HAWAI'I COUNTY

2022 COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY [DRAFT]

Prepared by: Hawai`i Island Economic Development Board

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ʻI KA WĀ MA MUA, KA WĀ MA HOPE

LOOKING BACK TO LOOK FORWARD

Developed and designed by Hawai'i Island Economic Development Board
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The Hawai`i Island Economic Development Board (HIEDB) is privileged to prepare and update the Comprehensive Economic Development Strategy (CEDS) which is intended to serve as the blueprint for generating economic growth, diversification, job creation, and resiliency for Hawai`i County. This document was prepared in collaboration with the Economic Development Alliance of Hawai`i (EDAH) with funding from the Economic Development Administration (EDA),

U.S. Department of Commerce through the Hawai`i State Office of Planning and Sustainability (OPSD), Department of Business, Economic Development and Tourism,

This economic roadmap is developed with input from a diverse and large group of Hawai`i Island residents representing the public, private, and non-profit sectors, following the guidelines released in February 2015 by the U.S. Economic Development Administration. Upon acceptance and approval by the United States Economic Development Administration (EDA), the CEDS positions Hawai`i County to be eligible for federal funding, and as a roadmap for Hawai`i County's economic future through defined goals, objectives, and actionable strategies. Consistency and coordination with other plans such as, including and not limited to, the Hawai`i 2050 Sustainability Plan, Hawai`i County General Plan and respective Community Development Plans (CDPs) are also an important part of this strategic effort.

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TABLE OF CONTENTS

4
ACKNOWLEDGEMENTS AND MAHALO

10
METHODOLOGY, PROCESS, AND VISION
Overarching Themes, Objectives, and Strategies

25
HAWAI`I COUNTY ECONOMIC OVERVIEW
Key Economic Indicators

39
SECTOR INDUSTRIES
Agriculture and Food Systems
Astronomy and Technology
Construction and Infrastructure
Creative Arts and Industries
Education, Knowledge Creation, and Workforce Development
Energy and Resiliency
Environment and Climate Change
Government
Health and Wellness
Hospitality and Tourism

110
EPILOGUE

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COMMUNITY PARTICIPATION AND FOCUS GROUP MEETINGS

In addition to the SAC, HIEDB met with multiple individuals and convened numerous focus group meetings to discuss aerospace, agriculture and agrotechnology, astronomy, broadband, climate change, cost of living, creative arts, cybersecurity, economic growth and diversification, education, electrification and energy, engineering, government, healthcare, homelessness, housing, indigenous knowledge, infrastructure and modernization, innovation, poverty, rules and regulations, science, shipping, technology, tourism management, transportation, values, water, and workforce development to help inform the CEDS. To integrate diversity, equity, and inclusiveness and Indigenous Hawaiian traditions, values, and perspectives, HIEDB simultaneously hosted an online series Native Hawaiian Perspectives featuring panel discussion on multiple topics germane to Hawai`i Island's socioeconomics.

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YOUTH VOICES

In addition those individuals listed above, thirty-four (34) juveniles ranging 11 to 17 years in age participated in one or more focus group meetings and are not being named out of respect for their privacy.

ORGANIZATIONS that participated and provided guidance included:

- Chamber of Commerce of Hawai`i
- Hawai`i Community College
- Hawai`i Island Chamber of Commerce
- Hawai`i Island Economic Development Board
- Hawai`i Leeward Planning Conference
- HCF Freshwater Initiative
- Hui Ohana, Hawai`i Island Native Hawaiian Chamber of Commerce
- Japanese Chamber of Commerce and Industry Hawai`i
- Kona Kohala Chamber of Commerce
- Maunakea Observatories
- Sustainable Energy Hawai`i
- U.S. Army Garrison Hawai`i Native Hawaiian Advisory Council
- Vibrant Hawai`i

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CHATHAM HOUSE RULE

All meetings were convened under the Chatham House Rule:

"When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed." [1]

EXPLANATION OF THE RULE

The Chatham House Rule originated at Chatham House with the aim of providing anonymity to speakers and to encourage openness and the sharing of information. It is now used throughout the world as an aid to free discussion. Meetings do not have to take place at Chatham House, or be organized by Chatham House, to be held under the Rule.

FREQUENTLY ASKED QUESTIONS

What are the benefits of using the Rule? It allows people to speak as individuals, and to express views that may not be those of their organizations, and therefore it encourages free discussion. People usually feel more relaxed if they do not have to worry about their reputation or the implications if they are publicly quoted. It is widely used in the English-speaking world by local government and commercial organizations as well as research organizations.

Can participants in a meeting be named as long as what is said is not attributed? It is important to think about the spirit of the Rule. For example, sometimes speakers need to be named when publicizing the meeting. The Rule is more about the dissemination of the information after the event - nothing should be done to identify, either explicitly or implicitly, who said what.

[1] Chatham House, also known as the Royal Institute of International Affairs, is an independent policy institute headquartered in London. Its mission is to provide authoritative commentary on world events and offer solutions to global challenges. It is the originator of the Chatham House Rule.

All participants in this process have affirmed their commitment to working to implement the CEDS including introducing and adopting the goals, objectives and strategies at their respective companies and community organizations, as well as, participating in period reviews, helping to determine course corrections and future direction for Hawai`i Island economic development strategy.

Moreover, the group is committed to support the Hawai`i 2050 Sustainability Plan [2] and Hawai`i's 2030 statewide sustainability goals and the "Aloha+ Challenge, a state-wide commitment to sustainability, with the leadership of the Governor, four county Mayors, ... and other public-private partners across the state. The Aloha+ Challenge: He Nohona ʻAeʻoia, A Culture of Sustainability builds on Hawaiʻi's history of systems thinking, Hawaiian culture and values, and successful track record on sustainability to outline six ambitious goals to be achieved by 2030 in clean energy transformation, local food production, natural resource management, solid waste reduction, smart sustainable communities (including climate resilience and liveability), and green workforce and education." [3]

[2] Office of Planning and Sustainable Development, Department of Business, Economic Development & Tourism, Honolulu, HI. "Hawaiʻi 2050 Sustainability Plan, Charting a Course for the Decade of Action (2020-2030)." June 2021. Accessed 12 July 2022. http://dbedt.hawaii.gov/economic/files/2020/06/Quality-of-Life-2019-Update.pdf

[3] Hawai`i Green Growth. The Aloha + Challenge. 2018, accessed April 2022 https://aloha-challenge.hawaiigreengrowth.org/aloha-goals/

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METHODOLOGY AND PROCESS

Work on the Hawai`i County 2022 - 2026 Comprehensive Economic Development Strategy (CEDS) was coordinated by the Hawai`i Island Economic Development Board, Inc. (HIEDB) and initiated in the summer of 2021 during the throes of the COVID-19 pandemic with multiple outreach and community engagement sessions to provide an initial introduction to the CEDS process and overview of prior CEDS plans developed for Hawai`i Island in 2005, 2010, and 2016. This work continued into summer of 2022 culminating in this document which is based on four distinct and integrated project phases:

1. **Baseline Conditions:** The economic and demographic conditions of Hawai`i County [4] were inventoried and considered to establish an understanding and baseline from which to start development of the CEDS.

2. **Strategic Advisory Committee:** As required by the Economic Development Administration (EDA) of the U.S. Department of Commerce, a Strategic Advisory Committee (SAC) comprised of diverse stakeholder representation was formed to contribute to the knowledge base developed in phase one (above); validate the analysis and findings; and provide guidance to the process and implementation of the CEDS. HIEDB made every effort to reflect the island's diversity in forming the committee. This committee was supported by numerous individuals and community organizations who participated in focus group meetings.

3. **SWOT Analysis:** Identification of the island's Strengths, Weaknesses, Opportunities, and Threats with SWOT sessions conducted with the SAC and others in on-line platform meetings convened between October 2021 and August 2022. Information was also developed from one-to-one interviews with stakeholders.

4. **Action, Implementation and Measurement:** The preparation of the Hawai`i County CEDS update was done in conjunction with the update of the Hawai`i State CEDS. HIEDB will maintain communications with key stakeholders to facilitate coordination and implementation to assist Hawai`i Island with meeting economic goals, benchmarks, and to leverage and maximize resources, opportunities, and outcomes.

[4] For the purposes of this report, the terms "Hawai'i County," "County of Hawai'i," "Hawai'i Island," "island," and "community" are used interchangeably to refer to Hawai'i County which is coterminous with the Island of Hawai'i and is the specific jurisdiction and geographic area being referred to in this report.

WHAT IS A COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY (CEDS)?

A Comprehensive Economic Development Strategy (CEDS) is an economic development plan required by the U.S. Department of Commerce, Economic Development Administration (EDA) for areas to qualify for assistance under the Public Works and Economic Adjustment Programs, and "contributes to effective economic development in America's communities and regions through a locally-based, regionally-driven economic development planning process."[2] A strategy-driven plan for regional economic planning, the CEDS provides the capacity-building foundation by which the public sector, working in conjunction with other economic actors (individuals, firms, industries), creates the environment for regional economic prosperity. [5]

Per the regulations governing the CEDS (see 13 C.F.R. § 303.7), the following sections must be included in the CEDS document:

- **Summary Background:** A summary background of the economic conditions of the region.
- **SWOT Analysis:** An in-depth analysis of regional strengths, weaknesses, opportunities and threats
- **Strategic Direction/Action Plan:** The strategic direction and action plan should build on findings from the SWOT analysis and incorporate/integrate elements from other regional plans (e.g., land use and transportation, workforce development, etc.) where appropriate as determined by the EDD or community/region engaged in development of the CEDS. The action plan should also identify the stakeholder(s) responsible for implementation, timetables, and opportunities for the integrated use of other local, state, and federal funds
- **Evaluation Framework:** Performance measures used to evaluate the organization's implementation of the CEDS and impact on the regional economy.
- **Economic Resilience:** The ability to avoid, withstand, and recover from economic shifts, natural disasters, the impacts of climate change, etc. Note: resilience as a separate section, distinct goal or priority action item, and/or as an area of investigation in the SWOT analysis. It may be most effective, however, to infuse the concept of resilience throughout the CEDS document.

[5] U.S. Development Administration, "Overview," CEDS Content Guidelines, accessed October 2021, https://eda.gov/ceds/

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The Hawai'i County/ Island Comprehensive Economic Development Strategy (CEDS) serves as a roadmap to understanding Hawai'i County's economy and as a useful guide to policy development and decision making.

It is a comprehensive planning process resulting in a document that acts as a blueprint to the economic development activities of Hawai'i County and is a requirement for receiving Federal funds through the Economic Development Administration (EDA) of the US Department of Commerce.

Developed by master navigator Nainoa Thompson, the Hawaiian Star Compass is the foundational framework behind the art of wayfinding.[6] Besides the stars, the compass also reads the flight path of birds and the direction of waves.[7] The Hawaiian Star Compass and construct of wayfinding are used throughout this report as guiding points.

The CEDS is revised/updated at least every five (5) years. The first CEDS for Hawai`i Island was done in 2005 with updates in 2010 and 2016 (delay due to administration changes and other external factors). Hawai`i Island Economic Development Board (HIEDB) is privileged to have done the aforementioned CEDS and to have the opportunity to work with our community in convening the 2022 CEDS process and developing this document.

As further required by the EDA, a Comprehensive Economic Development Strategy Advisory Committee (SAC) was established to guide the CEDS process. Over the next five years, HIEDB will engage with SAC and others to monitor progress and continue collaboration with the Hawai`i Island community to maintain partnerships and develop initiatives to successfully achieve CEDS goals.

[6] Wayfinding: The process or activity of ascertaining one's position and planning and following a route. WAYFINDING | Meaning & Definition for UK EnglishLexico.com, accessed March 2022 https://www.lexico.com/definition/wayfinding

[7] Thompson, Nainoa. "Hawaiian Voyaging Traditions: On Wayfinding" accessed 07 August 2022 https://archive.hokulea.com/ike/hookele/on_wayfinding.html

VISION

The Hawai`i County of Hawai`i Comprehensive Economic Development Strategy (CEDS) 2022 Update Strategic Advisory Committee (SAC) conducted an analysis in May 2022 of Hawai`i Island's Strengths, Weaknesses, Opportunities, and Threats (SWOT) which was considered over the following months along with SWOT analyses done in preceding months by multiple industry sector and community focus groups.

SWOT Common Themes / Trends were identified as

- Affordability, Cost of Living, Poverty
- Diversification
- Education and Workforce Development
- Housing
- Infrastructure
- Innovation and Technology
- Labor Force Shortages
- Water

Throughout the process, Hawai`i's rich culture, heritage, traditions, and resilience of Indigenous Hawaiians were considered, leading to establishing wayfinding5 as the foundation for guiding us on our economic journey and developing the 2022 Hawai`i County CEDS. Stakeholders and community participants further emphasized the need to recognize the island's strong pre-pandemic economy, community's sense of place and responsibility for our economy and future, and integrate shared values of Aloha and Indigenous Knowledge, which led to the working slogan of, ***"Hawai`i Island: Our Island – Our Economy – Our Future `I Ka Wā Ma Mua, Ka Wā Ma Hope – Looking Back to Look Forward"*** and vision statement shown above.

In recognition that Hawai`i's geographic isolation supports an economy based on "local" industry sectors and human capital, the SAC continued its wayfinding until arriving at identifying ten key sectors and industry clusters:

1. Agriculture and Food Systems
2. Astronomy and Technology
3. Construction and Infrastructure
4. Creative Arts and Industries
5. Education, Knowledge Creation, and Workforce Development
6. Energy and Resiliency
7. Environment and Climate Change
8. Government
9. Health and Wellness
10. Hospitality and Tourism

From a systems perspective, numerous overarching influences and elements also must be integrated including those that are discussed in the following pages.

VISION

Building upon Hawai`i County's healthy pre-pandemic economy, we strive to develop a more vibrant, sustainable economy; improve resilience to systemic shocks; identify and foster opportunities of shared prosperity for Hawai`i County's diverse communities.

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OVERARCHING THEMES, OBJECTIVES AND STRATEGIES

In the process of conducting appreciative inquiry to prioritize the many components that must be considered in laying out an economic development strategy for Hawai`i Island, several consistent desired outcomes emerged. These themes-in-common which reflect the overall desired outcomes for the CEDS, are also important in planning and implementation of strategies to achieve results for the respective sectors.

Affordable and Attainable Housing

Like other jurisdictions, Hawai`i County faces several obstacles that undermine the construction of new workforce and low-income housing which must be addressed including and not limited to: misperceptions of affordable housing, not in my back yard (NIMBY) ideology, rules, and regulations fraught with inadvertent consequences, and lack of alignment between community need and demand for housing and the policies, rules, and regulations put in place.

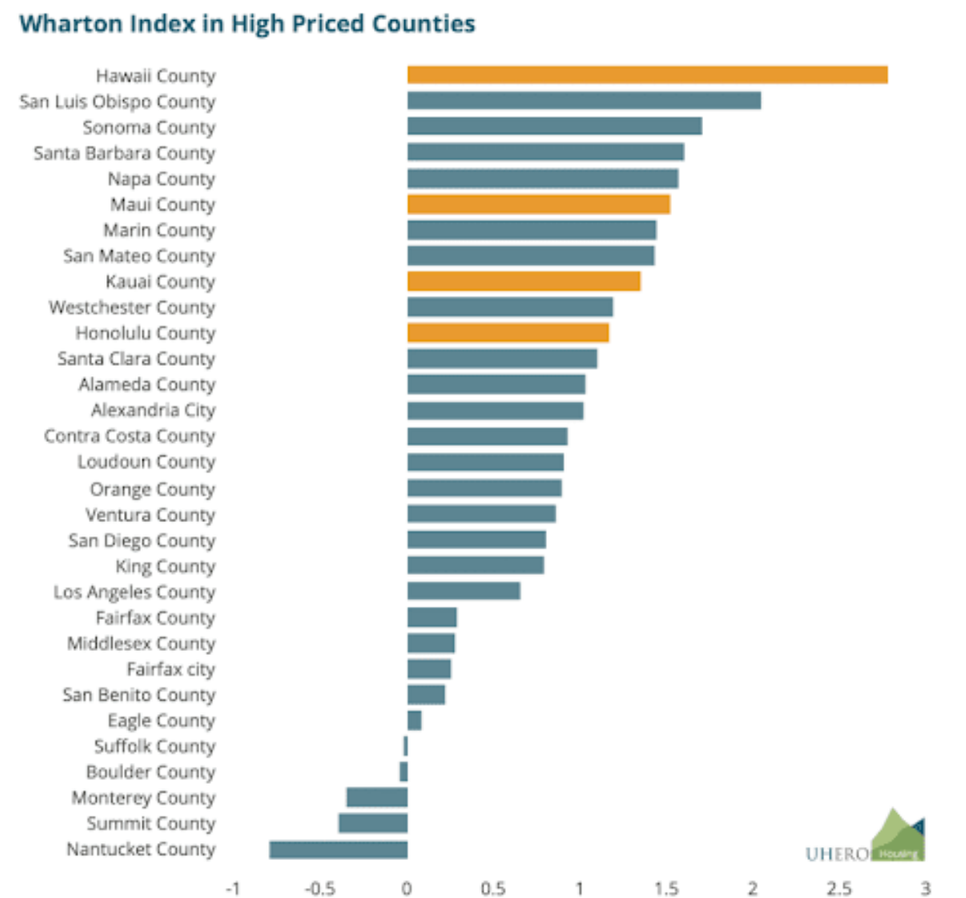
For example, a report issued by the University of Hawai`i Economic Research Organization (UHERO) in April 2022 confirmed what many had surmised anecdotally without the objective analysis to support their theory. In UHERO's brief "Measuring the Burden of Housing Regulation in Hawaii"[8] the regulatory barriers to development in Hawaii are gauged relative to those in other states across the U.S. with high housing costs utilizing information provided by the Wharton Residential Land Use Regulatory Index.[9] As illustrated in the chart on the next page, Hawai`i County's housing costs is reflected as highest in the nation when compared.

Simultaneously, some Hawai`i County residents and policymakers routinely point to out-of-state purchasers as a key reason for residents being unable to achieve the dream of home ownership. This hypothesis is disputed by the Grassroot Institute of Hawai`i in an August 2022 brief titled "The 'outsider' theory on Hawai`i's housing crisis"[10] analyzing how Hawai`i's home prices are impacted by out-of-state-buyers.

[8] Inafuku, Tyndall, and Bonham. Measuring the Burden of Housing Regulation in Hawaii · UHERO accessed 22 August 2022. https://uhero.hawaii.edu/measuring-the-burden-of-housing-regulation-in-hawaii/A New Measure of the Local Regulatory Environment for Housing Markets: The Wharton Residential Land Use Regulatory Index — Zell/Lurie Real Estate Center (upenn.edu).

[9] Gyourko, Saiz, and Summers." A New Measure of the Local Regulatory Environment for Housing Markets: The Wharton Residential Land Use Regulatory Index" accessed 22 August 2022. https://realestate.wharton.upenn.edu/working-papers/a-new-measure-of-the-local-regulatory-environment-for-housing-markets-the-wharton-residential-land-use-regulatory-index/.

[10] Ahokovi, Jensen. "The 'outsider' theory of Hawai'i' housing crisis". Accessed 22 August 2022. https://www.grassrootinstitute.org/wp-content/uploads/2022/08/The-%E2%80%98outsider-theory-of-Hawaiis-housing-crisis.pdf.



The figure includes the 30 counties in the US with the highest median home prices, as well as Hawaii County.

These factors confirm that housing is a complex societal issue requiring more systemic consideration including determining whether affordable and attainable housing is the true problem, or rather a symptom tied to other cross cutting issues such as cost of living and poverty as we determine our best strategies and priority actions.

As illustrated in the chart **below,** the Wharton Index measurements reflect Hawai`i County's housing costs as highest in the nation in a comparison with thirty (30) other high-priced counties. (Note that Maui, Kauai, and Honolulu Counties also are included).

The following list though not all-inclusive refers to overarching, cross-cutting areas and priority actions besides housing included in Hawai`i County economic development discussions.

Business, Industry and Entrepreneurship

Continue efforts to engender and support more responsive government, establish the necessary regulatory environment and framework, other ecosystems, and efforts to make it easier to do business in Hawai`i County in a responsible, environmentally friendly, community minded, resilient manner that enhances the overall economic well-being of the community.

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Child Care and Early Childhood Education

It is important to recognize childcare and early childhood education as being integral to the social infrastructure for economic development. Beyond providing care and education for our youngest citizens, childcare and early childhood education impact people's ability to get to work just like built infrastructure such as roads and public transportation. As a sector, childcare and early childhood education can impact land use planning, public and private financing, and household income, and thus, requires planners and economic development strategists to consider how best to include keiki (children) in the community and economic planning discussion and process. The "Hawai`i County Early Childhood Community Profile" [11] done in March 2022 provides data on key dimensions of child and family wellbeing, including economic conditions, housing, health, early care and education, and the status of key resources that help to support families with young children in Hawai`i County. The commitment to include this important sector as an important economic indicator is further reflected by the addition in 2022 of an Early Childhood Education Specialist in the Hawai`i County Department of Research and Development.

Climate Change

Increasingly the public and private sector in Hawai`i County recognize that climate change is affected by and also affects economic development. Challenges of extreme weather events, sea level rise, ocean acidity, increased heat, drought, and other climate change impacts threaten infrastructure, viability of coastal and inland properties (residential, commercial, and civic) requiring strategies be developed to withstand the shocks of and adapt to climate change.

Collaboration, Communications, Leveraging and Increasing Resources

Successful implementation of the Hawai`i County CEDS will require facilitation of existing and creation of new ecosystems for sectors to strengthen, connect and collaborate; increase capacity; establish and maintain excellent communications; leverage existing resources in a responsible manner; and attract new investments and resources. There is also a need to focus on the community and systems changes that will modify and improve our island's economic conditions.

[11] Hawai'i County Early Childhood Community Profile — Early Childhood Action Strategy Early Childhood Action Strategy (ECAS) Honolulu, Hawaii. March 2022. Accessed 09 July 2022 https://hawaiiactionstrategy.org/ecas-data-efforts-1/datawalks2022/3/22/hi-county-early-childhood-community-profile-tyyt2i

Education and Workforce Pipeline

To retain and grow the job base in Hawai`i County, all sectors are committed to supporting opportunities such as the Workforce Innovation and Opportunity Act of 2022 and the Workforce Opportunity Investment Act (WOIA), underserved communities, growing and enriching our talent pool. To understand and respond to the needs of both current and future employers, establish a community-business-academic coalition to regularly assess such needs through surveys, workshops, etc. Support P-20, vocational training and other learning opportunities that are key to Hawai`i County's economic development. Identify, facilitate, develop, implement, and support programs that work towards ensuring both short and long-term initiatives built around key STEAM (science, technology, engineering, art, and mathematics) skills. Support certification programs and incentives for employers to support internships, fellowships, mentoring, and experiential training opportunities.

Financial Institutions and Investors

Besides providing capital and being employers and entrepreneurs, in channeling funds financial institutions and investors play an instrumental role in helping to identify the right types of industries and projects for the community. It is therefore incumbent to ensure banks, credit unions, economic development organizations, and prospective investors are familiar with and understand the role of the Comprehensive Economic Development Strategy (CEDS) in fostering the island's economic health. Support efforts to provide information and technical assistance to businesses, project proponents, stakeholders and others regarding financing and capital opportunities from public and private sources.

Infrastructure

Critical to all sectors and overall economic development, job creation, and prosperity, is the replacement, maintenance, and modernization of aging infrastructure and development and construction of new infrastructure including and not limited to broadband and emerging communications/ connectivity, electric and hydrogen fuel vehicles, and other technologies. Encourage infrastructure built to allow for additions/modifications with minimal effort. An example of this is the "Dig Once" policy which requires coordination with local government by public and private excavators whenever ground will be broken in the public right-of-way (PROW) such as for installation of cables or conduit.

Prosperity and Poverty

Redirect focus on wealth-creation versus profit-generation to better ensure inclusive economic growth aligned with equity that optimize assets, operating more efficiently and productively, the levels of disparity, inequality, and poverty can be lessened on Hawai`i Island. Increase community engagement on and understanding of shared prosperity to ensure this philosophy of shared prosperity is built into every sector's proposed strategy.

Quality of Life

While a highly subjective measure of happiness based on personal preferences, many of the factors that contribute to one's respective and a community's overall sense of well-being, such as including and not limited to, financial security, job satisfaction, education opportunities, quality health care, and safety, such as measured in the Quality of Life Index and reported by the Research Economic Analysis Division (READ) of the Hawai`i Department of Business, Economic Development and Tourism (DBEDT)[12] are considered in developing the CEDS.

[12] Research Economic Analysis Division, Department of Business, Economic Development & Tourism, Honolulu, HI. "Quality of Life in Hawai`i: 2019 Update" May 2020. Accessed 13 July 2022. http://dbedt.hawaii.gov/economic/files/2020/06/Quality-of-Life-2019-Update.pdf

Resilience

In the context of economic development, resilience is defined by the U.S. Economic Development Administration as "... the ability to recover quickly from a shock, the ability to withstand a shock, and the ability to avoid the shock altogether" [13] To establish resilience in Hawai`i Island's economy, stakeholders must be able to anticipate risk, evaluate how such risk can impact Hawai`i, identify and leverage key economic assets to build the community's preparedness and responsive capacity.

Sustainability

In 1987, the United Nations Brundtland Commission defined sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." [14]

"Economic sustainability refers to practices that support long-term economic growth without negatively impacting social, environmental, and cultural aspects of the community." [15]

[13] Economic Development Administration, U.S. Dept of Commerce. Washington, DC. "Content: Economic Resilience" Accessed 13 July 2022. https://www.eda.gov/ceds/content/economic-resilience.htm

[14] United Nations. Academic Impact: Sustainability. Accessed 12 July 2022. https://www.un.org/en/academic-impact/sustainability

[15] University of Mary Washington. Fredericksburg, Virginia. Do One Thing: Economic Sustainability. Accessed 12 July 2022. https://www.un.org/en/academic-impact/sustainability

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Sustainability strategies as outlined in the Hawai`i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2020-2030)[16] recently updated by the State of Hawai`i Office of Planning and Sustainable Development's Statewide Sustainability Program. The updated plan aligns the State's goals, policies and actions with the United Nations Sustainable Development Goals[17] and with its recommendations for sustainable and resilient economic recovery for Hawai`i will help to guide the county's efforts to coordinate and implement sustainability pursuant to Hawai`i Revised Statutes §226-65. [18]

Transportation

In addition to a need for increased access to reliable public transportation, there are infrastructure needs related to roads, highways, bridges, and safety as well as, creating jobs in underserved areas of the island to minimize commuting times and reduce pressure on existing workforce and infrastructure. Simultaneously, electrification and new modes of transportation, technologies, such as electric and hydrogen powered vehicles require new and expanded infrastructure which is being integrated into planning and development including cost analyses and impact on the consumer.

Water

Hawai`i County is dependent on a reliable supply of water to meet the needs of its residents and growing population as well as, for the needs of agricultural and commercial sectors. As the demand for increasing the island's housing inventory grows, prospective developers are required to ensure adequate water supply. In order to meet this need, the County and other government entities and private sector must consider how water resource projects are funded, develop new resources, and also focus on repairing and modernizing aging infrastructure.

A priority to ensure a stable supply of water requires immediate support for the Hawai`i County Department of Water Supply in its development of water plans and new water resources (supply, storage, transmission) and efforts to obtain state and federal funding to maintain and upgrade aging infrastructure.

[16] Office of Planning and Sustainable Development, Department of Business, Economic Development & Tourism, Honolulu, HI. "Hawai'i 2050 Sustainability Plan, Charting a Course for the Decade of Action (2020-2030)." June 2021. Accessed 12 July 2022. http://dbedt.hawaii.gov/economic/files/2020/06/Quality-of-Life-2019-Update.pdf

[17] United Nations. Department of Economic and Social Affairs Sustainable Development. Sustainable Development Goals. Accessed 12 July 2022. Department of Economic and Social Affairs Sustainable Development

[18] 2019 Hawaii Revised Statutes TITLE 13. PLANNING AND ECONOMIC DEVELOPMENT 226. Hawaii State Planning Act 226-65 Hawaii 2050 sustainability plan. Accessed 12 July 2022. https://law.justia.com/codes/hawaii/2019/title-13/chapter-226/section-226-65/

HAWAI`I COUNTY

ECONOMIC OVERVIEW

The County of Hawai`i comprised by the Island of Hawai`i, boasts a land mass of 4,028 square miles that is larger than the combined total square miles (~2,400) of the other seven major islands that comprise the State of Hawai`i. [19] Nicknamed the "Big Island", the sheer size of Hawai`i Island which encompasses 63% of the state's total land mass, is one contributing factor to some of the economic challenges faced by the county and her residents.

Work on the Hawai`i County 2022-2026 Comprehensive Economic Development Strategy (CEDS) was initiated in the summer of 2021 with the convening (on virtual, on-line platforms) of multiple outreach and community engagement sessions to provide an initial introduction to or refamiliarization with the CEDS process and overview of prior CEDS plans developed for Hawai`i Island in 2005, 2010, and 2016. As work on the CEDS commenced during the throes of the COVID-19 pandemic, the Hawai`i Island CEDS 2022 Update Strategic Advisory Committee often found itself considering the county's past including its near-term pre-pandemic economy to better inform its future economy.

When the last update to the Hawai`i County Comprehensive Economic Development Strategy (CEDS) was done in 2016, the county, its residents,

[19] Honolulu, Hawai'i: Office of Planning, Hawai'i State Department of Business, Economic Development and Tourism. State of Hawai'i Data Book 2021. accessed 12 August 2022 https://HawaiiDataBook_Land Area by County

and businesses, were largely recovered from what was then the deepest and widest global recession experienced since World War II.

In 2018 the island's residents were rocked by the eruption of Kilauea volcano which sent lava into the lower Puna District of the island covering approximately fourteen (14) square miles of land, forced approximately two thousand residents to be evacuated and resulted in the loss of seven hundred (700) homes[19] and recovery costs in excess of $800 million (2018 USD).[20] The eruption which was the most destructive volcanic event in the United States since 1980 when Mount St. Helen erupted in Washington State, also forced the ORMAT Puna Geothermal Venture (PGV) facilities which had produced approximately 25% of the island's electricity to cease operations in May 2018. [21]

PGV was in the process of restarting operations when Hawai`i Governor David Ige in March 2020 issued a Third Supplementary Proclamation in response to the global COVID-19 pandemic declaring "... all persons within the State of Hawai`i are ordered to stay at home or in their place of residence ..."[22] further delaying restart of operations and getting geothermal back into the island's electric grid until November 2020.

Significant economic loss is something that Hawai`i Island residents and businesses have faced and innovatively recovered from often throughout the years including the tsunami of 1960 which launched a community driven effort to champion for astronomy as part of the island's economic recovery and diversification.[23]

Looking through an historic economic lens, the nineteenth century served as the backdrop for the transformation from the agrarian to industrial society[24] and brought forth seismic changes in the way people live, work, and develop the economy. With the advent of globalization, use of technology, remote learning, remote work, and other shifts began advancing and brought with it new challenges and opportunities.

Once home to thousands of acres dedicated to the cultivation of sugar cane and multiple sugar processing mills spread across the island, Hawai`i Island experienced a delayed transition from an agrarian economy including the closures of its last sugar plantation Pahala Sugar Mill in Ka`u 1996 [25] and moving the academic year calendar for Kona district public schools to align with the Hawai`i State Department of Education calendar and other public schools in 1969 (after being on a different academic year calendar since 1932 to align with coffee production and have children available to work coffee with parents).[26]

The largest employers on Hawai`i Island are in government (County, State, Federal combines), leisure and hospitality, and health and human services. [27]

While the COVID-19 pandemic created previously unfathomable socio-economic challenges, many of the factors contributing to the confluence changing the island's economic environment predates the pandemic. Of note are the cascading socio-economic impacts exacerbated by the global pandemic including and not limited to high cost of living and doing business; lack of affordable, attainable housing for both ownership and rental; changes in behavior and expectations of the island's residents; ongoing supply chain disruptions; historically high volume of visitors to the island leading to increased pressure and competition for natural and other resources with such competition shifting the balance of shared values and changing resident perspectives including increased demand for better tourism management; concerns regarding sense of place and maintaining Hawai`i Island's unique, historical, social resources and community identity; and the overall well-being and future of Hawai`i Island and its residents.

There is also increasing evidence of and concern about the widening economic divide driven in large part by structural changes resulting in economic and opportunity inequality. The relationship between economic inequality and opportunity can be illustrated easily by considering the digital divide which is often the result of inaccessibility to internet. Hawai`i Island's size and geography predominantly rural in nature contributes to limited physical access

[20] Burnett, John. "Official count of houses destroyed reaches 700" Hawaii Tribune-Herald. Archived from the original on 2018 July 10. Retrieved 15 July 2022.

[21] Dayton, Kevin. "Recovery from Kilauea eruption might cost $800M" Star Advertiser. Archived from the original on 2018 September 02. Retrieved 15 July 2022.

[22] Ige, David Y. Governor. Office of the Governor, State of Hawai`i. Third Supplementary Proclamation. 23 March 2020, accessed 18 May 2022 2003162-ATG_Third-Supplementary-Proclamation-for-COVID-19-signed.pdf (hawaii.gov)

[23] Hasinger, Guenther. Director, Institute for Astronomy, University of Hawai`i. "Modern History of Astronomy in Hawai`i" 11 February 2016. Accessed 13 July 2022 Modern History of Astronomy in Hawaii, Dr. Guenther Hasinger (Director, IFA, UH Manoa) (February 11, 2016) · University of Hawai'i at Mānoa - Physics & Astronomy Department (Indico)

[24] Britannica, The Editors of Encyclopedia. "Industrial Revolution". Encyclopedia Britannica, 13 March 2022, https://www.britannica.com/event/Industrial-Revolution. Accessed 20 August 2022.

[25] Peterson, Ann C. Plantation Era Is Gone, and Pahala Lives On: Historic Preservationist Julia Neal Uses Hammer and Wood to Pull the Community Together (keolamagazine.com) Keola. accessed 12 July 2022

[26] Honolulu Magazine. The Editors of Honolulu Magazine. "A Timeline of Coffee in Hawai`i". 2014 December 03 https://www.honolulumagazine.com/a-timeline-of-coffee-in-hawaii/ accessed 12 July 2022

[27] State of Hawai`i: Data.Hawai`i.Gov. "Top 50 Employers in Hawai`i County" accessed 14 July 2022 https://opendata.hawaii.gov/dataset/top-50-employers-hawaii-county

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2022

ECONOMIC INDICATORS

The following key economic indicators reflect where the County of Hawai'i stands today and provide the opportunity for tracking future progress. Using these indicators, efforts can be identified and implemented to bolster the ability to withstand and avoid shocks, identify, and implement opportunities for economic recovery and resilience for Hawai'i County.

202,900
Total County Population

30,632
Population for Whom Poverty Status is Determined

93,000
People in the Labor Force

60,700
Jobs in Hawai`i County

$82,400
Median Household Income

89,700
People Employed

4,178
Business Establishments (Hawai'i County Median)

to digital technology due to both high costs and the general lack of the infrastructure needed to support internet access and is compounded further by limited digital literacy necessary to access and use resources.

Because of its remote location being over two thousand (2,000) miles from the closest continental land mass, Hawai`i connectivity challenges are very different than those of the contiguous United States with connectivity reliant on submarine fiber terminating in cable landing stations and reinforced by terrestrial connections. Hawai`i County recognizes the importance of ensuring its citizens are able to access essential services such as education, healthcare, social services, and commerce, and is working in collaboration with the State, University of Hawai`i, Federal Government, and private sector to invest in its broadband infrastructure.[28]

This need to address accessibility in the digital and other arenas is further emphasized when considering the twenty-first century bringing another significant economic transformation as we navigate the highway taking us from an industrial to information and knowledge-based economy.

Hawai`i County and its kama`aina (longtime resident) populace have demonstrated their resilience and ability to make transitions from one economic framework to another and can draw upon real-life experience versus depending exclusively on second-hand nostalgia and oratory accounts as they look to 21st century economic opportunities.

Such resilience is showcased in real time as we build upon the strengths of Hawai`i Island's pre-pandemic economy and work together to develop a more vibrant, diverse, sustainable economy, and shared prosperity.

Working to improve resilience to systemic shocks and creating opportunities, numerous initiatives by the public and private sector respectively and collectively are in various stages of planning, development, and/or implementation.

These include and are not limited to the County of Hawai`i Build Back Better Agriculture Coalition; the Hawai`i Aerospace-Astronomy Coalition; a multipurpose manufacturing and innovation facility; climate change adaptation and related projects in renewable energy, water resource development and management; conversion of thousands of cesspools to modernized septic systems; modernizing, and firming the island's electric grid; transformative changes to transportation and mobility systems; and developing strategies for destination and visitor management.

Hawai`i Island and its people have a long history of collaboration, cooperation, commitment to shared values, honoring Indigenous Hawaiian knowledge and traditions, welcoming newcomers, embracing new ideas and opportunities, and of looking back to look forward. These strengths anchored in diversity, equity, inclusiveness, and resiliency are being tested by geo-political tensions that reflect changes in behavior and expectations. While such tension existed prior to the pandemic, the combination of physical isolation and exclusion of high numbers of visitors for an extended period of time allowing increased sense of place, ownership, and access by residents to resources has highlighted the need to acknowledge and recognize how this tension impacts the island, its people, and its economic future.

[28] University of Hawai'i. "Broadband for Hawai'i: Connecting everyone, everywhere all the time" accessed 12 July 2022 Bhttps://www.hawaii.edu/broadband/

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LABOR FORCE

The labor force is the sum of employed and unemployed persons, and the labor force participation rate is the percentage of the civilian, noninstitutional population 16 years and older that is working or actively looking for work.

As of May 2022, Hawai`i County had a labor force of 93,000 and an unemployment rate of 3.6% compared to a labor force of 93,500 and unemployment rate of 3.0% in May 2019. The effects of the COVID-19 pandemic can be seen in the statistics of May 2021 when the labor force in Hawai`i County stood at 93,500 an 5.4% unemployment.

Number of People in the Labor Force

Month	2019	2020	2021	2022
January	92,800	93,950	92,600	94,300
February	93,650	94,200	92,250	93,500
March	93,400	93,700	93,500	93,450
April	93,600	88,300	93,300	92,750
May	93,850	89,450	93,500	93,000
June	93,550	91,800	93,400	
July	93,800	92,750	94,550	
August	92,700	93,700	95,250	
September	93,950	87,500	94,500	
October	93,550	89,500	94,150	
November	94,300	91,550	94,850	

Number of People Employed

Month	2019	2020	2021	2022
January	89,350	91,300	85,700	90,700
February	90,600	91,850	86,550	90,000
March	90,300	91,350	88,300	90,350
April	90,650	69,000	88,150	89,450
May	91,000	71,600	88,500	89,700
June	89,850	76,250	87,450	
July	90,500	78,250	89,300	
August	89,850	81,200	90,050	
September	91,300	75,450	89,650	
October	90,800	79,000	89,550	
November	91,850	81,800	90,650	

Source: Department of Business, Economic Development & Tourism, Monthly Economic Indicators June 2022, accessed 13 July 2022 https://s.hawaii.gov%2Fdbedt%2Feconomic data reports 2022-06-Hawai'i County

Jobs and Average Earnings for Hawai`i County in 2018

Industry	2018 Jobs	% of Total Jobs	NAICS	2018 Avg Earnings
Government	14,979	13.88%	90	$ 77,226
Accommodation and Food Services	14,319	13.27%	72	$ 38,143
Retail Trade	12,420	11.51%	44	$ 34,654
Health Care and Social Assistance	9,611	8.91%	62	$ 49,389
Administrative and Support and Waste Management	8,041	7.45%	56	$ 31,696
Agriculture, Forestry, Fishing and Hunting	7,300	6.76%	11	$ 25,698
Construction	6,450	5.98%	23	$ 62,593
Real Estate and Rental and Leasing	5,875	5.44%	53	$ 35,853
Other Services (except Public Administration)	5,635	5.22%	81	$ 30,252
Professional, Scientific, and Technical Services	4,693	4.35%	54	$ 46,071
Transportation and Warehousing	3,637	3.37%	48	$ 48,443
Arts, Entertainment, and Recreation	3,267	3.03%	71	$ 32,334
Finance and Insurance	2,550	2.36%	52	$ 45,346
Manufacturing	2,408	2.23%	31	$ 45,888
Wholesale Trade	2,345	2.17%	42	$ 56,530
Educational Services	2,149	1.99%	61	$ 37,648
Information	1,000	0.93%	51	$ 59,327
Utilities	696	0.64%	22	$ 133,381
Management of Companies and Enterprises	336	0.31%	55	$ 85,092
Mining, Quarrying, and Oil and Gas Extraction	215	0.20%	21	$ 33,731
All Industry Total	**107,926**	**100%**		**45,966**

Source: EMSI and DBEDT, READ.

Average Earnings per Job 2018- 2020

Year	Current Dollars	Constant Dollars	% of Statewide Average	% of U.S. Average
2018	$46,246.00	$42,694.00	77.16	74.01
2019	$47,668.00	$43,365.00	76.34	73.80
2020	$52,055.00	$46,801.00	72.96	75.22

Source: Calculations by the Hawai'i Regional Economic Analysis Project (HI-REAP) with data provided by the U.S. Department of Commerce, Bureau of Economic Hawaii County vs. Hawaii | Average Earnings Per Job Trends Report over 1969-2020 (reaproject.org) Accessed 12 July 2022 https://hawaii.reaproject.org/analysis/comparative-trends-analysis/

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Hawai`i County Jobs by Sector

Not seasonally adjusted job county by detailed industry

	2020	2021
Total Nonagricultural Wage & Salary Jobs	61,000	64,500
Total Private	46,600	50,600
Goods-Producing	4,900	5,100
Nat. Resources & Mining & Construction	3,600	3,700
Special Trade Contractors	1.900	1,800
Manufacturing	1,300	1,400
Durable Goods	300	300
Non-durable Goods	1,000	1,200
Service-Providing	56,100	59,600
Private Service-Providing	41,800	45,500
Trade, Transportation & Utilities	13,200	14,000
Wholesale Trade	1,600	1,600
Retail Trade	9,000	9,500
Food & Beverage Stores	2,400	2,500
Clothing & Clothing Accessories Stores	400	500
General Merchandise	2,200	2,300
Transportation, Warehousing & Utilities	2,500	2,900
Air Transportation	400	400
Information	500	600
Financial Activities	2,300	2,300
Finance & Insurance	1,200	1,200
Professional & Business Services	5,800	5,900
Professional, Scientific & Tech. Svcs.	1,500	1,600
Management of Companies & Enterprises	300	300
Administrative & Support & Waste	0?	0?
Management & Remediation Services	4,000	4,100
Education & Health Services	8,600	8,600
Educational Services	1,100	1,200
Health Care & Social Assistance	7,500	7,500
Leisure and Hospitality	9,400	12,100
Accommodation & Food Services	8,300	10,800
Accommodation	3,400	5,000
Food Services & Drinking Places	4,900	5,800
Full-Service Restaurants	2,500	3,200

Hawai`i County Jobs by Sector

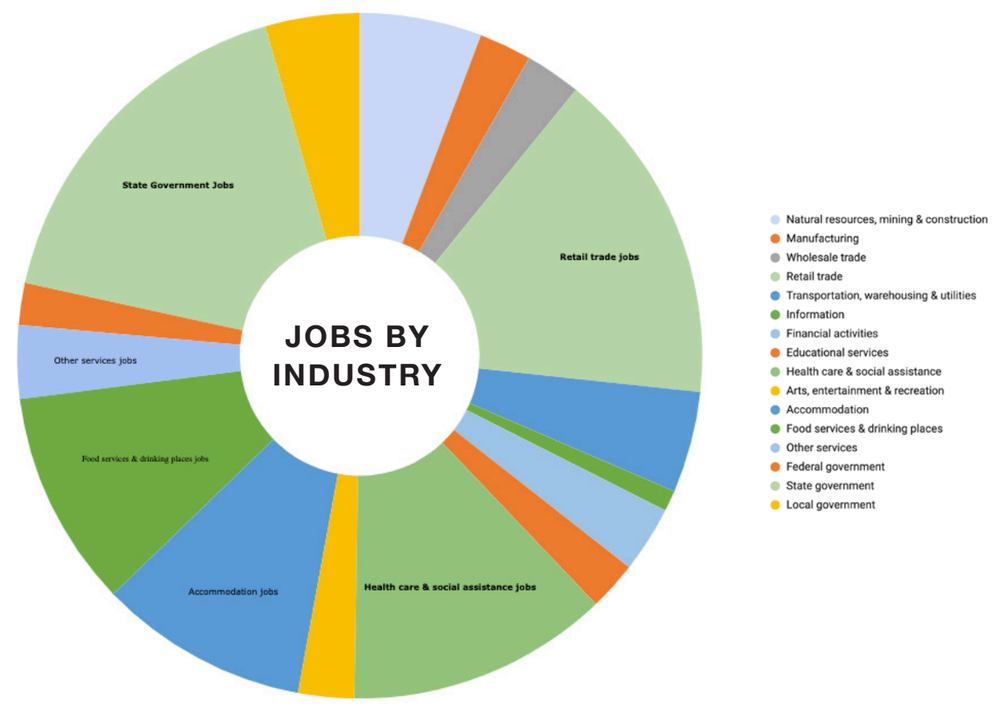
Not seasonally adjusted job county by detailed industry

	2020	2021
Other Services	2,000	2,000
Government	14,400	14,100
Federal Government	1,400	1,300
State Government	10,200	10,100
State Education (DOE & UH) (2)	6,400	6,300
Local Government	2,800	2,700

Note: Data rounded to nearest 100. Totals may not add due to rounding or residual categories.

Source: Job County by Industry Hawai'i County Hawai'i State Dep. of Labor & Industrial Relations & Dept of Business, Economic Development & Tourism. Compiled by Research & Economic Development Analysis Division, State of Hawai'i Dept of Business, Economic Development and Tourism. Accessed 15 August 2022.

May 2022 Jobs by Industry



Source: Hawaii State Dep. of Labor & Industrial Relations, and Dep. of Business, Economic Development & TourismDept of Business, Economic Development and Tourism. Accessed 15 August 2022.

POPULATION

2022 Population of Counties in Hawai`i

There are five counties in Hawai`i: Honolulu, Hawai`i, Maui, Kauai, and Kewalo. Hawai`i County is the second most populous county in the state with a population in 2022 of 202,906 people. According to the U.S. Census Bureau, Hawai`i County saw its population increase nine of the eleven years between 2010 and 2021 representing a growth rate of 8.43% since the 2010 census and surpassed only by the nearly one million population of Honolulu County (Island of O`ahu).

Similarly, the 1.1% increase in population between 2020 and 2021 in Hawai`i County reflects the fastest growing population in the State of Hawai`i. The population in the county in 2021 was 202,906 compared to 200,746 in 2020. [29]

[29] Source of Raw Data: DBEDT Research and Economic Analysis Division (READ) Population and Economic Projections for the State of Hawaii to 2045, accessed July 2022 https://dbedt.hawaii.gov/economic/economic-forecast/2045-long-range-forecast/

Hawai`i County Population by Age

Age Group	2021	% of Population
Under 5	10,883	5.36%
5 to 9	12,629	6.22%
10 to 14	12,439	6.13%
15 to 19	11,312	5.57%
20 to 24	9,732	4.80%
25 to 29	10,705	5.28%
25 to 34	22,985	11.33%
30 to 34	12,280	6.05%
35 to 39	12,878	6.35%
40 to 44	12,572	6.20%
35 to 44	25,450	12.54%
45 to 49	11,489	5.66%
50 to 54	11,680	5.76%
45 to 54	23,169	11.42%
55 to 59	13,006	6.41%
60 to 64	15,254	7.52%
65 +	46,047	22.69%
Total Resident Population	202,906	100%

Census Bureau (Annual data), Bureau of Economic Analysis (Quarterly data), Data for 2011-2019 are DBEDT estimates

The 65+ age group represents the highest percentage of the population at 22.69% compared to 40.01% for the 25-59 age group.

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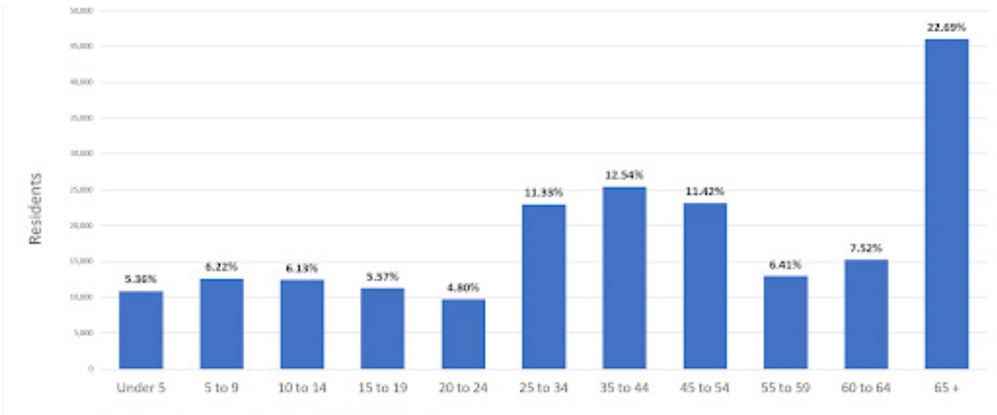
Breakdown of Age Group



Source of Raw Data: Department of Business, Economic Development and Tourism, DBEDT Research and Economic Analysis, Population and Economic Projections for the State of Hawai'i to 2045, accessed July 2022, https://dbedt.hawaii.gov/economic/economic-forecast/2045-long-range-forecast/ Graph developed by HIEDB.

POVERTY

Median income for Hawai`i County is $65,401.00 which is less than the state median of $83,173 as reported in the 2020 American Community Survey 5- year Estimates. Slightly more than 14.0% of Hawai`i County residents live in poverty[30] which is higher than the state's average of 9.4%[30] and national average of 11.4%.[31]

Recognizing poverty as an overarching issue throughout Hawai`i County's economic profile, the Strategy Advisory Committee discussed the need to address a plethora of economic issues including and not limited to, the cost of living (and of doing business) on Hawai`i Island, increasing housing inventory in general with a special focus on affordable/attainable housing, generate economic engines/opportunities in more densely populated rural areas, improve and increase accessibility to public transportation, and increase the availability of and accessibility to affordable childcare and early childhood education.

Asset Limited, Income Constrained, Employed (ALICE) refers to the households in the community who earn more than the Federal Poverty Level but less than the basic cost of living in Hawai`i County (often even when working two or more jobs). Although employed, ALICE households struggle to maintain the costs of household essentials (housing, childcare, food, transportation, health care). 48% of Hawai`i County families fall into the ALICE category.[32]

As discussed previously in the section on overarching themes, there is a shortage of childcare centers and early childhood education facilities. And the available facilities are often not affordable. The State of Hawai`i Department of Human Services reported the median costs for childcare for an infant or toddler in Hawai`i County in 2019 ranged from $650 to $950 per month.[33]

[30] United States Census Bureau. Quick Facts Hawai'i County, Hawai'i. "Median Household Income (in 2020 dollars)" December 2020. Accessed 12 August 2022 https://www.census.gov/quickfacts/fact/table/hawaiicountyhawaii/INC110220#INC110220

[31] United States Census Bureau. 2020 American Community Survey 5-Year Estimates. "Hawai'i County, Hawaii: Poverty, All People in Hawai'i" accessed 12 August 2022 https://www.census.gov/search-results.htmlpoverty+hawaii+county

[32] 2022 United Way of Northern New Jersey, United for Alice COVID-19 and ALICE | UnitedForALICE accessed 18 August 2022 https://unitedforalice.org/

[33] State of Hawaii Department of Human Services, Audit, Quality Control and Research Office. March 2020. "2019 Hawai'i Child Care Market Rate Study Summary of Results" accessed 18 August 2022. https://humanservices.hawaii.gov/wp-content/uploads/2020/09/Hawaii-Child-Care-Market-Rate-Study-2019-final-3-2020.pdf

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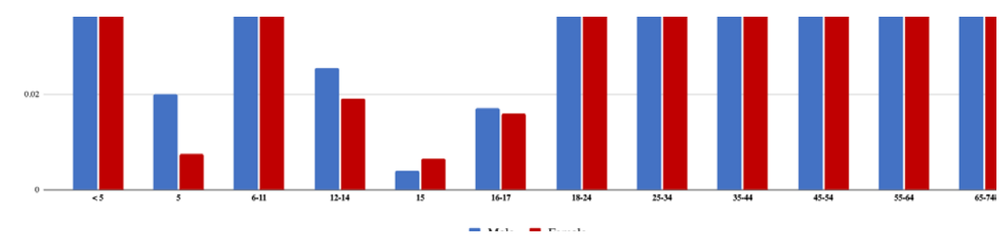
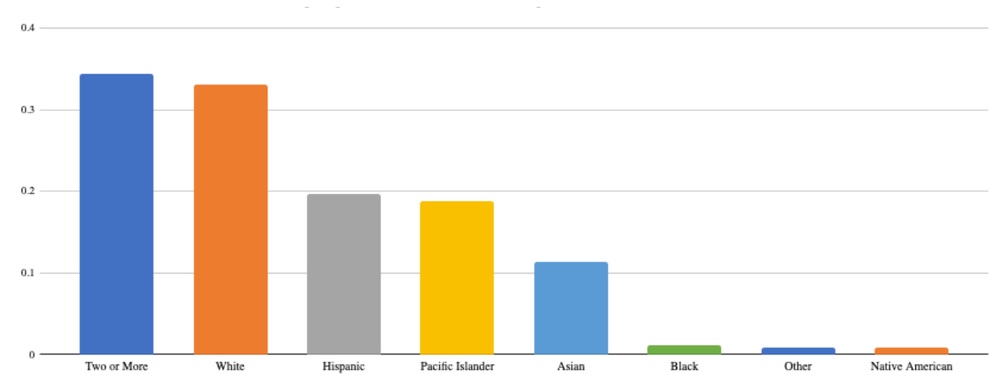
Poverty by Age and Gender



Poverty by Race and Ethnicity



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HAWAI'I COUNTY'S TEN INDUSTRY SECTORS

In recognition that Hawai`i's geographic isolation supports an economy based on "local" industry sectors and human capital, the Strategic Advisory Committee (SAC) identified ten key sectors and industry clusters:

1. Agriculture and Food Systems
2. Astronomy and Technology
3. Construction and Infrastructure
4. Creative Arts and Industries
5. Education, Knowledge Creation, and Workforce Development
6. Energy and Resiliency
7. Environment and Climate Change
8. Government
9. Health and Wellness
10. Hospitality and Tourism

The following section sumbreaks down each sector and organized by:

- description of sector and cluster industry;
- analysis of each sector's Strengths, Weaknesses, Opportunities, and Threats (SWOT); and
- goals, objectives, strategies and priority actions.

AGRICULTURE AND FOOD SYSTEMS

"Agriculture is not crop production as popular belief holds – it's the production of food and fiber from the world's land and waters. Without agriculture it is not possible to have a city, stock market, banks, university, church, or army. Agriculture is the foundation of civilization and any stable economy."

Allan Savory

Once home to thousands of acres dedicated to the cultivation of sugar cane and multiple sugar processing mills spread across the island, the last sugar plantation on Hawai`i Island, Ka`u Agribusiness, closed in 1996. In the intervening years, the island's landscape and use of land continue to be transformed and agriculture on Hawai`i Island remains a vital part of the island's economy. While coffee, macadamia nuts, and papayas remain the dominant crops, farmers have embraced diversification with specialty crops running the gamut from floral and ornamentals to cacao, exotic fruits, and tea. Ranching and aquaculture are also vital to the island's agriculture sector.

Serving as the primary strategy for revitalizing Hawai`i Island's Agriculture sector is the Hawai`i County Build Back Better Regional Agricultural Coalition which proposes an Agricultural Cluster that builds its capacity to sustainably generate new jobs and income suited to the Island's unique resources and communities. Hawai`i Island's Agricultural Cluster represents the region's greatest asset and potential for economic growth and innovation.[34]

On August 23rd 2022 it was announced that with new federal funds from two bills, the American Rescue Plan and the Inflation Reduction Act, the U.S. Department of Agriculture (USDA) will distribute up to $550 million to expand certain farmers' access to land, money, and markets and to create educational opportunities in higher education institutions that work with racial and ethnic minorities including Native Hawaiians, so represents a funding source that stakeholders will work with the University of Hawai`i at Hilo an Hawai`i Community College, and others to access. [35]

In addition to the SWOT exercise conducted with focus groups, the following pages provide the results of a Grant Stakeholder Interview for Agriculture Sector Interests from two hundred and sixty-eight (268) respondents.

The Hawai`i Island Agriculture and Food System Study initiated by the Hawai`i Island Agricultural Partnership HIAP in partnership with the Hawai`i Island Food Alliance (HIFA), to increase the growth and resiliency of the island's agri-food system by mapping and understanding the system, identifying key needs and opportunities to improve the system, and facilitating collective action to make those improvements a reality. The study was conducted by a set of multi-stakeholder teams totaling seventy-seven individuals representing different organizations working on agriculture and food efforts including farmers, ranchers, processors, distributors, business owners, educators, government, non-profit leaders, and more. They participated through the study's Facilitation Team, its Planning & Analysis Team, and the three Planning & Analysis Sub-teams focused on Systems Mapping, Agricultural Value Chains and Food Resiliency. Utilizing a participatory process for analysis facilitated by the Hāmākua Institute, the study took a system-wide approach to understand the needs and opportunities within the agri-food system from the perspectives of different stakeholder groups. Through surveys, interviews and focus group discussions, the study gathered input from these different stakeholder groups, added it to other existing system data, and the multi-stakeholder

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[34] Hawai'i County "Build Back Better Regional Coalition Challenge Phase I Proposal Narrative" accessed 09 July 2022 https://eda.gov/files/arpa/build-back-better/finalists/concept-proposal-narrative/County%20of%20Hawaii.pdf

[35] Strong, Jared. Nebraska Examiner. 25 August 2022. "USDA plans 'historic' funding to help struggling farmers and develop new ag leaders". Accessed 25 August 2022. https://nebraskaexaminer.com/2022/08/25/usda-plans-historic-funding-

Planning & Analysis team jointly analyzed all of this information together to produce a set of recommended actions for collectively improving the system.

- Hawai`i Island Ag and Food System Study Report
- Feasibility Study for the Hilo Agricultural Hub
- Agriculture Value Chain Quantitative Dashboard by Supersistence
- Agriculture and Food System Story Map
- Stakeholder Responses compiled by the Hāmākua Institute
- Survey of Women Farmers of Hawai`i County
- Hawai`i County Food systems Survey 2020 Kea`au High
- Hawai`i County Food security Survey 2020 Kamehameha Schools
- Food Security Survey Hawai`i Community College
- Literature Review compiled by the Hāmākua Institute
- Needs, Opportunities and Recommended Actions Compiled by the Hāmākua Institute
- Hawai`i Island Ag and Food System Study Presentation

Transforming Food Systems Together

A series of applied research projects (below) are being conducted that will inform policy and planning recommendations and build statewide capacity to achieve a more economically robust, sustainable, equitable and resilient food system for Hawai`i. The key findings of these Knowledge Products will inform the development of an Integrated State Food Policy Framework and Food System Resiliency and Equity Strategy for Hawai`i. (This is a statewide process)

In addition to the list below, an initiative to develop outreach and education on agricultural law to agricultural producers is being launched with the Hawai`i Bar Association and others as part of the technical assistance (back room) support that is very important and often lacking as part of the comprehensive agriculture and food systems eco-system.

Knowledge Products:

1. Food System Mapping
2. Social Network Analysis
3. Comprehensive State Policy Analysis
4. Vulnerability Assessments
5. Amplifying the Work of Subsistence Indigenous Producers
6. Institutional Purchasing
7. Hawai`i Farmer & Rancher Focus Groups

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STRENGTHS

- County of Hawai`i Build Back Better Agriculture Coalition
- Kamehameha Schools Food Systems Initiatives
- University of Hawai`i and Hawai`i Community College Ag & Food Systems Programs
- Geography
- Availability of Land
- Growing Conditions Favorable
- US Department of Agriculture (USDA)
- Pacific Basin Agricultural Research Center (PBARC)
- NELHA/HOST Park
- Public Consciousness towards Food Security and Self-Reliance
- Feed Mill
- Diversity in Types of Agriculture and Aquaculture
- Research, STEM (Science, Technology, Engineering, Mathematics), Crop Technology
- Crops = Commodities that DRIVE economics

WEAKNESSES

- Farmers & Ranchers - average age 60+
  - 95% Family Farms (note Hawai'i situation consistent with rest of nation)
  - No succession plans in place – difficult to keep land in ag production as offspring decline to continue family farms
- Cost of Living and Doing Business: Low pay - long hours
- Labor Shortage
- Agricultural Theft
- Housing
- Transportation
  - Shipping and Energy volatility (costs of oil)
- Technical Assistance (Back Room – Business Sustainability) support and resources
- Food Safety Regulations and Certifications including access and Insurance Requirements
  - Laws, Regulations, Policies
- Political - Structure - Philosophy - Ideology
- Declining support from State of Hawai'i
  - Funding reduced
  - Programs and UH faculty positions lost
- Economies of Scale (difficult to achieve)
  - "Buy Local" program well-intended but if the profit margin is =/< 5% then not affordable
- Lack of Data: Need Facts NOT Anecdotes (e.g., Korean Farming techniques)
- Agriculture should be valued as a profession
- Leadership (Elected Officials, Policy Makers)
  - Failure to project/advocate for agriculture
  - Failure to recognize economic and job potential
  - Lack of vision/strategy
- Need to reframe and tell agriculture story better

OPPORTUNITIES

- People NEED to eat therefore captive market
- Research Opportunities
- Multiple cropping seasons
- Identify, implement new agriculture/ farming/ranching techniques and technologies
- Natural Farming – soil enrichment
- Indigenous farming, aquaculture techniques
- New potential sources of funding
- Aquaculture industry
- Agrotechnology
- Value added
- Diverse Renewable Energy
- Government has the capacity to help farmers and ranchers
- Mentoring, Internship
- Innovation
  - Unmanned Aerial Vehicles (UAVs)
  - Robotics
- Education
  - STEM
  - Apprenticeships, Mentoring
  - Expansion of school garden and agriculture curriculum
  - Farm-to-School Program
- Collaboration including with other industry sectors
  - e.g., Hospitality and Tourism including sourcing local, cross-sector collaboration on regenerative agriculture and regenerative tourism
  - e.g., Health and wellness

THREATS

- Farmers/Ranchers Aging Out of Industry –
- Cost of living and doing business
- Housing
- Invasive Species and Pests
- Ideology, Mis/Disinformation,
  - Anecdote and Emotion versus Data and Science
  - Mistrust; Misrepresentation of scientific data
- Regulations and related costs
  - Over regulating
  - Bad public policy hinders economic and other growth
- Labor Force
  - Labor Shortage
  - Skills
  - Costs
  - Workers' Compensation
- Shipping and Transportation
- Climate Change
- Globalization
- Insufficient investment and traditional funding support
- Lack of Infrastructure
- Land
  - Costs
  - Infrastructure
  - Encroachment by development
  - Competing interests for land
- Litigation (can be from multiple fronts including and not limited to land ownership/lease to compliance with rules, laws to financial matters, etc.)

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SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS

Objectives

- Develop strong sector partnerships and industry clusters
  - Include aquaculture, farming, fishing, hunting, ranching, value added industries, hotels and restaurants, grocery, and other distribution outlets
  - Supply chain, transportation, shipping
- Employ natural and biological controls for pests and disease
- Enhance environmental quality and natural resources
- Enhance the quality of life of farmers and ranchers, and for community overall
- Identify and develop value added opportunities
- Satisfy local human consumption needs and reduce imports
- Sustain the economic viability of farming and ranching
- Use renewable energy and resources as primary source
- Use nonrenewable resources more efficiently

Strategies and Priority Actions

- Build capacity
  - Address the island's agricultural value chain functions including processing, transportation, aggregation, storage, and distribution.
  - Address labor force needs
    - Collaborate and build stronger relationships with education and workforce development organizations
  - Increase food storage and distribution capacity
    - Advocate and increase capacity to support programs such as Hawai`i County Keiki Feed
  - Increase viability of small farms and ranches
    - Facilitate succession planning and opportunities for farmers and ranchers entering the sector to keep farms and ranches in operation
- Review and adjust marketing efforts
- Secure funding to conduct better market and carrying capacity studies
- Stimulate increased production on-island
- Buy local
- Advocate for and support procurement by USDA and others who procure food to purchase from local producers
- Secure and maintain funding to support initiatives
- Support participation in programs such as USDA equity farming and ranching programs intended to expand access to land, money, markets, and education to underserved producers including Native Hawaiians and institutions serving Native Hawaiians and others who qualify.
- Collaborate, increase cooperation across the island's agriculture and food systems sector
  - Support existing organizations, cooperatives, and networks
  - Collaborate with government
- Collaborate with industry cluster partners
  - Distributors
  - Farmers Markets
  - Financial Institutions
  - Government
  - Industry Organizations and Advocates
  - Restaurants and Hotels
  - Transportation and Shipping
  - Utilities
- Identify and secure funding to do planning, engineering, environmental assessments, and construction of needed infrastructure
- Increase and improve outreach and education to public (including public officials and policy makers)

Strategies Metrics

- Number of farms, ranches, aquaculture companies that continue production
- Acres of land that remain in agriculture
- Number of new farmers, ranchers, value added producers
- Acres of land that remain in agriculture
- Increased volume of food and other crop production
- Increased volume of livestock raised and going to market locally
- Number of students in agriculture curriculum studies
- Increased use of technology by producers
- Number of interns working in agriculture
- Number of new cooperatives, partnerships, cross-sector initiatives
- Number of business development, support services programs and convenings launched (and number of participants)

ASTRONOMY AND TECHNOLOGY

"It will afford me unfeigned satisfaction if my kingdom can add its quota toward the successful accomplishment of the most important astronomical observation of the present century and assist, however humbly, the enlightened nations of the earth in these costly enterprises..."

King David Kalakaua, 1874

The University of Hawai`i Economic Research Organization (UHERO) reported the Astronomy sector in Hawai`i produced an economic impact of $221 million and 1,313 jobs statewide in 2019. Of this, the largest impact came from Hawai`i Island based astronomy with $102 million and 611 jobs representing 46% of the statewide astronomy impact. [36]

The Maunakea Observatories are a collaboration of independent institutions with telescopes located on Maunakea on Hawai`i Island. Together, the observatories make Maunakea the most scientifically productive site for astronomy world-wide with the telescopes on Maunakea operated by 12 separate nonprofit observatories. Each has its own strengths with varying fields of view and sensitivities to light from radio to ultraviolet wavelengths.[37]

On May 23, 1960, Hawai`i Island was devastated by a tsunami caused by an earthquake off the coast of Chile. Seeking to stimulate and help the local economy recover, community and business leaders including the Hawai`i Island Chamber of Commerce, reached out to U.S. and Japan universities to suggest Maunakea as a site for an observatory. In 1964, then Hawai`i Governor John Burns committed $25,000 in state funds to build a dirt road to the summit of the mountain that stands 13,802 feet, to allow requisite due diligence work in consideration of the idea. This led to funding from NASA, establishment of the Mauna Kea Science Reserve, and the first telescope built atop Maunakea on Hawai`i Island in 1968. Subsequently, twelve more telescopes were built in the reserve and today, Maunakea is recognized globally for its contributions to astronomy, research, science, education, technology, innovation and our understanding of the universe we live in.

In another instance of`I Ka Wā Ma Mua, Ka Wā Ma Hope – Looking Back to Look Forward, along with his interest in astronomy as noted above, Hawai`i's King David Kalakaua is said to have been fascinated by technology in general. "In November 1886, electric lights illuminated Iolani Palace's grounds for King Kalakaua's 50th birthday celebrations. By March 1887, the Palace had 325 incandescent lights installed within its 104 rooms. The king's action promoted economic development and accelerated implementation of electric lighting of the town of Honolulu on 23 March 1888."[38] demonstrating that astronomy and technology have long served as economic wayfinders in Hawai`i.

As to whether astronomy should continue on Maunakea and whether there is support to do so, in July 2022, Hawai`I's Governor David Ige signed into law Act 255[39] which establishes the Maunakea Stewardship and Oversight Authority (MKSOA). There will be a five (5) year transition period beginning in 2023 as MKSOA assumes governance and management responsibility from the University of Hawai`i and the State of Hawai`i Department of Land and Natural Resources (DLNR). The current master lease held by the UH expires in 2033 at which time the subleases under UH which the current Maunakea observatories operate will also expire.

[36] Bond-Smith, Steven; Bonham, Carl et al. Honolulu, Hawai'i. UHERO, The Economic Research Organization at the University of Hawai'i. The Economic Impact of Astronomy in Hawai'i: 2019 Update. April 24, 2022. https://uhero.hawaii.edu/wp-content/uploads/2022/04/EconomicImpactofAstronomyinHawaii2019Update.pdf. Accessed 21 June 2022.

[37] About – Maunakea Observatories; ©2020 Maunakea Observatories. Accessed 21 June 2022.

[38] Davis, Amanda. 2 April 2018. "Honolulu's Iolani Palace Paved the Way for Electricity in Hawai'i" Accessed 24 August 2022. https:/themauimiracle.org/our-history/king-david-kalakaua/

[39] Ige, David. Governor's Message No. 1358 Relating to Mauna Kea, Act 255. O7 July 2022. Accessed 23 August 2022. https://www.capitol.hawaii.gov/session2022/Bills/GM1358_.PDF

Author's Note: We have referred to the highest mountain (mauna) on Hawai'i Island as Mauna Kea translating to "White Mountain." In 2014 some Hawaiian scholars and practitioners changed the spelling and definition to "Maunakea" as a single word short for "Mauna a Wākea" meaning "the mountain of Wākea" in honor of Wākea the god of the sky Department of Business, Economic Development and Tourism. Research and Economic Analysis: Construction https://dbedt.hawaii.gov/economic/qser/construction/ . Second quarter 2022. Accessed 10 July 2022.

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STRENGTHS

- Astronomy Services Industry
- Ancillary Industries
  - Strong STEM and Research
  - STEM Education and funding
  - Journey through the Universe program
  - Observatories Youth Scholar programs
  - Robotics
- Space Enterprises (Payload) and Tourism
- `Imiloa Astronomy Center
  - Integration of Indigenous, Native Hawaiian Knowledge, Traditions, Beliefs, Olelo (Language)
- Location
- Dark Skies, Low light pollution
- Low Satellite Launch
- Modern day Wayfinding
- Underutilized Infrastructure (Ports/ Airports)
- Laser Communications
- Human Resources Potential
- Collaboration (Narrative/Telling Story)
- Engineering Program at UH Hilo (tie to robotics and innovation curriculum)
- Dynamic Astronomy Industry (note 4 of the 5 busiest telescopes on planet based on Mauna Kea)
- Ancillary Industries
- Private Sector Leadership / Collaboration / Resources
- Drone/UAV Technology
- Recapture Hawai`i Island's legacy – Space, Aerospace
  - Startup Hawai`i coalition

WEAKNESSES

- Location (i.e., Isolation)
- Transportation/Shipping
  - Costs - Housing, Food, Electricity, Energy in General, Fuel, Shipping
- Insufficient, Aging Infrastructure
- Ranked lowest State as place to do business
- More support needed for start-ups and local businesses
- Geo-politics
- Obstructionists (Opposition to Tech and Innovation)
- Fear of Science, Change
- Anti-Science Bias
- Lack of Political Will and Leadership
  - Compounded by political weakness, low population, low voter turnout, apathy
- Rehash old failures, obsolete technologies
- Misinformation and Disinformation
- Maunakea Management Authority (may become a strength but timing is a weakness)
- Lack of vision and strategy
- Lack of clarity and consistency
  - Permits, Processes
  - Maunakea (UH spelling) – Mauna Kea (Legislature)
- Declining funding
- National Science Foundation (NSF) and others over reliant on minority opinion
  - Referring here to Thirty Meter Telescope but same happening on other issues (loudest voices are listened to and others ignored)
- VOG (Volcanic haze)

OPPORTUNITIES

- Location (i.e., Isolation)
- Expanded focus on astronomy, technology, innovation, and funding
- Develop robust technology industry that leverages astronomy and other technology assets to created new markets and opportunities
  - Software
  - Engineering
  - Creative Media solutions
- P-20 STEAM Education
  - Funding for computer science, digital literacy
  - Creative Media, Software Technology Development
- Space Enterprises (Payload) and Tourism
- Low Satellite Launch
- Underutilized Infrastructure (Ports/ Airports)
- Laser Communications
- Diverse Renewable Energy Portfolio
- Human Resources Potential
- Enable Health Tourism
- Collaboration (Narrative/Telling Story)
- Pōhakuloa Training Area Land Retention
- Mauna Kea Lease Renewal
- Engineering Program at UH Hilo (tie to robotics and innovation curriculum)
- World class Research and Discovery Reputation
- Aloha `Aina Economic Development
- Dynamic Astronomy Industry (note 4 of the 5 busiest telescopes on planet based on Mauna Kea)

THREATS

- Lack of Vision, Commitment, Direction from Elected Officials, Policy Makers, Public
- Maunakea Management (new Authority established by Legislature)
- Momentum of Anti-Science/Fear-Mongers
- Driving agenda of fear, emotion, anecdote
- Misinformation (error) and Disinformation (deliberate)
  - Social media
- Inadequate supply of highly skilled, technically trained workforce
- Lack of vision and consensus re: Sovereignty Issue
- Perceived Racism
- Current status of TMT
- Project failure leads to dire economic and other long-term negative consequences
- Lack of Leadership concurrent with Lack of Meaningful Political Opposition (need more dialogue)
  - "Fickle" politicians and policy makers
- Lack of Timeliness on Land Use and other Decisions
- Lack of Clarity in Hawai`i State both laws and processes
- Changing Demographics / Loss of Common Values
- TIME-What happens, what's at stake as time passes?
- Brain Drain (Beyond young people, professionals who find environment oppressive, non- supportive)
- Hawai`i is often ranked last of 50 states as good place to do business
- Loss of another project will exacerbate difficulty to secure investors including NSF

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SUSTAINABLE ASTRONOMY AND TECHNOLOGY

Strategies

- Develop and implement public outreach and experience to enhance understanding of economic, education, scientific, innovation, and other benefits of the sector
- Develop Regional Innovation Engine with focus on Astronomy and Technology
- Encourage and Increase dialogue, engagement, collaboration, outreach, and education between stakeholders.
- Collaborate and maximize opportunities through including and not limited to, `Imiloa Astronomy Center and observatory outreach programs such as star watching.
- Collaborate with industry cluster partners such as Aerospace, Agrotechnology, Creative Arts, Education, Tourism, Workforce Development
- Develop and maintain database of jobs, skillsets, internships, and other opportunities.
- Identify sources of and seek capital necessary to execute on strategies and achieve outcomes.
- Support and promote K-20 Science, Technology, Engineering, Art and Mathematics (STEM) curriculum (both formal and extracurricular). Increase student interest through experiential learning, internships, mentoring, and inclusion in meetings, conferences, and "Journey Through the Universe."
- Support and promote scholarships, grants, other funding sources for students. Showcase education and career opportunities through partnerships with schools, organizations, businesses. Develop and conduct work fairs and other opportunities for employment outreach.
- Support and promote business training/entrepreneurship.
- Support Development of Multi-Purpose Manufacturing Facility

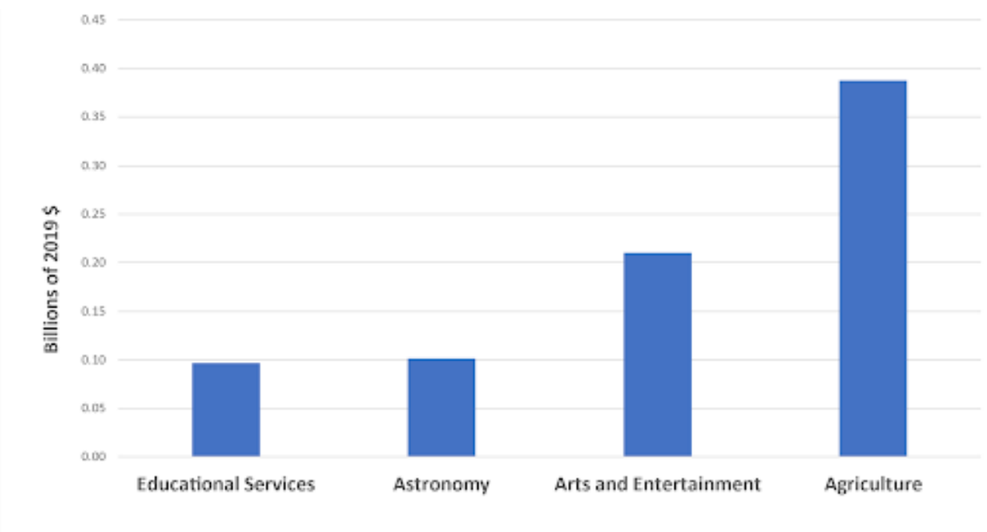
PRIORITY ACTIONS

- Establish series of diverse perspectives outreach programs including Indigenous speakers to help foster understanding of shared values and common interests
- Work with community to redirect focus on astronomy and separate other contributing but not directly related factors that create divisiveness
    - Convene meeting to discuss and understand the underlying issues
    - Include public outreach and experience to enhance understanding of economic, education, scientific, innovation, and other benefits of the sector
- Secure funding to support regular science outreach into the community
- Expand student experiential learning opportunities
- Establish working relationship and reciprocal communications with Maunakea Management Authority

Strategies Metrics

- Number of students and educators provided with scholarships, grants, internships, mentoring
- Number of public outreach and engagement opportunities and number of participants
- Number of new collaborations such as Startup Hawai`i
- Number of new startups
- Public and private partnerships and funding

Comparison of Astronomy Output to Other Sectors in the Economy



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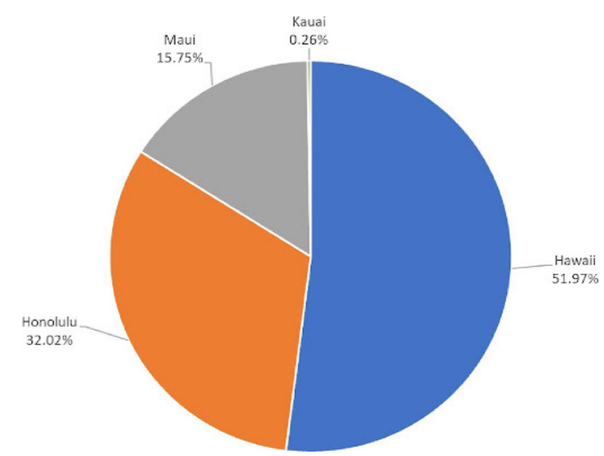
Economic Impacts of Astronomy - Related Local Expenditures by County

County	Output	Earnings *(Millions of 2019 Dollars)*	State Taxes	No of Jobs
Hawaii	101.68	28.52	4.08	611
Honolulu	86.96	30.42	4.85	517
Kauai	1.59	0.41	0.06	9
Maui	30.72	8.69	1.11	176
State	220.95	68.05	10.1	1313

Source: https://uhero.hawaii.edu/wp- content/uploads/2022/04/EconomicImpactofAstronomyinHawaii 2019Update. pdf

Share of Astronomy-Related Local Expenditures by County



CONSTRUCTION AND INFRASTRUCTURE

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"You can dream, create, design, and build the most wonderful place in the world. But it requires people to make the dream a reality."

Walt Disney

Construction is identified as "... the fourth largest private industry in Hawai`i as measured by the share of the state's gross domestic product (GDP) following tourism, real estate, and health care."[37] In the first quarter of 2022, private building authorizations in Hawai`i County increased $21.8 million or 13.3 percent, compared with the first quarter of 2021 (see table). In 2021, private building authorizations in Hawai`i County increased $56.2 million or 8.4 percent, compared with the previous year [40] 3,500 jobs on the island are attributed to the construction industry.

Like the rest of the state and nation, Hawai`i County is facing many challenges in replacing, maintaining, and modernizing aging infrastructure to comport with 21st century needs and quality of life. Simultaneously, while requiring more infrastructure, residents value open space and Hawai`i Island's rural aesthetic creating conflicting expectations and outcomes. Construction is also impacted by rising costs, supply chain disruptions created during the pandemic and not yet fully recovered, and labor shortages.

The Hawai`i County General Plan which was adopted in 2005 serves as the blueprint that guides the long-term development of Hawai`i Island is currently under review for update. It considers the needs of the entire island and provides a sound growth strategy that directs future opportunities related to land use, zoning amendments and capital expenditures. The General Plan strives to position Hawai`i Island for economic progress while preserving the environment and strengthening community foundations." [41] In the years between 2005 and the current review, island residents worked to develop, adopt, and implement regional Community Development Plans (CDPs) which do not always align with the General Plan.

Important questions and concerns regarding land use following the end of sugar in Hawai`i County are being raised. Beyond land use and related regulations, stakeholders must consider for example and not limited to, water use and related regulations, and infrastructure previously constructed and financed by, then maintained and updated by the sugar industry.

While Hawai`i County realtors report a low inventory of housing for sale and rent at all economic levels, the community is very concerned about workforce, affordable, attainable housing and the declining inventory runs parallel to the labor force shortages that employers in all industries are facing. As discussed earlier in this report, regulatory barriers contribute to the high costs of housing with Hawai`i County being the costliest in the state and also in the nation in comparison to thirty other high-cost counties.

Such heavy regulation and related costs contradict policy makers who consistently identify housing as a priority. Concerns about the length of time to secure necessary permits have been a point of contention for several years, and the County of Hawai`i is working to streamline and modernized the process with comprehensive reviews, integration of automated systems and digitized record keeping.

Infrastructure, climate change, social concerns, and availability of potable water also contribute to the complexity and hamper the desire to develop and maintain a healthy and diverse housing inventory on the island.

[40] Department of Business, Economic Development and Tourism. Research and Economic Analysis: Construction https://dbedt.hawaii.gov/economic/qser/construction/ . Second quarter 2022. Accessed 10 July 2022.

[41] County of Hawai`i, Hilo, Hawai`i. Planning Department. Accessed 12 July 2022. https://dbedt.hawaii.gov/economic/qser/construction

21st century rules and regulations are also creating projects and jobs as the county and other stakeholders adopt and comply with new environmental standards such as conversion of thousands of cesspools on island to environmentally sound and approved wastewater management systems by 2050.

When the pandemic forced people to work and learn remotely, broadband emerged as critical infrastructure and like many jurisdictions nationwide, Hawai`i County is working to expand connectivity.

The Hawai`i Broadband Hui (partnership) an informal coalition focused on broadband in Hawai`i convened by the Hawai`i State Broadband Strategy in collaboration with the nonprofit organizations Transform Hawai`i Government and the Economic Development Alliance of Hawai`i developed the Hawai`i Digital Equity Declaration. Focused on Broadband for A.L.L. (Access, Literacy, Livelihood), and signed by a broad group of government agencies and representatives, businesses, organizations, and individuals the declaration includes a list of priorities to achieve having 100% of Hawai`i's residents by 2030 having "consistent, quality internet access." [42]

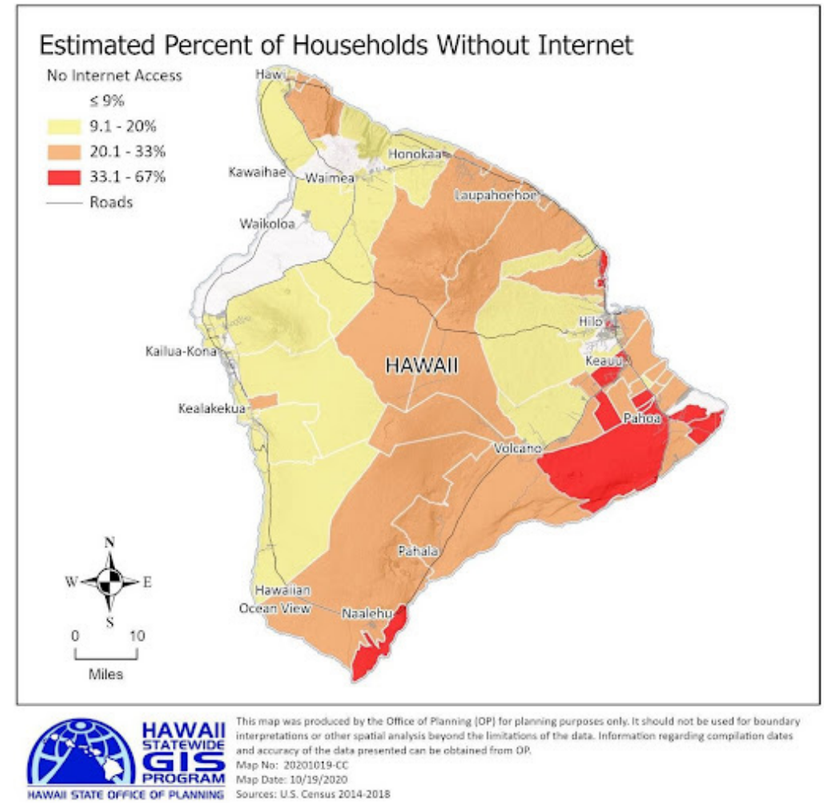
The hui identifies a number of disparities that contribute to the digital divide which is not new but has been spotlighted and exacerbated with the pandemic and depriving the neediest from interaction and participating in business and economy, education, health, human services, government, and social connection. Broadband and digital access provides the opportunity to establish steady state and resilience, and also support diversity, equity, and inclusion. With much of the community committed to focusing on Native Hawaiian Indigenous Knowledge, data reveals that 8.7% of Native Hawaiian households do not have internet which is almost double the 4.6% of the state's total population who are without an internet subscription.

Hawai`i Island's geography also contributes to the disparity as wired connectivity is not available in many of the identified unserved rural areas and studies are in progress to determine if it is feasible to provide digital connectivity via wireless technology to such areas. The County of Hawai`i has signed the declaration and its Departments of Research & Development and Technology in partnership with others in both government and private sector, are committed to extending both the "middle mile" [43] and "last mile" [44] necessary to achieve the 2030 goal of 100% accessibility.

[42] Broadband Hui. Digital equity for A.L.L. – A Digital Declaration for Hawai`i. Accessed 18 August 2022. https://www.broadbandhui.org/

[43] Broadband USA, National Telecommunications and Information Administration. Washington D.C. "Enabling Middle Mile Broadband Infrastructure Program." Accessed 18 August 2022. https://broadbandusa.ntia.doc.gov/resources/grant-programs/enabling-middle-mile-broadband-infrastructure-program

[44] Quintillion. Anchorage, Alaska. 07 April 2022. "What is the Middle Mile in Broadband?" accessed 18 August 2022.https://www.quintillionglobal.com/what-is-the-middle-mile-in-broadband/



BROADBAND

As the pandemic transitioned thousands of individuals to work, learn, and conduct business remotely in Hawai`i County and as reiterated in the Hawai`i Strategic Broadband Plan (October 2020) "Broadband is the critical infrastructure of the 21st century and as such needs to be a public and private sector priority." [45] As can be seen, there are large swaths of Hawai`i Island that are underserved.

[45] Microsoft Word - Hawaii BB Plan 2020 FINAL_10-23-20.docx https://broadband.hawaii.gov/wp-content/uploads/2020/11/Hawaii-BB-Plan- 2020-FINAL_10-23-20_v1.1.pdf Accessed 08 July 2022.

STRENGTHS

- Demand
- Location
- Logistics
- Land available
- Design Opportunities
- Education and Workforce Development for the Industry
  - Professional degree programs at UH Hilo
  - Trade training and certification programs at HCC
  - High school training/preparation programs

WEAKNESSES

- Regulations
  - Excessive, Obsolete, Contradictory
  - Not aligned with needs of community
- Infrastructure
  - Lack of, inadequate, in disrepair, antiquated
  - Insufficient capital improvement and funding
  - Lacking long-term plan and vision
- Water
  - Inadequate infrastructure
  - Inadequate resource
  - Interference from agencies relying on "Junk Science"
  - No water – no permit – no housing and other development
- Cost of Living
  - Housing not affordable, not attainable
  - Energy costs
  - Cost of doing business
- Labor Shortage
  - HOUSING!!
- Supply Chain Disruptions
  - Shipping and Transportation
  - Materials and Equipment
- Government
  - Regulations and Policies – Tariffs
  - SLOW and Burdensome e.g., Permits, Processing, Inspections
  - Inadequate personnel e.g., State Historic Preservation Department
- Social Divisiveness
  - NIMBY (Not in my back yard)
  - Resentment of in migration residents and resort housing

OPPORTUNITIES

- Location
- Quality of Life
- Increase intellectual assets, experience
- Landowner incentives
- Technology, Innovation
- BUILD TMT
- PTA Land Retention
- Climate Change improve planning, technologies, design

THREATS

- Government
- Lack of long-term planning and vision
- Ideology
- Geographic Isolation
- Insufficient Healthcare (affects both workforce and general community)
- Climate Change
- Cost of Living and Doing Business
  - Energy Costs and Volatility
  - HOUSING

CONSTRUCTION AND INFRASTRUCTURE

Goal: Expand private and public sector capacity and infrastructure.

Objectives

- Develop and maintain healthy, diverse housing inventory for all market levels.
- Develop workforce, affordable (attainable), and transitional housing.
- Develop infrastructure including broadband, telecommunications, transportation, potable water, waste collection, solid waste management, waste treatment, electricity needed to support 21st century technologies, business, and prosperity.
- Raise awareness of residents and economic development stakeholders in Hawai`i County that land use planning and economic development can co-exist. To achieve quality economic development, it is vital to have effective land use planning.
- Identify, recruit, support and coordinate development that has a net positive impact on Hawai`i County and its residents.
- Develop and implement outreach and education for resilience including and not limited to, natural disasters, cybersecurity, economy, and its multiple sectors.
- Identify built infrastructure/environment for modernization.
- Assure that land use planning is not completed in a vacuum; recognize land use policies result in real world impacts, particularly at the financial level.
- Ensure alignment between strategic plans including and not limited to, Hawai`i County General Plan and Community Development Plans.
- Identify and mitigate points of contention (i.e., where alignment is not possible for example due to contradictory guidelines or requirements).

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Strategies

- Identify funding sources and opportunities to build, repair and maintain affordable, workforce and transitional housing.
- Assure that land use regulations contain some elements of flexibility. The flexibility must be consistent with the overall community development objectives stated in the County's General Plan and related such as Community Development Plans (CDPs) and should allow for variations that help accomplish those objectives.
- Promote long-term visions, goals, and plans for sustainable community development.
- Support initiatives and integrate other management plans related to infrastructure construction, installation, upgrading, repairs, and maintenance.
- Promote strategic investments for infrastructure that facilitates and supports Hawai`i County's social, cultural, and economic development needs.
- Maintain, improve transportation infrastructure consistent with smart growth principles.
- Develop, improve, expand industrial sites, acreage, parks, and buildings consistent with smart growth principles
- Support identified infrastructure projects including and not limited to
  - Extension of Daniel K. Inouye Highway from Mamalahoa Highway terminus to Queen Kaahumanu Highway
  - Hana Hou Downtown Hilo Revitalization
  - Kailua Village Business Improvement District Utility Modernization
  - Cesspool replacements
- Support research and development of natural resources
- Support expansion of renewable, clean energy consistent with smart growth principles and the state's goal of 100% clean energy by 2045. Specifically support Aloha+ Challenge targets of securing 70% clean energy with 40% from renewables and 30% through efficiency
- Support maintenance and improvements of utility infrastructure
- Support modernization of airports, harbors (including Honokohau and other Small Boat harbors), and shipping/processing facilities.
- Build collaborative networks to engage stakeholders in respectful discussion in support of managed growth and development

CONSTRUCTION AND INFRASTRUCTURE

Priority Actions

- Direct Federal, State, and county resources and efforts to the development of housing and rental units for low- and middle-income households
  - Use public and private resources to create necessary infrastructure for low- and middle-income developments
  - Use public lands for the development of low- and middle-income housing units particularly for transit-oriented development
    - Excerpted from 2017 State Housing Functional Plan
  - Increase the number of affordable and attainable housing units. Note the "major distinction between affordable and attainable housing is that affordable housing has income guidelines, whereas attainable housing does not require that the buyers' income be limited to qualify for purchase". [46]
- Support development of new potable water resources
- Reinvest in public infrastructure in older communities to retain/attract residents and small businesses
- Review, clarify, and exclude, if possible, rules and regulations that contribute to housing in Hawai`i County being most expensive in nation
- Advocate for new models such as the inclusion of workforce housing at Waikoloa Beach Resort which is the first such project and leading diversity, equity, inclusion, and community building

[46] Malone, Trish et al. Guidelines for Increasing Community Housing By Adding the Use of an Attainable Housing Program to the Affordable Housing Requirements. James Kent Associates. 2007. p. 2.

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CREATIVE ARTS AND INDUSTRIES

"Creativity is a way of living life, no matter what our vocation, or how we earn our living. Creativity is not limited to the arts ... "

Madeleine L'Engle (author)

Hawai`i Island's size, natural resources, beautiful surroundings, and diversity which include ten (10) of the world's fourteen (14) climate zones all lend the island to being a favorite locale for movie and television production. Beyond movies and television, the island's creative arts and industries sector abounds with diversity including and not limited to music, cultural activities, design services, architecture, radio and television broadcasting, video production and distribution. In 2018, 5,649 of the state's creative industry jobs were in Hawai`i County

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Creative Industry Jobs, Hawai`i County

Industry Group	Performance Class	Jobs				Average Annual Job Growth (%)			
		2008	2009	2017	2018	2008-2009	2009-2018	2017-2018	2008-2018
Music	Base-Growth	156	142	212	243	-9.4%	6.2%	14.8%	4.5%
Cultural Activities	Base-Growth	107	93	185	202	-13.4%	9.0%	9.3%	6.5%
Design Services	Base-Growth	285	256	326	339	-10.2%	3.2%	4.1%	1.8%
Architecture	Base-Growth	181	166	177	188	-8.5%	1.4%	6.4%	0.4%
Radio and TV Broadcasting	Emerging	79	61	80	85	-22.6%	3.7%	6.5%	0.7%
Film, TV, Video Production/Distrib	Emerging	68	84	70	74	23.0%	-1.4%	5.1%	0.8%
Computer and Digital Media Products	Transitioning	264	233	357	364	-11.4%	5.1%	2.1%	3.3%
Engineering and R&D	Transitioning	571	561	612	573	-1.7%	0.2%	-6.4%	0.0%
Marketing, Photography & Related	Transitioning	1,217	1,164	1,365	1,377	-4.4%	1.9%	0.9%	1.2%
Performing and Creative Arts	Transitioning	1,311	1,416	1,452	1,464	8.0%	0.4%	0.8%	1.1%
Art Education	Transitioning	56	49	66	62	-12.3%	2.6%	-6.7%	1.0%
Business Consulting	Declining	536	494	465	466	-7.8%	-0.6%	0.2%	-1.4%
Publishing & Information	Declining	297	296	211	212	-0.3%	-3.7%	0.5%	-3.3%
Total Creative Industry	Transitioning	5,127	5,014	5,578	5,649	-2.2%	1.3%	1.3%	1.0%

The table above shows the creative industry groups and job trends between 2008 and 2018.

[47] State of Hawai'i Department of Business, Economic Development and Tourism. Honolulu, Hawai'i. May 2020. "Hawai'i's Creative Industries Update Report 2020" accessed 19 August 2022.

STRENGTHS

- Strong base of diverse and wide range of talented individuals
  - Youth creativity
  - Untapped talent
- Hawai`i Island is an attractive location
  - Natural environment
  - Reciprocal relationship with environment
- Community recognizes the need and supports arts and culture
- Native Hawaiian Indigenous Knowledge, Traditions, Culture and Art Forms
  - Aloha Spirit
  - Teach residents and visitors
- Cultural Diversity
- Exposure to art helps individuals find and develop their own creativity
  - Increased number of outreach programs in arts and culture to underserved populations, including children
- Creative food/culinary
- Fabric Arts

WEAKNESSES

- Resource constraints including access to capital
  - Lack of facilities overall and in particular affordable for art creation, presentation
- Costs
  - Cost of living
  - Costs associated directly with creating art and other creative expressions
    - Costs of materials and supplies
    - Costs for import/export (shipping)
    - Costs to attend out of state venues and/or education opportunities
    - Supply chain
- Difficult to monetize some art forms
  - Value proposition difficult to determine
- Cultural Appropriation
  - Hawaiian culture and art not presented authentically to visitors
- Lack of common vision within the creative arts and industry community
- Lack of clear vision from government as to role of creative arts and industry beyond entertainment, movies, television
- Lack of strong advocates for the sector
- Limited market

OPPORTUNITIES

- National and International exposure of local talent (e.g., musicians, clothing designers)
  - Export opportunities
- Affluent people moving to island bring new opportunities including education leading to appreciation and financial support
- Build on Hawai`i's culture, tradition, and art with Authenticity (i.e., beyond the luau, hula, and shell leis sourced from another country)
- Tool to address mental health
- Disability awareness through art to create resilience
- Build self-confidence and self-esteem
- Curated experiences
- Platform to express/explore passions
- Community needs drive art sector
- Tool to use or manipulate environment
- Community workshops
- Cross-sector collaborations

THREATS

- Funding insufficient, inconsistent
- Lack of State support for other creative industries and art beyond film
- Cultural appropriation and disrespect
  - Lack of authentic presentation and education
  - Disenfranchised Native Hawaiian artists
- Changing demographics
- Competition
- Changed behavior with individuals transitioning to "virtual" rather than in person platforms to view art and creativity

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CREATIVE ARTS AND INDUSTRIES

Goal: Expand and strengthen the Creative Arts and Industries Sector

Objectives

- Increase opportunities and the number of viable jobs in the Creative Arts and Industries Sector

Priority Actions

- Showcase existing venues (e.g., Wailoa Art Center, Isaacs Gallery, Kahilu Theatre, museums) and events such as the Merrie Monarch (hula, fashion, crafts, lei, etc.)
- Provide technical assistance grants to assist organizations in securing public sector funds
- Convene workshops to provide "backroom" business, startup assistance
- As part of community's desired new model for tourism, expand arts & culture tourism programs integrating Indigenous Knowledge, traditions
- Generate greater support from leaders in the community
- Create an identity for Hawai`i Island's creative arts and industries sector
- Build and enumerate cross-sector collaborations
- Identify opportunities to establish short-term featured artist in residence programs
- Establish funding, scholarships, stipends
    - Identify opportunities to connect with existing sources of funding beyond specifically designated to arts and creative industries (i.e., cross sector collaborations e.g., education, environment, technology)

Metrics

- Number of new venues (including short-term) showcasing creative industries and arts
- Sustainable funding opportunities established
- Number of scholarships, stipends awarded

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EDUCATION, KNOWLEDGE CREATION, WORKFORCE DEVELOPMENT

"The power of education extends beyond the development of skills we need for economic success. It can contribute to nation-building and reconciliation."

Nelson Mandela

Education at all levels is a fundamental requirement to achieve sustainable and resilient economic development, which requires that there be "... substantial investment in human capital. Education enriches people's understanding of themselves and the world. It improves the quality of their lives and leads to broad social benefit to individuals and society. Education raises people's productivity and creativity and promotes entrepreneurship and technological advances. [48]

Hawai`i Island residents are provided with educational opportunities at a multitude of public, charter and private pre-12 schools, and post-secondary education. There are forty-one public schools in Hawaii County, under the State of Hawai`i Department of Education (DOE) representing nine (09) complexes across the island. In the 2020-2021 school year, there were 23,113 students enrolled in public schools in Hawai`i County. [49] Hawai`i County has a high school graduation rate of 92.9% which is slightly higher than the state's rate of 92.5%. The county's college rate of is 29.5% is lower than the state's 33.6% rate. [50]

When the last CEDS for Hawai`i County was done in 2016, the Learning Policy Institute was engaging in discussion about an emerging concern about teacher shortages. [51] In July 2022, the DOE reported a shortage of approximately two hundred (200) teachers in Hawai`i County with DOE spokespersons noting shortages of forty-one (41) teachers in the Hilo-Waiakea complex area, fifty (50) for the Ka`u-Keaau-Pahoa complex, and one hundred and five (105) for the Honokaa-Kealakehe-Kohala-Konawaena complex. The latter two complex areas qualify as "hard- to-staff geographical locations" due to remote, rural sites. [52]

The University of Hawai`i at Hilo (UHH) offers numerous four-year degrees, Master's, and PhD programs. The University of Hawai`i, Hawai`i Community College (HCC) offers associate degrees, and along with UHH, certification, and non-credit programs in many areas including and not limited to trades, business, culinary studies, health, and hotel operations. In 2015, the UH HCC at Palamanui was opened and welcomed its first students and faculty. The campus located in Kailua-Kona near the Kona International Airport and Natural Energy Laboratory of Hawai`i at Keahole Point, offers a wide array of associate degrees and certificate programs ranging from Accounting and Agriculture to Hawaiian Studies and Hospitality to Health and Natural Resource Management. Its location and neighbors offer some interesting prospective collaborations and experiential learning opportunities.

At the other end of the spectrum, there is a severe shortage of childcare spaces and pre-K facilities in Hawai`i County which impacts early childhood learning and lowers the baseline for students as they enter K-12. The "Hawai`i County Early Childhood Community Profile" [53] done in March 2022 provides data on

[48] Ozturk, Ilhan, The Role of Education in Economic Development: A Theoretical Perspective. Accessed 06 August 2022. Available at SSRN: https://ssrn.com/abstract=1137541 .

[49] County Office, Hawai'i State Department of Education Official Enrollment Count SY 2021-2022 Accessed 06 August 2022. Public Schools - Hawaii County, HI (Enrollment & Calendars) (countyoffice.org)

[50] United States Census Bureau. Quick Facts: Hawai'i and Hawai'i County. Accessed 10 July 2022. https://www.census.gov/quickfacts/HI

[51] Sutcher, Lieb. Learning Policy Institute. Palo Alto, California. "A Coming Crisis in Teaching? Teacher Supply, Demand, and Shortages in the U.S." Accessed 06 August 2022. https://learningpolicyinstitute.org/product/coming-crisis-teaching

[52] Phillips, Grant. Hawai'i Tribune Herald. 11 July 2022. "Isle in Need of Teachers" Accessed 12 July 2022. https://www.westhawaiitoday com/2022/07/11/hawaii-news/isle-in-need-of-teachers/

[53] Early Childhood Action Strategy. Honolulu, Hawai'i. March 2022. "Hawai'i County Early Childhood Community Profile" Accessed 10 July 2022. https://hawaiiactionstrategy.org/ecas-data-efforts-1/datawalks2022/3/22/hi-county-early-childhood-community-profile-tyyt2i

key dimensions of child and family wellbeing, including economic conditions, housing, health, early care and education, and the status of key resources that help to support families with young children in Hawai`i County. The County is responding to the need and in 2022 added an Early Childhood Education Specialist in the Hawai`i County Department of Research and Development.

The Hawai`i County Workforce Development Board (HCWDB) focuses its efforts "... to promote the development of a highly competent and productive workforce by coordinating the efforts of educational institutions, labor, business, economic development organizations, government agencies and the entire community in order to sustain a strong economy and lifestyle." [54]

One of the challenges and opportunities being experienced at the higher education level relates to the changing needs as we transition from an industrial to information-based economy and consider lessons learned such as during the COVID pandemic. For example, curriculum that was very relevant, cutting edge, and important established pre-COVID in preparing students to enter the labor force in pharmacology has now been rendered in need of recrafting as lessons learned require more emphasis on human resources, resource management, communications, automated systems, and new technologies. Similarly, the anecdotal reports of educators struggling to pivot to remote teaching were on par with the struggles of students transitioning to remote learning.

Knowledge creation - 'inventing and innovating new concepts, approaches, methods, techniques, products, services, and ideas that can be used for the benefit of people and organizations" [55] is one of the vehicles that will help steer Hawai`i Island to strengthen and diversify our economy by exploring innovative problem-solving and generating solutions to problems not yet identified as such.

[54] County of Hawai`i, Department of Housing and Community Development. Hawai`i County Workforce Development Board. Accessed 10 July 2022. https://www.hawaiicounty.gov/departments/office-of-housing/workforce-innovation-and-opportunity-act-wioa-program

[55] Lucidea. "KM Component 13 – The Knowledge Creation Process" 21 June 2021. Accessed 11 July 2022. https://lucidea.com/blogkm-component-13-knowledge-creation-process/

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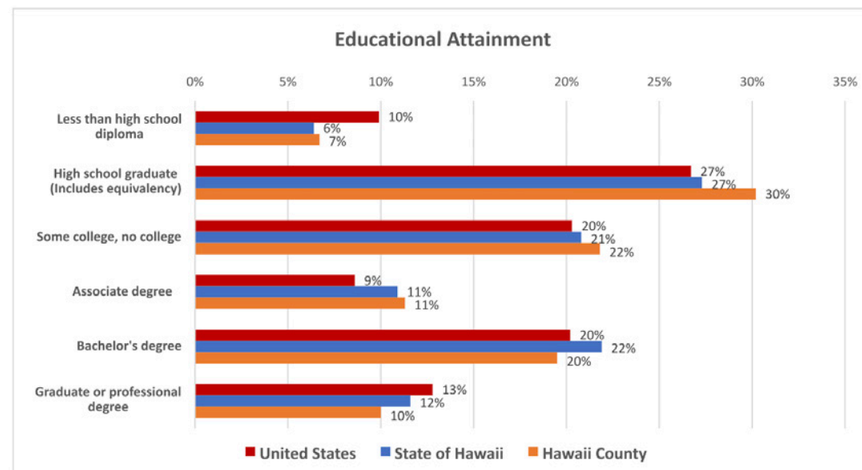
Comparison of Educational Attainment
between the U.S., State of Hawai`i, and the County

Educational Attainment (Age 25+)	United States (%)	State of Hawaii (%)	Hawaii County (%)
Less than high school diploma	10%	6%	7%
High school graduate (Includes equivalency)	27%	27%	30%
Some college, no college	20%	21%	22%
Associate's degree	9%	11%	11%
Bachelor's degree	20%	22%	20%
Graduate or professional degree	13%	12%	10%

Source: https://www.towncharts.com/Hawaii/Education/Hawaii-County-HI-Education- data.html Accessed July 11, 2022



The charts and graphs above provide data supporting narratives about student enrollment and levels of education attained.

STRENGTHS

- Complementary, Quality Higher Education
- Scholarship, Grant Opportunities
- Availability, Accessibility, Affordability
- Quality, Committed Educators and Administrators
  - 85% of teachers trained at UH Hilo stay on island
- Primary, Secondary, and Advanced Education
  - Department of Education
  - University of Hawai`i, Hilo
  - UH Hawai`i Community College
- UH Hawai`i Community College at Palamanui
  - Kamehameha Schools
  - Charter and Private Schools
- Shared value, culture, Aloha
- Diverse people and communities
- Commitment to children and early education
- Relationships, Collaborations
  - Schools, Businesses, Non-Profits, Community Organizations, Government
  - Workforce Development Board
- Technology
- Indigenous Knowledge
- Past challenges and successes help guide us to future problem solving
- Collaboration between programs such P20, DOE, and Workforce Development

WEAKNESSES

- High Cost of Living
  - Housing
- Demographics
- Logistics
- Mobility Limitations (for both education and work)
  - Insufficient Public Transportation
- Rural Status
- Access to education (distance)
- Insufficient technology infrastructure
- Skillsets to navigate technology
- Skillsets to apply/interview/secure job
- Cultural capital
- Relevance, Nimbleness, Ability to pivot
- Need closer collaboration between business and higher education (especially for job placement)
- Often ranked lowest State as place to do business
- Inadequate funding
- Shortage of skilled workforce prepared to be part of the global economy

OPPORTUNITIES

- Deepen connection with workforce
- Career connections program
- Collaborate between higher education campuses
- Increase education opportunities and remote support centers in rural areas
- Utilize resilience hubs to coordinate professional/workforce development efforts
- Career connections program
- Converse and Behave in manner that honors Diversity, Equity, and Inclusion
- Apprenticeships, Internships (including trade unions)
- Technology
- Distance Education
- Dual enrollment (college classes/credits while in high school)
- Out-of-Box Thinking and initiatives
- Cultural/Family Outreach
- Community based poverty/financial literacy outreach
- Entrepreneurship
- STEAM (Science, Technology, Engineering, Arts and Mathematics)
- Information/Data Repository and Analysis Centers
  - Create new industry and jobs
  - Geothermal, other renewable energy can be used to produce necessary cooling

THREATS

- Affordability / Cost of Living
- Location (Distance between jobs and housing)
- Changing Demographics
- “Brain Drain”
- Poverty, Lack of Financial Literacy
- Poverty Barriers and Mindset (Instant gratification)
- Un- and Under- employment
- Transportation
- Predatory Hiring (Employment) Practices
- Digital Divide
- Insufficient, outdated infrastructure
- Employee Unions
- Ideology and “Anti” stance
- Critical mass of people who are “Disenfranchised”
- Apathy, Sense of Hopelessness

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EDUCATION, KNOWLEDGE CREATION, WORKFORCE

Goal and Objectives

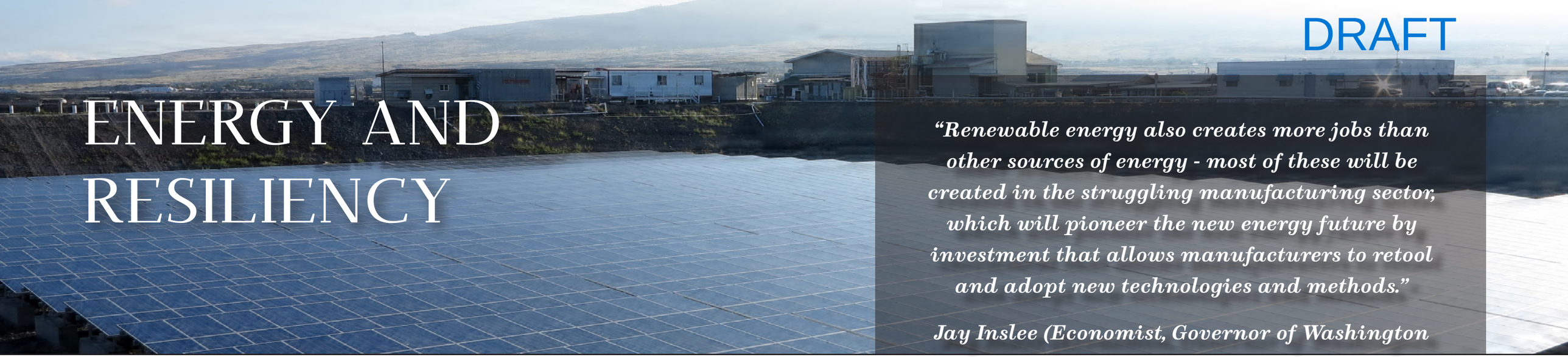
- We lead technology – technology does not lead us
- Implement STEAM as compulsory curriculum
- Establish partnerships with DHHL, National Parks, and others
- Develop and evolve early childhood to post-secondary education system to include real world integration through industry collaboration and social, technological, historical, and natural awareness
- Recruit/address teacher shortage
- Maintain existing and build new relationships with employers
  - Develop better understanding of emerging technologies and skillsets
  - Adapt curriculum and support programs aligned with emerging needs

Priority Actions:

- Increase Early Childhood Education and Childcare Facilities
  - County of Hawai`i Department of Research and Development has established an Early Childhood Education Resource Program
  - Support programs and efforts to secure additional funding for Early Childhood Education
    - ARPA Funding has been set aside to support Early Childhood Education and increase childcare spaces
    - Early Childhood Stakeholders Council has been established to advocate for the programs and funding necessary
    - Advocate for Hawai`i County to partner with the state to leverage and utilize funding ($200 million) provided by Hawai`i State Legislature through HB2000 to construct and/or renovate buildings for childcare centers to increase capacity
- Third grade reading test scores are very low and need to be improved
  - There is a direct correlation between third grade reading scores to a child's future success as a student and ultimately as a contributing member of society
  - Develop birth to third grade systems that work to support children from birth through transition to kindergarten and to third grade.
- Advocate for workforce including workplace housing (note school campuses have land that can be used for teacher housing as was done years ago)
- Advocate for salary differentials as recruitment and retention tool to address teacher shortages
  - Advocate for adoption of true merit-based payments to deserving teachers
  - Assist with establishing criteria for merit-based payments
- Connect teachers to resources (identify and create resources).
- Connect students to resources (scholarships, internships, extra-curricular activities, mentoring, tutoring, etc.).
- Secure funding to allow students from all school complexes and communities to participate in extracurricular education opportunities
  - Transportation, lunches, admission, supplies and materials
- Secure funding to allow educators to secure specialized training
  - Grants, stipends, travel, and related expenses

Metrics

- Additional childcare and early education placements
  - Number of additional licensed, certified providers and facilities
  - Number of employers who participate in integrating childcare as part of employment experience, incentives, on site centers
- Improved third grade reading test scores
- Number of experiential opportunities for students
  - Number of student participants
- Number of experiential opportunities for educators
  - Number of educator participants



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ENERGY AND RESILIENCY

"Renewable energy also creates more jobs than other sources of energy - most of these will be created in the struggling manufacturing sector, which will pioneer the new energy future by investment that allows manufacturers to retool and adopt new technologies and methods."

Jay Inslee (Economist, Governor of Washington

Maintaining a high quality of life and ensuring economic resilience for Hawai`i Island residents depends in large part on utility resilience, transportation for residents and tourists on island as well as, air travel and reliable shipping departing from and arriving to the island. There are two airports capable of handling major commercial air traffic and two deep draft harbors on island.

An estimated 26,000 tons of cargo and mail pass through Kona and Hilo airports. Confirming that water transport continues to be the primary means by which goods reach the island, 2 million plus tons of cargo pass through Hilo Harbor and approximately 1.75 million tons through Kawaihae Harbor. [56]

Hawai`i Island boasts the most diverse renewable energy portfolio in the state with wind, solar, hydro, and geothermal. And while the Renewable Portfolio Standard (RPS) registered at 43% for the island's electricity grid which is the highest in the state in 2020, the cost for electricity in comparison to Oahu, Maui, or the continental U.S. remains high for Hawai`i County residents paying 37.92 cents per kWh. [57]

The Big Island has 136,664 licensed drivers who consumed 123.3m gallons of fuel in 2020.

ORMAT's Puna Geothermal Venture (PGV) which was taken offline following the disruption caused by the eruption of Kilauea in 2018 and lava activity in PGV's immediate vicinity, was not able to contribute to the 2020 RPS which would otherwise have boosted the island's RPS to 75%. With PGV resuming operations in November 2020 and expanding their capacity, plus several major Photovoltaic projects underway, Hawaiian Electric Co. anticipates Hawai`i Island meeting 100% of its renewable energy standards in 2023 and exceeding that by an additional 10% by 2024. Simultaneously the County of Hawai`i is leading efforts to modernize and reduce emissions from its transportation sector with increased electric vehicles and the introduction of hydrogen powered public transport busses.

The infrastructure necessary to support electric vehicles (EVs) is expanding with EV charging stations located on both private and public properties throughout the island including an increasing number of remote, rural locations.

The state's first hydrogen bus was received by Hawai`i County and added to the island's public transportation fleet in May 2022 with fueling facilities located in the Hawai`i Ocean Science Technology (HOST) Park adjacent to the Hawai`i Natural Energy Laboratory Authority (NELHA) located at Keahole Point where the Ellison Onizuka Kona international Airport. The bus is the first in the County's plan transition the county's entire bus fleet to zero emissions by 2035 with hydrogen and battery-electric buses. [58]

Meanwhile, we look back to look forward with renewed interest in Ocean Thermal Energy Conversion (OTEC) at the NELHA where the first experiments with OTEC were conducted in the 1970's following the national oil crisis. NELHA then operated a small demonstration plant in the 1990's. Today Makai Ocean Engineering operates the world's largest operational OTEC facility at NELHA with an annual power generation capacity for 100kW. Because the OTEC process produces desalinated water as its by-product, there are several nations (including some island nation/states) interested and pursuing the technology for both electricity generation and water. [59]

[56] Hilo, Hawai'i: County of Hawai'i, Department of Research and Development 2016. Hawai'i County Data Book 2015. Table 6.2.17 Freight Traffic for Hilo and Kawaihae Harbors. (p. 129) Table 7.1.2 Electric Utilities Hawai'i County (p.135).

[57] Hawaiian Electric Co. Inc. Average Price of Electricity | Hawaiian Electric accessed 20 August 2022. https://www.hawaiianelectric.com/billing-and-payment/rates-and-regulations/average-price-of-electricity

[58] School of Ocean and Earth Science and Technology, University of Hawai'i. Honolulu, HI. "Hawai'i Island receives state's first hydrogen bus. Accessed 25 August 2022. https://www.soest.hawaii.edu/soestwp/announce/news/hawaii-island-welcomes-states-first-hydrogen-bus/

[59] Power Technology. June 2020. Makai's Ocean Thermal Energy Conversion (OTEC) Power Plant, Hawai'i. Accessed 25 August 2022. https://www.power-technology.com/projects/makais-ocean-thermal-energy-conversion-otec-power-plant-hawaii/

Households in Hawai'i County spent an average of 2.9% of their income on electricity bills, one percentage point higher than the state average at 1.9%. The electricity burdens were 4.1% for renters, 3.6% for households living in condos or apartments, 17.3% for households earning below 30% of AMI, and 18.4% for households with income below FPL in Hawai'i County. Owner households below FPL in Hawai'i County spent as much as 19% of their income on electricity costs, compared with renters below FPL spending 17.9%. Households living in single-family houses spent up to 18.8% of their income on electricity bills, while those living in condos or apartments spent 16.3%.

Table 6. Average monthly electricity cost and electricity burden: Hawai'i County

Household Type		Housing count[1]	Average annual income	Average monthly electricity cost	Average electricity burden[2]
All households		68,412	$77,407	$188.6	2.9%
House tenure	Owners	45,767	$88,474	$188.5	2.6%
	Renters	22,645	$55,040	$188.9	4.1%
Building structure[3]	Single-family house	59,212	$81,423	$193.6	2.9%
	Condo/apartment	9,032	$51,726	$157.2	3.6%
Area median income (AMI)	100%+ AMI	31,109	$132,206	$208.7	1.9%
	80-100% AMI	6,693	$60,991	$181.9	3.6%
	60-80% AMI	7,264	$46,220	$192.3	5.0%
	30-60% AMI	11,045	$28,707	$172.6	7.2%
	0-30% AMI	12,300	$10,684	$154.3	17.3%
Federal poverty level (FPL)	400%+	22,582	$147,394	$205.7	1.7%
	200%-400%	21,475	$66,880	$188.1	3.4%
	150-200%	6,167	$38,556	$199.1	6.2%
	100-150%	6,895	$25,702	$175.8	8.2%
	0-100%	11,293	$10,262	$157.5	18.4%
All households below the Federal poverty level					
House tenure	Owners	5,237	$10,091	$159.8	19.0%
	Renters	6,056	$10,409	$155.5	17.9%
Building structure[3]	Single-family house	9,296	$10,570	$165.2	18.8%
	Condo/apartment	1,966	$8,870	$120.7	16.3%

1. The sums of housing units of some subgroups are not necessarily equal to total housing units due to rounding.
2. Household electricity burden is the percentage of household income spent on electricity bills. It is calculated as the ratio of the average annual electricity cost to average annual household income for each household group.
3. A small number of other building structures, including mobile homes, trailers, boats, RVs, vans, etc., are excluded from this table.
Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. (2020). Low-Income Energy Affordability Data - LEAD Tool - 2018 Update.

STRENGTHS

- Assets based leveraging
- Community Resources
- Geographic Isolation
- Isolated Grid
- Visitor Industry
- Social Media
- Logistics
- Diverse Renewable Energy Portfolio
- Reliable electricity grid
- Knowledge creation and Intellectual property
- Hawai`i Electric Industries Integrated Grid Plan
- Skilled engineers, linemen, operators, admin
- Cohesive leadership team

WEAKNESSES

- Geographic Isolation
- Cost to Import (Oil and other products)
- Insufficient trained workforce
- Social Media
- Economics re: Finance Grid Modernization
- Vulnerability to natural disasters
- LNG
- Lack of Trust in Government
- Expectations
- Instant Gratification
- Resistance to Change
- Lack of Leadership
- Relevance, Nimbleness

OPPORTUNITIES

- Change in Mindset
- Diversified Portfolio
- Geography
- More advantageous to do business on Hawai`i Island
- Out-of-Box Thinking and initiatives
- Innovation
- Create new industry and jobs
- Infrastructure Upgrades
- Increase efficiency
- Exportable Intellectual Property
- Experiential Successes

THREATS

- Volatile oil prices
- War in Ukraine
- Mistrust of business and government
- NIMBY
- Fear; Risk Averse; Uncertainty Avoidance
- Entitlement
- Mis (error) and Dis (Deliberate) Information
- Social media
- Lack and cost of infrastructure
- Utility demonized – Ideology
- Costs of Infrastructure
- Supply Chain Disruptions
- Rules, Regulations, Tariffs

ENERGY AND RESILIENCY

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Goal: Provide all Residents with Access to Energy that is Affordable and Reliable for both Stationary (electricity) and Mobile (transportation) Applications.

Objectives

- Ensure systems for power source/grid resiliency
- Secure business models, opportunities for funding to modernize grid and support infrastructure
- Ensure regulations, ordinances, laws, policies, and plans support renewable energy resource development.
- Ensure grid modernization allows penetration of multiple sources of firm and non-firm renewable sources.
- Support utility and County Program initiatives for meeting 100% renewable grid by 2045; reduce imported fossil fuels for transportation; and reduce costs of energy for island residents.
- Support energy efficiency
- Ensure research and development of multiple technologies, including development of energy alternatives for transportation. Provide and retain a skilled workforce
- Develop community outreach and education opportunities providing opportunity for better understanding of the “macro” view and impacts on community, individuals, businesses
- Enhance community understanding of climate change challenges

Strategies

- Work with regulated utilities and independent power producers to create a back-up system for our power source to ensure resiliency.
- Identify business models and/or opportunities for funding to upgrade Hawai`i Island’s aged electrical grid and support infrastructure.
- Work with regulated utilities to develop and implement public seminars, workshops, and professional development classes to teach about the strong connection between economic development and energy costs; pros and cons of renewable energy resources; and other information to create better understanding and acceptance of changes in the energy arena.
- Review and consider implementation of programs such as the property-assessed clean energy (PACE) model, an innovative mechanism for financing energy efficiency and renewable energy improvements on private property. PACE programs allow local governments, state governments, or other inter-jurisdictional authorities, when authorized by state law, to fund the up-front cost of energy improvements on commercial and residential properties, which are paid back over time by the property owners.
- Work with regulated utilities, independent power producers, County and State entities to develop comprehensive knowledge base for outreach and education. Facilitate collaboration and dialogue between all stakeholders.
- Work with schools and training centers to deliver curriculum and prepare workforce to keep up with new technologies such as for example, fuel cell versus combustion engine.
- Work with regulated utilities, independent power producers, County and State entities to develop comprehensive knowledge base for outreach and education. Facilitate collaboration and dialogue between all stakeholders.

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ENERGY AND RESILIENCY

Priority Actions

- Raise awareness about the importance of local planning to ensure connections between transportation, housing, jobs, social and public services
- Facilitate communications and collaboration between partners both public and private, for investments in housing, transportation, social and public services
- Establish benchmarks and baselines by adopting a policy to report the energy use of buildings
- Incentivize small businesses to adopt clean energy, efficiency, no emission standards
- Identify and establish programs that will support transition to renewable energy sources in both stationary and mobile applications that do not create additional hardship for those currently unable to transition financially
    - Identify and adopt models and programs to assist lower and fixed income residents with transition to renewable energy sources
    - Identify opportunities including funding options for those unable to afford electric vehicles to make the transition sooner than later
        - Equity requires providing “real” access to opportunities, attainability, and establishing a sense of “belonging” (inclusion)
- Adopt multi-model transportation models, offer specialized transit services, and invest in efficient and expanded public transportation to connect workers to job centers
- Develop new and improve existing infrastructure including public transport to incentivize workforce to utilize public transportation
    - Coordinate with employers and childcare providers to align with public transport schedules
- Raise awareness about the importance of local planning to ensure connections between transportation, housing, jobs, social and public services
- Facilitate communications and collaboration between partners both public and private, for investments in housing, transportation, social and public services
- Establish benchmarks and baselines by adopting a policy to report the energy use of buildings
- Incentivize small businesses to adopt clean energy, efficiency, no emission standards
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ENVIRONMENT AND CLIMATE CHANGE

" Reviving Indigenous Knowledge and traditional values can reduce the damage by limiting coastal erosion, reversing the rising acidity of coastal waters and lessening flooding from intense storms. "

Nick Reppun, farm director for Kāko'o 'Ōiwi.

In order to survive and thrive with just the resources at hand on the Hawaiian archipelago located thousands of miles from the nearest land mass, Native Hawaiians had to live sustainably. Our theme of looking back to look forward especially resonates when discussing the environment and climate change.

The Hawai`i State Legislature codified sustainability as a priority for the state in the Hawai`i Revised Statutes §226-65[60] Hawaii 2050 sustainability plan mandating the Hawai`i State Office of Planning and Sustainable Development (OPSD) update the Hawai`i 2050 Sustainability Plan[61] to help "determine future actions guiding the coordination and implementation of Hawai`i's sustainability and climate adaptation goals, principles, and policies. The Hawai`i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2020-2030) was issued in June 2021 and beyond environment and climate change, sets a course for sustainable and resilient economic recovery.

In March 2021 a two-day County of Hawai`i Sustainability Summit 2021[62] was convened with speakers and breakout sessions on

- Affordable Housing
- Aloha+ Challenge
- Climate Action and Resiliency
- Economy
- Energy
- Food Security
- Preserving the Environment
- Sustainable Agriculture
- Sustainable Healthcare
- Sustainable Tourism
- Technology
- Transportation
- Waste Management
- Workforce and Education

"This summit will bring bright minds together to develop actionable strategies that will help Hawai`i island address issues regarding renewable energy, sea-level rise, threats to our reef and more. The summit will also focus on how Hawai`i can become more self-sustainable, and provide opportunities for residents to think globally and act locally to reduce climate change". Hawai`i County Mayor - Mitch Roth

In 2020, the County of Hawai`i released its Draft Climate Action Plan which is helping to lead the way to reaching the county's Greenhouse Gas (GHG) emissions goals and "improving our community's health, wellness, and economic resiliency." [63]

60 Hawai'i Revised Statutes §226-65. Accessed 19 July 2022. https://www.capitol.hawaii.gov/hrscurrent/Vol04_Ch0201-0257/HRS0226/HRS_0226-0065.htm

61 Office of Planning and Sustainable Development, State of Hawai'i . June 2021. The Hawai'i 2050 Sustainability Plan: Charting a Course for the Decade of Action (2020-2030). Accessed 19 July 2022 https://hawaii2050.hawaii.gov/wp-content/uploads/2021/07/ /FINAL-Hawaii-2050-Sustainability-Plan-web-1.pdf

62 County of Hawai'i: Sustainability Summit 2021. March 2021. Accessed 19 July 2022. https://www.hawaiicounty.gov/our-county/sustainability-summit-2021 FINAL-Hawaii-2050-Sustainability-Plan-web-1.pdf

63 County of Hawai'i Department of Research and Development. Hilo, Hawai'i. 2020. County of Hawai'i Climate Action Plan (First Draft). Accessed 28 August 2022. https://www.rd.hawaiicounty.gov/home/showpublisheddocument/301933/637233445066030 00

The County of Hawai`i Department of Research and Development (R&D) provides a comprehensive listing of the county's resources, initiatives, and services to climate change including the Hawai`i County Sustainability Committee and GHG inventory on its website.[64] R&D also helped to facilitate the county's signing in July 2020, the Climate Mayors Congressional letter on zero-carbon green economy to create good-paying jobs and prioritize equity.[65]

The county also is a member of the Hawai`i Climate Change Mitigation and Adaptation Commission "promotes ambitious, climate-neutral, culturally responsive strategies for climate change adaptation and mitigation in a manner that is CLEAN, EQUITABLE, & RESILIENT." As part of the commission's outreach, education, and information efforts, the state has established the State of Hawai`i Climate Change Portal[66] which serves as a one-stop shop for information on current and future vulnerabilities, impacts, and mitigation efforts of climate change in Hawai`i.

[64] County of Hawai'i Department of Research and Development. Hilo, Hawai'i. 2022. Climate Change. Accessed 28 August 2022. https://www.rd.hawaiicounty.gov/economic-development/climate-change-action

[65] Climate Mayors. climatemayors.org. July 23, 2020. Letter to Congress. Accessed 28 August 2022. https://climatemayors.org/wp-content/uploads/2020/07/FINAL-Climate-Mayors_Congressional-Letter_07.22.20-copy.pdf

[66] State of Hawai'i. 2022. Climate Change Portal. Accessed 28 August 2022. https://climate.hawaii.gov/

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STRENGTHS

- Isolation
- Diverse Biota
- Multiple Climate Zones
- Open Space
- Quality of Life
- Natural Resources and Beauty
- Clean air, water, ocean
- Community commitment and engagement
- Government commitment
- Business support

WEAKNESSES

- Isolation
- Poor Infrastructure
- Insufficient funding
- Slow response to invasive species
- High cost of living, doing business

OPPORTUNITIES

- Experience and Exportable IP
- Natural Resources
- Diversity
- Visitor Industry
- Model/Pilot Programs
- Innovation and Technology
- Green industry and jobs
- Water Security

THREATS

- Poor infrastructure
- Natural Hazards
- Sea Level Rise
- Drought and Fires
- Ocean Acidity
- Time
- Pests and Invasive Species
- PEOPLE!!

ENVIRONMENT AND CLIMATE CHANGE

Goal: *'I Ka Wā Ma Mua, Ka Wā Ma Hope* – Looking Back to Look Forward

He mau makana nâu kêia na kô mâkou kûpuna.
These are gifts for you from our elders.

Strategies

- Integrate Indigenous Hawaiian, cultural, traditional, comprehensive approach into strategizing response to environment and climate change concerns
- Focus on Water
  - Wai – Water
  - Wai Wai – Wealth
  - Ka Wai Ola – Water is Life
    - Cross sector collaboration with Construction and Infrastructure sector to create and implement water infrastructure development and management plan
- Potable water, streams, rivers, ocean are all part of the focus
- Advocate and help create sustainable funding for conservation and bio-security management
- Reduce GHG, solid waste
- Transition Hawai`i Island's approximately fifty thousand (50,000) cesspools to modernized, environmentally safer septic systems

Priority Actions

- Solve problems related to environment and climate change by integrating Indigenous Knowledge and traditions in today's modern setting
- Revitalize traditional ahupua'a system which is comprehensive and refers both to the land unit and the system of managing resources from "mauka to makai" (mountain to ocean).
  - Cross sector collaboration with the Hospitality and Tourism sector
    - Support regenerative tourism and destination management plans providing orientation, education, outreach of importance of understanding authentic Native Hawaiian traditions and practices and connection with modern day challenges
- Develop and introduce business models, opportunities for business, government, and residents to integrate environmentally friendly policies and practices into daily operations and living
- Cross sector collaboration with Hawai`i Leeward Planning Conference and other planning, development, construction, infrastructure organizations and initiatives
- Cross sector collaboration with Agriculture and Food Security Systems to integrate and revitalize Indigenous traditions in farming, aquaculture, and food production
- Cross sector collaboration with P-20 educators and workforce development
- Cross sector collaboration with Energy and Resilience to identify points of common impact and develop respective and collective responses

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Priority Actions Specific to Water (Drawn from HCF Clean Water Initiative)[67]

- **Water Reuse**
  - Fund infrastructure needs and technology innovation
  - Support and advocate for onsite water reuse
    - Seed money funding for demonstration/ pilot projects
- **Water Recharge**
  - Support watershed, forest, coastal zone, mountain, and other resource management programs
  - Support, advocate, fund green infrastructure
- **Water Conservation**
  - Balance water use by increasing water conservation and reuse in visitor industry
  - Identify, fund, install water systems with upgraded technology capable of improving water conservation
- Align sources and uses of water to protect long-term water security

[67] Hawai`i Community Foundation Hawai`i Freshwater Initiative. "A Blueprint for Action Water Security for an Uncertain Future" Accessed 29 August 2022. https://issuu.com/hcfhawaii/docs/fresh_water_blueprint_final_062215_?e=1137810/68588624

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GOVERNMENT

A`ohe Hana Nui Ke Alu `Ia

No task is too big when done together by all

As one of the largest industry sectors and employers on Hawai`i Island, our diversity, inclusiveness, and equity is built into a close working relationship between government (County, State, and Federal) and our community.

During the 2019 Legislative Session, the Department of Business, Economic Development and Tourism (DBEDT) was tasked by Senate Concurrent Resolution 86 to conduct a study on potential industries, other than tourism, to promote economic development in the County of Hawaii.

The report states ..." Though the top five industries were the same for both Hawaii County and the state, Hawaii County was heavier in Tourism (more job concentration in Accommodation and Food Services, 13.3 percent for Hawaii County, 12.5 percent for State, and Retail trade, 11.5 percent for Hawaii County versus 9.7 percent for state). In contrast, the state overall was heavily weighted towards Government (government job share was 19.8 percent for the state and 13.9 percent for Hawaii County). Hawaii County was significantly concentrated in Agriculture, Forestry, Fishing and Hunting with 6.8 percent of the jobs in this sector while the state jobs share was only 1.6 percent." [68]

In addition to elected officials and policy makers, government agencies and departments including and not limited to the Department of Education, University of Hawai`i system, and military are part of the economic ecosystem on Hawai`i Island.

"The influence of government grows daily reaching all sectors of the community. It is imperative that the taxpayer - corporate and individual - be aware of government's policies and programs and get involved in the decision-making process at all levels of government. The opportunity to become involved in shaping the future of our state presents us with a challenge to be informed about the fiscal workings of state and local government."[69]

Government regulations is intended to work for the greater good through protecting people, businesses, communities, and the environment. [70]

It is incumbent on residents, business, and government representatives to work together to develop, diversify, strengthen Hawai`i Island's economy and address economic challenges and seek economic opportunities.

There is strong need for local and State government to address the "elephants in the room."

Government failure to comply with its own laws, rules and regulations leading to discontent in the community (e.g., Department of Hawaiian Homelands) that become part of a cascade of negative impacts including economically and reputationally, has led to creating divisiveness in the community. This also leads to community members feeing disenfranchised and excluded.

Convening government, stakeholders, and community with diverse missions, perspectives, objectives, expectations can lead to improving understanding, increased awareness, opportunities to find points of common impact and agreement to build relationships and trust, and work collectively to improve communications and solve problems.

[68] Hawai'i State Department of Business, Economic Development and Tourism. December 2019. "Hawai'i County Industry Analysis 2001 – 20018" Accessed 22 August 2022. https://files.hawaii.gov/dbedt/economic/reports/HCountyReport.pdf

[69] Bickmore, Kenneth 1997. "Government in Hawai'i: A Handbook of Financial Statistics." Access 22 August 2022. https://evols.library.manoa.hawaii.edu/bitstream/10524/54266/1977.pdf#:~:text=Its%20purpose%20is%20to%20foster%20effi%C2%AD%20ciency%20and,to%20assist%20in%20the%20improvement%20of%20public%20administration.

[70] Kinsey, Anne. Bizfluent. 29 August 2019. "Government Regulation of Business: How Does it Work?" Accessed 22 August 2022. https://bizfluent.com/13721121/government-regulation-of-business-how-does-it-work

STRENGTHS

- Mutual respect and good working relationship between community and government
- Because Hawai`i is still relatively small, we recognize individuals in government versus the impersonal "government" entity – they are our neighbors, our family, and friends.
- Government still small enough to allow access (i.e., easy to meet with to discuss concerns, initiatives, etc.)

WEAKNESSES

- Government can sometimes become caught up in "the bureaucratic process and status quo" and not look for solutions "outside the box"
- Government employees risk averse – perceived as not wanting to upset the cart and stand out from other bureaucrats
- Innovators in government frowned upon so difficult to make changes
  - Fifty ways why something cannot be done versus one way something can be done
- Some individual government employees and elected officials forget why they are in place
  - Public servants who think that the public serves them
  - Rude, arrogant elected officials who publicly shame citizens who deign to get involved in the government process such as offering testimony
  - Elected officials who under the guise of "interview" in public hearings of individuals who volunteer to serve on boards, commissions shame and make accusations against would-be volunteers
  - Increase in corruption leading to mistrust, cynicism, apathy in community
- Interpretations of rules, regulations that exclude rather than allow initiatives to proceed
- UNIONS & PROCUREMENT
- The pace of government – SLOW that cause delays in time and increase costs
- Permitting process is too cumbersome and slow – needs systems change
- Misalignment between purported goals, objectives, desires and bills, ordinances, outcomes
  - Sometimes outright contradiction and hypocrisy

OPPORTUNITIES

- Rebuild and maintain relationships and trust
- Recommend review of and contribute to participating in solutions, problem solving (e.g., Kona Kohala Chamber of Commerce Planning and Permitting Task Force)
- Remind elected officials and others in government of Hawai`i Revised Statute [§5-7.5] and recommend that all government representatives elected or not in all levels embrace and conduct themselves with "Aloha Spirit" (b) In exercising their power on behalf of the people and in fulfillment of their responsibilities, obligations and service to the people, the legislature, governor, lieutenant governor, executive officers of each department, the chief justice, associate justices, and judges of the appellate, circuit, and district courts may contemplate and reside with the life force and give consideration to the "Aloha Spirit". [L 1986, c 202, §1]"
- Help government tell its story – relevance, reframing, positive perspective, assets based, accept responsibility and accountability, transparent

THREATS

- Bureaucracy and bureaucratic processes
- Failure to act and/or respond in timely fashion
  - Policy/Law to respond within thirty (30) days as example and often loophole used whereby a letter is issued advising the department, director, etc. has received your inquiry and it is currently under review. This is repeated in thirty days, then again, and the entire process and policy is fraught with disingenuity.
  - This leads to additional fracture and mistrust in government
- Defer and Deflect rather than Act
  - Lack of clarity in processes that allow departments to point to other departments and literally have citizens running in circles
- Lack of Accountability and Transparency
- Failure to uphold Rule of Law equally
  - Failure to address simmering and outright tensions, disagreements, different perspectives in community
  - Allowing "bullying" by a loud, vocal minority versus protecting interests of entire community
  - Puts some individuals with different perspectives and opinion at risk
  - Discourages individuals from participating in civic engagement and government process

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GOVERNMENT

Goal: Rebuild relationship and trust in government; engender more collaboration and reciprocal communications and relationships.

Objectives

- Identify common ground and matters of mutual impact and importance
- Develop cohesive messaging for advocacy and legislation
- Identify community priorities and work with government to take necessary action to implement

Strategies and Priority Actions

- Work with community leaders to identify areas of concern
  - Convene listening sessions in community to address specific issues and invite diverse voices, perspectives, social classes, ethnic groups
  - Be transparent about policy changes in advance of making changes
- Seek clarity on where different agencies, departments, elected officials stand on complex, controversial, and divisive matters
  - Reminder: Lives and livelihoods are involved
  - Explain reasons for position (not political stomping and courting constituents, transparency, and honesty).
- Some specific areas of concern identified by the CEDS SAC that have impact on the island's economy and economic future that must be addressed include and are not limited to:
- **Maunakea**
  - Discussions exclusive of astronomy must be engaged to better understand, address underlying causes for rift in community
  - Legislature has installed a new managing authority with little discussion with the community about impacts such as delay in being able to renew leases with individual observatories; impacts including and not limited to reputation, economy, research, science, jobs (current and future)
  - Rule of Law must be applied consistently
- **Astronomy**
  - Current observatories and industry sector ($104 million, 611 jobs Hawai`i County)
  - Include economic discussion and long standing $1/year lease and related issues
  - Thirty Meter Telescope
  - Future of astronomy – i.e., are elected officials and others supportive of the industry sector currently and into future?
    - Impacts economy, education, research, science, curriculum, student preparation, workforce development
    - Specifically impacts observatory employees, families, and broader community
- **Military**
  - Pōhakuloa Training Area (PTA) Land Retention and cascading considerations
    - Include economic discussion and long standing $1/year lease and related issues
    - National Security
    - Hawai`i Security
    - Emergency and First Response in the Saddle Road and Maunakea, MaunaloaMauna Loa area (firefighting, vehicular accidents, accidents on mountain summit)
- **Hospitality and Visitor Industry**
  - Lack of understanding by community of the industry
  - Lack of understanding by industry of community concerns, sentiments
    - Convening representatives from industry, community, and government to meet, share perspectives, experience, etc. helps to build relationship, understanding, respect, and provides environment for mutually identifying problems and response.

All of the aforementioned impact Hawai`i Island's economy and future on multiple fronts and the community and industry sectors are attempting to navigate the challenges that include social unrest and multiple (sometimes divisive) perspectives. Already challenged with trying to prepare for future jobs and opportunities, problem solve for future problems, the community needs to understand which current jobs and opportunities are supported by government in order that we can better navigate to our island's future, economic and otherwise.

Metrics

- Number of "reciprocal information gathering and sharing" meetings convened
- Number and diversity of participants
- Number of public-private collaborations

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HEALTH AND WELLNESS

A`ohe Hana Nui Ke Alu `Ia

No task is too big when done together by all

Several key stakeholders and representatives of Hawai`i Island's health and wellness sector including behavioral health and wellbeing serve on the Hawai`i Island Strategic Action Committee.

"Quality of Life" was often referred to in discussions as one of Hawai`i County's strengths and the need for to health and medical care identified as a key component to maintaining quality of life as well as, social and economic determinants such as unemployment, poverty, income disparity, childcare, and basic needs. Population factors including the high ratio of residents aged 65+ with a shortage of physicians and health care workers and facilities are also a concern.

Hawai`i Island's healthcare challenges were exacerbated and highly visible during the pandemic which led to increased interest, support, and advocacy. In a 2021 report by the U.S. Department of Health and Human Services, Federal Health Resources and Services Administration Hawai`i County's shortage was identified as the 3rd worst in the nation

Sponsored in part by Community First Hawai`i a 501 (c) 3 non-profit based on Hawai`i Island founded in 2014 to serve as a neutral forum for the community to come together, and as a catalyst for solutions to improve health and access to health care, the July 2022 report "Access to Care Health for our Communities" reported the results of a statewide survey. The report notes "While a majority (55%) view our island communities as healthy, much of the survey tells a different story. It is one of strife, hardship, and need." [71]

The report based on a survey conducted from April 1st to May 9th 2022 of approximately 3,300 Hawai`i residents and 324 health care providers noted "The public uses mostly negative and emotional language to describe the current state of health care in Hawai`i."[71]

Overall health care in Hawai`i needs an overhaul but as stated in the subject report, it's a very complicated matter with some of our strengths such as our cultural diversity also a weakness and threat such as during the pandemic when language barriers and mistrust resulted in many individuals not seeking care (including fear of contracting COVID-19). Simultaneously this provided opportunities for equity and inclusion as government and private sector collaborated to provide health care in these communities which adds to the overall resilience of Hawai`i County's health and wellness.

[71] Community First Hawai`i. Hilo, Hawai`i. July 2022. "Access to Care – Health for our Communities". Accessed 08 August 2022. https://communityfirsthawaii.org/access-to-care/

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STRENGTHS

- Affiliation with Queen's Medical Center
- Affiliation with other private medical centers
- Residency Training on Island
- Bay Clinic and West Hawai`i Community Health Center Merger
- Hamakua Health Center, Urgent Care, Ali`i Health
- QUEST/Medicaid
- Physical Environment
- Collaboration and Resource Leveraging
- Technology Integration
- Telemedicine/Dentistry/Psychology
- Quality of Life
- Outdoor recreation

WEAKNESSES

- Cost of living and doing business
- HOUSING!!
- Mental/Behavioral Health
- Recruitment and Retention of doctors, other health care professionals
- Need new hospital in North Kona
- Low reimbursement rates
- Government Structure
- Shortages
- Physical Facilities and Infrastructure
- Affordable Care Act
- Regulations
- Broadband access hinders telehealth
- Language and Tradition Barriers (e.g., Micronesian, and other Pacific Islanders)

OPPORTUNITIES

- Telehealth
- Homegrown professionals
- Collaboration with business community
- Regional Health
- Affordable Care Act
- Recruitment
- Pilot programs/new models (analogy Peace Corps)
- WHHC Advanced Trauma Pilot Program
- Educational Collaborations
- State Tax Incentives
- Technology Integration including Telemedicine
- Integrate Indigenous Health
- Integrate/Blended/Naturopathic Medicine (note that HMSA includes Naturopaths)

THREATS

- Lack of housing
- Not a health profession shortage area (HPSA) island wide (program currently being reevaluated)
- Senior Tsunami (insufficient resources to provide care and dignity)
- Reimbursements: HMSA, Medicaid
- Workers' Compensation (Pay) Affordability
- Behavioral and Mental Health – Shortage of programs, services, structure, treatment centers
- Model changing – fewer physicians going into private practice
- Geography – Transportation - Isolation (Patients)

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HEALTH AND WELLNESS

Goal: Provide all residents with access to affordable, quality health care and health education.

Objectives

- Prioritize the health, well-being, and quality of life of Hawai`i Island residents as essential to economic prosperity.
- Support projects that improve the health of Hawai`i Island residents including equity.
- Recognize and address needs in physical, mental, and behavioral health.
- Recognize employers' concerns about the cost of health insurance and health care mandates.
- Recognize and promote day-care and early learning as "safety net" especially for at risk children.
- Prioritize substance abuse and its negative impact on economic development, prosperity, and quality of life for all residents.
- Have health and well-being integrated by more employers in the workplace.

Strategies

- First and foremost, support the work being done by the health care industry and stakeholders including County and State, to mitigate concerns.
- Assist with efforts to secure necessary funding and resources to maximize effectiveness of existing and emerging health programs.
- Assist with development and implementation of early health intervention and education.
- While limited with respect to addressing cost of health care and related issues, stakeholders can convene and facilitate discussions and fact-finding with the County, State, and human service agencies.
- Support efforts to reduce/prevent substance abuse in Hawai`i County.
- Support efforts and programs that bring health care into the workplace and the positive impact on economic development, job retention, and quality of life.
- Advocate for employers to provide for paid time off for medical appointments.
- Support efforts to "overhaul" medical reimbursements.

Priority Actions

- Work with law makers, insurers, and other industry stakeholders to implement reimbursement/ payment reforms.
- Work with physicians and other care providers across both the public and private sectors to reward quality and efficiency of care.
- Work to build a more equitable health and wellness sector.
- Work for necessary reform including elimination of Hawai`i General Excise Tax on medication and health services.
- Expand rural community health worker training, certification, and implementation.
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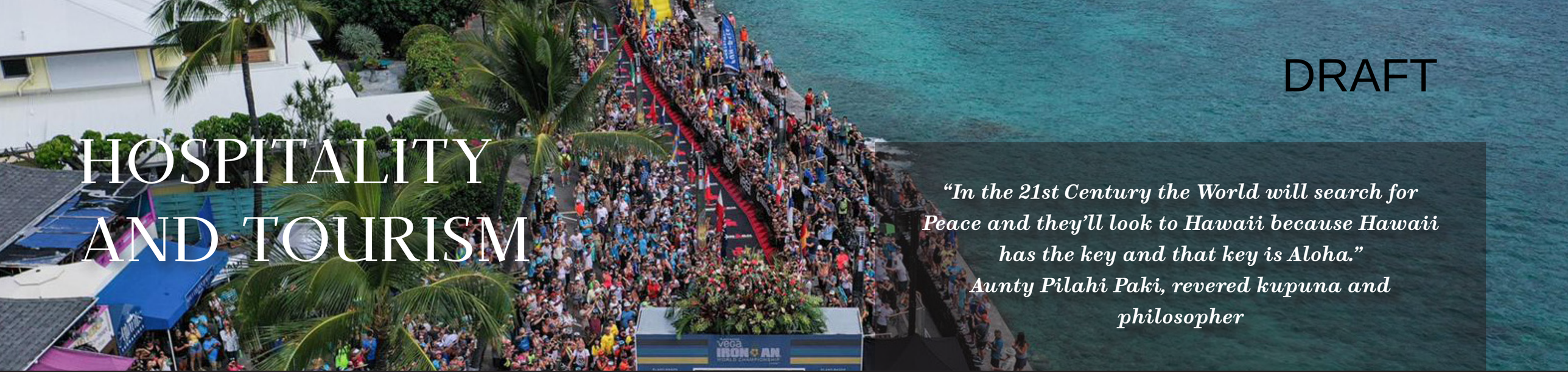


DRAFT

HOSPITALITY AND TOURISM

"In the 21st Century the World will search for Peace and they'll look to Hawaii because Hawaii has the key and that key is Aloha."
Aunty Pilahi Paki, revered kupuna and philosopher

Whenever there is discussion about economic recovery and resiliency, there is simultaneous discussion about the need for economic diversification. While diversification is critical to a strong and resilient economy, the macro discussion can sometimes fail to comprehensively consider the micro components.

Adhering to motto of looking back to look forward, in reviewing Hawai`i Island's hospitality and tourism sector, it becomes clear that tourism served and important role in the island's economy as it became part of the economic diversification equation as the island's agricultural economic base began to decline and policy makers and planners identified tourism as a sector that could be a viable economic engine.

The discussion about the hospitality and tourism sector as part of the economic diversification equation is especially relevant as we consider lessons learned from the pandemic especially as related to changes in resident behavior and expectation.

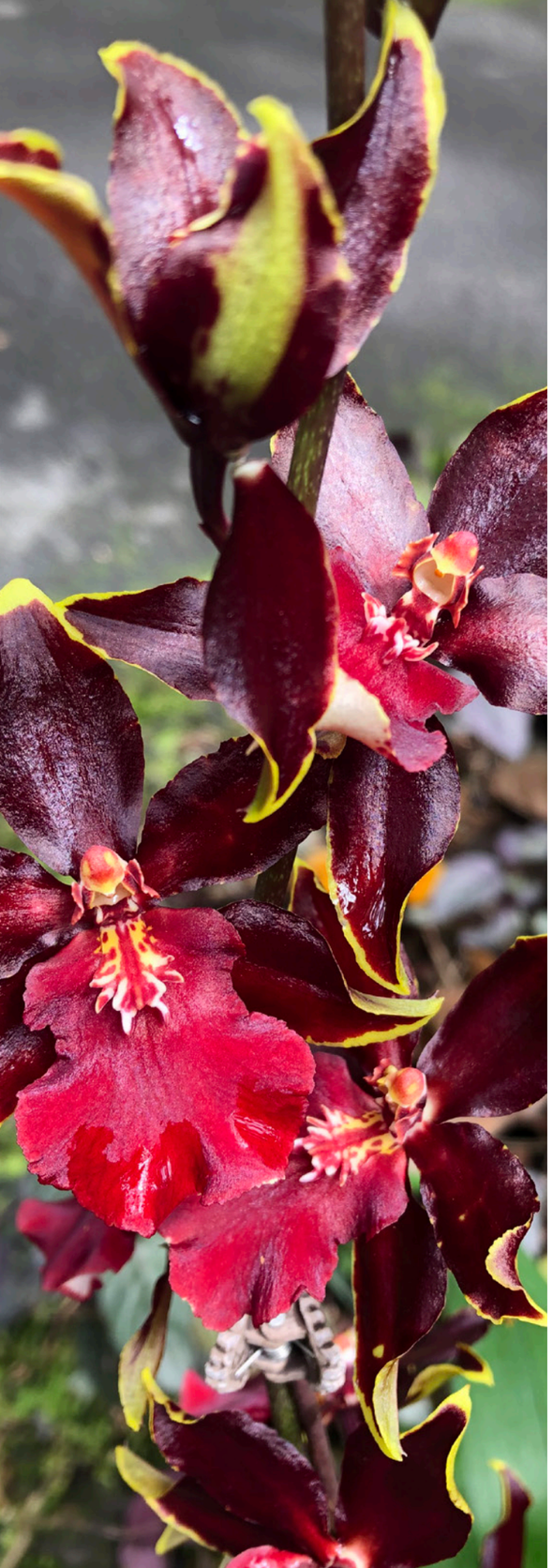
For two years during the pandemic and rules such as safe sheltering at home and restrictions on travel became the norm, there were other impacts. For example, the long pause found residents able to enjoy recreational and cultural sites without throngs of visitors, and as months progressed, it was recognized that absent high daily counts of people, natural resources were recovering.

This pause also allowed policy makers, industry representatives, and stakeholders representing a broad spectrum of the community to convene and consider the sector. As one sector industry leader stated "it was a great opportunity to learn from others, hear their perspectives, look through a different lens, and understand there are some 'pinch points' in place that I did not realize. I am now able to integrate this new information into the decisions we make and how we conduct our operations in a more equitable and ultimately more resilient way." Another industry executive noted "I am much more aware of the disconnect between what I thought we were offering and what the community sees. With so much of my focus on the economic benefits, revenue generation opportunities, and job creation and retention, I forgot until reminded that the workforce and resident expectations of lifestyle, time with `ohana (family), and resident experience including access to resources shared with visitors but often unavailable to residents whether due to long hours commuting and at work or being made to feel unwelcome in their own home also need to be considered."

In addition to focus groups and interviews, the strategic advisory committee referred to the Hawai`i Tourism Authority (HTA) Strategic Plan which considers "tourism is at a point that requires a re-balancing of priorities. The continuous drive to increase visitor numbers has taken its toll on our natural environment and people, the very reasons visitors travel to our islands."[71]

The committee also referred to the HTA Hawai`i Island Destination Management Action Plan which sought to "rebuild, redefine and reset the direction of tourism over a three-year period." The steering committee that helped to build the action plan focused on "stabilization, recovery, and rebuilding to the desired visitor industry..."[72]

[71] Hawai'i Tourism Authority. Strategic Plan 2020 -2025. Accessed 08 July 2022. https://www.hawaiitourismauthority.org/media/4286/hta-strategic-plan-2020-2025.pdf
[72] Hawai'i Tourism Authority. Hawai'i Island Destination Management Action Plan 2021 – 2023. Accessed 08 July 2022.



"Regenerative tourism" has gained popularity as one model to increase sustainability in the visitor industry and many of the recommendations made are based on the concept.

It is important to remember that the hospitality and tourism sector is an important part of Hawai`i Island's economic health, diversity, sustainability, and resilience. Indeed Hawai`i resident support for the industry remains strong as evidenced by the results on August 29th 2022 of the Spring 2022 Resident Sentiment Survey which reported strong support for destination management and 54% of those surveyed believing the visitor industry bring more benefit than negative concerns.[73]

It is equally important to retain the key markers historically used by the industry as measurements of their success in promoting the island, specifically number of arrivals, length of stay, and visitor spending. The markers show that visitors are trending in the direction recommended in the aforementioned reports with fewer arrivals and higher spending. An additional statistic that the industry and community watches now is the average daily census or total number of visitors on island any given day of the month.

- Reviewing these statistics in July and August of 2022 as we navigate out of the pandemic in comparison to the pre-pandemic numbers of 2019 provide some interesting insights.
- Arrivals are down -6.8% YTD 2022 vs 2019
- Length of Stay is up 13.2% YTD 2022 vs 2019 (8.34 days vs 7.37 days)
- Daily Spend (per day spending) up 6.9% YTD, Month of July 2022 was up 11% over the same month in 2019. This is a big indicator and in considering the current trend of hotel and other pricing, it is anticipated that this number will continue to rise through the remainder of calendar year 2022.
- Per Trip Spending is up 21% YTD, Month of July up 24.6% showing the same trend as the per day.
- Total Spending was up 12.7% YTD, Month of July up 21.6% again showing a trend by month that we will see continue through the rest of the year.
- Average Daily Census up 5.5% YTD, Month of July 9.5% (for 2022 Hawai`i Island saw an average of 38,649 visitors on island on any given day vs 36,636 in 2019) This is a direct and specific relation to the length of stay increase. This data reveals that fewer arrivals staying for shorter length of stay will result in a negative impact on the island's visitor sector. In July 2022, there were an average of 43,203 visitors on island per day.

The air seat increase was due to the demand for the neighbor island visitation from the U.S. market especially Hawai`i Island and Kaua`i. Industry analysts expect this demand at least through the end of 2022. Additionally, as flights from international markets have resumed, it is anticipated that any decline in domestic flights will be recovered by Japan and others that will fly to Kona. Additional increases of flights into Hilo are on the near horizon as well.

[73] Hawai`i State Department of Business, Economic Development and Tourism. 29 August 2022. Spring 2022 Resident Sentiment Survey. Accessed 29 August 2022. https://www.hawaiitourismauthority.org/news/news-releases/2022/dbedt-releases-results-of-spring-2022-resident-sentiment-survey/

EPILOGUE

This CEDS is more than just another plan. It is designed to bring Hawai`i Island's economic development to the forefront, engender collaboration, equity, and finding common ground to help guide our island to economic recovery and sustainability.

The COVID-19 pandemic coupled with natural disaster on Hawai`i Island created epic economic challenges for the island's residents and policy makers. Devastating shortages of food and other resources, ALICE families and those living in poverty finding conditions exacerbated by layoffs, businesses permanently closed, and a series of negative impacts left Hawai`i County and its community members once again reaching deep to navigate towards recovery and resiliency.

There are numerous projects and initiatives that the community is working on including and not limited to

- Hana Hou Hilo – Revitalizing Downtown Hilo
- Infrastructure - Extending the Daniel K. Inouye Highway from its current Mamalahoa Terminus to Queen Kaahumanu Highway extending the Daniel K. Inouye Highway from its current Mamalahoa Terminus to Queen Kaahumanu Highway
- Infrastructure – Replacing 40,000+ cesspools, developing new wastewater facilities, repairing roads, bridges, and other transportation infrastructure
- Infrastructure and Traffic Safety in Waimea (Kamuela)
- WATER – identify and develop new potable water resources
- Kailua Village Business Improvement District utility relocation from above to under ground

`I Ka Wā Ma Mua, Ka Wā Ma Hope – Looking Back to Look Forward, the community, stakeholders, and County government will once again prioritize "Our Island – Our Economy – Our Future" and work together to increase resiliency, depend on our cultural and social diversity to build more equity, and navigate towards recovery and shared prosperity.

PHOTO CREDITS and LIST OF REFERENCES TO BE INSERTED

DRAFT