greenhouse gas emissions through reduction of energy use, adoption of renewable energy, and control of air pollution among all agencies, departments, industries, and sectors, including transportation. Aligns the State of Hawai'i's commitment to combat climate change with the principles and goals set forth by the United Nations' Paris Agreement and Hawai'i's share of the obligations within the expectations apportioned to the United States in the Paris Agreement.
Senate Concurrent Resolution 44 (2021): Declaring a Climate Emergency and Requesting Statewide Collaboration Toward an Immediate Just Transition and Emergency Mobilization Effort to Restore a Safe Climate	Resolves that the state mobilize climate mitigation and adaptation efforts to address climate change at the necessary scale and speed. Advocates for the facilitation of investments in beneficial projects and infrastructure that promote zero emissions. Affirms that the State commits to statewide action that is rooted in equity, self-determination, culture, tradition, and the belief that people locally and around the world have the right to clean, healthy, and adequate air, water, land, food, education, and shelter.
HB 243 (2021): Relating to Sea Level Rise Adaptation*	Requires the State of Hawai'i Office of Planning while coordinating with other State agencies to identify existing and planned facilities that are vulnerable to the impact of sea level rise, flooding impacts, and natural hazards and assess options to mitigate those impacts, and add sustainable development and climate change adaptation as objectives for facility systems.

\*At the date of publication, the bills from the 2021 legislative session referenced herein were passed by the Hawai'i State Legislature and transmitted to the Governor for consideration.





## Hawai'i's Commitments to Address SDG 13



### STRATEGIC PLANS

<b>Hawai'i Highways Climate Adaptation Action Plan (2021)</b>	<p>Summarizes research on how climate change will impact Hawai'i's roadways.</p> <p>Outlines strategies to achieve greater network resilience in the face of long-term environmental risks.</p>
<b>Nature-Based Resilience and Adaptation to Climate Change in Hawai'i Working Paper (2021)</b>	<p>Highlights opportunities for Hawai'i to implement nature-based strategies to adapt to and mitigate climate change.</p>
<b>Ocean Resources Management Plan (2020)</b>	<p>Identifies 18 strategic actions across three focus area goals (development and coastal hazards, land-based pollution, and marine resources) to advance the State's management of ocean resources.</p>
<b>Guidance for Addressing Sea Level Rise in Community Planning in Hawai'i (2020)</b>	<p>Provides additional guidance following on the 2017 Sea Level Rise Vulnerability and Adaptation Report.</p> <p>Assists county planners to build upon and improve existing efforts to address sea level rise for four key topics: 1) vulnerability assessment, 2) land use and development alternatives, 3) plan and policy alignment, and 4) adaptive management.</p>
<b>Feasibility and Implications of Establishing a Carbon Offset Program for the State of Hawai'i (2019)</b>	<p>Evaluates the feasibility for the Hawai'i State Government to foster additional greenhouse gas reductions through carbon offset credits.</p>
<b>State of Hawai'i Statewide Coastal Highway Program Report (2019)</b>	<p>Develops a scientifically rigorous methodology to assess and rank the susceptibility of the state's coastal roads to erosion and structural degradation due to ocean hazards such as waves, currents, tides and sea level rise.</p> <p>Presents a new index methodology that considers the principal factors that determine coastal erosion and road degradation. The method is based on determination of the index CRESI (Coastal Road Erosion Susceptibility Index), which is evaluated at discrete locations along coastal roads in relatively close proximity to the ocean, and segments the coastal roads to have low, medium, and high susceptibility to structural degradation.</p>
<b>Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas in Hawai'i (2019)</b>	<p>Makes findings regarding retreat programs and their relative significance to Hawai'i and a specific multi prong recommendation regarding the feasibility of retreat in Hawai'i.</p>
<b>State of Hawai'i 2018 Hazard Mitigation Plan (2018)</b>	<p>Provides a five-year strategy to reduce risk and losses from future natural hazard events. Promotes resiliency and sustainability, aids in consistent evaluation, and provides a means to reduce the costs associated with disaster response and recovery, includes a mitigation action plan with information such as estimated costs, potential funding sources, anticipated timelines, and the expected benefits and avoided losses of each hazard mitigation action identified.</p>
<b>Sea Level Rise Vulnerability and Adaptation Report (2017)</b>	<p>Provides a statewide assessment of Hawai'i's vulnerability to sea level rise and nine recommendations to reduce exposure to its impacts.</p>

Photo Right: Waikiki, O'ahu.

Photo Credit: State of Hawai'i, Hawai'i Tourism Authority.







# SUSTAINING HAWAII



Hawaii is predicted to experience a hurricane every **16 years** that is powerful enough to cause a FEMA disaster declaration. In fact, climate change is expected to increase this occurrence by causing stronger and more frequent hurricanes, and climate change will also exacerbate vulnerability to other natural disasters such as flooding, wildfires, and tsunamis.

**Isolated communities are especially vulnerable to natural disasters if utilities become cut off and vital roads become impassable, giving no access for emergency services to reach communities in the crucial hours and days after a disaster.** In April 2018, this occurred when floods and landslides from record-breaking rainfall in Kaua'i resulted in severe damage to roads, schools, homes, and other structures. The communities of Hā'ena, Wainiha, and Hanalei on Kaua'i's North Shore were among those most impacted because the only highway built to connect these communities to the rest of the island was closed into 2019 due to critical damage from the floods. However, to prevent similar disaster catastrophes in the future, the County of Kaua'i is leading a collaborative initiative for a Wainiha Community Resiliency Center, which will service these North Shore communities before, during and after future disasters. Funded by appropriations for disaster relief from Act 35, Session Laws of Hawaii 2019, the Wainiha Community Resiliency Center will include a commercial kitchen, supplies staging and storage space, and satellites offices for first responders and State Parks officials, as well as provide a community gathering space and an improved shelter against hurricanes compared to older buildings.



Photo Left and Right: Hanalei Hill landslide and landslide clearing as a result of heavy rain and floods on Kaua'i Island in March 2021.

Photo Credit: State of Hawai'i Department of Transportation.









# LIFE BELOW WATER

## Sustainable Development Goal 14

Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

This goal aims to balance the mindful use of marine and coastal resources and conservation. Targets to achieve this goal include:

- Preventing and reducing land-based debris and nutrient pollution that causes harm to marine and coastal environments
- Regulating and managing the use of marine and coastal resources

### Overview

Climate changes, including rising air temperatures, changing rainfall patterns, drought, flooding, and saltwater contamination, are threatening marine ecosystems. The changing climate also impacts local biodiversity of native species. Rising ocean temperatures and acidification threaten the sustainability of fisheries and coral reefs. Coral reefs are a key draw for Hawai'i's tourism industry, adding over \$350 million to the local economy each year. However, coral bleaching has already begun (DLNR 2017). For example, elevated ocean temperatures led to extreme coral bleaching in 2014–2015, with a nearly 50% decline in coral cover in west Hawai'i and a 20–40% decline in Maui. Mass coral bleaching events are anticipated to continue if no climate action is taken (Office of Planning 2020).

Currently, Hawai'i's residents are concerned about the human impact on nearshore areas (Office of Planning 2020). There is also the concern for the health of aquatic ecosystems and the migration of native fish species as ocean temperatures increase due to climate change. Previous fish mortality events in O'ahu have been connected to slackened trade winds and elevated surface water temperatures. As an island community, many Hawai'i residents enjoy a seafood diet and rely upon subsistence living, including fishing; however, declines in tuna and billfish populations are projected to impact the fishery industry with 2–5% losses per decade (USGCRP 2018).

There is the need to balance agricultural productivity on the islands, which boost Hawai'i's food security, self-sufficiency and access to fresh food, with the pollution to nearshore waters caused in part by intensive agricultural practices. Runoff from residential areas is also a contributing source of water pollution. There is a nascent recognition of the need to protect groundwater-dependent ecosystems.

One of the three main focus areas of the *2020 Ocean Resources Management Plan* is land-based pollution, which highlights polluted stormwater runoff as a pervasive and widespread issue within Hawai'i's watersheds (Office of Planning 2020).



## VOLUNTARY INITIATIVES

The Aloha+ Challenge has a target to reverse the trend of natural resource loss by increasing freshwater security, watershed protection, community-based marine management, invasive species prevention and native species restoration. The challenge also includes the goal to significantly increase the percentage of Hawai'i's marine waters under active management by 2030. The Sustainable Hawai'i Initiative includes a goal to protect 30% of priority watersheds and effectively manage 30% of nearshore ocean waters by 2030.

## Hawai'i's Commitments to Address SDG 14



### EXISTING STATE LAWS & POLICIES

Hawai'i Revised Statutes §226-11 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment—Land-Based, Shoreline, and Marine Resources	Describes objectives regarding the sustainable use of marine resources and the protection of fragile environmental resources, including species and habitat conservation and do-no-harm principles.
Hawai'i Revised Statutes Chapter 342D: Water Pollution	Defines the rules and regulations for water pollution management in Hawai'i under the purview of the Department of Health.
Hawai'i Revised Statutes Chapter 205A: Coastal Zone Management	Outlines the rules and regulations for the management of Hawai'i's coastal zone, including the specification of special management areas.
Hawai'i Revised Statutes Chapter 187A: Aquatic Resources	Outlines the policies relating to how aquatic resources can be used in Hawai'i, including fishing rights and how to prevent the spread of aquatic invasive species.
Hawai'i Revised Statutes Chapter 188: Fishing Rights and Regulations	Specifies further regulations relating to fishing in the waters of Hawai'i, including licensing and provisions for subsistence fishing.
Hawai'i Revised Statutes Chapter 188F: West Hawai'i Regional Fishery Management Area	Establishes the West Hawai'i Regional Fishery Management Area in order to improve the management of consumptive and non-consumptive uses of aquatic resources in that region.
Hawai'i Revised Statutes Chapter 189: Commercial Fishing	Outlines the State regulations surrounding commercial fishing, including reporting requirements, licensing, approved and prohibited techniques, and the purchase of fishing vessels.
Hawai'i Revised Statutes Chapter 190: Marine Life Conservation Program	Establishes marine life conservation districts and defines what activities are permitted within those districts.
Hawai'i Revised Statutes Chapter 195D: Conservation of Aquatic Life, Wildlife, and Land Plants	Specifies how various species will be protected, and how the state will assist in the recovery of species' population, health, or ecosystems.



### STRATEGIC PLANS

Hawai'i Nonpoint Source Management Plan: 2021-2025 (2021)	Establishes goals, objectives, strategies, and milestones to reduce and prevent nonpoint source pollution and improve water quality, guiding the state's nonpoint source pollution management efforts.
Office of Planning's Ocean Resources Management Plan (2020)	Identifies 18 strategic actions across three focus area goals (development and coastal hazards, land-based pollution, and marine resources) to advance the state's management of ocean resources.
Holomua: Marine 30x30 (2020)	Provides a vision of a healthy nearshore ecosystem with abundant resources that allow the people of Hawai'i to enjoy coastal waters, support local livelihoods, and feed their families.  Includes four key pillars to effectively manage Hawai'i's nearshore waters with at least 30% established as marine management areas by 2030: place-based planning, pono practices, monitoring, and protection and restoration.
Hawai'i Coral Reef Strategy 2030 (2020)	Outlines recommendations for projects that address coral reef ecosystem planning and summarizes the impact of previous projects on Hawai'i's reef resiliency.
Water Resource Protection Plan (2019)	Component of the Hawai'i Water Plan that seeks to protect and sustain statewide ground and surface water resources, watersheds, and natural stream environments.  Recognizes that groundwater dependent ecosystems (GDEs) support a variety of valuable ecosystem services, such as flood control, water supply, water purification, recreational opportunities, biodiversity, and traditional and customary rights. However, the current approach for managing ground water in Hawai'i does not explicitly account for the ground water discharge needs of GDEs.
Coral Bleaching Recovery Plan (2017)	Promotes the recovery of coral reefs following the 2014-2015 global coral bleaching event by identifying which management interventions are the most likely to promote recovery.



# SUSTAINING HAWAI‘I



**Coral, or ko‘a, is the first species named in the Kumulipo.** This is one of the many ways Kānaka Maoli underpin the close relationship between life on land and sea. Coral’s cultural significance, along with its ecological and economic importance, is why the declining health of Hawai‘i’s corals in the face of human pressures and climate change evokes great concern.

As a popular destination for coral reefs, Hanauma Bay on O‘ahu is no different in facing this dual threat. The bay’s coral colonies face stress from multiple bleaching events, and with nearly 845,000 visitors in 2019 alone, the coral colonies also show reduced growth in more disturbed areas (Star Advertiser 2020, Severino et al. 2020). The COVID-19 global pandemic further demonstrated the effects of visitor traffic: after Hanauma Bay was closed for safety purposes in March 2020, water clarity improved by 64% and as much as **19.5 feet**, larger fish were spotted in the reef, and there was a reported increase in endangered Hawaiian monk seal activity (Star Advertiser 2020, Serota 2020). The bay’s closure also allowed the nonprofit Friends of Hanauma Bay, in partnership with DLNR-DAR’s Coral Restoration Nursery, to begin coral restoration to repair damage to the reef (Friends of Hanauma Bay 2021). When Hanauma Bay reopened in December 2020, the City and County of Honolulu implemented COVID-19 capacity limits, shortened operation hours, increased non-resident visitor fees, and closures two days a week, which allowed for a reopening while continuing reduced pressure on the coral reef (Star Advertiser 2020). Although challenges remain, as the bay reopens further, an unmatched opportunity will be provided to monitor visitor impacts from a new baseline and determine the best mechanisms to steward a more thriving Hanauma Bay.



Photo Left: Friends of Hanauma Bay and Ocean Defenders Alliance Hawai‘i partnered to launch a citizen science study during the COVID-19 pandemic safety closure on Hanauma Bay’s Coral Colony Temporal Texture Study to determine baseline health of coral within Hanauma Bay’s inner reef. Photo Credit: Friends of Hanauma Bay.

Photo Right: Hanauma Bay on the island of O‘ahu reopened to the public after being closed for 9 months due to the COVID-19 pandemic. The COVID-19 closure rejuvenated the bay’s marine environment providing significant ecosystem restoration, the return and growth of wildlife and endangered species, and a 64% improvement in water clarity. Photo Credit: Friends of Hanauma Bay.









# LIFE ON LAND

## Sustainable Development Goal 15

Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

The objective of “life on land” is to maintain continued thriving ecosystems on land and end all threats to land degradation and biodiversity loss. Targets to achieve this goal address:

- Protecting biodiversity by reducing degradation of natural habitats, ending the poaching and trafficking of endangered species, and introducing measures to reduce the impact of invasive species
- Implementing sustainable management practices that end deforestation and combat desertification

## Overview

As one of the most geographically isolated regions in the world, Hawai‘i is home to rich and diverse ecosystems and species. However, Hawai‘i also faces many threats to its biodiversity: as of 2015, the state’s endangered and threatened species accounted for 28% of the nation’s total (DLNR 2015). Existing and emerging threats to these native ecosystems and species include invasive species and climate change impacts. Invasive species can aggressively overtake indigenous species and knock Hawai‘i’s delicate ecosystems out of balance. This is particularly a threat to Hawai‘i due to the state’s geographic isolation. The State’s Climate Change Mitigation and Adaptation Commission has begun this endeavor to identify climate change impacts to native ecosystem through their working paper, “Nature-Based Resilience and Adaptation to Climate Change in Hawai‘i” (Climate Change Mitigation and Adaptation Commission 2021).

The Hawai‘i Department of Agriculture, Hawai‘i Invasive Species Council, Hawai‘i Department of Land and Natural Resources, Hawai‘i Department of Transportation, Hawai‘i Department of Health, the Coordinating Group on Alien Pest Species, and many partnerships with landowners, farmers, and environmental and community organizations coordinate to support Hawai‘i’s biosecurity (Hawai‘i Biosecurity Plan 2016).

Traditional practices once created a successful relationship between natural resources and culture, resulting in a successful, sustainable community. Integrating Native Hawaiian cultural practices and traditional ecological knowledge into natural resource management is critical to protecting and maintaining the state’s biodiversity (Hawai‘i Conservation Alliance 2010).



## VOLUNTARY INITIATIVES

The Aloha+ Challenge targets include protecting 30% of watershed forests by 2030 and increasing the percentage of threatened and endangered native species that are managed in Hawai‘i by 2030.

The Sustainable Hawai‘i Initiative includes a commitment to protect 30% of priority watersheds by 2030, and to implement the State’s Interagency Biosecurity Plan by 2027.



## EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-11 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment—Land-Based, Shoreline and Marine Resources**

Requires the protection of Hawai'i's unique and fragile environmental resources.  
Requires the State to exercise a conservation ethic, balance activities with ecological systems, consider physical attributes of areas when designing activities or facilities, encourage beneficial and multiple use of natural resources without causing irreparable environmental damage, consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions, and encourage protection of endangered species.

**Hawai'i Revised Statutes §226-12 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment—Scenic, Natural Beauty, and Historic Resources**

Defines the State's objectives and policies for the enhancement and preservation of Hawai'i's physical environment, including scenic and natural beauty, and historic resources.  
Promotes the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.  
Requires protection of areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.

**Hawai'i Revised Statutes §226-13 of the Hawai'i State Planning Act: Objectives and Policies for the Physical Environment—Land, Air, and Water Quality**

Describes the State's objectives and policies for improving air and surface water quality, promoting the proper management of natural resources, and strengthening resilience to the effects of disasters.

**Hawai'i Revised Statutes Chapter 180: Soil and Water Conservation Districts**

Creates soil and water conservation district within the state and defines what actions the State will take to conserve those areas.

**Hawai'i Revised Statutes Chapter 183D: Wildlife**

Sets regulations related to wildlife management, including conservation, hunting, and the protection of wild animals.

**Hawai'i Revised Statutes Chapter 184: State Parks and Recreation Areas**

Arranges a fund for the State park system and defines policies related to those parks and their use.

**Hawai'i Revised Statutes Chapter 194: Invasive Species Council**

Establishes the Invasive Species Council to study invasive species and prevent their spread through intervention.

**Hawai'i Revised Statutes Chapter 195: Natural Area Reserves System**

Creates a Natural Area Reserves program, identifies certain areas to be part of the program, and defines what will be done within the areas to protect them from degradation.

**Hawai'i Revised Statutes Chapter 195D: Conservation of Aquatic Life, Wildlife, and Land Plants**

Defines the actions for the State of Hawai'i to protect plants and animals from threats and environmental degradation.

**Hawai'i Revised Statutes Chapter 195F: Forest Stewardship**

Establishes the Forest Stewardship Program and Forest Stewardship fund, in order to promote the long-term management of privately- and publicly-owned forest land within the state.



## STRATEGIC PLANS

**Hawai'i Interagency Biosecurity Plan (2017)**

Serves as a ten year plan providing a coordinated path forward to increase support for local agriculture, protection for the environment, and safeguards for the health and lifestyle of Hawai'i's people. The plan addresses Hawai'i's most critical biosecurity gaps and identifies more than 100 policy, processes, and infrastructure actions to take by 2027.

**Hawai'i Forest Action Plan 2016 (2016)**

Identifies nine priority areas for Hawai'i's forests that include: water quality and quantity; forest health, invasive species, insects and disease; wildfire; urban and community forestry; climate change and sea level rise; conservation of native biodiversity; hunting, nature-based recreation, and tourism; forest products and carbon sequestration; and U.S. tropical island state and territorial issues.

**Hawai'i State Wildlife Action Plan (2015)**

This plan comprehensively reviews the status of the full range of the state's native terrestrial and aquatic species, over 10,000 of which are found nowhere else on Earth, and presents strategies for long-term conservation of species and habitats.

**Hawai'i Statewide Assessment of Forest Conditions and Trends (2010)**

Includes provisions prioritizing the rapid response to invasive species.  
Recommends restoring and conserving the native forest species and ecosystems by using native species.

**Strategic Plan for Hawai'i's Natural Area Reserves System (2008)**

Identifies and defines the Natural Area Reserves System's role in conservation of biological ecosystems.



# SUSTAINING HAWAII



## **Hahai no ka ua i ka**

**ululā'au:** Rains always follow the forest.

Historically, Kānaka Maoli were acutely aware of the importance of water and were experts in how to manage water, as reflected in this 'Ōlelo No'eau (Hawaiian proverb). Forests are crucial to groundwater recharge by preventing rainfall from becoming runoff into the ocean.

## **Because of their role in water catchment, forests are a key part of upland watershed ecology.**

Watersheds are “an area of land, such as a mountain or valley, which collects rainwater into a common outlet,” and are approximately equivalent to the traditional land divisions called ahupua'a (Hawai'i Association of Watershed Partnerships 2021c). In addition to recharging groundwater, the forests in watersheds provide services like flood control, recreational spaces, carbon dioxide absorption, air and water filtration, erosion control, and habitat for culturally and ecologically significant species (Hawai'i Association of Watershed Partnerships 2021d). In 2003, the Hawai'i Association of Watershed Partnerships was created between existing watershed partnerships and the State of Hawai'i to coordinate watershed protection efforts (HAWP 2021b). The Hawai'i Association of Watershed Partnerships currently consists of 10 watershed partnerships comprising nearly 75 voluntary public and private partners and collectively covers over 2.2 million acres of land (Hawai'i Association of Watershed Partnerships 2021a). Watershed partners include landowners comprising among others, Kamehameha Schools, Department of Hawaiian Home Lands, and supportive partners such as The Nature Conservancy, Bishop Museum, and Kupu, which contribute expertise, capacity, and/or research to the mission of protecting Hawai'i's watersheds (LHWRP 2018, MKWA 2021, KMWP 2021). Being joined together under Hawai'i Association of Watershed Partnerships allows for greater sharing of resources, knowledge, and collective advocacy power to amplify the effectiveness of these individual organizations and watershed partnerships. This scale of collaboration and multi sector partnership can serve as an example to work together in a kākou effort as Hawai'i prepares to face future complex challenges from a changing climate.



Photo Left: Volunteers participating in the Wai'anae Mountains Watershed Partnership outplanting 1,024 plants in the Wai'anae Kai Forest Reserve on O'ahu.

Photo Credit: Yumi Miyata, Wai'anae Mountains Watershed Partnership.

Photo Right: 'Ōhi'a Lehua growing in uplands of the Ko'olau Mountains Watershed on O'ahu.

Photo Credit: Ko'olau Mountains Watershed Partnership.









# PEACE, JUSTICE, AND STRONG INSTITUTIONS

## Sustainable Development Goal 16

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels

This goal seeks to create and sustain inclusive societies with fair and just institutions at all levels. Targets relating to this goal include:

- Ending violence, abuse, and mistreatment of people everywhere by promoting the rule of law at national and international levels
- Promoting equality through inclusive and representative decision making
- Establishing accountable and transparent institutions

## Overview

Hawai'i has the highest percentage of mixed-race people in the United States, making up about 25% of Hawai'i's population. However, prejudice and injustice against minorities and immigrant communities such as African Americans and Micronesians, among others, still exists (Velasquez-Manoff 2019). As discussed under SDG 3, low-income households, Native Hawaiians, and Micronesians face unequal health impacts and health insurance coverage compared to higher income and other racial and ethnic groups in the state. As previously discussed under SDG 4 educational disparities were also highlighted between racial and socioeconomic groups. Similarly, SDG 5 discussed the gender-based inequalities that Native Hawaiian women face. Finally, as discussed under SDG 10, there are opportunities for increasing equality in the state. Thus, achievements in the other SDGs would likely positively impact SDG 16.

The COVID-19 global pandemic and movements demanding racial justice and equality in 2020 have reinvigorated calls for justice. The University of Hawai'i at Mānoa's Truth, Racial Healing, and Transformation (TRHT) Campus Center team was recognized on a national platform to highlight its work to tackle historical and contemporary effects of racism in September 2020 (UH News 2020b).

## Hawai'i's Commitments to Address SDG 16



### EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes Chapter §226-6 of the Hawai'i State Planning Act: Objectives and Policies for the Economy**

Sets goals to provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.

**Hawai'i Revised Statutes §226-24 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Individual Rights and Personal Well-Being**

Sets objectives to uphold and protect the national and state constitutional rights of every individual and assure access to legal assistance, consumer protection, and other public services, while ensuring equal opportunities for individual participation in society.

**Hawai'i Revised Statutes §226-25 of the Hawai'i State Planning Act: Objectives and Policies for Socio-Cultural Advancement—Culture**

Includes provisions for the enhancement of cultural identities, traditions, values, and arts of Hawai'i's people.

Supports sharing the knowledge and understanding of Hawai'i's history and heritage.

Supports activities that promote cultural values, encouraging increased awareness of the impact of actions on Hawaiian culture, and promoting strong relationships between Hawai'i's people and visitors.

**Hawai'i Revised Statutes §8-16: Peace Day**

Recognizes September 21 of every year as "Peace Day" in order to promote peace programs, improve international relations, and increase educational awareness of peace.

**Hawai'i Revised Statutes Chapter 92: Public Proceedings and Records**

The formation and conduct of public policy—the discussions, deliberations, decisions, and action of governmental agencies—shall be conducted as openly as possible.

**Hawai'i Revised Statutes Chapter 368: Civil Rights Commission**

Prevents discrimination on the basis of race, color, religion, age, sex, including gender identity or expression, sexual orientation, marital status, national origin, ancestry, or disability in employment, housing, public accommodations, or access to services receiving state financial assistance.



### STRATEGIC PLANS

**Hawai'i Civil Rights Commission Reports (2020)**

Annual reports on Hawai'i's commitment to strong state civil rights laws by rebuilding capacity, maintaining, and restoring resources for state civil rights law enforcement.

**University of Hawai'i Strategic Directions 2015-2021 (2018)**

Includes provisions to prepare more Native Hawaiians to assume leadership roles within the University of Hawai'i and the community.



# SUSTAINING HAWAII



Moloka'i is estimated to have supported a population of 10,500 people prior to European contact (SFCA 2000). Today the island is home to approximately 6,275 people, but the systems that once supported such a population size have been degraded by the impacts of climate change, land development, and colonization (U.S. Census Bureau 2019 a,b,c).

‘Āina Momona is a Native Hawaiian nonprofit on Moloka'i dedicated to rebuilding this community resilience through ancestral solutions and achieving environmental health and sustainability through four pillars: land, water, food, and restorative social justice. They are based at the Keawanui Fishpond and Cultural Learning Site where they manage the 55-acre loko i'a and 8 acres of agricultural land, both of which face intense erosion, groundwater depletion, and invasive species threats. With support from the Ceres Trust, the Conservation Fund, and the National Oceanographic and Atmospheric Administration (NOAA), their team of community members work to revitalize the land and restore traditional food systems; and, in partnership with Kamehameha Schools, they will be extending this stewardship and restoration to the overall Ka'amola ahupua'a. Current work focuses on stabilizing the soil and sheltering the Cultural Learning Site and loko i'a against climate change-induced storms and winds. To that end, 'Āina Momona is collaborating with the Māla Kalu'ulu Cooperative to incorporate agroforestry on site with native species to restore traditional food systems, ensure ground water retention, and mitigate erosion. Their overall aim is to create self-determination opportunities for Moloka'i residents while also creating a scalable model for community-led restoration for other areas similarly impacted by climate change, and to restore the Ka'amola ahupua'a to an 'āina momona again.



Photo Left: Keawanui fishpond of the island of Moloka'i. Photo Credit: 'Āina Momona.

Photo Right: Keawanui fishpond of the island of Moloka'i. Photo Credit: Mickey Pauole.







# PARTNERSHIPS

## Sustainable Development Goal 17

Strengthen the means of implementation and revitalize the global partnership for sustainable development

This goal recognizes partnerships as a means of implementation for sustainable development and includes targets that address bolstering multi-stakeholder partnerships that share knowledge, expertise, and technology as well as hold themselves accountable.

### Overview

The ultimate success of Hawai'i's sustainability actions will rely on effective collaboration across organizations. Currently, many partnerships are already tackling issues related to the SDGs discussed in this plan. These include (but are not limited to) the Statewide Sustainability Program; the State Office of Planning; County Planning Departments; County Climate and Sustainability Offices; Coastal Zone Management network; the Hawai'i Climate Change Mitigation and Adaptation Commission, the Aloha+ Challenge; and the Hawai'i Statewide Comprehensive Economic Development Strategy.

The COVID-19 global pandemic has brought more clarity to issues that Hawai'i can work on, such as inequality and an economy over-reliant on tourism, and provides a chance for a "new normal" to develop as the state recovers from the pandemic. There is a unique opportunity to engage with partners across government, nonprofits, the private sector, educational institutions, and the public to advance sustainability in the coming years.

Partnerships are a key component of several state policies and programs.

# Hawai'i's Commitments to Address SDG 17



## EXISTING STATE LAWS & POLICIES

**Hawai'i Revised Statutes §226-6 of the Hawai'i State Planning Act: Objectives and Policies for the Economy**

Details provisions for achieving full employment and economic growth including promoting Hawai'i as an attractive market for investment, penetrating new markets for Hawai'i's products and services, and fostering cooperation between government and private sectors in developing employment and economic growth.

**Hawai'i Revised Statutes §226-108 of the Hawai'i State Planning Act: Priority Guidelines and Principles to Promote Sustainability**

Requires policy that emphasizes that "everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i."

**Hawai'i Revised Statutes Chapter 226-Part II of the Hawai'i State Planning Act: Planning Coordination & Implementation**

Establishes a statewide planning system to coordinate and guide all major state and county activities as well as to implement the overall goals, objectives, policies, and priority guidelines from the Hawai'i State Planning Act.

**Hawai'i Revised Statutes §225M-2(b)(9): Office of Planning Responsibilities; Sustainability and Climate Adaptation Planning and Coordination**

Requires the State of Hawai'i Office of Planning to develop, monitor, and evaluate strategic climate adaptation plans and actionable policy recommendations for the state and counties addressing expected statewide climate change impacts and provide planning and policy guidance and assistance to state and county agencies regarding climate change and sustainability.

**Hawai'i Revised Statutes §225M-8: Statewide Sustainability Branch**

Requires the Statewide Sustainability Program to develop, organize, and promote policies and programs that assist in the meeting of Hawai'i's numerous sustainability and climate policies and goals.

Requires the Statewide Sustainability Program to identify, evaluate, and make recommendations regarding proposed legislation, regulatory changes, or policy modifications to the governor, the legislature, government agencies, private entities, and other bodies for the purpose of encouraging activities that best sustain, protect, and enhance the quality of the environment, economy, and community for the present and future benefit of the people of Hawai'i.

**Hawai'i Revised Statutes §225P-3: Hawai'i Climate Change Mitigation and Adaptation Commission**

Establishes the State of Hawai'i Climate Mitigation and Adaptation Commission, which is administratively attached to the Department of Land and Natural Resources. Coordination of this advisory commission is headed jointly by two co-chairs: the Chairperson of the Board of Land and Natural Resources and the Director of the State of Hawai'i's Office of Planning, or their designees.



## STRATEGIC PLANS

**Hawai'i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2021)**

Serves as the revised and updated version of the Hawai'i 2050 Sustainability Plan, provides additional recommendations to achieve within the 2020-2030 decade.

Serves as the State's climate and sustainability strategic action plan.

**Hawai'i 2050 Sustainability Plan: Ten Year Measurement Update 2008-2017 (2018)**

Provides an informal update includes a compilation, review and analysis of available metrics originally established by the 2008 version of the Hawai'i 2050 Sustainability Plan, along with additional recommendations developed by the Office of Planning.



## VOLUNTARY INITIATIVES

The Aloha+ Challenge serves as an initiative to enable public-private partnerships to also achieve Hawai'i's sustainability goals.



# SUSTAINING HAWAII



According to a study by Gallup, social gathering places are the top driver of people's attachment to their community (Knight Foundation 2010). While perhaps an intuitive conclusion, it reinforces the importance of fostering connection through placemaking and points to one way Hawai'i's strong social ties can be maintained as communities grow and change over the coming decade.

In Ho'olehua, Moloka'i, the Lanikeha Community Center is the only large facility available for such social gatherings, making it an especially valued asset for the community. Originally procured by the Moloka'i Homestead Farmers Alliance for its kitchen to assist farmers in creating value-added products, repeated interest led to it also becoming a focal location for community events: hālau hula, policy workshops for the community, weddings, a Kūpuna Program, and school fairs are just a sample of the diverse events that have been held there. The center was also renovated in 2017 through a State grant to better meet community needs, adding features like a new stage, entertainment and sound systems, an upgraded certified kitchen, and solar panels (Pactol 2018). With its titular focus on farmers, the Moloka'i Homestead Farmers Alliance dedicates much work to assisting them in increasing their economic stability and market reach, but its efforts have since grown to include the community at large, and the center mirrors this broader mission. Indeed, the Lanikeha Community Center has helped build new bridges and inspired conversations about how to synergize the excellent work being done by Moloka'i's many organizations. The COVID-19 global pandemic brought further opportunity to build this network to fill gaps in the community. Since the pandemic began, Lanikeha Community Center has hosted events such as toy giveaways, food distributions, and a monthly farmer's market not only lessening economic impacts but also buffering some of the pandemic's social disruptions and helping the community remain connected. Ultimately, the Lanikeha Community Center is both reflective of and nurtures community members' deep commitment to their home, and it is positioned—physically and figuratively—to become anything the community needs.



Photo left: Lanikeha Community Center and volunteers from the Moloka'i Homestead Farmers Alliance supporting their community-based COVID-19 relief program to distribute food, produce, hot meals, supplies (masks, sanitizers, etc.), and certificates for drugstore/prescription purchases in Moloka'i. Photo Credit: The Moloka'i Homestead Farmers Alliance.

Photo Right: A farm in Moloka'i from a farmer participating in the Moloka'i Homestead Farmers Alliance. Photo Credit: The Moloka'i Homestead Farmers Alliance.





# 2021-2030 RECOMMENDED ACTIONS

Hawai'i has the opportunity to make significant progress toward sustainability over this decade, building on the momentum of the past decade. Public engagement on this plan update identified climate action as the top sustainability priority over the next 5- and 10-year periods.

**This section presents recommended actions over this decade, based on an assessment of:**

**Anticipated readiness for action, based on the existence of at least some of these commitments:**

- The State of Hawai'i has an existing sustainability target codified in law.
- Existing state-mandated policies or government policies are in place to implement actions.
- There is a dedicated state strategic plan that defines requirements for making progress toward the goal

**Sense of urgency, as identified through public and stakeholder engagement**

**Potential to address important themes identified through public engagement, including:**

**Multiple SDGs addressed**

- Equity is either directly or indirectly addressed by implementation of the action.
- The action area is consistent with Native Hawaiian and local values, including:
  - Intergenerational equity
  - Explicit honoring and protection of native practices (e.g., gathering)
  - Use what you have before you build new
- Partnership opportunities exist for collaborating to secure funding and implement actions.
- The action area will benefit local residents.

Overall, this plan identifies eight focus areas for this decade, each of which includes specific strategies and examples of actions that can be taken to advance the State's environmental, social, and economic sustainability objectives. The strategies and actions presented in this section draw from existing strategic plans, laws, policies, and input from public and stakeholder engagement. Some actions can be addressed or begun immediately over the next five years; others build upon the five-year actions or include longer-term strategies that may begin in the second half of the decade. Finally, this list is not exhaustive but rather seeks to highlight and encourage the adoption of strategic actions identified through existing efforts of state agencies and other entities.

Photo Credit: State of Hawai'i, Hawai'i Tourism Authority





# PROMOTE A SUSTAINABLE ECONOMIC RECOVERY

## LOCAL AGRICULTURE



This section builds on recommendations from existing laws, policies, and strategic action plans, including Hawai'i Revised Statutes §225P-4; Hawai'i Revised Statutes Chapter 205; the Hawai'i Statewide Comprehensive Economic Development Strategy; and the Hawai'i Tourism Authority's Strategic Plan. Recommendations were also identified through state, county, stakeholder, and public input.

## GREEN WORKFORCE DEVELOPMENT AND EDUCATION

This section builds on recommendations from existing laws, policies, and strategic action plans, including the Hawai'i Statewide Comprehensive

### STRATEGY 1

#### Support farmer livelihoods

Encourage the development of regional food processing and packaging facilities and food hubs across all islands to support local agriculture distribution.

Work with farmers to address barriers such as access to retention of agricultural land, adoption of innovative technologies, affordable agricultural workforce housing, and irrigation needs.

Enhance the availability of financing to help farmers through mechanisms such as the livestock revitalization program and agricultural loan program.

Develop and distribute locally-relevant information and data that will help agricultural operators make informed business decisions.

Provide new and existing farmers with access to agricultural land, irrigation water, capital investments, training, and processing/packaging facilities.

Protect lands with a high capacity for intensive cultivation of food by minimizing land prices or rents based on non-agricultural use.

Expand public outreach and grants to farmers, incentivizing the pivot to different business strategies.

### STRATEGY 2

#### Support local markets for locally grown food

Encourage local food purchases for state-run programs including schools, universities, colleges, and prisons through a Farm-to-State Program.

Support consumer education programs that promote local farm recognition and inform on the benefits of buying local farm products (nutritional, economics, social, cultural).

Expand and improve branding and labeling programs to identify local foods.

Empower and inform agricultural producers what minimum quality, quantity, and timeliness is required to be able to sell local foods in hotels and local markets.

Support efforts that encourage the visitor industry to purchase local products and locally grown food whenever appropriate to reduce dependence on imports and increase local economic activity.

Support local food marketing programs to focus on people, place and products throughout the Hawaiian Islands.

Increase agricultural education within secondary schools, vocational schools, and colleges.

Develop a seafood hatchery and new aquaculture farm for local consumption and export.

Explore and invest in value-added products from Hawai'i farms and support and educate farmers on promotional opportunities to create a Hawai'i marketplace of products.

Elevate the need for agricultural planning and investment to meet local food security targets.

### STRATEGY 3

#### Promote sustainable & resilient farmland, practices, and infrastructure

Encourage sustainable crop management practices (e.g., organic farming, no till, improved manure management and sustainable irrigation practices) that may provide environmental services and co-benefits, such as protecting against soil degradation, providing GHG sequestration, increasing biodiversity and soil fertility, and maintaining or increasing economic production of crops and animal protein in order to meet the state's doubling of food production goals.

Continue to support the education of Native Hawaiian practices and other cultural farming practices such as lo'i farming to enhance local food productivity growth and protect Hawai'i's environment.

Continue to support the education of the genuine threats of invasive species to local farmlands and surrounding land habitats.

Ensure consistent funding for agricultural infrastructure improvements, operations, and maintenance.

Continue the State's purchase of fee interest for available prime agricultural lands before they are subject to non-agricultural development.

Coordinate water reuse expansion efforts with the Department of Agriculture's Agribusiness Development Corporation.

Explore and invest in the technological advancement of Hawai'i-based agriculture and food production, including indoor greenhouse growing opportunities.

Utilize more smart and high technology to improve agricultural production in Hawai'i.

Research and study proof of concept for large scale protected agriculture as an alternative to conventional agricultural production.

Expand public outreach and grants to farmers, incentivizing the pivot to sustainable and regenerative, and greenhouse gas sequestration agricultural business strategies.

### STRATEGY 4

#### Invest in green workforce development, beginning with youth

Identify opportunities to provide funding for and encourage youth engagement in the green workforce.

Incorporate green job pathways at both high school and 2-year college programs.

Enlist the support of policymakers, educational administrators, and others to provide the facilities, resources, and incentives that nurture and enable research, innovation, and technology.

Develop a local green job youth corps program that prioritizes the State's workforce development and economic diversification, while providing temporary work and training opportunities for young adults in natural resource management, agricultural development, conservation, renewable energy, or other sustainability professions.

Cultivate and sustain interest in youth and innovation, farm mentorship and other agricultural-related programs to promote vocational interest in agriculture, aquaponics, and robotics.



Development Strategy, Aloha+ Challenge, and University of Hawai'i Strategic Directions. Recommendations were also identified through state, county, stakeholder, and public input.

## DIVERSIFIED ECONOMY



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Hawai'i Statewide Comprehensive Economic Development Strategy.

## REGENERATIVE TOURISM



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Hawai'i Statewide Comprehensive Economic Development Strategy, Forest Action Plan, and Hawai'i Tourism Authority's Strategic Plan. Recommendations were also identified through state, county, stakeholder, and public input.

### STRATEGY 5

**Foster the development of jobs that can sustain families financially**

Encourage innovation, entrepreneurship, and small business development.

Provide Hawai'i small business and entrepreneurial support and enhance skill-building opportunities and workforce retraining.

Strengthen existing partnerships and form new ones to enhance high quality job creation in Hawai'i.

Provide workers with skills to adapt to job changes, navigate between careers, and create an adaptive workforce.

Develop Hawai'i's vulnerable workforce to include adaptive skills desirable in the 21st century job environment, leading to greater adaptability, higher probability to find work, and pivot during or soon after future economic shocks.

Develop local manufacturing periphery (including local creative agencies), and business to business (B2B) services.

Increase investment opportunity for local manufacturing.

Develop sustainable, resiliency-oriented products to be manufactured locally.

Support business pivots, revenue diversity, product manufacturing, and sales of local products.

Integrate circular economic principles in local manufacturing opportunities.

Prioritize resources to stimulate development of economic clusters, and the competitive advantages shared and invested in locally.

Increase digital and financial literacy within Hawai'i's schools and workforce.

Foster an ecosystem of innovation, research, education, and entrepreneurship that creates living-wage jobs and a diversified economy.

### STRATEGY 6

**Support diversification of the economy**

Develop emerging industries and diversify economic clusters.

Develop creative industry infrastructure.

Provide post-production creative industry training.

Build a robust media and entertainment complex to develop the film industry.

Strengthen vocational workforce training to high-paying creative industry jobs.

Connect local creative industry artists to online platforms for sales and marketing.

Empower creative industry content creators to market their projects.

Grow three priority sectors: Healthcare (including clinical and community health), Technology (including IT and clean energy), and Skilled Trades (including sustainable agriculture, manufacturing, sustainable development, and construction).

### STRATEGY 7

**Reduce the environmental footprint of the tourism industry**

Identify the impacts of and best practices for ecotourism.

Evaluate the feasibility of a state certification program to provide authentic ecotourism opportunities while also providing for enhanced protection of natural and cultural resources.

Assist and recognize visitor industry businesses that operate in an environmentally and socially responsible manner, including local food purchasing, waste reduction, and reducing petroleum-based energy, and water use.

Launch a collaborative tourism-based environmental sustainability program with natural resource partners to mitigate visitor impacts and support responsible tourism initiatives.

Protect and enhance recognition of Hawai'i as a green destination.

Incentivize and facilitate a shift to a regenerative visitor industry that has a smaller footprint and that aims to sustain and improve the quality of life for Hawai'i residents.

Mitigate impacts of tourism from a community standpoint through conducting the destination management planning process statewide.

Promote Hawai'i's sustainability, natural resources, local agriculture, and climate-resilience through Hawai'i tourism marketing and branding.

Enable Hawai'i tourism to contribute to the regeneration of Hawai'i's natural beauty, resources, and unique culture.

Develop a framework for a comprehensive sea level adaptation and resilience plan for the Waikiki Special District.

### STRATEGY 8

**Support native Hawaiian culture & reduce impacts of the tourism industry to local communities**

Monitor local infrastructure to support resident and visitor activity, assist counties in building capacity to service international flights, provide eco- and green tourism opportunities in balance with community input.

Convene community, government, and industry networks to support destination management and increase collaboration in responding to negative tourism impacts on Hawai'i's communities.

Provide members of the visitor industry with access to comprehensive Hawaiian cultural training, curriculum, and programming.

Enhance the visitor experience with programs that create and nurture a Hawaiian sense of place.





# REDUCE GREENHOUSE GAS EMISSIONS

## GHG EMISSIONS



This section builds on recommendations from existing laws, policies, and strategic action plans, including Hawai'i Revised Statutes §225P-4 and §225P-5, and the Carbon Offset Feasibility Report. Recommendations were also identified through state, county, stakeholder, and public input.

## CLEAN & EFFICIENT ENERGY



These strategies build upon recommendations from existing laws, policies, and strategic action plans, including the Hawai'i Statewide Comprehensive Economic Development Strategy, HSEO Annual Reports, the Water Resource Protection Plan, and the O'ahu Resilience Strategy. Recommendations were also identified through state, county, stakeholder, and public input.

### STRATEGY 9 Measure, manage, and plan for GHG emission reduction

Develop a Climate Action Plan to meet the State's Zero Emissions Clean Economy Target by 2045, using Science Based Targets and the IPCC reports.

Require emission reductions by setting a more stringent post-2020 sector-wide cap.

Continue to measure GHG emissions through periodic updates of the state's GHG inventory.

Identify types of agricultural and aquacultural practices, public land and marine use policies, and on-farm managing practices that would provide greenhouse gas benefits and result in tangible economic benefits to agricultural and aquacultural operations.

Establish short-term and long-term benchmarks that would indicate how effectively agricultural and aquacultural activities have helped to reach the State's Zero Emission Clean Economy Target by 2045.

Explore establishing net-zero GHG goals for all projects, including construction and infrastructure projects, to meet Hawai'i's Zero Emissions Clean Economy Target by 2045.

Encourage smart-growth strategies to foster urban infill development and re-development to significantly reduce the number of vehicular trips taken, reduce traffic and congestion, and GHG emissions.

### STRATEGY 10 Incorporate climate change planning into decision- making processes

Screen projects over a particular size for impact on climate change mitigation or achievement of other SDGs.

Consider the impact of agency plans, decisions, and strategies on the State's ability to achieve its climate and sustainability goals—including the State's ability to achieve the Zero Emissions Clean Economy Target by 2045—weighed appropriately against their primary purpose.

Give consideration to climate change planning in land use planning.

Investigate the possibility of establishing a fund to support and incentivize voluntary greenhouse gas reduction measures and set funding criteria that will make the most economic sense of the state (including from: voluntary contributions from individuals or organizations, tax revenue, utility ratepayer revenue, or financial institutions).

### STRATEGY 11 Promote energy conservation and efficiency through outreach, communication, and community and public engagement

Improve the awareness and understanding of energy resources by investing in ongoing community-based energy education.

Develop a clean energy public education plan and curriculum in coordination with institutions of public education.

Create incentives for energy-efficient behavior.

Study how energy conservation can be used as an incentive for, and complement to, water conservation.

### STRATEGY 12 Continue to invest in the deployment of clean energy technologies to reduce reliance on fossil fuels

Advance the 1-year, 2-year, and 5-year actions identified in the 2020 Hawai'i State Energy Office (HSEO) Annual Report on energy efficiency, clean transportation, energy assurance and resiliency, and renewable energy deployment.

Align policies and processes to enable adoption of more renewable energy sources and accelerate the adoption of storage.

Enable grid improvements and modernization toward greater interconnection of renewable resources.

Work on innovative clean energy initiatives (for example, biofuels, hydrogen, microgrids, working with community-friendly developers).

Expand micro-gridding, grid planning, cluster-based energy, and smart meters throughout the state.

Increase renewable energy installations through energy performance contracts.

Increase solar and storage battery projects.

Increase statewide rooftop photovoltaic installation.

Encourage and expand zero emissions vehicle charging in public areas, commercial areas, workplaces, households, and apartment dwellings.

Improve access to energy efficiency, renewable energy, and zero emissions vehicle charging options for rental units and condos.

Inspire and transform Hawai'i's clean energy future and expand the use of hydrogen fuel cell technology.

Educate the general public on the benefits of hydrogen fuel cell technology.

## SUSTAINABLE TRANSPORTATION



These strategies build upon existing laws, policies, and strategic action plans, including Hawai'i Revised Statutes §196-9, the Honolulu Annual Sustainability Report, and the Hawai'i County Climate Action Plan. Recommendations were also identified through state, county, stakeholder, and public input.

## WASTE MANAGEMENT



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Department of Health's Plastic Source Reduction Working Group Report, County of Hawai'i's Climate Action Plan, the Hawai'i 2050 Sustainability Plan Ten Year Measurement Report, and the O'ahu Resilience Strategy. Recommendations were also identified through state, county, stakeholder, and public input.

### **STRATEGY 13** **Expand the adoption of** **zero emission vehicles** **(ZEVs)**

Implement expanded infrastructure for ZEVs, including energy storage and increasing the availability of electric charging and hydrogen fueling stations.

Adopt a plan for statewide adoption of ZEVs.

Incorporate ZEVs into State and County government fleet.

### **STRATEGY 14** **Promote alternative** **modes of transportation**

Promote safe, connected multimodal transportation options focusing on equitable opportunities to walk, bike, and rely on other forms of active transportation to connect to transit.

Develop bike and pedestrian pathway networks statewide to increase multimodal connectivity.

Create transportation hubs designed to facilitate transfer from one mode of transportation to other modes of transportation while enhancing rider comfort and safety.

Expand public transportation systems to facilitate home to work commuting in areas with the greatest economic need.

Modernize transportation planning and projects to: enhance equity for all communities, reduce transportation costs to residents, minimize injuries and fatalities, improve public health and quality of life, and reduce greenhouse gas emissions.

Use travel demand forecasting and other tools to assess future road capacities and the effectiveness of alternative modes of travel.

Promote alternative transportation options in the development of new communities and infrastructure.

### **STRATEGY 15** **Reduce the generation** **of waste, including** **plastic waste**

Advance sustainable purchasing practices for state, county, and commercial procurement.

Use financial mechanisms to incentivize waste reduction.

Update the Department of Health (DOH) Health Code as needed to increase the use of reusables in food service.

Develop strategies to encourage plastic reduction and reuse in the food service industry, such as reusable container incentive programs for customers.

Develop recommendations for the implementation of a uniform, statewide policy for single-use plastics such as plastic bags and polystyrene foam containers that can replace existing county ordinances and provide businesses with laws that are consistent throughout the state.

Study and develop recommendations to implement extended producer responsibility to address solid waste, including bulky items and plastic packaging.

Review and update existing legislation to achieve statewide waste reduction goals.

Establish a 5-year state-facilitated education campaign about waste reduction.

### **STRATEGY 16** **Increase diversion of** **waste through** **recycling, reuse, and** **composting**

Reduce waste through encouraging source reduction and increased use of repairing, recycling, and composting services for residential, commercial, governmental, and industrial waste.

Accelerate regional composting statewide.

Require owners and managers of multi-family dwellings and multi-tenant commercial buildings to provide recycling services.

Comply with laws requiring recycling in state-owned facilities.

Expand opportunities for methane capture and reuse at landfills, waste-to-energy facilities, wastewater treatment facilities, and anaerobic digesters.

Evaluate recycling opportunities for large volume and hazardous waste streams, such as photo-voltaic solar panels and lithium-ion batteries from electric vehicles.

Update the State's Integrated Solid Waste Management Plan.

Review and update existing legislation to achieve statewide diversion goals.



# IMPROVE CLIMATE RESILIENCE

This section builds on recommendations from existing laws, policies, and strategic action plans, including the Department of Health-Hazard Evaluation and Emergency Response Office Memorandum on Risks of Sea Level Rise and Increased Flooding on Known Chemical Contamination in Hawai'i, Hawai'i Climate Change Adaptation Priority Guidelines, Forest Action Plan, O'ahu Resilience Strategy, Ocean Resources Management Plan, and the Sea Level Rise Vulnerability and Adaptation Report. Recommendations were also identified through state, county, stakeholder, and public input.



<b>STRATEGY 17</b> <b>Integrate climate change adaptation and resilience considerations into planning and implementation</b>	<b>STRATEGY 18</b> <b>Assess and communicate the impacts of climate change to residents, businesses, and communities most likely to be impacted</b>	<b>STRATEGY 19</b> <b>Implement actions that improve the state's resilience to climate change</b>	<b>STRATEGY 20</b> <b>Increase the resilience of vulnerable populations to the impacts of climate change and other shocks and stressors</b>
<p>Improve interagency and intragovernmental coordination to assess and address impacts from sea level rise, flooding, drought, heat, wildfire, and other climate-related hazards.</p> <p>Inventory and analyze critical infrastructure assets threatened by climate-related hazards (e.g., those along shoreline threatened by chronic and episodic coastal hazards and future sea level rise projections).</p> <p>Investigate the financial risk to /exposure of the state associated with climate change.</p> <p>Study the impacts of sea level rise projections on cultural and archeological resources, such as gathering sites, fishponds or fish traps (loko i'a), places of worship and shrines (heiau), and petroglyphs (ki'i pohaku).</p> <p>Coordinate across agencies with operational responsibilities over state facilities to: identify existing and planned facilities that are vulnerable to climate-related hazards; assess options to increase the resilience of those facilities; and report on progress made in implementing adaptation strategies in future plans, programs, and capital improvement needs and decisions.</p> <p>Develop a statewide Climate Adaptation and Resilience Implementation Plan.</p> <p>Incorporate regional managed retreat or strategic relocation analysis into planning.</p> <p>Study the feasibility of and prioritize nature-based solutions (e.g., on Hawai'i's high energy shorelines to manage and mitigate erosion).</p> <p>Include the increased and changing risks of chemical contamination due to sea level rise and increased flooding from climate change in future updates to the Hawai'i 2050 Sustainability Plan and 2017 Sea Level Rise Vulnerability and Adaptation Report, and incorporate efforts to mitigate risks in state, county, and local planning.</p>	<p>Develop a network of community resilience hubs.</p> <p>Engage state and county agencies, private sector, and nonprofit organizations in identifying the most critical climate risks facing the state.</p> <p>Invest in the continued monitoring and research on the impacts of weather hazards under climate change on the state and mitigation measures.</p> <p>Increase public awareness about climate risks facing the state, counties, and the public and actions they can take individually to increase their resilience and minimize negative impacts.</p>	<p>Establish an emergency food supply and storage strategy.</p> <p>Identify and select adaptation strategies (e.g., infrastructure investments, policy changes) that increase Hawai'i's resilience while upholding the goals of doing so equitably (e.g., using an equity lens framework) and in line with Native Hawaiian, Traditional Ecological Knowledge, and local values.</p> <p>Articulate the business case for investments in resilience strategies (estimating costs of inaction as well as financial benefits of investments) to ensure reliable energy, transportation fuel, and other systems.</p> <p>Seek federal funding to increase the resilience of Hawai'i's infrastructure and other assets (through implementation of strategies to protect, accommodate, and/or relocate).</p>	<p>Develop a Social Vulnerability Index to identify populations most at risk.</p> <p>Apply the Social Vulnerability Index (SVI) to develop climate adaptation strategies that are targeted to addressing vulnerabilities.</p> <p>Encourage community involvement and resilience by working with community members, matching community partners with funders, and initiating conversations between communities and the government.</p>

# ADVANCE SUSTAINABLE COMMUNITIES

This section draws from strategies identified in the priorities of the State's Climate Commission and recommendations from existing laws, policies, and strategic action plans, including the Aloha+ Challenge, Carbon Offset Feasibility Report, City and County of Honolulu General Plan, EPA Greening America's Communities: Greening Iwilei and Kapalama, O'ahu Resilience Strategy, State of Hawai'i Multi-Hazard Mitigation Plan, and the State of Hawai'i Strategic Plan for Transit-Oriented Development. Recommendations were also identified through state, county, stakeholder, and public input.



<b>STRATEGY 21</b> <b>Advance smart growth initiatives and multimodal transportation systems</b>	<b>STRATEGY 22</b> <b>Advance sustainability in school and university operations</b>	<b>STRATEGY 23</b> <b>Integrate sustainable design principles into new and existing buildings</b>	
<p>Promote human-powered transportation, multimodal systems, and connectivity throughout the state.</p> <p>Implement the Department of Transportation's Statewide Pedestrian Master Plan.</p> <p>Increase the urban tree canopy and increase dedicated bike lane miles.</p> <p>Integrate state and county transit-oriented development and smart growth measures in creating sustainable, livable communities.</p> <p>Increase public availability of outdoor spaces and provide areas where people can interact with nature and each other and reduce urban heat island effects.</p> <p>Advance multimodal transportation systems into the land use planning of new communities and redevelopment of existing communities.</p>	<p>Adopt ZEVs in school fleets (e.g., schoolbuses), where feasible.</p> <p>Expand more farm-to-school opportunities, including the 'aina pono program.</p> <p>Incorporate sustainable development practices into educational curricula to promote sustainability through individual actions as well as community-wide initiatives.</p> <p>Plan and implement strategies to achieve net-zero energy use in schools and universities by 2035.</p> <p>Establish a Sustainability Coordinator position for the Department of Education to support and incorporate sustainable practices in K-12 public schools and plan for meeting the net-zero energy goal in schools.</p> <p>Reduce waste through encouraging source reduction and increased use of repairing, reuse, recycling, and composting services in schools and universities statewide.</p>	<p>Utilize and fund integration of efficiency and green building requirements for new construction and major renovation projects.</p> <p>Explore further use of building codes and standards to improve and direct efficiencies among the existing and new infrastructure of the State of Hawai'i.</p> <p>Strengthen Hurricane Sheltering to highest degree possible to withstand Category 5 hurricanes.</p> <p>Establish a homeowners retrofit grant program for severe storm events.</p> <p>Ensure statewide resilient emergency power generation.</p> <p>Incentivize the use of green roofs.</p> <p>Study and implement green infrastructure design guidelines and policies.</p> <p>Support and expand on-site rainwater harvesting and stormwater management.</p> <p>Expand and integrate permeable pavement and concrete opportunities.</p> <p>Consider ecoblock/ecobuilding development to promote decentralized water and sustainable energy to reduce the development's carbon and water footprints.</p> <p>Consider underground cistern/detention infiltration chambers and above ground cisterns to collect and store rooftop rainfall and storm water runoff for water reuse strategies.</p> <p>Consider the adoption of a "one water approach" to provide integrated planning and implementation approach to managing finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs.</p> <p>Utilize green building performance tracking and metrics for building retrofits and consider impacts to building occupant health.</p>	<p>Collaborate with design professionals, developers, and contractors to identify synergistic sustainability and greenhouse gas emission reduction strategies that meet larger State and County goals while supporting affordability and workforce development.</p> <p>Establish partnerships and capital to build, maintain, and enhance infrastructure and fund the development of sustainable housing.</p> <p>Encourage innovative residential developments which result in: lower cost, the sustainable use of resources, more efficient use of land and infrastructure, greater convenience and privacy, and a distinct community identity.</p> <p>Update building codes and standards in a timely manner to increase clean energy and energy efficiency, water reuse and reclamation, and material resource efficiency among existing and new infrastructure in the State of Hawai'i.</p> <p>Prioritize and fund the implementation and adoption of standards such as LEED® and ENERGY STAR®, to the extent that they support increased efficiency of buildings within the state.</p> <p>Continue to explore and support low-carbon building products to reduce greenhouse gas emissions in building materials.</p> <p>Continue to encourage development within existing urban centers to reduce vehicle miles traveled, reduce greenhouse gas emissions, promote transit-oriented development planning efforts, and increase the efficient use of infrastructure to create distinct communities throughout Hawai'i.</p> <p>Emphasize existing building reuse and adaptation of Hawai'i's extensive existing building stock to limit the embodied carbon impact of new construction.</p>





# ADVANCE EQUITY

## ACCESS TO RESOURCES

Actions in this section build on recommendations from existing laws, policies, and strategic action plans, including the Hawai'i Broadband Strategic Plan, Hawai'i Housing Planning Study, Housing Functional Plan, and the State of Hawai'i Affordable Rental Housing Report and Ten-Year Plan. Recommendations were also identified through state, county, stakeholder, and public input.



## GENDER EQUITY



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Feminist Economic Recovery Plan. Recommendations were also identified through state, county, stakeholder, and public input.

### STRATEGY 24 Strengthen broadband access to support digital learning and online solutions in rural areas

### STRATEGY 25 Continue to improve economic and social sustainability of individuals through access to affordable housing

### STRATEGY 26 Continue to implement strategies that reduce homelessness in Hawai'i to enhance livelihoods

### STRATEGY 27 Continue to advance opportunities for all, regardless of gender

Invest in programs that will provide students with digital content via tablets, laptops and other mobile devices.

Provide free high-speed Internet services in public areas in and around all state buildings, public libraries, and schools.

Enable rapid introduction of community broadband in areas that do not have effective broadband service.

Identify barriers to the adoption of broadband and information technology services through collection of public and private sector data, including outreach survey activities.

Expand broadband and increase remote work opportunities to reduce greenhouse gas emissions from commuting, and address equity for rural communities and other broadband-dependent services.

Maintain a broadband mapping service to identify underserved communities.

Develop and implement provider and consumer incentives accordingly for last-mile installation or service subscription to encourage adoption and foster provision of affordable services in strategic areas.

Transition Hawai'i's government toward more digital systems.

Invest in and improve existing cable landing infrastructure.

Grow the Statewide Geographic Information Systems Program.

Support and adopt the goals set forth in the Digital Equity Declaration for Hawai'i adopted by the state's Broadband Hui.

Expand strategic broadband infrastructure to build a robust, resilient network including government-owned, non-profit or cooperative networks to enable all Hawai'i residents to access the global internet.

Implement strategies identified in the Affordable Rental Housing Report and Ten-Year Plan and the Hawai'i State Functional Plan on Housing.

Implement alternative financing mechanisms to support affordable housing, such as mixed-use developments.

Establish public-private partnerships to fund the development of sustainable housing.

Increase affordable housing opportunities for households up to 140% of the AMI.

Increase and sustain the supply of permanent rental housing that is affordable and accessible to Hawai'i residents, particularly those with incomes at or below 80% AMI.

Support Hawaiian Home Lands Homesteading programs.

Work to reduce current homelessness by supporting rapid rehousing programs that provide equitable financial assistance to help people access safe housing.

Combat future homelessness by identifying persons at risk and connecting them with homelessness prevention programs such as supportive services, mediation in housing court, and rent subsidies.

Support permanent supportive housing for chronically homeless individuals experiencing the longest episodes of homelessness.

Review and implement best practices from programs such Kahauiki Village (O'ahu), Huliau (Maui) or Kealahula at Pua Loke (Kaua'i) that combine low-cost housing models with on-site supportive services, and a specific preference for households transitioning out of homelessness.

Boost childcare, eldercare, and education, and offer support for women whose jobs and family roles may have been especially hurt by the COVID-19 global pandemic.

Increase sustainable employment opportunities for all, regardless of gender identification.

Increase gender diversity across state, local, and private sector leadership positions.

Increase awareness of the gender spectrum across all levels of government.

Ensure the representation of women, youth, LGBTQ+ persons, and immigrants within all levels of decision-making.

# INSTITUTIONALIZE SUSTAINABILITY

## GOVERNMENT CAPACITY TO ADDRESS SUSTAINABILITY



Strategies in this section build upon recommendations from existing laws, and policies. Recommendations were also identified through state, county, stakeholder, and public input.

## GREEN GOVERNMENT OPERATIONS



Strategies in this section build upon recommendations from existing laws, and policies. Recommendations were also identified through state, county, stakeholder, and public input.

### STRATEGY 28

**Invest in staff and other resources to coordinate and advance sustainability goals across state agencies and local governments**

Continue to leverage government public-private partnerships to advance sustainable development goals.

Increase coordination across government, nonprofits, the private sector, and communities to address and implement the SDGs.

Fund and staff the State Sustainability Program and other statewide and county coordinating programs responsible for implementing the SDGs.

### STRATEGY 29

**Update state policies to reflect sustainability and climate change priorities**

Update portions of the Hawai'i State Planning Act to reflect current priorities for sustainability and climate change adaptation (e.g., focus on the update and modernization of the agriculture industry), including those identified in this plan.

Update the State Functional Plans that were not recently updated during the 21st century, to align with climate change and sustainability targets and better reflect the current state of planning needs, with a particular focus on the Energy, Agriculture, Conservation, Recreation, Transportation, and Tourism Functional Plans.

Integrate land use planning to address Hawai'i's competing uses of land to mutually obtain local food production goals, affordable housing needs, sustainable energy goals, and conservation.

The State Sustainability Program should measure the progress of these recommendations on every 5th year between the decennial update of this plan to ensure progress toward Hawai'i's sustainability goals.

### STRATEGY 30

**Incorporate sustainability into government operations**

Procure environmentally preferable and sustainable products, including recycled and recycled-content, bio-based, and other resource-efficient products and materials.

Design and construct government buildings that meet the LEED® rating systems or another comparable state-approved, nationally recognized, and consensus-based guideline, standard, or system, except when the guideline, standard, or system interferes or conflicts with the use of the building or facility as an emergency shelter.

Implement water and energy efficiency practices in operations to reduce waste and increase conservation.

Incorporate principles of waste minimization and pollution prevention, such as reducing, revising, and recycling as a standard operating practice in programs, including programs for waste management in construction and demolition projects and office paper and packaging recycling programs.

Implement strategies to work toward on-site water reclamation and develop or retrofit infrastructure to support water reuse in 100% of government facilities by 2045.

Explore further opportunities to retrofit existing structures and to design new structures that reduce our carbon footprint and increase the government's ability to adapt to climate change impacts.

Maximize the use of solar on or around all state buildings and parking facilities, especially for new construction and major renovations.



# PRESERVE THE NATURAL ENVIRONMENT

## CLEAN WATER



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Ocean Resources Management Plan, Water Resources Protection Plan, and the Water Reuse Plan. Recommendations were also identified through state, county, stakeholder, and public input.

### **STRATEGY 31** **Improve water quality** **through reduced** **pollution and dumping**

Work toward the 2050 cesspool reduction requirement and develop infrastructure to support the elimination of cesspools.

Increase the shared understanding of green stormwater infrastructure among homeowners, government officials, practitioners, and private industry through continued outreach efforts.

Evaluate the use of green infrastructure along Hawai'i's shoreline and throughout the coastal zone, with the dual-benefit of controlling erosion and other shoreline processes while mitigating the impacts of land-based pollution and inland flooding.

Sponsor symposia and trainings on green infrastructure installation and maintenance for professionals, homeowners, and advocates.

Identify adaptations needed to implement green infrastructure successfully in Hawai'i's unique conditions (topography, climate, soils, and development patterns).

Study the efficacy, cost, and lifespan of green infrastructure and traditional water management techniques compared to the 'grey' infrastructure currently utilized in Hawai'i.

Ensure that water quality improvement and water reuse strategies are incorporated with land use planning.

### **STRATEGY 32** **Support water reuse** **strategies to conserve** **water**

Establish mandatory recycled water use zones within reasonable transport distances from major sources of recycled water and establish incentives for developers.

Upgrade Water Reuse regulations to allow unrestricted irrigation with R-1 recycled water and allow use of municipal delivered R-1 recycled water in individual residences for landscape and crops irrigation.

Allow groundwater recharge with recycled water for: use as a barrier against seawater intrusion, aquifer storage and recovery, indirect potable reuse, and as a flood mitigation strategy.

Mandate use of recycled water where available for golf course, landscape, and agriculture irrigation within designated recycled water use zones.

Develop standards and guidelines for stormwater reclamation and reuse.

Conduct water audits of public water systems to verify use and aid water providers in identifying water losses.

Develop water shortage plans for priority water management areas.

Upgrade water reuse regulations to encourage uses of graywater within a development parcel with a simplified permitting system.

Ensure that water quality improvement and water reuse strategies are incorporated with land use planning.

## MARINE RESOURCES & ECOSYSTEMS



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Aloha+ Challenge, Forest Action Plan, Hawai'i Coral Reef Strategy, Holomua: Marine 30x30 Plan, and the Ocean Resources Management Plan. Recommendations were also identified through state, county, stakeholder, and public input.

### **STRATEGY 33** **Establish policies to** **protect Hawai'i's unique** **marine ecosystems**

Protect coral reef systems by establishing a network of ecological-connected marine management areas, informed by ecological and socio-cultural design principles created using the best readily available science, local expert knowledge including traditional ecological knowledge.

Increase education and outreach efforts to build a greater public awareness for responsible behavior affecting aquatic resources.

Support invasive species management and watershed protection.

### **STRATEGY 34** **Manage climate change** **impacts to marine** **resources**

Expand the use of sea level rise and land cover data in conducting stormwater assessments and modeling.

Protect ahupua'a that recharge freshwater supplies.

Evaluate the use of green stormwater infrastructure along Hawai'i's shoreline and throughout the coastal zone, with the dual benefit of controlling erosion and other shoreline processes while mitigating the impacts of land-based pollution and inland flooding.

# NATURAL RESOURCE PROTECTION



This section builds on recommendations from existing laws, policies, and strategic action plans, including the Forest Action Plan, Hawai'i Interagency Biosecurity Plan, Hawai'i Tourism Authority Strategic Plan, Nature-Based Resilience and Adaptation to Climate Change in Hawai'i Working Paper, and the Water Resources Protection Plan. Recommendations were also identified through state, county, stakeholder, and public input.

<b>STRATEGY 35</b> <b>Protect and manage watersheds</b>	<b>STRATEGY 36</b> <b>Continue to adopt strategies that protect land-based natural resources</b>	<b>STRATEGY 37</b> <b>Conserve working forest landscapes, protect forests from harm, and enhance public benefits from trees and forests</b>
<p>Support long-term hydrologic monitoring programs to understand and document changes in watershed productivity that result from improved watershed management activities.</p> <p>Increase research and monitoring of new emerging watershed and forest threats and develop approaches and management tools for controlling and reducing impacts on watersheds where found.</p> <p>Identify specific areas, regions, or watersheds to target for concentrated efforts and collaborate on setting priority areas for watershed management with key federal, state, and county agency partners, landowners, and stakeholders.</p> <p>Support research on the effects of climate change on watersheds and water resources in Hawai'i.</p> <p>Improve collaboration among county water departments, the CZM Program, DOH, EPA, the U.S. Fish and Wildlife Service (USFWS), DAR, and NRCS, which have overlapping priorities, to jointly set future priorities, to strategically advance projects for competitive grant opportunities at the local and national watershed-scale conservation programs, and to maximize the amount of watershed acreage being protected and the conservation benefits realized.</p> <p>Improve methods for targeting and communicating with communities and the public about the importance of watershed management, the threats to Hawai'i's forests, and the community's role and contribution to improving management of watersheds locally and across the state.</p> <p>Improve monitoring, data collection, and information sharing between the watershed partnerships, various private and public land management programs, and the ISCs to consolidate and collect comparable data regarding watershed and forest health, location of invasive species, management actions being taken, and impacts of land management activities on water quality and quantity.</p> <p>Continue to implement non-point source water pollution management strategies to restore impaired waters and protect high quality waters from non-point source pollution.</p>	<p>Continue to fund, manage, protect, and improve Hawai'i's natural resources against climate hazards.</p> <p>Identify the adequate level of hydrologic and climatic data collection needed statewide to enable effective decision-making about water security.</p> <p>Improve recharge estimates to include the best available information on climate change impacts.</p> <p>Improve estimates of stream flow characteristics, particularly during low-flow conditions.</p> <p>Understand the impacts of native vs. non-native plant species on water resources and watersheds by supporting research and long-term hydrologic monitoring programs.</p> <p>Construct new deep monitoring wells in critical aquifers to gather and utilize data to identify impacts from pumpage, climate, and land use changes; verify fresh water sustainable yields; and monitor recharge trends.</p> <p>Reduce invasive species impacts through implementing Hawai'i Interagency Biosecurity Plan.</p>	<p>Restore and conserve native forest species and ecosystems by using native species where possible and discouraging the use of potentially invasive species.</p> <p>Ensure that local and statewide climate change and drought plans, policy, and initiatives address wildfire.</p> <p>Monitor resource vulnerability to climate change through improved data collection and refinement of models that are specific to Hawai'i.</p> <p>Investigate and pursue opportunities for obtaining certification of sustainable production and harvest practices for common market species.</p> <p>Complete comprehensive management plans for all state forest reserves.</p>



This section builds on recommendations from existing laws, policies, and strategic action plans. Recommendations were also identified through state, county, stakeholder, and public input.

### **STRATEGY 38**

#### **Ground climate and sustainability strategies in our cultural foundation**

Foster opportunities to recommit to traditional practices and principles as well as transmit and generate new cultural knowledge and practices to inform sustainability strategies.

Incorporate Native Hawaiian and Traditional Ecological Knowledge and practices in the planning for Hawai'i's sustainability and the impacts of climate change.

Continue to require certain board and commission members to attend an Office of Hawaiian Affairs-sponsored training course to ensure individuals are familiar with their legal responsibilities regarding Native Hawaiian rights and the public trust doctrine.

Prepare more Native Hawaiians to assume leadership roles within the community and our institutions.

Elevate the position of Hawaiian cultural experts to develop standards and practices.

Support Native Hawaiian and other cultural festivals and events that perpetuate Hawai'i's island culture and communities.

Support programs that help to revitalize and normalize 'Ōlelo Hawai'i.



**Photo Courtesy:** State of Hawai'i, Hawai'i Tourism Authority



# ‘A‘OHE HANA NUI KE ALU ‘IA

*No task is too big when done together by all*

The disruptions brought about by the COVID-19 global pandemic created space to reflect on Hawai‘i’s values, consider what makes Hawai‘i unique and resilient, and recognize some of the fault lines in our communities that make us vulnerable to shocks and stressors. At the time of the development of this plan, the COVID-19 global pandemic looms large. Recovery from the COVID-19 global pandemic is both an enormous challenge and a once-in-a-generation opportunity to rethink what was considered unchangeable. We can choose to innovate, to do things differently, to re-focus on the values and culture we want to perpetuate.

Climate change will bring new challenges that Hawai‘i has not yet seen. We will increasingly experience shocks and stressors due to climate change. There is good information about the projected changes and many of the strategies recommended in this plan will help increase the Hawai‘i’s resilience.

## **This decade is a critical time to act.**

Hawai‘i has already made significant sustainability commitments through laws, policies, and plans that reflect our values. For the first time, this updated plan presents these commitments as a collective whole and aligned with the SDGs. There is much work yet to be done to achieve these sustainability goals and commitments. The strategies identified in this plan point to what is urgent to undertake over this decade.

## **A successful Decade of Action in Hawai‘i will require:**



### **Strategic prioritization of limited resources.**

When prioritizing investments, funders should evaluate whether the activity contributes to one or more SDGs, is ready for action (e.g., existing targets, policies, plans, and/or partnerships are in place), addresses an urgent need, directly or indirectly addresses equity, explicitly protects our values, and will benefit local residents.



### **Identification and commitment from lead and supporting actors.**

There are opportunities for everyone (elected officials, state agencies, counties, community organizations, the private sector, students, and residents) to lead or support efforts to achieve these strategies; collaboration will be essential.



### **Development of metrics to define success and then enable measurement and tracking of our progress.**

Defined endpoints and metrics for success will make it possible to measure advancements and identify where gaps remain; in some cases, targets and metrics have already been identified whereas a collective vision will need to be developed in other cases.



### **A realistic timeline to work toward.**

We can get moving quickly on some strategies, for which sustained efforts will be necessary to make steady, incremental process. Others may require significant upfront planning, buy-in from disparate parties, and securing financial support before a swift and dramatic change can be made. Establishing a clear and feasible timeline that sets out incremental milestones will ensure greater success.

**Let’s work together toward an equitable, resilient, and sustainable Hawai‘i.**



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## **Hawai'i 2050 Sustainability Plan**

### **Charting a Course for the Decade of Action (2020–2030)**

June 2021

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