

KEKAHA SENIORS  
*50th Anniversary*  
OCTOBER 2<sup>nd</sup>, 2019



# OPEN HOUSE SERIES #1 SUMMARY REPORT

**Kaua'i Climate Adaptation Plan**  
July 7, 2022

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# Open House Overview

## PURPOSE

The purpose of the Online and In-Person open houses was to understand personal and local community experiences with climate hazards and adaptation measures. Feedback from these open houses will complement technical work completed by the consultant and inform the next phase of analysis and community outreach and education efforts.

The main purposes of the Online Open House were to introduce the public to the project, provide information about local climate hazards and vulnerability, and capture local knowledge. Small group discussions were conducted to capture residents' place-based experience with climate hazards and adaptation efforts, thoughts on their vision for climate adaptation, and thoughts on GHG mitigation in the county. Lastly, the Online Open House was used as an opportunity to encourage participation in other CAP outreach events/items.

The purpose of the In-Person Open Houses was to supplement the Online Open House and to provide more opportunities for community members to understand and document hazards and vulnerabilities related to climate change. The In-Person Open Houses focused on community values related to climate change adaptation and mitigation ideas. The event design allowed community members to work their way through the stations at a leisurely pace and to engage with staff in discussion.

## APPROACH

The Online Open House was held on Zoom. It included an initial presentation and group exercise followed by small group discussions. The small group discussions were held in Zoom breakout rooms, which participants were free to move between and drop in/out as they wanted. In the breakout rooms, a facilitator supported discussion of maps showing anticipated climate impacts, which was documented on the virtual whiteboard platform Miro.

The In-person Open Houses were a series of events held in each of the five County Planning Areas (see locations and dates in "Schedule" below). Participants were able to attend at their convenience throughout the three-hour period and walk through various booths. Each booth was staffed by a County project team member and included visual materials to comment on.

# SCHEDULE

- Online Open House: Wednesday March 23, 2022 from 5:30pm – 7:30 pm
- Kekaha Neighborhood Center (In-person): Monday March 28, 2022 from 4:00 pm – 7:00 pm
- Kukui Grove Center Food Court (In-person): Saturday April 2, 2022 from 9:00 am – 12:00 pm
- Kapa‘a Neighborhood Center (In-person): Tuesday April 5, 2022 from 4:00 pm – 7:00 pm
- Koloa Neighborhood Center (In-person): Thursday April 7, 2022 from 4:00 – 7:00 pm
- ‘Aina Ho‘okupu o Kilauea (In-person): Saturday April 9, 2022 9:00 am – 12:00 pm

# PARTICIPATION

At its highest, attendance at the Online Open House included 24 members of the public. Participants were invited to answer demographic questions via a Zoom poll, but responses were completely optional. Three quarters of respondents were adults over 40 years old; over 60% all respondents were older adults (60 years or older). A majority of respondents identified as White, meaning the group was overrepresented compared to the demographics of the County. Women were also overrepresented, as over 60% of respondents identified as female.

A total of 130 participants attended the In-Person Open Houses.<sup>1</sup> Participation by event were as follows:

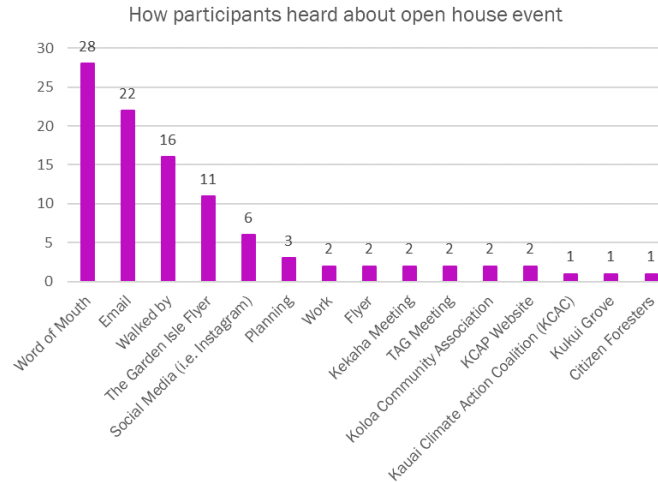
- West Kaua‘i: 20 participants
- Līhu‘e: 37 participants
- East Kaua‘i: 40 participants
- South Kaua‘i: 25 participants
- North Shore: 8 participants.

When signing in, participants were asked how they heard about the Open House event. Participants indicated that they heard about the events in a variety of ways:

- The Garden Isle flyer
- Word of mouth from friends, family, council member, and project team members
- Post on KCAP project website
- Kaua‘i Climate Action Coalition (KCAC)
- KCAP and West Kauai Community Vulnerability Assessment email listserv
- Kukui Grove flyer
- Walked by
- County Instagram and other social media
- Kekaha meeting
- Citizen Foresters
- KCAP Technical Advisory Group meeting
- Koloa Association

Figure 1 illustrates the different ways in which participants heard about the event, with the most common responses being ‘word of mouth’, ‘email’, ‘walked by’, or ‘The Garden Isle flyer’.

<sup>1</sup> These values indicate all attendees who signed into the event, and excludes those who chose not to sign in and those who may have entered from a separate entrance



# Summary of Results

## ONLINE OPEN HOUSE POLL

The following is a short summary of the answers to questions asked during the large group polling exercise. Full results can be found in Appendix B.

All participants believe that the climate in Kaua’i is changing due to human activities. All participants have at least some familiarity already with the effects of climate change on the island, with a majority stating they are “Very Familiar – Know a lot.” The climate change impacts participants are most concerned about are extreme rainfall and flooding, sea level rise and flooding, and more intense tropical cyclones. Participants think critical facilities, natural resources and habitats, and wastewater and drainage systems are the top three most important assets to preserve from the impacts of climate change.

## ONLINE OPEN HOUSE BREAKOUT ROOM DISCUSSION SUMMARY

The comments from the verbal discussion and online Miro Boards is summarized in the following section for each Breakout Room. Raw comments grouped by topic can be found in Appendix C.

### Main Room - Vision

The questions to guide the Vision discussion were: 1) How does the General Plan’s vision guide us in adapting to climate change and 2) Which values are most important to keep in mind? (i.e., Hawaiian values such as Malama and Kuleana).

Participants highlighted the importance of preserving water, agriculture, and shorelines in relation to the General Plan goal for a sustainable island. They also highlighted the importance of and struggle with reconciling housing/development, climate, and the General Plan equity goal. Another question brought up in discussion was how far out in time the CAP's vision should go. Lastly, participants discussed the importance of involving all groups of people, particularly youth, in creating the plan and its vision.

## Room 1 – North Shore

The questions to guide the North Shore breakout room were: 1) He aha kou Mana'o? What are your thoughts? 2) What resources and assets in North Shore do you think are most important to preserve? And 3) What steps are being taken in North Shore to prepare?

Participants discussed the importance of preserving beaches from erosion (and its interaction with development), roads and bridges that are at risk of getting cut off, the local food supply, and historic resources. In relation to what has been done to prepare, they talked about the positive and negative aspects of disaster response from previous climate shocks including Hurricane Iniki and 2018 floods. Lastly, the conversation turned to what should be done to adapt. A large focus was on more education to inform homeowners and visitors about hazards, drawing on historic practices, and changing development patterns.

## Room 2 – East Kaua'i

The questions to guide the East Kaua'i breakout room were: 1) He aha kou Mana'o? What are your thoughts? 2) What resources and assets in East Kaua'i do you think are most important to preserve? And 3) What steps are being taken in East Kaua'i to prepare?

Participants discussed the climate change impacts they've observed islandwide and in Anahola Town Center, Kapa'a, and Wailua. Roads, critical facilities (particularly hospitals, schools, and fire stations), wastewater systems, cultural and historic resources, and the local food supply. Though there was discussion of actions taken on DHHH lands to adapt to climate change, participants also talked about what should be done to adapt. This included resident education/action and interagency collaboration to prevent flood from streams, targeting areas for flood mitigation projects, and undergrounding utilities.

## Room 3 - Lihu'e

The questions to guide the Lihu'e breakout room were: 1) He aha kou Mana'o? What are your thoughts? 2) What resources and assets in Lihu'e do you think are most important to preserve? And 3) What steps are being taken in Lihu'e to prepare?

Participants discussed the climate change impacts they've noticed in the planning area, such as sea level rise and fire. They also noted that it is important to preserve the critical facilities in the area such as the airport and harbor, which serve the island as a whole. Lastly, participants talked about ongoing efforts in the Kauai Community College system and the opportunities/importance of collaboration with the County.



## Room 4 – South Kaua‘i

The questions to guide the South Kaua‘i breakout room were: 1) He aha kou Mana‘o? What are your thoughts? 2) What resources and assets in South Kaua‘i do you think are most important to preserve? And 3) What steps are being taken in South Kaua‘i to prepare?

Participants discussed their observation of heat, drought, and flooding impacts in the planning area. They identified ocean resources and coastal habitats, critical habitats and natural resources, critical infrastructure, and local food system as resources/assets that need to be preserved. Overall, participants did not think much is being done yet to prepare for climate change impacts. Instead, they talked about what should be done, including engaging with the community on local issues, engaging youth, restoring forests (native and urban), and considering the transportation network.

## Room 5 – West Kaua‘i

The questions to guide the West Kaua‘i breakout room were: 1) He aha kou Mana‘o? What are your thoughts? 2) What resources and assets in West Kaua‘i do you think are most important to preserve? And 3) What steps are being taken in West Kaua‘i to prepare?

Participants identified wildfire and drought as concerning climate-related hazard in the planning area. They discussed steps being taken by DHHL (ongoing and planned efforts) and along the coast at Kekaha to adapt to climate change. Lastly, participants stressed that the County should collaborate with DHHL.

## Room 6 – GHG Mitigation

The questions to guide the GHG Mitigation were: 1) He aha kou Mana‘o? What are your thoughts? 2) What are the key areas of overlap between cost of living and climate change mitigation and adaptation? 3) How do we ensure that adaptation to climate change doesn't contribute to our carbon footprint? And 4) What are some mitigation actions that you and/or your community do?

Participants discussed their observation that sometimes people don't feel personal responsibility for their contributions to GHGs. They also discussed the plan, including that it should include mitigation in the title. Though it was not specifically a question, participants discussed what mitigation actions the County should be taking. They focused on taking action to increase EV adoption, reducing waste going to landfill, reducing GHGs from air travel, phasing out gas powered lawn/garden equipment, and requiring solar hot water.

# IN-PERSON OPEN HOUSE CLUSTERED COMMENTS

Each of the five In-Person Open Houses was set up with seven stations outfitted with display boards and accompanying maps. A summary of each station and the input received is detailed below while a detailed description of the stations is included in Appendix D. The following summary clusters comments by vulnerability concerns, adaptation ideas, mitigation, and education and awareness. They are further broken down into subtopics. Those with the highest number of comments are:

- Vulnerability of Drainage Systems, Streams, and Waterways (55 comments)
- Vulnerability of Beaches and Coastlines (37 comments)
- Adaptation Ideas: Building and Development Standards (32 comments)
- Adaptation Ideas: Green and Blue Infrastructure (32 comments)
- Vulnerable Populations (29 comments)
- Vulnerability of Cultural and Historic Resources (28 comments)

## Vulnerability Concerns

Overall, the majority of comments received addressed the community's vulnerability to climate change hazards, as was intended with the open house set-up and design of the stations. The vulnerability comments can be grouped into three broad categories: built environment vulnerabilities, community vulnerabilities, and natural resource vulnerabilities. Comments are highlighted and summarized below:

### Built Environment

Fifteen percent of the comments dealt with vulnerabilities in the built environment, which include all human-made aspects of our towns and community from roads to parks. Specific vulnerabilities include County and State facilities and roadways. Other critical systems such as drainage, wastewater, and solid waste management were also addressed.

#### **Infrastructure and Facilities (22 comments)**

Regarding County facilities, comments addressed the importance of protecting and maintaining existing coastal parks, including special use parks located near the shore such as the Wailua Golf Course. Community members identified vulnerable State facilities such as libraries (specifically Kapa'a library), the Hanalei Pier, and Nawiliwili Harbor. Concerns about one federal facility, the Pacific Missile Range Facility, were raised regarding a proposed radar project and ongoing sonar activities. Private infrastructure systems, such as the drainage pumps at the Mānā Plain, were also identified as highly vulnerable.

Wastewater infrastructure, or the lack thereof, was another vulnerability raised at the in-person events. There was a general concern about how Kaua'i's many cesspools impact water quality. People felt that climate hazards such as extreme precipitation and SLR could inundate cesspools leading to more severe water pollution issues. The comments expressed urgency to convert cesspools to septic systems or to develop wastewater facilities. One wastewater facility that was deemed particularly vulnerable was the low-lying Wailua Wastewater Treatment Plant at Lydgate Park. One concern mentioned that the plant already produces an odor that is a nuisance to the community.

Other hotspot areas with wastewater treatment needs include Hanalei, Kōloa-Po'ipū, and Kekaha. In Po'ipū, there was concern with the many coastal injection wells associated with the area's many resort uses. Commenters were interested in exploring other non-traditional and innovative treatment options beyond sewer and asked for improved mapping to better understand where cesspools are located.

#### **Solid Waste and Recycling (2 comments)**

The County's lack of a confirmed site for a new sanitary landfill was raised several times as a vulnerability. Comments also spoke to a desire to ramp up efforts to recycle, reduce, and reuse. Other recycling comments are summarized in the mitigation section.

### **Neighborhoods, Homes, and other Property (14 comments)**

Specific neighborhoods and properties were also identified as vulnerable places. Most of the concerns focused on the vulnerability of coastal properties, especially coastal homes, to sea level rise and storm surge. The Lāwa'i Road area, including the Kiahuna Plantation Resort, were cited as an especially vulnerable area. Other places include Hanamā'ulu, Kōloa (to flooding), and Anahola (to wildfire).

Related concerns include the unaffordability of home hazard insurance and the generalized negative impact of development – especially on drainage patterns. Another concern was arson leading to wildfires.

### **Transportation (22 comments)**

Transportation system vulnerabilities were also raised in the comments. Portions of the State highway system (primarily Kaumuali'i Highway and Kūhiō Highway) were identified as highly vulnerable to coastal erosion and projected sea level rise. Communities with highly vulnerable roads include the North Shore, Wailua, and Kekaha. On the North Shore, there were concerns about additional landslides once again impacting access to the community. People shared their observations of chronic erosion at Wainiha and Lumahai.

On the East Side, Wailua Bridge and its surrounds (the area from Lydgate Park to Wailua Beach) was determined to be highly vulnerable. The resiliency of the bridge was a common concern given its key location including fears that damage from a tsunami or erosion could compromise the bridge and halt access between Līhu'e and Kapaa.

Other vulnerable roads or road segments include Kealia Road, Haua'ala Road, Lāwa'i Road and Kaumuali'i Highway (Kekaha). Low-lying bridges and culverts in the Kalapaki Bay area and Niumalu were also identified. One comment mentioned that Hanapēpē Swinging Bridge is highly vulnerable to wind.

### **Drainage Systems, Streams, and Waterways (55 comments)**

Drainage systems and waterways were mentioned many times in the comments. Several comments indicated that people believe that flooding, especially the number of flash floods, would increase due to unpredictable weather patterns caused by climate change.

Many comments reflected stormwater drainage concerns and the desire for better drainage infrastructure. There were concerns with low-lying communities already in the floodplain such as Hanalei, Hanapēpē, Kapa'a, and Wailua. Some comments expressed frustration with chronic flooding and the lack of drainage, such as, "Any plans for stormwater adaptation in Kapa'a, Wailua? We have asked this question for over 30 years."

Specific roads and areas with poor drainage were mentioned several times such as Hanapēpē Heights, Puna Road, Lopaka Paipa Road, Kōloa Elementary School, and Kūhiō Highway (north of Princeville).

Many had questions about reservoirs such as Kalihiwai and Waita and asked about recreational access, hydroelectrical potential, and agricultural irrigation. Some comments wondered about the health of dams during times of ongoing drought. Also, comments reflected questions and worries about the absence of evacuation plans for when dams breach, especially at Waita Reservoir given its proximity to Kōloa Town.

There were two differing perspectives around reservoirs – one that they are critical infrastructure and the other that they should be decommissioned. For example, one comment stated that DLNR is too rapidly decommissioning dams and that reservoirs should be maintained, while several other comments called for the continued decommissioning of dams to allow waterways and riparian habitats to return to their natural state.

A dozen comments focused on water diversion and reflected a strong desire for waterways to flow their natural course. There were concerns with the imbalance caused by "diverting water out of an ahupua'a to suit the

needs of development in another [ahupua‘a].” Some people felt that water diversions negatively impact the species in streams and cause habitat fragmentation.

River health and invasive species were also concerns. Hau trees, located on riverbanks, becomes easily overgrown and clogs the drainageways during flash floods. Some comments mentioned that golf courses negatively impact drainage.

## Community, Economy, and Population-Level Impacts

### ***Vulnerable Populations (29 comments)***

Several vulnerable segments of the County’s resident population, including specific geographic communities or neighborhoods, were identified as highly vulnerable to climate change impacts. This included coastal landowners and residents living in rural areas. Particularly, Kaumakani was noted as an area “getting hotter” and Kekaha was noted for its proximity to the ocean. Also, Kekaha residents pointed out how their community was previously impacted by hazards such as the storm surge from Hurricane Iniki. Other specific communities mentioned include Anahola, Hanapēpē Heights, the area surrounding Kōloa Elementary School, and low-income communities in general.

It was also noted that Native Hawaiians and other BIPOC (black, indigenous, and people of color) would be the most drastically impacted by climate change. Comments pointed out that Native Hawaiians are already negatively burdened by the legacy of colonialism and dispossession. Also, former plantation camp families, some of whom may be low-income, were another group also identified as vulnerable.

Another equity issue raised was the loss and/or difficulties of building on intergenerational property as long-time residents are unable to afford living on Kaua‘i due to high housing costs, high cost of hazard insurance, and even unintended consequences of land use regulations and policies. One comment stated, “...sad to see locals have no place in the community, you rather push people to work for housing with no path to home ownership.”

In another example, a resident who owned property on the coastline had hoped to build an additional housing unit for their children as an affordable way to keep future generations on island. However, due to the County’s shoreline setback ordinance, they were prohibited from expanding. While the goal of the ordinance was to adapt to rising seas, it highlights the unintended consequences on generational residents that hope to stay on island.

Keiki and kupuna were also noted to be vulnerable, especially to the emotional and psychological stress of ongoing hazards and sustained impacts. Finally, houseless people and families, many of whom live in coastal camps, such as near Niualu Beach Park, are also vulnerable.

### ***Cultural and Historic Resources (28 comments)***

Kaua‘i’s unique cultural and historic resources were also identified as vulnerable to climate change hazards. In particular, the Alakoko Fishpond was mentioned several times and questions were raised if the height of its rock walls is adequate, and if the Nawiliwili breakwater impacts the movement of fish. Another frequent comment was a desire to protect iwi kūpuna (burials) especially in coastal areas and dunes, while other comments reiterated their importance to Native Hawaiians and the Hawaiian culture. Finally, there was concern about archeological sites in the Kōloa area and how recent development might impact these resources.

The Kōloa Mill, one of Kaua‘i’s few remaining plantation era mills, was a historic resource also mentioned as needing protection. Finally, there were other comments calling to perpetuate the Hawaiian culture.

**Agriculture (4)**

Regarding agriculture, concerns were raised about the impact of monoculture and “big agriculture,” while others shared concerns about the loss of plantation agriculture leading to fallow, dry land susceptible to wildfire (that may not be irrigated).

**Natural Areas and Resources****Beaches and Coastlines (37 comments)**

Given projected sea level rise impacts and coastal erosion, the community identified many vulnerabilities related to beaches and coastal areas. People shared their observations of higher tides and warmer water, such as “I observed higher water levels this past fall/winter in the Poipu area – one to two feet higher on both regular times and high king tides.” Additionally, people were concerned about coral reef health and bleaching and asked how the loss of coral habitat would impact fish and other species.

On the North Shore, the Nā Pali coast, the Hanalei River mouth and Anini Beach were vulnerable areas. Specifically, people expressed concern about the septic system at Anini Beach Park and the health of limu and fish in the area. On the East Side, Kealia, Wailua, and Lydgate Park beaches were mentioned as places experiencing chronic erosion. Someone noted that coastal erosion has already destroyed facilities such as the Waipouli Pavilion. In the Līhu‘e area, Kalapaki Bay was noted as a vulnerability.

In South Kaua‘i, a comment pointed out that erosion had already caused the loss of the sand tombolo at Po‘ipū Beach Park and that there was noticeable erosion at Brennecker. The Lāwa‘i Road area, included Kukui‘ula Boat Harbor, was a concern too. One person raised concern about access to the Lāwa‘i Kai area. On the West Side, the Pakala coastline was identified as a vulnerable area already eroding.

Coastal access was also raised several times, such as access to Makahuena Point.

**Natural Resources and Habitats (24 comments)**

Natural resources, such as forests and native species, ranked high as resources people were concerned about and desired to protect in the face of climate change. Some specific resources include native birds and other species. There was an understanding that it would be important to preserve the habitat for native species, such as beaches, caves, and estuaries. It was acknowledged that many of these species were already threatened and vulnerable to development and other human activities.

In the South Kaua‘i area, several comments reflected concern about endangered species who live in cave habitats and if those caves would be flooded by rising ocean levels.

There were 37 comments related to stream and waterway health and those are summarized in the “drainage” section.

**Adaptation Ideas**

Although the primary purpose of the open house was to seek input on vulnerability, approximately 130 of the comments dealt specifically with adaptation to climate hazards, with the majority focused on sea level rise hazards. Regarding the built environment, comments and ideas ranged from managed retreat to protection of existing assets and neighborhoods. Several hot spot areas of great concern were also identified, such as the Wailua Bridge and Kekaha.

***Managed Retreat and Protection (24 comments)***

Several comments encouraged the County and State to “move things away from the water,” particularly roads and homes to safer locations. One comment encouraged the plan to assess and figure out “good places” to accommodate retreat. Another idea was to buy out vulnerable properties now, possibly through a land trust.

Several roads and bridges were mentioned as needing to go further inland, while others wondered about the status of critical bypass projects, such as the Līhu‘e Bypass. Wailua Bridge and Coco Palms came up several times, with people seeking alternatives to the proposed development on the site. People wondered if there were alternative routes to Wailua Bridge. Kekaha was mentioned as a vulnerable place. One comment called to move the highway inland while others said to not allow the revetment to fail.

Protection or fortification came up several times too, with ideas such as undergrounding powerlines and acting now to preserve private property and homes, especially intergenerational property. At the same time, people expressed concern with an existing form of “protection” – seawalls – and how they negatively impact neighboring property.

***Building and Development Standards (32 comments)***

Ideas around building and development standards were also addressed in the comments. For example, one comment stated that the County’s stringent shoreline setback law for coastal properties was not fair and deprived people of the right to use their property. They argued that the law should not be applied to rocky coastlines where there is less erosion.

Elevation of buildings was also mentioned several times. Several comments called to elevate buildings and to plan for 10 feet of SLR by 2100. Niumalu, a low-lying area, was identified as an area where buildings should be elevated.

Building design should also address climate change and help keep homes comfortable and cool through ventilation, high roofs, and climate-ready housing design. Landscaping was also mentioned as being important to prevent runoff. One comment called for more native plants.

There was also concern about development in general. Some comments stated Kaua‘i was overdeveloped and that new or proposed developments were negatively impacting Kaua‘i with their wastewater or environmental impacts. There was a greater concern with the negative impact of high-end or luxury projects. Other comments called for re-zoning along coastlines.

***Green and Blue Infrastructure (32 comments)***

Green and blue infrastructure refers to our natural systems in the environment that provide critical ecosystem services, and utilizing or replicating these natural systems to create a resilient built environment. Many community comments expressed a desire to utilize and restore Kaua‘i’s natural resources. The desire for natural adaptation strategies included statements such as “work with the natural systems or the land, instead of against it.”

A very popular idea called for planting more trees and offering shade along streets and in parks, and just to have more tree canopy in general in towns.

Beaches were also identified as a critical defense system that should be protected and preserved, with comments such as “beaches, not beach homes.” We should allow for the natural migration/retreat of beaches. One comment called for expanding coastal parks to accommodate for the erosion or inundation of beach parks such as Salt Pond Beach Park.

Comments spoke to the importance of reefs in protecting our coastlines. There were also ideas exploring coral reef restoration and the utilization of reefs as a barrier against the force of the rising ocean.

Other comment addressed wetland restoration and suggested planning for future wetlands that are projected to occur in certain low-lying areas too. Some wondered if the County could purchase land for flood control purposes (such as for sale property adjacent to Hanalei River).

#### ***Natural Resource Management (9 comments)***

Natural resource management and watershed protection was highlighted as critical strategies to protect Kaua'i in the face of precipitation changes. There was an acknowledgement that more rainfall would lead to runoff and landslides, and that a healthy upper watershed would mitigate that. The downstream impacts of runoff, such as sediment reaching the ocean, would be mitigated by focusing on the health of the upper watershed through places like the Alakai Swamp.

Overall there was a desire to restore native forests and to protect habitat for native species. A healthy forest, without invasive species, would protect against wildfire too.

#### ***Indigenous Knowledge (13 comments)***

Observations and a historic understanding for environmental change from a Native Hawaiian perspective was a frequent theme in the comments as well. Several times it was expressed that we need to learn from the past to prepare for the future. The ancient Hawaiians lived lives rooted in sustainable practices that allowed the environment to thrive. One comment said to consider Hawaiian sustainability practices embodied in concepts such as "Aloha 'Āina," or seasonal fishing and hunting, so resources are not depleted. Another comment said, "we are all connected, and the earth reflects us a whole." Hawaiian values to keep in mind during the CAP process included *loka*hi (unity), and *kuleana* (responsibility). Lessons are also found through an understanding of Hawaiian place names.

## **Greenhouse Gas Mitigation**

Mitigation was a popular theme in the comments, with over 54 comments received. Many comments addressed the community's desire to reduce carbon emissions. Comments acknowledged the need for adaptation plans and actions, they also expressed that, "Adaptation alone is a losing race" and "We can't adapt our way out of this." There was also acknowledgement that planning for adaptation and climate action reaps multiple benefits and can help address long-standing community needs such as housing, food security, and land restoration.

#### ***Transportation Emissions (16 comments)***

Regarding mitigation ideas, the comments supported options beyond the common car-dependent lifestyle and a shift toward more walkable communities and active transportation options. One comment pointed out that transportation emissions are the majority of the County's emissions inventory. One person wanted to walk and bike more but did not feel safe doing so. Comments implied that infrastructure, facilities, and slower speeds are needed in order to increase walking and bike trips. Transportation emissions from air travel was also raised as a concern, including ideas to curb air travel by reducing tourism, employing more opportunities for carbon-offset, and transitioning to electric-powered planes.

Also, there was a desire for more Electric Vehicles (EVs) and a desire to see more EV stations to support this. Having EV stations in place would also prepare for the wider availability of EVs with new truck and SUV models coming online.

**Energy Emissions (15 comments)**

The comments reflected support for KIUC in its dramatic and sustained shift to renewable energy. Comments expressed continued interest in renewable energy projects and requested additional information about ongoing and anticipated projects.

**Food Resiliency, Circular Economy, and Recycling (15 comments)**

Many comments were related to supporting local, regenerative agriculture and shifting to “food sovereignty” through actions such as growing more kalo and other salt-tolerant foods. Ideas shared include plant-based diets, food forests, food hubs, CSA (community-supported agriculture) and agricultural centers.

Other climate action comments focused on the County’s management of solid waste along the theme of “reduce, reuse, and recycle.” People wanted to see more recycling and green waste diversion. One comment called for a transfer station on the South Side. There was a desire to site the new landfill in an appropriate location.

## Education and Awareness

A final set of comments (n=55) provided ideas and suggestions for education and awareness around climate change and planning, including ideas for improved public outreach for the CAP process.

Regarding the CAP process, some commented positively about the open houses and appreciated the information provided to the community. People also called for more discussion and meetings, with a focus on youth outreach and listening sessions. Comments recognized that we should learn from the past and utilize the power of stories as much as possible during the CAP. Some specific resources mentioned include Chuck Blay, kupuna, and hunters.

Regarding climate change in general, people wanted to see more community-wide education and awareness regarding climate change. Several people expressed surprise with the maps about wildfire risk and wanted more information. Several comments called for improvements to how the social vulnerability maps were communicated.

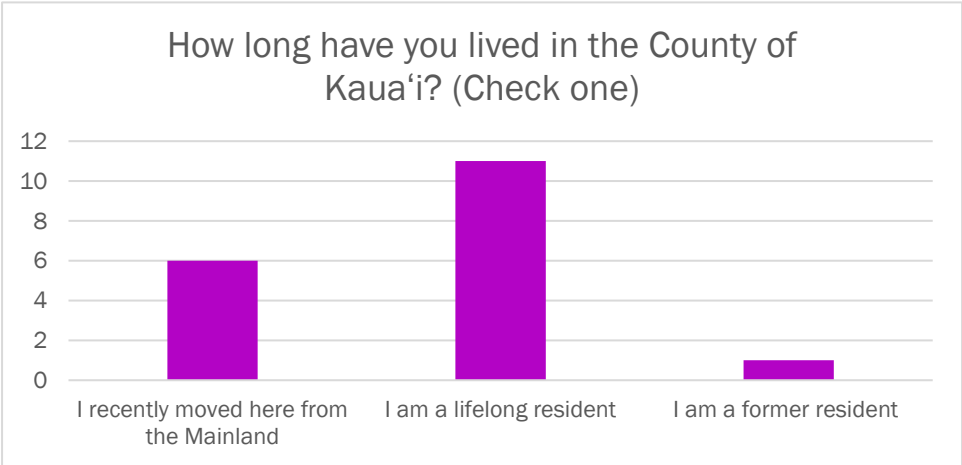


# Appendix A: Online Open House Demographics

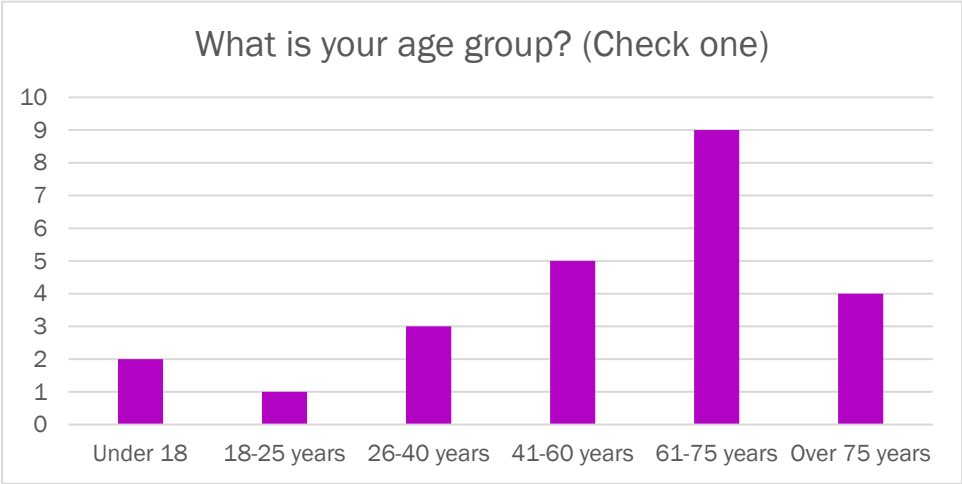
At its highest, attendance at the Open House included 24 members of the public. Participants were invited to answer demographic questions via Zoom poll but responses were completely optional. Not every question was answered by every participant.

Detailed demographics:

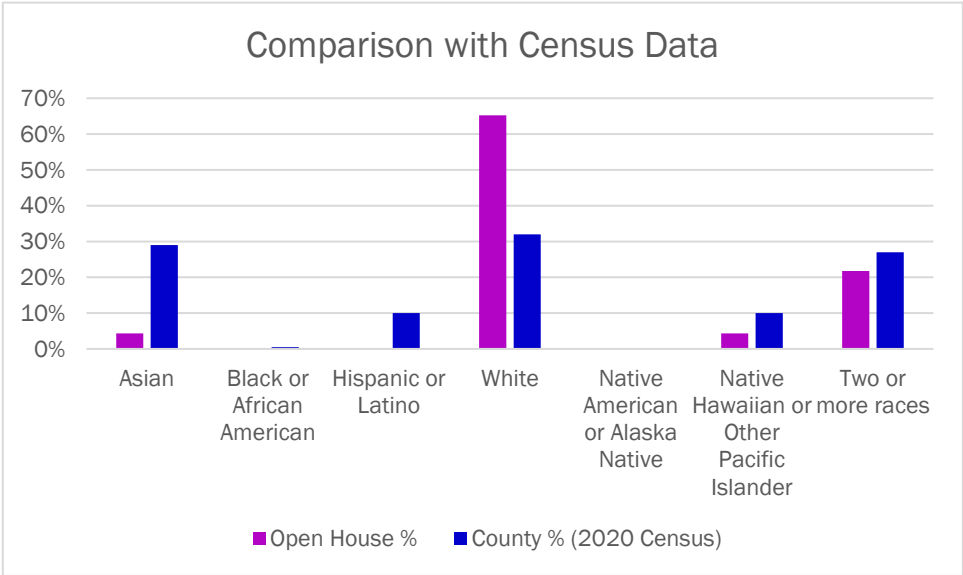
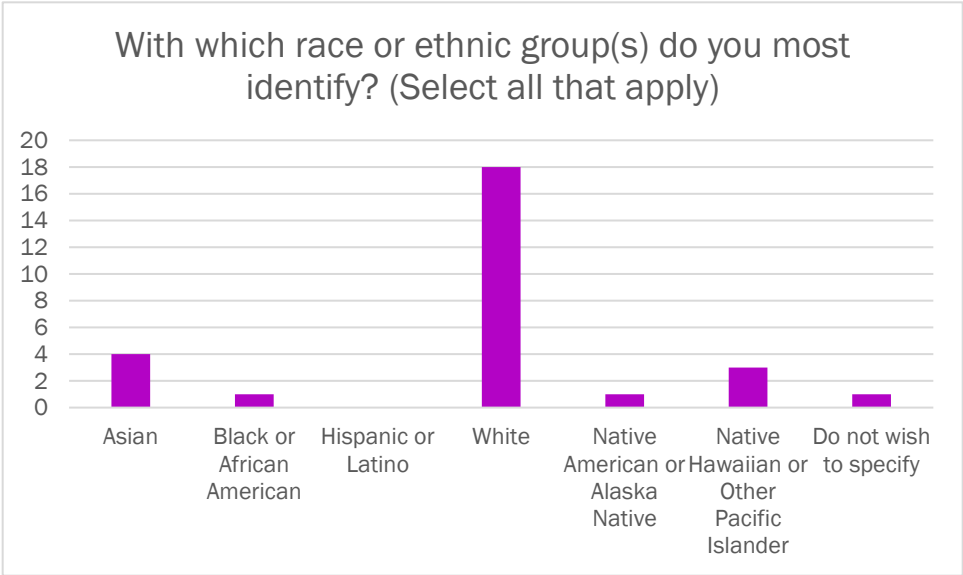
- 1. How long have you lived in the County of Kaua'i? (Check one)



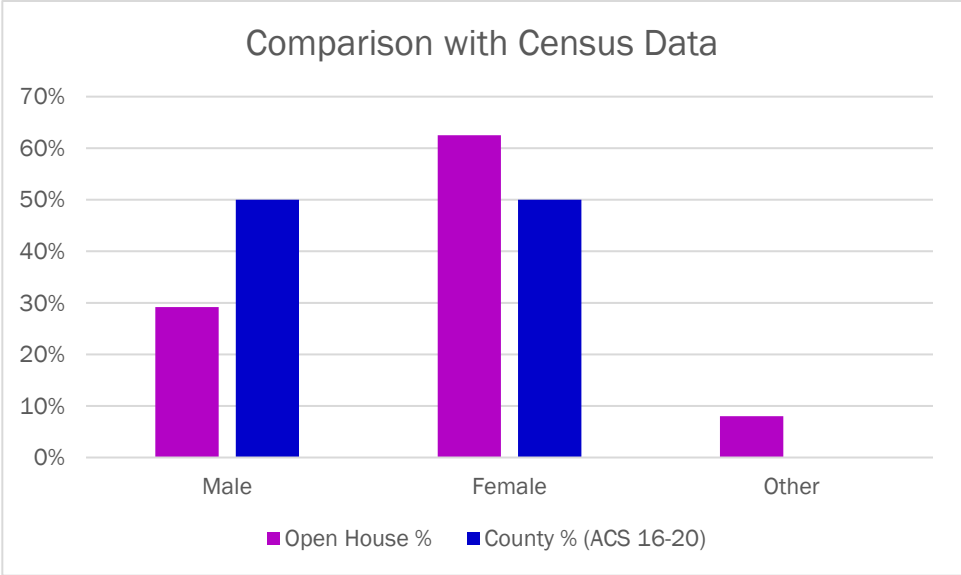
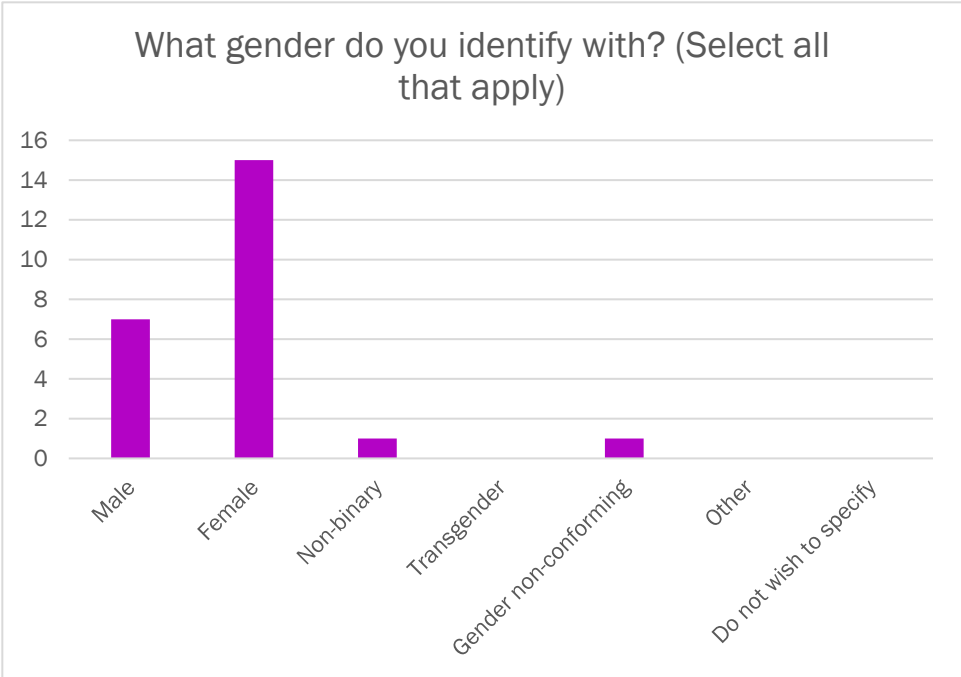
- 2. What is your age group? (Check one)



3. With which race or ethnic group(s) do you most identify? (Select all that apply)

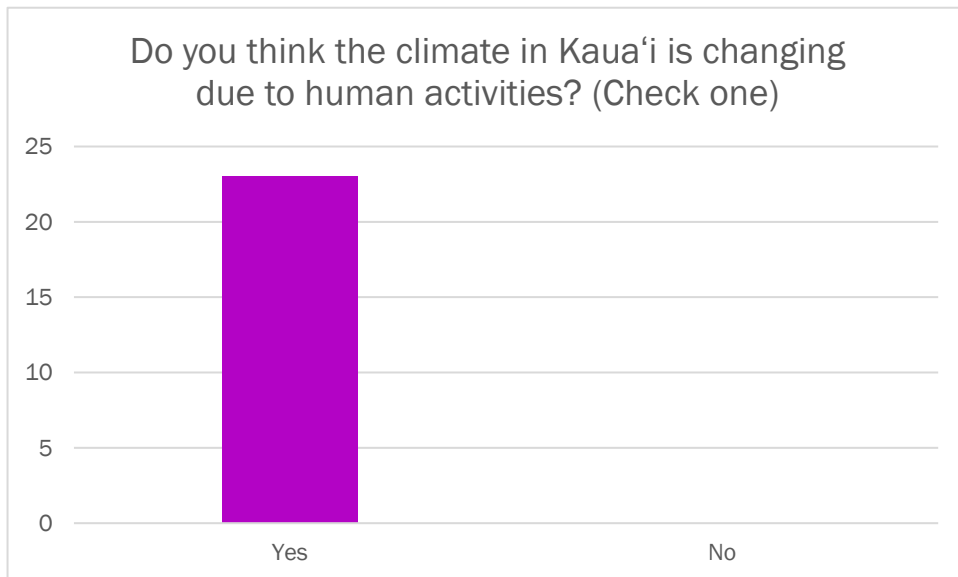


4. What gender do you identify with? (Select all that apply)

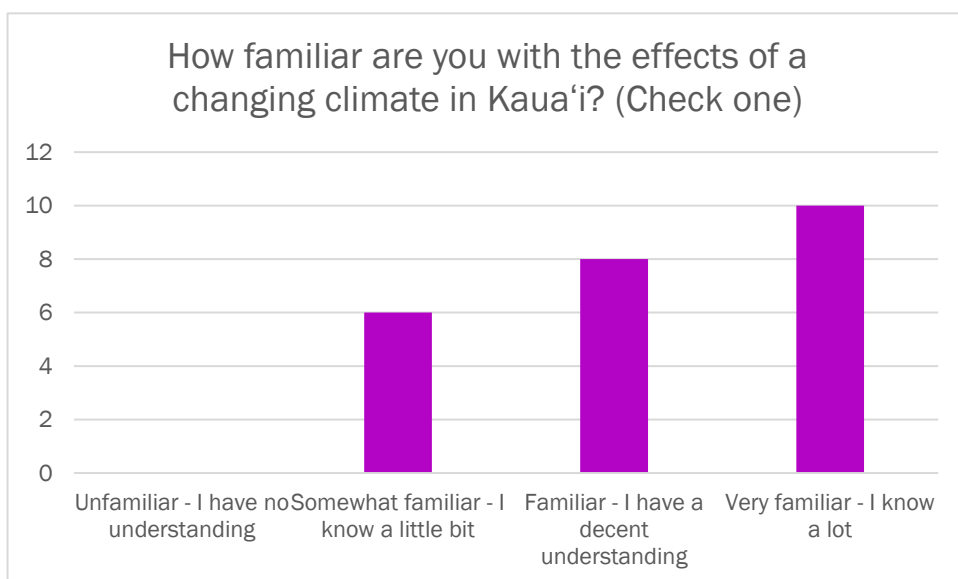


# Appendix B: Online Open House Poll Results

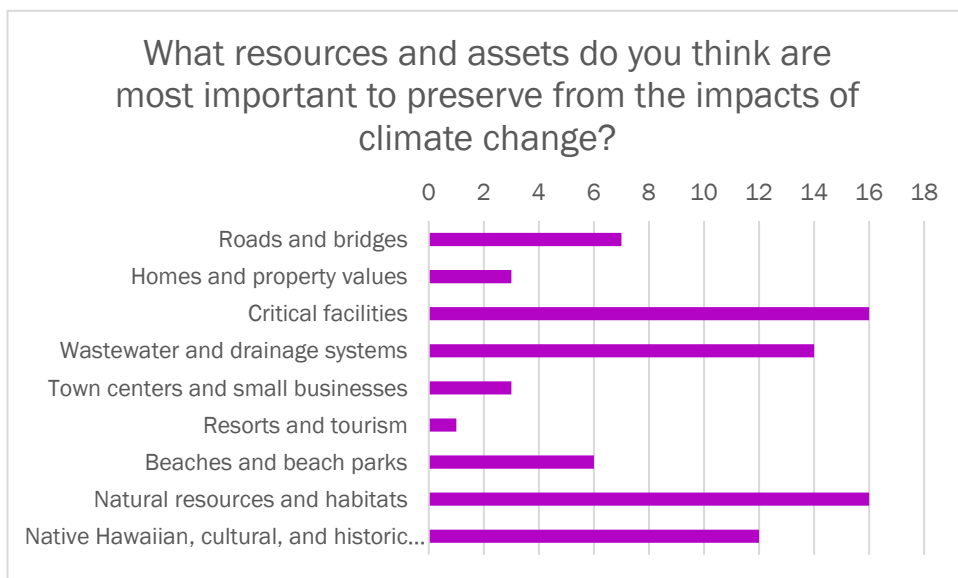
1. Do you think the climate in Kaua'i is changing due to human activities? (Check one)



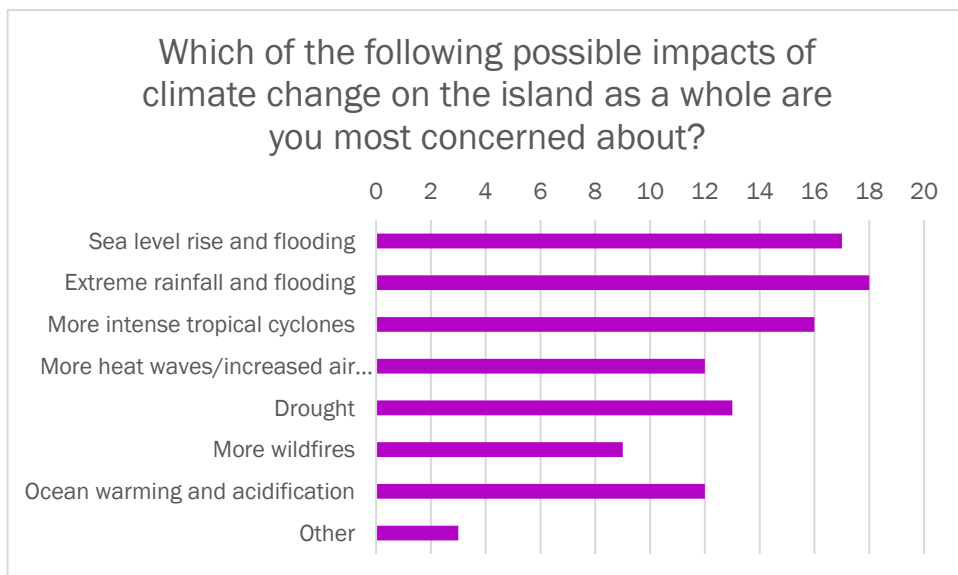
2. How familiar are you with the effects of a changing climate in Kaua'i? (Check one)



3. Which of the following possible impacts of climate change on the island as a whole are you most concerned about? (Check all that apply)



4. What resources and assets do you think are most important to preserve from the impacts of climate change? (Choose up to three)



# Appendix C: Online Workshop Breakout Room Boards and Comments

## Clustered Raw Comments

The notes from the Miro Boards are interpretations of participants' comments written by R+A staff in real time. Some comments were edited for clarity. Comments are grouped by key themes that emerged and unique comments are grouped as "Other." An image of each room's board follows its list of comments.

### Main Room - Vision

Preserving water, agriculture, and shorelines are important values to keep in mind in relation to the General Plan's goal of "A Sustainable Island"

- Water quality and water issues. Not sure if this goal is achievable due to severity of climate change. Changes in water cycles (drought). We could run out of water for agriculture and human consumption. Also extreme water events (ex: 2018 floods). This event also moved tons of land into the ocean, destroyed reefs. Going to have changes to rain and dry seasons. May have heavy rain events in summer when we don't have waves to take the sediment off reefs. Cannot build sea walls as it would destroy near shore environment. How do we keep coastline clear? Paper from Oahu shows wave action sucks out sewage water into the ocean. Cesspool exposure (ex: county park in Kapa'a). Sustainable island: need to maintain shorelines.
- Taking lots of water and not taking care of the watersheds and aquifers on the island. "sponge-like" behavior of Lihue area. Tons of changing hands property: need solar-based water pump to mitigate electricity use. Would like to see more discussion on better land use that allows us to be sustainable in what we grow. (no more McMansions). updating land use plans.
- Concern about changes in precipitation events.. how do we steward our watersheds?
- Focus on agriculture (what we grow) - and not just new development
- How do we maintain our shorelines?

Housing is an important asset to keep in mind in relation to the General Plan's goal of "An Equitable Place, with Opportunity for All"

- Where does housing fit into all of this? (included in vision: everyone deserves a roof over their head)
- Need to address housing, SLR threatens lots of the housing inventory, how do we address that?
- Followed the Waimea 400 plan, there will be severe challenges to residents. Many residences are already at risk. People are already developing "back up plans" to anticipate loss of housing.

- Concern for the west side, SLR-XA. where will our native population go if their houses are flooded. need to get ahead of the flooding. these impacts will be felt country wid. what does that mean for our disaster funds?

What is the planning horizon for the CAP's vision

- Timeframe for vision and goals: 20 year horizon, climate change isn't slowing down (need to think longer term? 2050+)
- Question about planning horizon for these goals and vision statements.

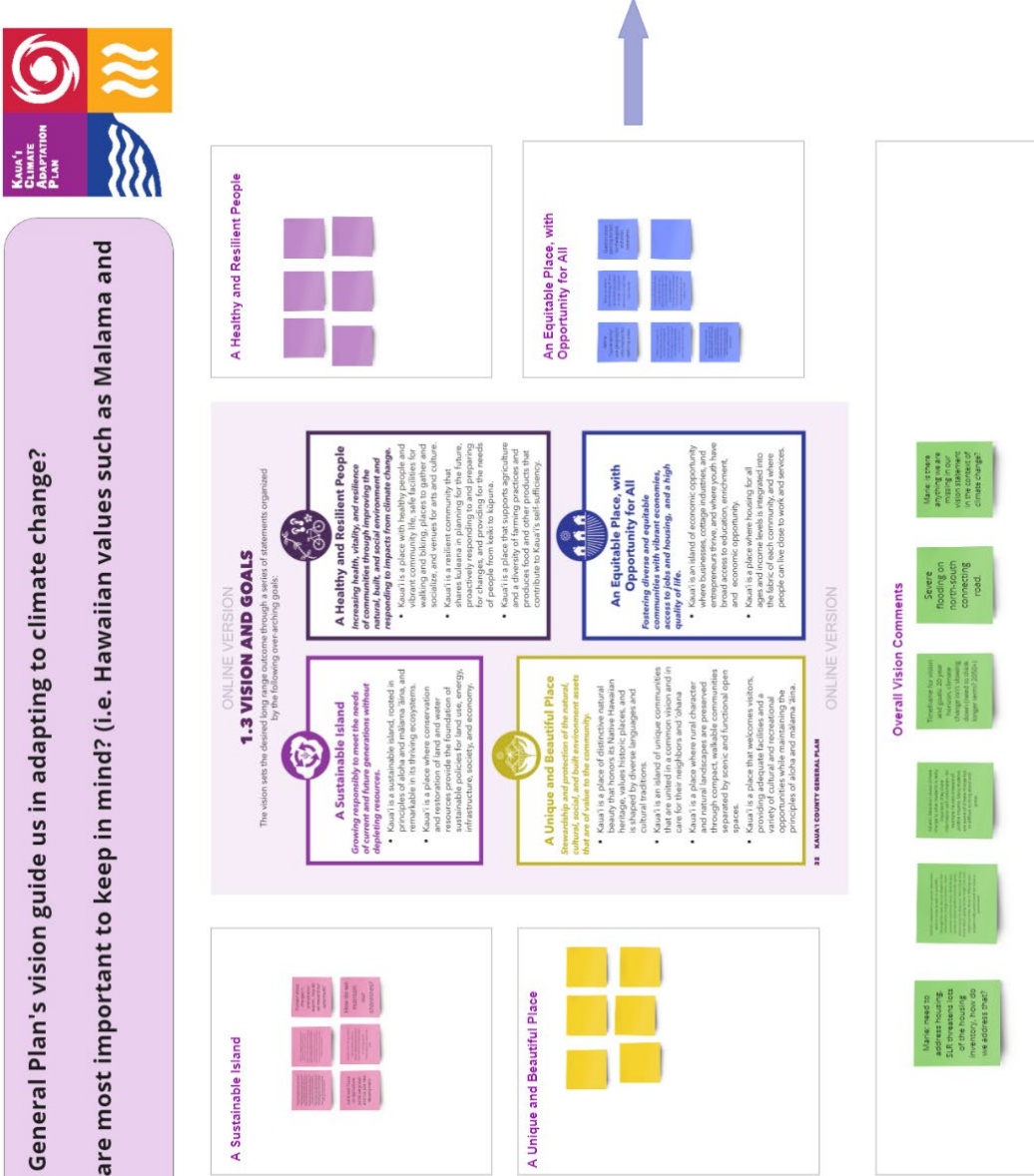
Get a wide a range of people informed and involved to shape the CAP

- Some thing may be too far gone, need to adapt. Many opportunities and different perspectives. A melting pot of information to inform the plan.
- important to spread awareness with as many people as possible. Through the club, we can disperse the information and go to forums, zoom sessions and learn more. Kailash was unaware about wildfire hazards, good information to disperse. Alot of kids may know what's going on but might not care, might not think about it. Making sure people really understand the issue is paramount.
- Education about climate change to other students is really important; they share information with classmates - for example, he was unaware of wildfire impacts. Many students are aware of climate change but its difficult to thing about and grasp.

Other

- Where in Lihue would be affected by climate hazards. The area by the harbor mall is one of the more important areas. Connector area. Landslides on mountain south of Lihue, has endangered species. Need to have land stewardship and maintenance.
- Define "vulnerability" use geographic information for defining areas

Figure 1. Vision Board





## North Shore Board

### *He aha kou Mana'o?*

- heat temperature map interesting & impacts

### *What resources and assets in the North Shore do you think are most important to preserve?*

Preserving beaches from erosion, and its interaction with development

- historically awareness of hazards like tsunamis, now more development close to beach
- Anini beach disappearing hard to know what to do next
- hardening can make beach erosion worse, need to adapt to erosion.
- protect public beaches, built environment too close to ocean.
- Permanent sea escape

Roads and bridges that are at risk of getting cut off

- north shore can get cut off by natural disasters
- Kalihiwai road now two roads?
- inland roads? what can be done?
- tsunami in 40's cause relocation of kalihiwai bridge
- struggle to find balance with "single lane" roads and bridges. large part of community is resistant

Preserve local food supply

- local food study? maybe OED. lots of taro. at risk for flooding in hanalei area
- some varieties [of taro] are more salt tolerant?
- Food access is a concern
- more food being grown for local consumption
- everything brought in, including clean water, food, etc

Historic resources

- protect local, historic resources. Issues with public exposure & possible damage

### *What steps are being taken in the North Shore to prepare?*

Facilities and community cooperation in disaster response

- Ainahou plan for shelters & response facilities
- People rallied to support areas cut off
- in 1992 island wide disasters also evoked cooperation
- vulnerable sub groups on N Shore? no evacuation shelters

Experience with flooding at Princeville

- Princeville impacted by 2018 flooding affected culverts on private roads
- FEMA Grants not available to association
- Silver lining underground infrastructure became priority drainage management plan

### *What should be done to adapt?*

More education is needed to inform homeowners and visitors about hazards

- worry about resilience with visitors

- when folks move to or visitors stay at remote communities, they need to realized there are hazards
- key education piece is disaster education
- resources to PCHA to help educate homeowners
- Co requires posting of escape/evacuation routes in TVRs
- awareness education resources need to be in more languages that just English
- looking for more, like KIUC brochures, storm sense
- KIUC has brochure

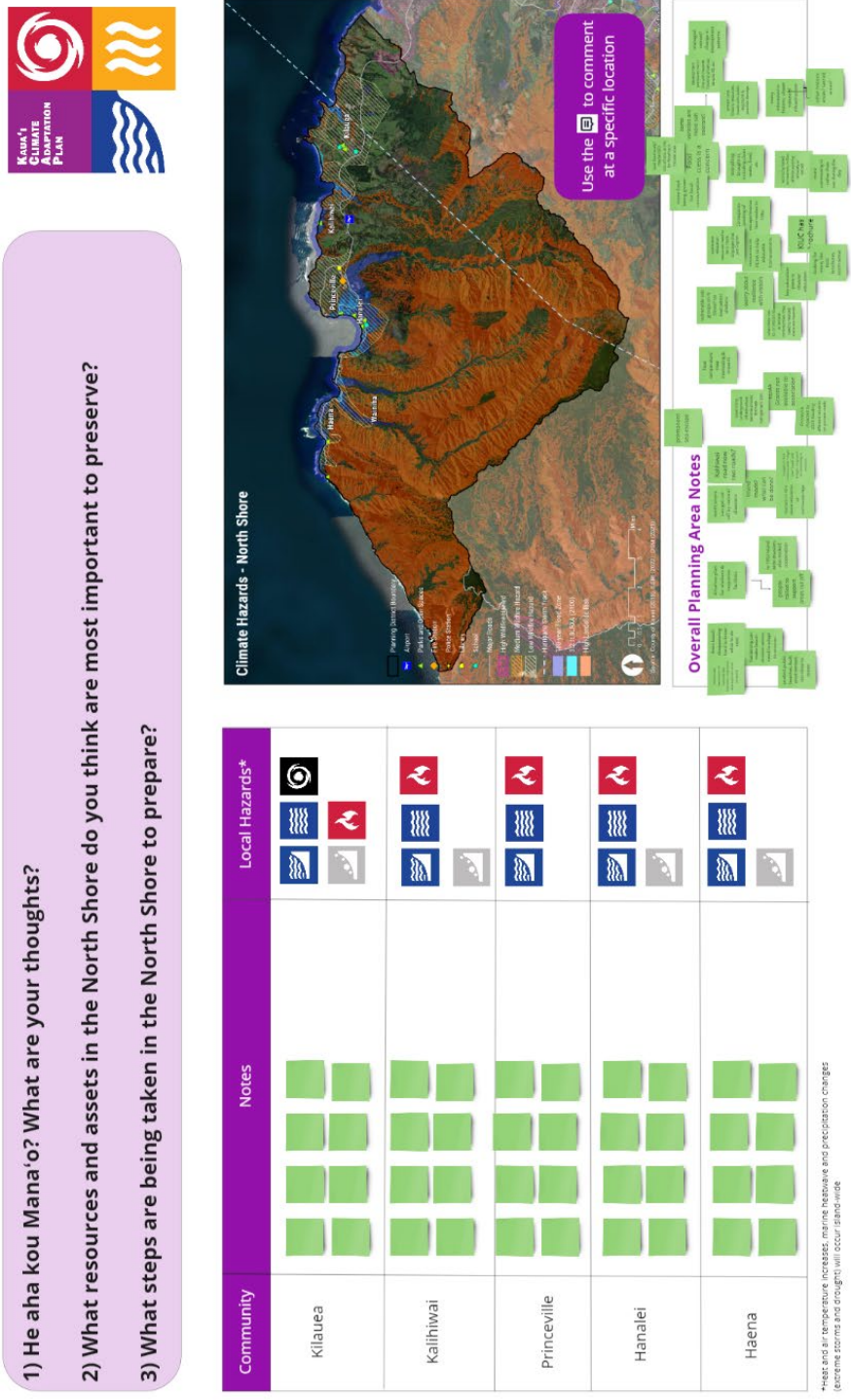
Draw on historic practices

- many interested in historic, slower nature of infrastructure
- other historic areas? sacred areas?

Change development patterns

- development pressures not in line with hazards. housing prices up, despite SR, etc
- managed retreat? change in development patterns

Figure 2. North Shore Board



\*Heat and air temperature increase, marine heatwave and precipitation changes (extreme storms and drought) will occur island-wide

## East Kaua'i Board

### *He aha kou Mana'o?*

Observed climate changes and impacts

- Decreasing tradewinds, increasing mosquitos, decrease rainfall, increased erratic rainfall
- Debris/plants clog waterways and cause flooding downstream
- surprise when seeing wildfire risk across the island
- Landslides on east side would ruin nature/plants on east side-- decrease plant diversity in areas which would decrease absorption capacity along watershed

Observations from Anahola Town Center

- Wildfire hazard on DHHL
- Flooding problems along Anahola river presents many challenges
- Coastal roadway eroding
- Wildfire high hazard area

Observations from Kapa'a

- Entire downtown is located along coastline
- Highest density in kapaa/wailua-- wailua gets increased rainfall and kapaa closer to ocean, proximity makes wastewater flooding a hazard

Observations from Wailua

- siting of sewage treatment plant in Wailua
- After Iniki, rural residents didn't have power for 6 months- forced to live off cold water (fortunately gravity fed) and generator
- Plans still exist for development between kapaa-wailua (btwn marketplace and old sheraton) area is extremely vulnerable to SLR- evacuation in event of shock would be a logistical nightmare
- concrete along bike path in wailua has been taken out (near golf course)

### *What resources and assets in East Kauai do you think are most important to preserve?*

Roads

- SLR impacting Aliomanu Rd. - houses north of erosion area will not have access to their homes
- Highway follows the coastline
- GPlan talks about alternate routes to get to critical infrastructure (hospital)

Critical facilities, particularly hospitals, schools, and fire stations

- Hospitals, schools, fire stations, other facilities
- Lack of nearby fire stations makes fire insurance for homeowners close to impossible
- Access to schools is critical as they serve as shelters during major shocks

Wastewater systems

- Increased severity with storms and increased volume of water being dropped puts stress on wastewater systems-- impacts to water quality downstream, freshwater, marine species, public health concerns

- Need improved education and assistance to residents to upgrade/convert residential wastewater/solid waste systems

#### Cultural and historic resources

- Cultural significance of Wailua is critical-- possibly most culturally significant area in entire state
- Many cultural sites along the coastline will be impacted by SLR
- Iwi kupuna buried in the sand, eroding into ocean

#### Local food supply

- Just north of Anahola-- in Moloaa, extreme weather, flooding, etc., could severely impact agriculture and greater food access/sovereignty for island

#### ***What steps are being taken in East Kaua'i to prepare?***

##### Actions taken on DHHL lands

- Piilani Mai ke kai gets a lot of wildfire-- people setting fires is major issue. Land is overgrown. DHHL working with KFD to do mitigation firebreaks/clearing/licensing out for community stewardship
- Some fee simple homelands, some DHHL. DHHL has moved people out of flood zones and moved elsewhere, not case with fee simple. DHHL looking at ways to move their lessees

#### ***What should be done to adapt?***

##### Resident education/action and interagency collaboration to prevent flood from streams

- Homeowners near streams need better education/access to resources to mitigate flooding and debris backup
- Give homeowners resources to mitigate clogging of waterways, i.e. homeowners in Wailua who live near waterways
- Lack of maintenance along river is needed. Stream mouth needs to be clear to mitigate river from backing up and flooding homes
- County and DHHL need to work together to address flooding issues in Anahola

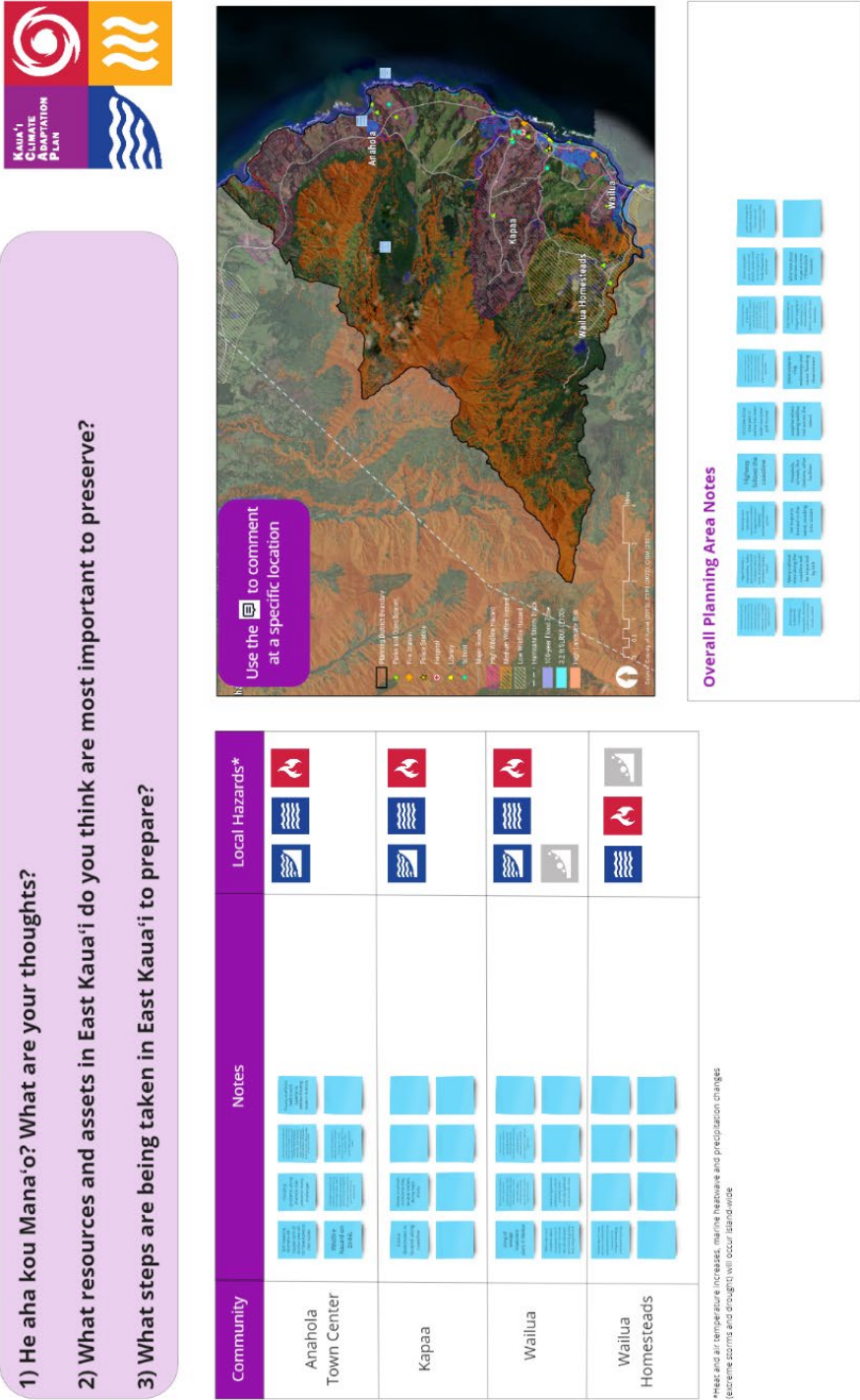
##### Target areas for flood mitigation projects

- Areas along bike path, monuments (Kealia), wailua need to be targeted for flood mitigation in waterways
- SLR/flooding erodes already aging infrastructure, i.e., piece of cement a few hundred yards down the river-- need to look critically at infrastructure upgrades that need to be addressed

##### Underground utilities

- After hurricane, wooden electric poles were replaced with large metal poles (quite controversial)-- what happens if metal poles come down. Underground utilities would have been better long term solution.

Figure 3. East Kauai Board



## Lihue Board

### ***He aha kou Mana'o?***

General reflections on climate and hazards in the planning area

- Interesting to see the wildfire risk is high. Didn't know they happened on Kauai
- eye opening to see so many overlaid hazards

Observations from Lihue

- Lihue is a microcosm of the island
- unique water recharge system in this area. Lihue and Puhi is like a big sponge.
- there was a brush fire on the makai side of the airport near the lighthouse last year. might have been caused by human behavior in conjunction with drought

Observations from Nawiliwili

- King Tide came up to the walking path at Nawiliwili

Mitigation and adaptation in the plan

- might be too late for mitigation to stop climate effects. Balance between adaptation and mitigation
- Mitigation is important because Hawaii is a climate leader

Other

- water out of mt waialeale is being diverted. DNLR and waterboard did not allocate water to DHHL lands. Restricting the ability of native Hawaiians to that land

### ***What resources and assets in Lihue do you think are most important to preserve?***

Critical facilities

- Only airport on the island
- Only harbor

Other

- road where harbor mall is highly traveled and connects people from Puhi to Rice st
- important to think about loss of endemic species in landslide areas

### ***What steps are being taken in Lihue to prepare?***

Infrastructural interventions have been done but are not effective

- built infrastructure to stop the effects of floods, but the weather continues to overcome them

### ***What should be done to adapt?***

Collaborate with KCC on educational opportunities and ways to involve youth

- Youth involvement!!
- Food demonstration projects, apiary (think about importance of bees). It is also a possible economic driver
- what can we do to use land at the school (Kauai community college) to teach people agriculture, etc.
- restore the aquifer at community college. opportunity to collaborate with the other schools nearby
- Opportunity to have an environmental teaching facility, like with the ulutopia program, gofarm Kauai

- working ahupuaa farm, aquaponics, lo'i, rice, water buffalo. gravel driveway just before overlook. education opportunity
- KCC has historic resources studies. collaborate with preservation and info sharing

Collaborate with other agencies/groups

- Collab with natural resource conservation services and affiliate member groups. Projects working with native Hawaiian farmers to get into production farming



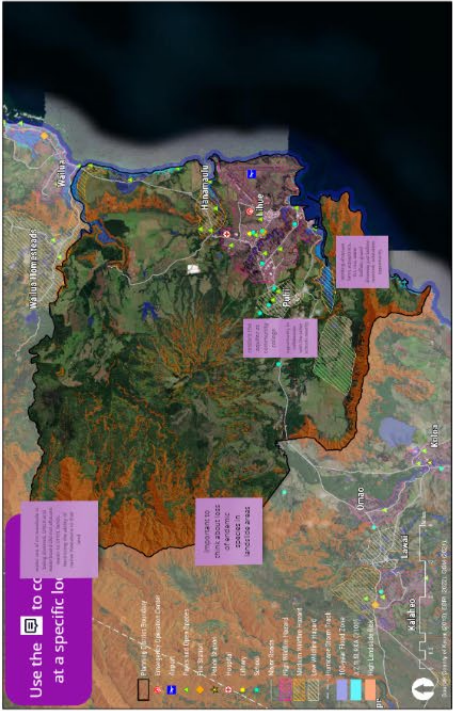
Figure 4. Lihue Board



- 1) He aha kou Mana'o? What are your thoughts?
- 2) What resources and assets in Lihue do you think are most important to preserve?
- 3) What steps are being taken in Lihue to prepare?

Community	Notes	Local Hazards*
Puhi	<div style="display: flex; flex-wrap: wrap; gap: 5px;"> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> </div>	
Lihue	<div style="display: flex; flex-wrap: wrap; gap: 5px;"> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> </div>	
Nawiliwili	<div style="display: flex; flex-wrap: wrap; gap: 5px;"> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> </div>	
Hanalei	<div style="display: flex; flex-wrap: wrap; gap: 5px;"> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> <div style="width: 20px; height: 20px; background-color: #ccc;"></div> </div>	

\*Heat and air temperature increases, marine, native and precipitation changes (extreme storms and droughts) will occur islandwide



**Overall Planning Area Notes**

- Watershed Assets: Forested areas, wetlands, riparian areas, and other natural resources that provide ecosystem services.
- Watershed Risks: Climate change impacts, land use changes, and other factors that threaten the health of the watershed.
- Watershed Opportunities: Opportunities to improve watershed health and resilience through conservation, restoration, and other actions.
- Watershed Threats: Threats to watershed health and resilience, such as climate change, land use changes, and other factors.
- Watershed Vulnerabilities: Vulnerabilities to climate change impacts, land use changes, and other factors.
- Watershed Resilience: The ability of the watershed to withstand and recover from climate change impacts, land use changes, and other factors.
- Watershed Capacity: The ability of the watershed to provide ecosystem services and support human well-being.



## South Kauai Board

### *He aha kou Mana'o?*

Observed changes related to heat and drought in the planning area

- heat and drought is severe - if not for irrigation, all agricultural plants/crops would die.
- Kalaheo is getting hotter each year - notably. Noticed March was particularly warm/notably hotter.
- Home plants are very dry.
- [In Omao] Dryness, hotness, and wetness were severe (like other south side areas)

Observed changes related to flooding in the planning area

- Inland flooding in Koloa Town was notable. RAIN18 - recorded many homes experienced flooding. E.g., in the plantation camp area and area toward Koloa Landing experienced much damage and flooding.
- As a result of the flooding, lots of county/state resources were expended for recovery clean up and remediation
- Border of Kalaheo and Lawai - lots of flooding experienced

Other

- Similar concerns, hazards, and risks are impacting various regions across Kauai.
- Landslide prone areas would exacerbate flooding and impact damage to coastal areas
- Omao is really a unique area... need people from there.

### *What resources and assets in South Kauai do you think are most important to preserve?*

Ocean resources and coastal habitats

- Protect ocean resources from disappearing
- Critical habitats: coastal habitats; corals/reefs.
- Poipu has had lots of changes to reef systems. County/State spraying pesticides/chemicals have had an affect.

Critical habitats and natural resources

- habitats and natural resources.
- Agree, natural habitats should be preserved.

Other

- Critical infrastructure
- Food production areas important!

### *What steps are being taken in South Kauai to prepare?*

- not much are being taken to prepare.
- Hard to address specific impacts at an individual level.

### *What should be done to adapt?*

Engage with the community on local issues

- it is very important to engage with community who live and are from certain areas to understand impacts and priorities

- community level coalitions per neighborhoods would help to engage discussion in the community. Building coalitions including hotels/resorts to contribute towards mitigation.
- Education on climate related hazards is important .

#### Engage youth

- Engage more peers/younger generations to engage in this conversation; get the word out on events like the Open House etc. e.g., email teachers and offer extra credit, or incorporate into curriculum. Also, provide feedback that they are being heard.
- Coalitions at high schools/involving students.

#### Restore forests (native and urban)

- Restore native forests/habitats and encourage diversity of species would help area be more resilient. Would help protect from landslides and flooding.
- Native forest restoration would help to replenish watershed and retain hillside to prevent impacts related to landslides.
- Some steps to take to prepare for climate change: Plantings; tree cover/shading; designing streets to allow for more shade/tree cover

#### Consider the transportation network

- need more transportation alternatives in the case of storm events etc
- Adding more roads may not be a good idea.

#### Other

- Grow food to sustain local needs
- Infrastructure/development correlated with wildfire risk. May need further study.
- water quality/pollution/septic/cesspool issues effecting coastal environments. e.g., hotel's effluent and food waste should be managed - diverted from the landfill or composted.

Figure 5. South Kauai Board



1) He aha kou Mana'o? What are your thoughts?  
 2) What resources and assets in South Kaua'i do you think are most important to preserve?  
 3) What steps are being taken in South Kaua'i to prepare?

Community	Notes	Local Hazards*
Poipu	[Notes for Poipu]	[Icons for Wildfire, Flood, Storm Surge]
Kukuiuiula	[Notes for Kukuiuiula]	[Icons for Wildfire, Flood, Storm Surge]
Koloa	[Notes for Koloa]	[Icon for Wildfire]
Lawai	[Notes for Lawai]	[Icons for Wildfire, Flood, Storm Surge]
Omao	[Notes for Omao]	[Icons for Wildfire, Flood, Storm Surge]
Kalaheo	[Notes for Kalaheo]	[Icons for Wildfire, Flood, Storm Surge]



**Overall Planning Area Notes**

- Protect coastal resources with green infrastructure and landscaping.
- Invest in additional resources for infrastructure and public works.
- Encourage local farmers to produce food to sustain local needs.
- Area where nature provides food production areas important.
- Crucial to protect coastal resources.
- Regarding 2), not much are done to prepare to prepare.
- Adding more roads may not be a good idea.

\*Heat and air temperature increases, marine heatwave and precipitation changes (extreme storms and drought) will occur basinwide

## West Kauai Board

### *He aha kou Mana'o?*

Fire and drought are big concerns in the planning area

- Drought (Kekaha, PMRF, Waimea, Kaumakani)
- Fire events (Kekaha, PMRF, Waimea, Kaumakani)
- Fires in Kekaha. Especially Kekaha-Kokee
- Fire - need to get community prepare
- Fires started due to drought events
- DHHL beneficiaries [in Hanapepe-Elementary] concerned about wildfire
- mauka land use is a concern. erosion and wildfire hazard. looking at kuleana settlement in pu`u o pae. when you develop land that hasn't been used in awhile, could trigger wildfires and such; but we hope that having ppl up there will be a positive presence.

Other observations from Kekaha

- Used to pick opihi by Kekaha road
- ditches discharge to the ocean during inland flood in the Waimea 400
- sea level rise affecting Kekaha- upwelling of groundwater on Mana Plain.

### *What resources and assets in West Kauai do you think are most important to preserve?*

Traditional ecological knowledge

- preserve traditional ecological knowledge as an important asset. Talk to native hawaiiians about these things.

### *What steps are being taken in West Kauai to prepare?*

DHHL ongoing and planned efforts

- DHHL homestead master plan, looking at water, wastewater, runoff. as we build mauka we need to retain water on the land so it doesn't runoff. need to put more thought into that strategy. e.g. permaculture, berms, detention basins, diverting water out of gulches and storing and keeping it on the land. as it gets drier and hotter, we have to think about heavy rains and how we get the water to infiltrate. mauka land use pretty important
- DHHL looking at identifying sending and receiving areas for SLR for their homesteaders. we can create an incentive system. We will need to relocate infrastructure (roads for access). neighborhood scale wastewater treatment, treated water reuse, fresh potable water
- DHHL: would like to update island plan; and really focus on hazards.

Actions taking place in Kekaha

- placed sand and stone (big revetment)
- Kekaha beach. Waves coming on road. They are putting sandbags.
- work on the Kikiaola harbor, e.g. dredging, there is sediment discharge from harbor to st theresa. it affects the reef

Other

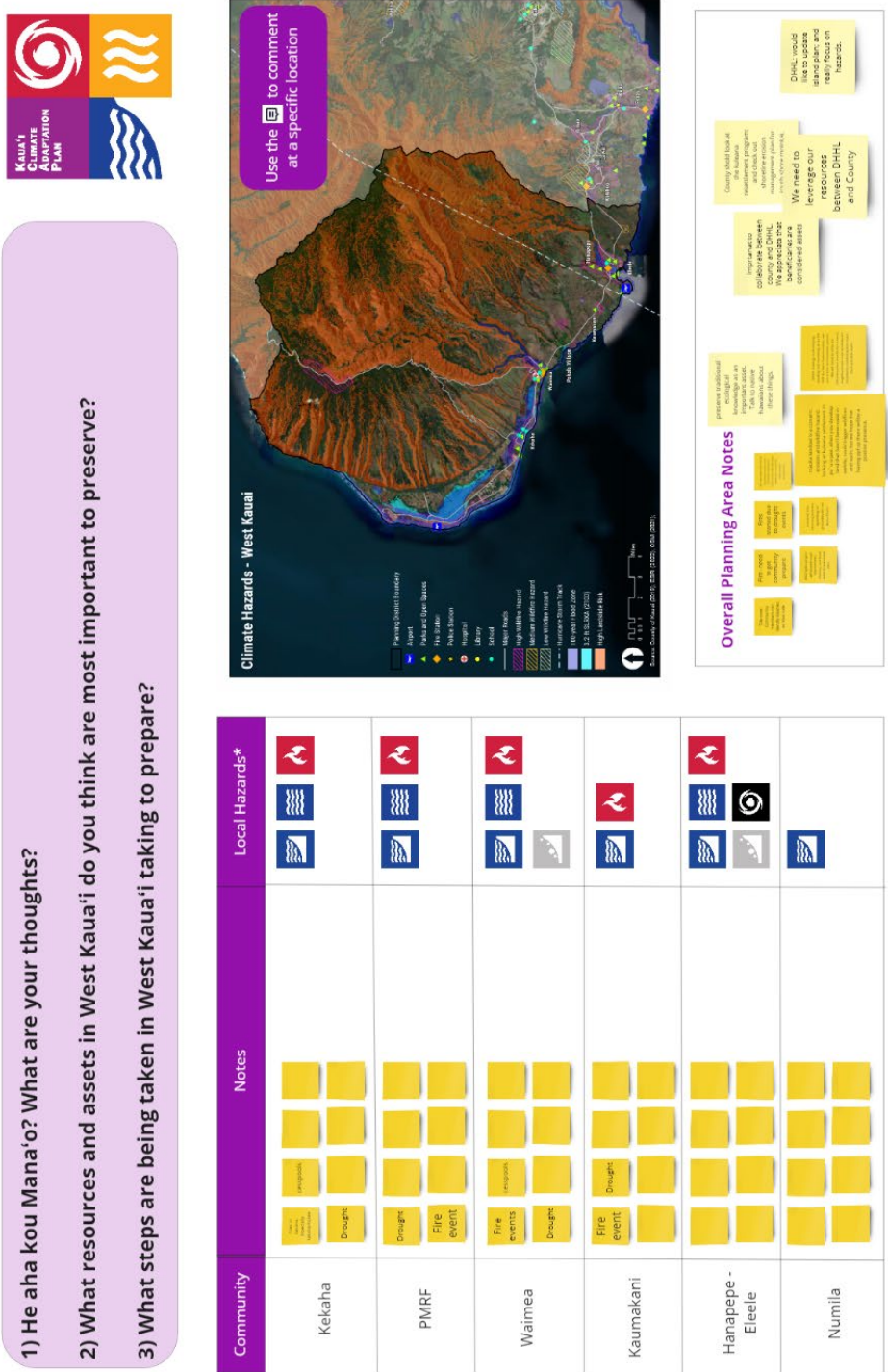
- Do not have cane fields (plantation) and seed pioneers anymore- used to be veg that was watered--> need to now control drought/fire
- KIUC hydro project - will provide road improvement, electricity, and fresh water to puu o pae area.

***What should be done to adapt?***

County collaboration with DHHL

- important to collaborate between county and DHHL. We appreciate that beneficiaries are considered assets
- We need to leverage our resources between DHHL and County
- County should look at the kuleana resettlement program; and check out shoreline erosion management plan for south shore molokai.

Figure 6. West Kauai Board



\*Heat and air temperature increases, marine heatwave and precipitation changes (extreme storms and drought) will occur island-wide.

## GHG Mitigation Board

### ***He aha kou Mana'o?***

General comments about the CAP

- "need to change the name of the plan to climate change mitigation and adaptation plan"
- it's difficult to field goals in the future without stop points along the way. we never hear how we're doing and what works and what doesn't. we should have stop points in the plan.

There is an issue of lack of personal responsibility when it comes to GHGs

- people like to burn, waste material or fireworks, and don't see themselves as contributing to GHG
- many people don't seem to see personal responsibility for lowering GHG emissions.

### ***What are the key areas of overlap between cost of living and climate change mitigation and adaptation?***

- discussion about population growth, housing opportunities and costs, and impact of more people on this land

### ***How do we ensure that adaptation to climate change doesn't contribute to our carbon footprint?***

Think about alternative transportation options

- need to think about transportation that's not increasing GHG emissions.

### ***What should be done to mitigate GHGs?***

Take action to increase EV adoption, with caveats

- CA banned cars that aren't electric in 2045. is county moving in this direction?
- can we start with rental car companies switching to EVs? add more fast charging stations around the island and yes you can pay for it like you pay for gas.
- recognize difficulties in inconsistencies with EVs. the prius gets 68 miles to the gallon.
- not a big fan of EVs. lithium is an issue in terms of what we're doing to the planet. take a look at things holistically and how can we do things that don't damage the planet.

Reduce waste going to landfill

- organics and food waste make about 1/3 of landfill and now the biggest pig farm we have closed during the pandemic, so many more food waste is going to landfill. if we put food waste or anything organic and let it decompose without air, it makes methane, and methane is more harmful than CO<sub>2e</sub>
- simple solution for food waste is that the County has already established landfill restrictions on things like cardboard, scrap metals, green waste primarily from commercial disposal. adding food waste to that would make a big difference. short term solution (mitigation and adaptation)
- concerns is that we don't have \_\_ pickup in Princeville. Residents need to bring recycling in person. can the county assist with curbside recycling pick up?

Consider how to reduce GHGs from air travel

- we can't say sorry you cannot fly anymore, but we can use alternative fuels (like algae fuel use)
- may not be possible to come up with other types of airline fuel due to long trips.
- during natural disasters or SLR, a lot of the island is trapped because of the roads we have. what is the County's plan to mitigate those issues - inland road system that might not be permanent or ways to get people out. Otherwise will have to fly people out which is a lot of fuel. how do we move people out of here, and 20,000 tourists?



- I've been contacted by Ikaika Hussey about an effort to develop a locally-owned plant to pull CO2 from the sky and turn it into a carbon-neutral jet fuel. Their goal is to completely decarbonize Hawaii's long-haul aviation by the end of the decade.

The commercial-scale facility will be on the west side of the Big Island. But we're looking for a place to locate a pilot-scale plant, and he thinks that perhaps they should look at Kauai. The pilot-scale plant will be the first of its kind in the US (a couple of similar plants are coming up in Northern Europe), which could be really exciting. Roughly speaking, the plant would cost roughly \$60m, and require 20mw of clean energy and a few acres of industrial land.

This isn't the county's focus but we could be a part of collaborating on the effort.

- There have been discussions about carbon offsets. Airlines could be required to cover the costs of mitigation efforts.

#### Phase out gas powered lawn/garden equipment

- the use of gas powered maintenance in landscaping equipment, has there been discussion to phase it out and go all electric? somewhere in CA has phased out the sale of gas powered equipment.

#### Require solar hot water

- Mandate Solar Hot Water on all residences! There was an ordinance passed years ago that was never adequately enforced. It was 30 years ago that we proposed an ordinance that all new homes have solar water heaters. They are a no brainer and pay for themselves on almost all occasions. Somehow people found loopholes and the county didn't want to close them and do the education - maybe we need to go back there. We need to make all water heating solar.

#### **What are some mitigation actions that you/your community do?**

- beach mitigation effort by coco palms area of the highway. Effort for "sand saver" to reduce beach erosion. This could be very bad. DOT is leading a sand capturing device to save area of that beach. That is an area very at risk

Figure 7. GHG Board

### Transportation

- Conduct technical studies to assess multi-modal shift and electrification in our transportation network
- GetAroundKauai.com: Highlight's our Island's sustainable transportation choices
- Pursue mobility hub plans
- Expand public EV charging network
- Transit Agency Zero Emission Bus Project

### Energy

- KIUC's 2018 Renewable Portfolio Standard: 65%
  - 43% solar, 14% hydro and 11% biomass
- Kauai runs on 100% renewable energy most of the day

### Waste

- Existing diversion rate: 43%
- Green waste diversion
- Food waste diversion (food banks, pig farming, backyard composting)
- Recycling Programs (residential drop bins, State Bottle Deposit Law (H15), metals including autos, scrap metal and appliances)
- Special Waste Recycling (eWaste, used motor oil, used tires, household hazardous waste, propane tank, batteries)
- Reuse drop off at Kauai Resource Center
- Commercial Landfill Restrictions on green waste, metals, and cardboard
- Plastic Bag Reduction Ordinance Administration
- Polystyrene Ban Ordinance Administration
- Pay as You Throw variable rate for refuse collection
- Educational Outreach and Technical Assistance (Schools, trade and community groups, and businesses)

### What are strategies the County can further or add?



### State Mitigation Goals

<p>Hawaii to be <b>Carbon Neutral by 2045</b> (Act 15 2018)</p>	<p>Electricity Sector: <b>100% Renewable Energy by 2045</b> (HPS Section 269-52)</p>
<p>State-wide Mayoral Commitment: <b>100% Renewable Ground Transportation by 2045</b></p>	

### County GHG Reduction Goals

<p><b>26-28%</b> GHG emissions reduction from 2005 levels by 2025</p>	<p><b>80%</b> GHG emissions reduction from 2005 levels by 2045</p>
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From Kauai Kakou General Plan 2018

### County Sustainability Goals by Sector

#### Ground Transportation

Reduce ground transportation emissions from County vehicles to **100% by 2035**

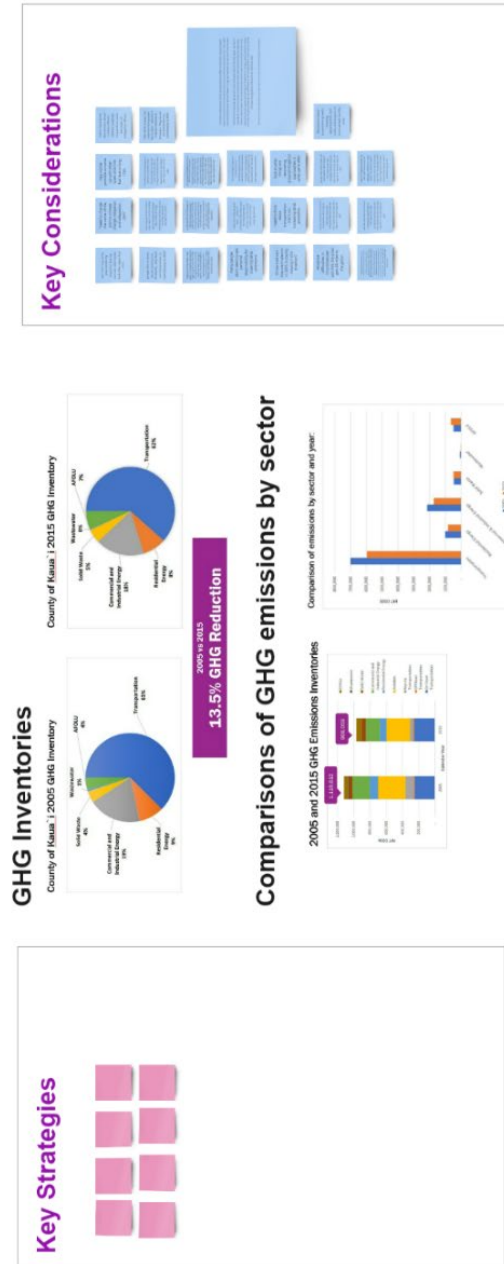
Transition County's bus fleet to **100% electric by 2035**

1) He aha kou Mana'o? What are your thoughts?

2) What are the key areas of overlap between cost of living and climate change mitigation and adaptation?

3) How do we ensure that adaptation to climate change doesn't contribute to our carbon footprint?

4) What are some mitigation actions that you and/or your community do?



# Appendix D: In-Person Open House Booth Boards

The booths displayed at the In-person Open Houses presented climate science information to the public and provided community members the opportunity to share their concerns and local knowledge in regard to Kaua'i's vulnerability to climate change. Each booth was staffed by a County CAP team member who could help orientate community members to the booth and could answer any questions participants may have. The following section summarizes the content presented at each booth.

After being welcomed to the event and signing-in, participants were first directed to the 'Project Overview' booth (Image 1). This booth introduced the purpose, process, timeline, and engagement strategies of the Climate Adaptation Plan. Participants could also learn more about common terms used in climate science (i.e. climate change, adaptation, and mitigation) and was presented with general information about the different climate hazards. The content was displayed visually on poster boards, as well as provided on take-home factsheets. Participants could also watch short one-minute informational videos prepared by the project team to learn more about how various climate hazards could impact Kaua'i.<sup>2</sup>

Next to the 'Project Overview' booth was a large (10'x10') island map of Kaua'i that displayed climate hazard exposure, including sea level rise, wildfire hazards, and landslides (Image 1). Community members were allowed to share their observations, experiences, and knowledge about vulnerable locations by writing on sticky notes and placing them on the large map.

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<sup>2</sup> Four videos were published in February, 2022 to spread awareness about the impact of climate hazards on Kaua'i. These videos can be found at this link: <https://kauaiadaptation.com/videos/>



Image 1: Youth member watching climate change informational videos (left). Community member looking at the large island map of Kaua'i (right)

The next booth, referred to as ‘History of Place,’ encouraged participants to reflect on what we can learn from the past to inform our current understanding of vulnerability, as well as help guide us as we adapt to future changes. A poster board displayed historical maps and photos which illustrated how landscapes previously looked like and were used in the past. The maps and historical photos were curated for the planning district that each In-Person Open House event took place in (Image 2). On a separate poster, participants could write on sticky notes to respond to the question, ‘How does our past help us prepare for climate change?’ A QR code was also displayed on the poster board to direct participants to the project’s interactive story map page, where participants can share their story, photos, and knowledge of places as Kaua’i’s climate changes, <https://kauaiadaptation.com/story-bank/>.



Image 2: An example of a poster created for the ‘History of Place’ booth that was displayed at the In-Person Open House in the West Kauai District (left). Community member writing a comment on a sticky note at the ‘History of Place’ booth at the In-person Open House in Līhu‘e (right).

The following three booths displayed maps and information about climate hazards and its exposure within the Planning District. The focus of each booth was on the following climate hazards: 1) sea level rise; 2) changing precipitation patterns and storm events; and 3) increasing temperatures and marine heat waves, as well as wildfires. At each booth, information about the climate hazard was displayed visually on a poster, and participants also had the option to take a climate hazard factsheet (Image 3). Climate hazard exposure maps were displayed at each booth, in which community members could place sticky notes on the map to identify vulnerable areas and share their experiences and observations. The exposure maps zoomed into the communities within the Planning District that each In-Person Open House event took place in. All three climate hazard booths were guided by the following three questions: 1) He aha kou manao? What are your thoughts?; 2) What resources and assets in your community do you think are important to preserve?; and 3) What steps are you and/or members of your community taking to prepare? Community members could respond to these prompts via writing on sticky notes and placing them on the poster.



Image 3: CAP staff member and community member discussing the Sea Level Rise Exposure maps at the ‘Sea Level Rise’ booth (left). CAP staff member and community member talking at the ‘Increasing temperatures and wildfires’ booth (right).

Another booth focused on ‘Envisioning the Future,’ where the four General Plan Vision Statements were displayed. Community members were encouraged to comment on the following questions: 1) “How does the General Plan Vision guide us in adapting to climate change?”; and 2) Which values are most important to keep in mind? (Such as Hawaiian values like mālama and kuleana). Participants could write on and post sticky notes on the poster board in response to the questions.

Additionally, the ‘Envisioning the Future’ booth also displayed a map of the communities’ social vulnerability to climate change based on an analysis of 13 indicators representing household characteristics, socioeconomic status, race and ethnicity, and physical conditions. Participants were asked, “How do you think different groups of people are being affected by climate change?” and could respond by writing on sticky notes. The ‘Envisioning the Future’ booth also showcased a poster which shared information about greenhouse gas mitigation, including state and county mitigation goals and presenting current County mitigation efforts.

The last booth shared how youth can engage in the Climate Adaptation Plan process (Image 4). Youth were encouraged to attend the project’s Climate Change Youth Summit<sup>3</sup> and to engage in some of the project’s keiki contests, including the Recycled Material Art Contest and the Kilo Climate Challenge<sup>4</sup>. Youth were also asked to engage in a three-question survey, in which the results from the survey would help to inform the design of the Climate Change Youth Summit. Youth could place sticky dots on the poster board in response to the three questions:

- How old are you?

<sup>3</sup> The Kauai Adaptation Plan’s Climate Change Youth Summit was held on May 7<sup>th</sup> with the aim of engaging youth in the early stages of developing the CAP.

<sup>4</sup> The Recycled Art Contest challenged keiki to use recycled material to create an art piece that expressed what climate change means to them and how it affects their home. The Kilo Climate Challenge encouraged keiki to share their observations of a place they frequent, and the changes this place may be experiencing due to a changing climate.

- I believe I can help to reduce the impacts of climate change
- I would participate at events if there are...

At the 'Youth Engagement' booth, the project team also distributed bookmarks, which had various climate change and environmental related books for keiki, young adults, and adults printed on it in an effort to encourage community members to learn more about climate change and environmental issues.



Image 4: Staff member talking to youth at the 'Youth Engagement' booth.

# Appendix E: In-Person Open House Comments

## Prompt: Vision Board

-What are your thoughts? (Coded as 'thought' in Question/Prompt column)

-What resources and assets in your community do you think are important to preserve? (Coded as 'resources/assets')

-What steps are you and/or member of your community taking to prepare? (Coded as 'steps')

-Community maps coded as 'map'

Open House Location	Question/Prompt	Comment
Līhu'e	values	responsibility means not just adapting but actively working to change our lifestyle to be more Sustainable e.g. forestation, no carbon, etc.
Līhu'e	values	Pilina (relationships)
Līhu'e	thought	walkable communities = physically and socially healthy
Līhu'e	thought	missing mixed used housing - addresses three crises: climate, transportation and housing
Līhu'e	values	Kuleana - natural resources
Līhu'e	values	equality; social justice Long term vision Sustainability obviously
Līhu'e	thought	generational equity
Līhu'e	thought	address multiple considerations: climate and housing and transportation = equity
Kapa'a	thought	work on communicating importance of forward action Sustainability
Kapa'a	thought	mauka route-> Wailua falls - reservoir (low speed, low impact, there in case of emergency)
Kapa'a	thought	lessen number of airplanes coming daily. Island can't handle that many. don't even have enough gates or workers
Kapa'a	thought	this is important! any plans for stormwater adaptations in Kapa'a Wailua? we have asked this question for over 30 years
Kapa'a	thought	small business owners will need monetary assistance
Kapa'a	thought	by 2035 go electric
Kapa'a	thought	more non-car travel options. engineer our habitat to create abundance. it's been done here before, people want it again
Kapa'a	thought	ancient Hawaiian sustainability practices
Kapa'a	thought	traditional Hawaiian practices of aloha "āina. Season to fishing, hunting etc. so resources don't get depleted
Kapa'a	values	remember we are all connected and that the earth reflects us as a whole
Kapa'a	thought	beaches - not beach houses, slower speed limits, less stop lights, higher volume traffic less wasted gas
Koloa	thought	noise "pollution" of ATV rides East of Ala Kinoiki Street (in field area). Also have noticed a great decline in Nene birds flying over our homes since this business started having ATVs near ala Kinoiki road December 2021
Koloa	thought	need a more central landfill area-such a waste of resources/noise issues/trucks having to travel through so many west side towns to get to Kekaha!
Koloa	values	the general plan should be guided to benefit the land first not the people
Koloa	values	let's take care of our parks for our children especially
Koloa	thought	advocate for increased options for farm worker housing on AG zone land. Need to support our farmers



Koloa	thought	we don't want new proposed military radar in PMRF. Great concern about increased resource dr'ainage for Kauai and other health risks
Koloa	thought	need to divert useable stuff from the dump. (Construction materials, furniture, household items that are still useable, good to have a site to hold for 60 days and give a chance to be adopted)
Koloa	values	preserve historical and archeological sites in Po'ipū/Kōloa area
Koloa	values	value: spiritual = Ao/Po; Ike= knowledge; wahi pana= sacred space; fundamentals of culture, religions practices
Koloa	values	Wai ola: water is life, living waters
Koloa	values	Na iwi kupuna: our most prized possession! Kuleana: have respect and be responsible.
Koloa	values	traditional names meaning is in the names and language
Koloa	thought	grew up fishing now there's hardly any fish water quality is poor. Reefs are dying, limu gone
Koloa	thought	burials removed for development, families removed from land, water diverted for more development
Koloa	thought	respect burials, culturally significant sites
Koloa	values	'āina= healthy consumption
Koloa	values	Alo = presence, Ha= equals (FUNDAMENTALS)
Kīlauea	thought	understanding and learning from the past can help us prepare for the future
Kīlauea	thought	it should plan and include the impact of climate change to every aspect of growth. just like we look at financial cost we need to include climate change cost

### Prompt: Social Vulnerability Index

Open House Location	Comment
Kekaha	low income HH + immigrants are why Hanapēpē heights is vulnerable
Līhu'e	identify all houseless/homeless camps
Līhu'e	psychological toll on all ages is heavy. old because we worry about our keiki. young because their world looks grim!
Līhu'e	golfers are impacting as the slope/rating of the course changes with wind patterns
Kapa'a	(Referring to northern red portion of Anahola on SVI map) higher income north end
Kapa'a	(Referring to mid-southern end of Anahola red section on SVI map from bay down) Hawaiian homelands- lots more adaptive/resilient

### Prompt: Historical Posters

Open House Location	Question/Prompt	Comment
Kekaha	Past informs present	sugarcane closed -> guinea grass creates lots of fuel for fire, sugarcane drained wetland for AG. once sugarcane closed, PMRF took over draining management
Kekaha	Past informs present	changing demographic values and expectations; changing community cohesion; used to communicate more with neighbors
Kekaha	Past informs present	white sand came from Hā'ena and black sand from Waimea valley tells us about sand transport
Kekaha	Past informs present	sugar cane closed -> state has to manage irrigation systems
Līhu'e	Past informs present	a memory project with our kupuna to better understand how Kauai has changed
Līhu'e	Past informs present	requires people willing to learn from the past
Līhu'e	Past informs present	Hawaiian past generations lived sustainability so look to Hawaiian practices- Kapu, ahupua'a concept etc.
Līhu'e	Past informs present	understand where our historic infrastructure is located
Līhu'e	Past informs present	listening to each other will be a great start
Kapa'a	Past informs present	QR code in public areas so more people can add stories
Kapa'a	Past informs present	reminiscing on past can help motivate away from focus on change
Kapa'a	Past informs present	stories reach beyond facts and engage people's emotions, which can make stories very powerful
Kapa'a	Past informs present	by knowing what happened years ago, we can better know the future
Koloa	Past informs present	Kōloahas poor drainage no access to school in emergency
Koloa	Past informs present	grove farm blocks access. Family loses access to roads and food access
Koloa	Past informs present	map of all water diversion where water goes and what happens to it
Koloa	Past informs present	lost access to Mahalepu beach our family lost ability to fish and camp
Koloa	Past informs present	history of loss of access to places such as swimming areas

Koloa	Past informs present	removal of burials at Makahuena point. Siri land corps bought land and disposed of native Hawaiians
Koloa	Past informs present	Waita reservoir breached learn from what happened
Koloa	Past informs present	dispossession and colonialism
Koloa	Past informs present	kupuna-keiki connection, force lifestyle impacts by foreign veins and concepts
Koloa	Past informs present	grove farm controls the water unlawfully when you change the course of natural waterways you have flooding in other areas
Koloa	Past informs present	it would help to work with the natural systems or the land instead of against it
Koloa	Past informs present	our parents could access Waita now we can't
Koloa	Past informs present	mana plains used to look like Hanalei. Water diversions have led to the depletion of resources
Koloa	Past informs present	Po'ipū beach has the highest number of burials (cultural layer) on the south side
Koloa	Past informs present	countless plantation era families from Kōloa are now homeless or live in poverty
Koloa	Past informs present	change in the natural waterways causes flooding
Kīlauea	Past informs present	observations from cultural perspective can help us prepare and adjust. people nowadays not invested
Kīlauea	Past informs present	coastline at Princeville -> streams flowing down to ocean. development along streams and they dried up cause of golf course
Kīlauea	Past informs present	Hanalei river wider, changed when jetties were built
Kīlauea	Past informs present	town used to be by Hanalei bridge. commerce moved makai. now by river
Kīlauea	Past informs present	Hanalei river mouth used to be wider
Kīlauea	Past informs present	fisherman reporting spawning earlier and younger because water is getting warmer
Kīlauea	Past informs present	three fishponds system for Hanalei. different fish, different seasons.
Kīlauea	Past informs present	tsunami history of Aku road. 4 ft?
Kīlauea	Past informs present	what is the salinity in Hanalei lo'i? needs monitoring!
Kīlauea	Past informs present	fish ('Anini) spawn at different time on east side than west
Kīlauea	Past informs present	informed science class project measured Ph in catchment over 3 year period and a result of an ag class. the Ph changed almost a point
Kīlauea	Past informs present	this lesson was related to yellowing health of plants
Kīlauea	Past informs present	Hawaiians used to predict seasons. now changing too fast and cannot predict
Kīlauea	Past informs present	significant change in lightening behavior in past 10 years. increasing pulse lightening. lightening can now hit the ground
Kīlauea	Past informs present	weather patterns changing. Drier, then dumps rain
Kīlauea	Past informs present	whatever was good this year not the same next year. need to adapt

### Prompt: Sea Level Rise

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-What are your thoughts? (Coded as 'thought' in Question/Prompt column)

-What resources and assets in your community do you think are important to preserve? (Coded as 'resources/assets')

-What steps are you and/or member of your community taking to prepare? (Coded as 'steps')

-Community maps coded as 'map'

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Open House Location	Question/Prompt	Comment
Kekaha	thought	property passed on from one generation to another (homestead) ; preserve personal property
Kekaha	Resources/assets	Preserve salt ponds, birds and wetlands
Līhu'e	resources/assets	Preserve cultural resources
Līhu'e	map	please don't wait for damaging event where the only post is out of commission for an extended period (sticky note by Nawiliwili)
Līhu'e	map	build higher- vulnerable to storms (sticky note by Nawiliwili)
Līhu'e	steps	mixed use housing: vibrant, walkable community. Put it here --> (arrow pointing to Rice Street area)

Līhu'e	map	isn't this where we get all our goods for the whole island? underwater!! (In reference to Nawiliwili)
Līhu'e	map	homeless people (Niumalu Beach Park area)
Līhu'e	thoughts	land bank beach/shoreline park expansion esp. salt pond beach park
Līhu'e	thoughts	allow beaches to retreat
Līhu'e	thoughts	restrict/eliminate shoreline mitigation measures for one property that jeopardized adjacent properties
Līhu'e	thoughts	restore fishpond
Līhu'e	map	restore/preserve forests especially native forests (sticky note left of Hule'ia River)
Līhu'e	steps	HHARP community plan (Hanapēpē-'Ele'ele)
Līhu'e	thoughts	communities/residents need help - easier import of battery storage units (small scale) - more Prius type engines with solar
Līhu'e	steps	we don't need to just prepare, we need to reduce carbon emissions, we drive an EV, hang up our clothes, plant trees, work with community, etc.
Līhu'e	steps	trying to change policy-working with legislature on carbon fee and cashback, volunteering with community, organizations, conducting educational settings
Līhu'e	thoughts	keep all businesses out of beach parks. no rentals, etc.
Līhu'e	thoughts	sea level rise will not only effect coastal properties, but transportation, resources, etc.
Līhu'e	thoughts	how do we assess "good" places to accommodate coastal retreat?
Līhu'e	thoughts	we're facing the prospect of major impacts on our lives- it truly is an existential crisis
Līhu'e	Resources/assets	forests, some beaches, sea life (coral, fish)
Līhu'e	resources/assets	the harbor is our only harbor for bringing goods to the island
Līhu'e	resources/assets	save our beaches-for recreation, open space, turtle and monk seal resting
Līhu'e	thoughts	Preserve beaches and parks!
Kapa'a	thoughts	cesspools and infrastructure (roads, electric, water) are vulnerable. not just to loss, but also to polluting as they get storm water
Kapa'a	thoughts	monetary assistance to homeowners should be given as a flat rate rather than based on individual property values
Kapa'a	thoughts	need emergency roads identified
Kapa'a	thoughts	cesspool to septic tank financial assistance. I want to change but money is a problem
Kapa'a	thoughts	to encourage and protect reef growth and preservation will help protect shoreline
Kapa'a	Resources/assets	support farmers shift from big ag to regenerative ag
Kapa'a	resources/assets	kalo fields, lo'i, fisheries, farmers markets, EBT/snap, local dairies
Kapa'a	resources/assets	wetlands
Kapa'a	resources/assets	roads and beach access
Kapa'a	steps	beach access
Kapa'a	steps	eating local establishing food sovereignty growing kalo, farming
Koloa	steps	speaking out at planning meetings to bring awareness and change
Koloa	resources/assets	koloa-Po'ipū water reclamation facility approved by Katherine Kaeloha 13-year-old permits
Koloa	steps	look at other "sewer" options so can build smaller homes/ADV at more places. Need more affordable homes
Koloa	resources/assets	estuaries are special places for learning, marine life
Koloa	thoughts	what were the results of the estuary studies (DLNR)?
Koloa	steps	address concerns on over development
Koloa	steps	stopping over development
Koloa	thoughts	too much water diversion
Koloa	thoughts	quality of life is decreasing. Access to clean fresh water and land to farm is nonexistent

Koloa	thoughts	Po'ipū and Kōloa really need a sewer system to provide this community - building septic systems too difficult (coast and ability)
Koloa	resources/assets	local families cannot enjoy the beach. Tourism is uncontrolled, no education for visitors
Koloa	resources/assets	water ways underground resources- caves, lava tubes
Koloa	resources/assets	Kōloa cave spider and Kōloa cave amphipod found nowhere else in the world! Kōloa cave ecosystem is 1 of the 10 most critically endangered cave systems in the world
Koloa	resources/assets	preserve shoreline. Over tourism is depleting natural resources
Koloa	thoughts	want to have river water returned to 1980 level. Hanapēpē river valley at the old "road crossing area"
Koloa	resources/assets	fishponds are gone. Historical sites bulldozed. Shoreline erosion with more development
Koloa	steps	focus on what to do about Lāwa'i road?
Koloa	resources/assets	most important asset... ancestral bones in the land they rested in before being disturbed
Koloa	resources/assets	loosing access to fishing grounds. Makahuena and many others
Koloa	thoughts	traffic studies in adequate round about poorly designed in emergency will be disaster in evacuation
Koloa	resources/assets	underground water studies need to be protected
Koloa	resources/assets	Waita reservoir has 3.2 billion gallons of water with no warning or monitoring system
Koloa	steps	green streets, more tree coverage
Koloa	thoughts	surf spots will be worse with SLR... but may create reef parking lots LOL (not funny)
Koloa	steps	more trees at parks
Koloa	steps	reduce burden on coral reefs and ocean creatures by decreasing pollution and runoff
Koloa	steps	stop development: development leads to water theft and diversions which lead to flooding and fires in other areas
Koloa	resources/assets	coastal erosion as it affects homes, change zoning to make those spaces public beach
Koloa	resources/assets	beaches. public trust. natural resources. beaches important economically
Koloa South Shore map	vulnerability	Huge development. How will they all evacuate? (Mauka end of Lāwa'i road)
Koloa South Shore map	Vulnerability Adaptation	Stop permitting coastline development. Soon enough they will be underwater... who will clean up the mess and decommission the sewage treatment (sticky note floating in ocean)
Koloa South Shore map	Adaptation	Rezone, especially coastlines (sticky note floating in ocean)
Koloa South Shore map	Experience Vulnerability	Homes across harbor used to have big sandy beach (left of Kukuiula boat harbor)
Koloa South Shore map	Vulnerability	Development planned next to beach- Kukuiula (sticky note by Kukuiula boat harbor)
Koloa South Shore map	vulnerability	This area is vulnerable to hurricane (arrows pointing to homes makai of Lāwa'i road)
Koloa South Shore map	Adaptation	Spouting Horn Rd. has seawalls. Rocky shoreline. Why can people not remodel their home if they are not 60' from shoreline? (Lāwa'i road)
Koloa South Shore map	vulnerability	Beach house restaurant. Want to build closer to the wall.
Koloa South Shore map	adaptation	Where is the evacuation plan? (Koloa)
Koloa South Shore map	vulnerability	Baby beach shore shrinking. Sand disappearing. (Po'ipū)
Koloa South Shore map	Experience Vulnerability	I observed higher water levels this past fall/winter in the Po'ipū area- 1-2 feet higher on both regular times and high king tides. Also, beach is steeper and less sand at Po'ipū.
Koloa South Shore map	vulnerability	Runoff. Kills life+ coral (arrow pointing to Po'ipū coastline [Hoonani Rd])
Koloa	vulnerability	Coral reef (mauka of Po'ipū coastline)

South Shore map		
Koloa South Shore map	vulnerability	Kids inaccessible during flood (Kōloa Elem. School)
Koloa South Shore map	vulnerability	Poor drainage (sticky note over Po'ipū Road/community by Lopaka Paipa Blvd)
Koloa South Shore map	vulnerability	Burial Caves and Waterways underground (Po'ipū)
Koloa South Shore map	vulnerability	Kiahuna. Building close to beach (Kiahuna plantation resort)
Koloa South Shore map	vulnerability	Kiahuna building falling into ocean (Kiahuna)
Koloa South Shore map	Vulnerability	Koloa-Po'ipū water reclamation will utilize ancient cave systems and lava tubes. (Po'ipū)
Koloa South Shore map	Adaptation	No in-depth studies of caves and lava tubes (sticky note by coastline between weliweli ahupua'a and Pa'a ahupua'a)
Koloa South Shore map	vulnerability	Hotels/developments do deep well injections. Sewage is pumped down underground, but island is porous. Freshwater springs will be inundated with sewage. People used to be able to get fresh drinking water from ocean floor since it is all connected. We should be concerned about sewage in ocean.
Kapa'a Moloa'a -Anahola map	vulnerability	1-land road due to erosion (sticky note pointing to Aliomanu Rd).
Kapa'a Moloa'a -Anahola map	vulnerability	Lots of bush fires over here (mauka Kūhiō Hwy up Hokualele Rd.)
Kapa'a Moloa'a -Anahola map	Vulnerability adaptation	Lot of bad people make bush fires. Find them with drones! (Sticky note mauka Kūhiō Hwy within Anahola)
Kapa'a Moloa'a -Anahola map	vulnerability	Bridge damaged in 1991 flood (Anahola bridge)
Kapa'a Moloa'a -Anahola map	vulnerability	Are there cesspools here? (Community mauka and makai of Hwy where Kanuikapono is)
Kapa'a Keālia- Kapa'a map	vulnerability	Alternative Access (Keālia Rd.)
Kapa'a Keālia- Kapa'a map	vulnerability	Underground powerlines (pointing to Kūhiō Hwy behind Keālia Beach)
Kapa'a Keālia- Kapa'a map	vulnerability	Keālia could be lost like Wailua is currently (point to Keālia beach)
Kapa'a Keālia- Kapa'a map	adaptation	Alternative Access (Hauuaala Rd.)
Kapa'a Keālia- Kapa'a map	vulnerability	Pavilions gone (Waipouli park)
Kapa'a Keālia- Kapa'a map	adaptation	Future wetlands right? How can we plan to make these areas productive and increase our resilience? (Waipouli Ahupua'a)
Kapa'a Wailua-Lydgate map	vulnerability	more cesspools here-data is incomplete
Kapa'a Wailua-Lydgate map	adaptation	Haul cane road bypass. Wailua River Crossing (Wailua Ahupua'a mauka area by DHHL land)
Kapa'a Wailua-Lydgate map	adaptation	Road bypass was discussed in the past (Wailua Houselots area pointing to where there could be future wetlands)
Kīlauea Wailua-Lydgate map	vulnerability	Sand disappearing (Wailua Beach)
Kapa'a Wailua-Lydgate map	vulnerability	What are the alternatives? (Pointing to Wailua Beach)
Kapa'a Wailua-Lydgate map	adaptation	Park here instead of hotel (pointing to Cocopalms)
Kapa'a Wailua-Lydgate map	vulnerability	Bridge vulnerable to tsunami (Wailua Bridge)
Kapa'a Wailua-Lydgate map	adaptation	Desalination plant? Will it lower the water levels? (Sticky note out in ocean makai of Wailua beach)

Wailua-Lydgate map		
Kapa'a Wailua-Lydgate map	vulnerability	King tides flood to the grass (before Waimea bridge at Lydgate and by Hilton Garden)
Kapa'a Wailua-Lydgate map	vulnerability	STP (sewage) floods park (Lydgate area)
Kapa'a Wailua-Lydgate map	vulnerability	This is where it flooded March 2020 (mauka Kūhiō Hwy from Hā'ena)
Kīlauea Wainiha- Hā'ena map	adaptation	Buy-out vulnerable properties- coastal land trust ( Hā'ena)
Kīlauea Wainiha- Hā'ena map	vulnerability	Road is threatened (Lumaha'i)
Kīlauea Wainiha- Hā'ena map	vulnerability	Get updated cesspool maps (ask Hanalei Initiative) (Hanalei)
Kīlauea Wainiha- Hā'ena map	adaptation	Conversion of cesspools must use anaerobic, or disinfectant, aerobic treatment (Hanalei)
Kīlauea Wainiha- Hā'ena map	vulnerability	Hanalei Pier was and sometimes had rocky front-- water came up to park grass. Lots of limu 'ele'ele on rocks! More deep-sea fish in shallows!
Kīlauea Princeville-Kalihiwai map	adaptation	The hau is laying into the river. Needs to be cut (Hanalei river)
Kīlauea Princeville-Kalihiwai map	adaptation	This is for sale by Mowry Trust. Purchase for flood control and wetland habitat (land right of Hanalei River)
Kīlauea Princeville-Kalihiwai map	vulnerability	'Anini once known for limu, he'e, fish! 'Anini Kalihikai Hanapai ('Anini shoreline)
Youth Summit	vulnerability	Erosion is happening quickly around the island. We can fortify bridges and roadways to make sure they stand strong to rising water levels

### Prompt: Storm/Precipitation

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-What are your thoughts? (Coded as 'thought' in Question/Prompt column)

-What resources and assets in your community do you think are important to preserve? (Coded as 'resources/assets')

-What steps are you and/or member of your community taking to prepare? (Coded as 'steps')

-Community maps coded as 'map'

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Open House Location	Question/Prompt	Comment
Kekaha	resources/assets	more landscaping for stormwater runoff
Kekaha	resources/assets	buyout programs; move residential homes on stilts; flood protection wall (but last resort!) maintenance might be an issues
Kekaha	resources/asset	Rockwall has been effective! hasn't moved even since Iniki
Kekaha	resources/asset	wetlands: Waimea 400 -> multiple use. need flood management
Kekaha	thoughts	never thought landslide would happen in Waimea
Kekaha	thoughts	we need to prepare for CC in Kekaha! need more meetings like these
Kekaha	thoughts	ocean is our neighbor; generational homestead; cost is high for flood insurance; too expensive to buy more land; affordability; not allowed to build more
Kekaha	thoughts	if you turn off something essential, you force people to look at alternatives
Kekaha	thoughts	you make the predictable (more extreme weather) unpredictable
Kekaha	thoughts	affordability is impacting families to stay in Kauai; can kama'āina/homestead build more units, even in SLR, for extended families?
Kekaha	steps	part of Kauai Coffee co should adjust; larger landowners need to help
Kekaha	steps	save money for possible damage; housing needs to stay livable; move homes to safe location?
Līhu'e	map	Rockwall impacts to fishpond, possible transparency to let wildlife through? (Pointing to break wall at Nawiliwili)
Līhu'e	thoughts	trade winds- golf course 2/3 of the time, wind isn't as steady (concept of handicap). winds changing!

Līhu'e	thoughts	more flash floods, sporadic weather
Līhu'e	thoughts	went through dry winter
Līhu'e	thoughts	Iniki: kupuna knowledge. newcomers who expect convenience from mainland are not ready! only come to island for "paradise"
Līhu'e	thoughts	we want to be food sustainable but depends on our rains. there's a drought throughout the state, impacting farming and growing food
Līhu'e	thoughts	we must not just adapt, we must reduce/eliminate carbon emission s
Līhu'e	thoughts	uneven weather patterns harden soil, leads to more flooding, impacts aquifer systems
Līhu'e	thoughts	living on a slope. we haven't had rains that we used to
Līhu'e	thoughts	population & development affects storms and what gets soaked into the soil vs. flooding
Līhu'e	thoughts	1930s: no hurricanes, just storms. weather pattern completely changes. feels like more storms now, no hurricanes since 1992
Līhu'e	resources/assets	no landslide insurance? assess risk of homes
Līhu'e	resources/assets	May: disaster prep month! how do we grow stuff? Ag land w/ water!
Līhu'e	thoughts	strengthen maintenance of infrastructure. address wastewater
Līhu'e	thoughts	fishpond, will they raise levy/wall due to SLR?
Līhu'e	steps	more native plants
Līhu'e	resources/assets	floating lo'i and salt-tolerant food for food sovereignty
Līhu'e	steps	stories! what use to be and what is now
Līhu'e	resources/assets	preserve alakoko fishpond but think how rock wall will impact flow of fishes
Līhu'e	steps	built in aqueducts? residential latches to use rainwater to water gardens
Kapa'a	thoughts	food security-> flooding and outdated sewage systems = pollution (esp. east side, Moloa 'a, west side)
Kapa'a	thoughts	housing safety
Kapa'a	thoughts	outlet reservoirs to help prevent stream flooding
Kapa'a	resources/assets	communication after disaster - radio
Kapa'a	resources/assets	resilience hubs - get food, any supply, meeting place leave messages for each other
Kapa'a	resources/assets	food security -planting fruit trees, help people start backyard
Kapa'a	resources/assets	hand radio operators. portable generators. satellite phones
Kapa'a	steps	prepare + mitigation
Koloa	map	Sugar lands used to be drained and irrigated. Now it's getting fuller and fuller (right of Waita Reservoir)
Koloa	map	Waita reservoir was wetland 200 years ago. Grove farm made it into a reservoir. If it breaks, will take out the town. Access to the reservoir is limited. We need eyes on the reservoir. (Waita Reservoir)
Koloa	map	flooding in 2018, shoveling sludge for days (sticky note is in town near Wailani Rd.)
Koloa	map	the water isn't being used for anything. Could be used for hydroelectric (sticky note below Waita Reservoir)
Koloa	resources/assets	thank you to the leaders of the Kōloa community association. Hope to have a community meeting soon
Kīlauea	resources/assets	farmland, existing houses, solar panel regions, beaches, forget golf courses and malls!
Kīlauea	resources/assets	agriculture and endangered species homes
Kīlauea	resources/assets	roads and houses critical infrastructure
Kīlauea	steps	surface water infrastructure for future use and for mitigating water/rain events
Kīlauea	steps	creating an AG center for growing food security and resiliency
Kīlauea	thoughts	overall, less rainfall. More concentrated when it falls
Kīlauea	thoughts	2022-> USGS water river gauge reported negative values on y-axis
Kīlauea	thoughts	Hanalei low-lying. Will salt come up? Is there enough freshwater in lo'i to prevent that? Economic impact?
Kīlauea	thoughts	how can we capture and use more rainwater? Be less reliant on importing water/water bottles
Kīlauea	thoughts	we cannot prepare for what is coming but we can remain flexible to face the future
Kīlauea	steps	individual property flood mitigation measures like ditches and swales on the edges of yards
Kīlauea	steps	talking with friends and family about the possible impacts of climate change and how we can help
Kīlauea	steps	portable solar panels (put on car roof or house etc.) to charge mini electric generators, in event of power outage
Kīlauea	map	(Kūhiō Hwy between Hanalei and Princeville) road/highway at risk of landslide, needs monitoring
Kīlauea	map	road eroding into ocean at corner (corner of Wainiha bay)
Kīlauea	map	Landslide area right by road +erosion at corner (Kūhiō highway, by Hā'ena Beach Park)
Kīlauea	map	Erosion below road at corner by recent repair work. (Right hand side Wainiha Bay)
Youth Summit	steps	Increase water barrier strength and relevancy

### Prompt: Heat/ Wildfire

-What are your thoughts? (Coded as 'thought' in Question/Prompt column)

-What resources and assets in your community do you think are important to preserve? (Coded as 'resources/assets')

-What steps are you and/or member of your community taking to prepare? (Coded as 'steps')

-Community maps coded as 'map'

Open House Location	Question/Prompt	Comment
Kekaha	thoughts	concern about vulnerability of native bird species
Kekaha	thoughts	things started drying up after cane ended. no more irrigation and no more green
Kekaha	thoughts	not climate change but zone management issues
Kekaha	thoughts	people used to go watch for fire and report it immediately
Kekaha	resources/assets	ocean breeze helps ventilate homes
Kekaha	thoughts	building at the mill contaminate soil; scary if a fire went there... toxic smoke would burn; no one manages it, and kids go
Kekaha	thoughts	landfill, PMRF
Kekaha	resources/assets	parks can be a refuge
Kekaha	resources/assets	tree can be planted in public parks
Kekaha	steps	plant more trees; stop cutting down trees
Kekaha	thoughts	protect powerline on Koke 'e road from fire and people; maybe just let it burn... the mauka AG land
Kekaha	steps	controlled burns to manage wildfire risk- so much guinea grass
Kekaha	steps	plant trees
Kekaha	steps	AG, trees, highly built ceilings, fans in homes
Līhu'e	resources/assets	contractors on call, equipment, disaster plan that can respond
Līhu'e	resources/assets	native forests and diverse forests
Līhu'e	thoughts	monoculture is attributing to risk, need diversified agriculture
Līhu'e	thoughts	should be considering wildlife in hazard mapping
Līhu'e	thoughts	more drainage in Līhu'e
Līhu'e	thoughts	surprised to learn about high fire risk
Līhu'e	thoughts	water temps around Kauai have been cooler in last 8-10 years
Līhu'e	thoughts	mowing the grass on the side of the highway decreases wildfire risk on west side
Līhu'e	steps	plants on the coast/shoreline to hold the sand in place
Līhu'e	steps	working with KCC to pull together community orgs to increase + strengthen local food systems
Līhu'e	steps	plant more native and drought resistant plants
Līhu'e	steps	grow coral reef, plant trees, kill invasive trees, weeds, seeds, fish, insects
Kapa'a	thoughts	protect Na Pali coast
Kapa'a	thoughts	lack of awareness is causing ppl not to care
Kapa'a	thoughts	hotter now on east side than it was when i was a child
Kapa'a	thoughts	change in wind, weather, heat
Kapa'a	thoughts	surprised of fire risk in Kapahi because it's so wet
Kapa'a	thoughts	climate change is learned and it's now or it keeps going
Kapa'a	thoughts	we need more awareness and education about what it is and how it impacts us as individual... change does not happen day/night
Kapa'a	thoughts	how many houses were lost when we built seal wall? building industry would rather pay fine than listen
Kapa'a	thoughts	people who need to be concerned about climate change are folks in building industry... not individual citizens
Kapa'a	thoughts	trees/jungle surrounding home is fire hazard
Kapa'a	resources/assets	summer 2019 was hot... has gotten hotter over years but this year is inconsistent weather.
Kapa'a	resources/assets	Waimea ... one bridge? cut off becomes defense issue
Kapa'a	resources/assets	Wailua road in time of tsunami is most vulnerable
Kapa'a	thoughts	we need roads further inland, road from Kapa'a to Puhi after cannery... what happened?



Kapa'a	steps	native plants on homestead properties keep soil biology back to times of native Hawaiians keep soil healthy to decrease soil erosion
Kapa'a	thoughts	those who are responsible are developers and businesses have biggest footprint and need to be responsible
Kapa'a	thoughts	suffering. no steps to prepare for heat
Kapa'a	steps	trees can be helpful and hold heat. erode soil and lost trees in Iniki
Koloa	thoughts	sediment runoff to coral won't permanently damage but will temp change will
Koloa	thoughts	concerned about chemical exposures from nearby farming (big farm companies)
Koloa	thoughts	a lot of bleached/ dead coral on Kauai- how much is affected by temp changes?
Koloa	thoughts	reservoir management: I think majority of Lāwa'i stream's water is diverted and so much of it is lost by bad reservoirs that seep too much into the ground. Need maintenance
Koloa	thoughts	fewer days of rain, more consecutive days of sun
Koloa	thoughts	surf has changed, is inconsistent. Hotter in last 5 years, need AC
Koloa	thoughts	increase in precipitation = increase runoff. Need to do more native plant restoration to replenish aquifers and hold the land together!
Koloa	thoughts	exponential change is climate change
Koloa	thoughts	dam health in big trouble. 2-week water supply of extreme drought
Koloa	thoughts	we're starting to get more fires here. What happens when insurance companies become broke, or people can't afford?
Koloa	thoughts	hotter in last 50 years, feels hotter, ozone missing, and sun is stronger
Koloa	steps	water use control
Koloa	steps	increase public awareness and education. Self-sufficiency and sovereignty
Koloa	steps	need to look into health of dams on Kauai, we have two-week water supply only! Takes 20 years to rebuild
Koloa	resources/assets	archeological site in Po'ipū subdivision estate w/haole Koa Forest
Koloa	resources/assets	coral reefs and beaches
Koloa	resources/assets	Hanapēpē river level is so low further up the valley unable to access and fish
Koloa	resources/assets	unable to access Lāwa'i Kai beach
Koloa	thoughts	diverting water out of an ahupua'a to suit the needs of development in another causes drought/imbalance of precipitation which causes wildfire. Kanaka Maoli ways teaches us that water stays in an ahupua'a from mountain to sea
Koloa	thoughts	wildfires are direct result of water diversions. Water no longer flows its natural course to keep all of Kauai hydrated and green
Koloa	resources/assets	ala kinoiki road needs fire hydrants. Past 3 significant fires scary. Fire trucks only had fire hydrant by Kauai Christian fellowship. Fire was more south
Koloa	thoughts	we have had 3 significant fires last fire June 2019 and we had to evacuate our Po'ipū home
Koloa	resources/assets	water diversion has depleted natural water sources
Kīlauea	map	fire on ridgeline in 60s... to reduce erosion the state ariel seeded it with non-natives because there were no natives available (Halele'a)
Kīlauea	thoughts	studies done by Hawaii wildfire management organization
Kīlauea	resources/assets	hunters have best knowledge of dryness in forest. Noticing drier growth
Kīlauea	resources/assets	36 hazard ratings: subdivision, vegetation, buildings, fire environment, fire protection, rainfall, sloping, road maintenance width, access

### Prompt: 10x10 map

Open House Location	Question/Prompt/Theme	Comment
Koloa	vulnerability	fish (la) navigate by smell, impact by loss of native forest and plants. Death of reef = lost sustenance (West side)
Koloa	vulnerability	negative impacts of dams and agricultural diversions. Habitat fragmentation-blocks fish passage. Reduction in stream flow. Sediment transportation = floodplain flooding (west side mauka)
Koloa	vulnerability	water diversions (Wainiha to Koloa)

Koloa	vulnerability	drought = fires impact on animals, houses and humans (Kōloa Po'ipū)
Koloa	vulnerability	water diversions = loss of spring Punawai (Kōloa Po'ipū)
Koloa	vulnerability	no evacuation plan! No warning system! (Waita reservoir)
Koloa	Experience vulnerability	dam breach 3.2 billion gallons at Waita! Increase of water usage = more management (Waita reservoir)
Koloa	vulnerability	destroying cave systems during development = cutting off our nostrils from the mountain tops to the ocean (spring water) (Kukui Ula) Kōloa Po'ipū
Koloa	vulnerability	traffic, drainage, evacuation, waste, what's the plan? Human activity increase. Kauai master plan (Līhu'e)
Koloa	vulnerability	kanaka maoli iwi kupuna impact our belief is nalwi is what nourish the land, large impacts along the coastal areas and cave systems (southside)
Koloa	vulnerability	development (Līhu'e/Puhi)
Koloa	vulnerability	overdevelopment that led to damaged fisheries (Līhu'e)
Koloa	vulnerability	development (Wailua)
Koloa	vulnerability	Development (Kapa'a )
Koloa	vulnerability	development (Anahola)
Koloa	vulnerability	caves and endangered species (East side)
Koloa	vulnerability	unlawful rezoning from ag to residential... more wells? Water diversions (Kīlauea)
Koloa	vulnerability	Kīlauea maxed out on water. Talks of drilling into our aquifer (contamination)
Koloa	vulnerability	development (Kalihiwai and Princeville)
Koloa	vulnerability	flood hazard! (Hanalei)
Koloa	vulnerability	wetland hydrology and soil vegetation (Hanalei Bay)
Koloa	vulnerability	development 200 acres (Haena)
Koloa	vulnerability	watershed (Alakai)
Koloa	vulnerability	native bird's climate change as it warms it creates disease transmitting mosquitos. Water management (Interior Island)
Koloa	vulnerability	water diversions: pollution, contamination, pesticides, clean water, water is life (upper Wainiha valley)
Koloa	vulnerability	unlawful water diversion that are detrimental to County's proposed CAP (Wainiha)
Koloa	adaptation	wetlands: flood protection, improve water quality, sediment (island wide)
Koloa	vulnerability	Kukui ula drainage empty here kids getting ear infections (South side)
Koloa	Adaptation vulnerability	impact of native birds. Hawaii holds the record for the most extinct birds in the world. Solution: forestry (island wide)
Kīlauea	Adaptation Vulnerability	big storms, rain bombs and 100 storms (+ tsunamis) affected BIPOC disproportionately. sharing culture saves lives
Kīlauea	Equity vulnerability	socio-economic changes. migration of people to vulnerable or less vulnerable areas
Kīlauea	Process equity	need a narrative explaining the complexity of social vulnerability
Kīlauea	Vulnerability equity	socio-economic strata on lands. have spread vulnerable people live in less climate vulnerable areas. but they are still vulnerable
Kīlauea	Vulnerability equity	vulnerability is hard to assess by people. rural areas are becoming less populated by Hawaiians for example
Youth Summit	Adaptation	cleaning up trash and stop dumping trash everywhere
Youth Summit	adaptation	remove dry invasive species for fire prevention
Youth Summit	adaptation	release Wolbachia mosquitos!!!!
Youth Summit	adaptation	COCO Palms: raise money to purchase the land and put it into a land trust. turn into a community center that focuses on Hawaiian culture and sustainability agriculture (Coco Palms)
Youth Summit	adaptation	organize community to steward Nounou and Wailua park (create healthier green spaces with native species) (Wailua)
Youth Summit	adaptation	planned retreat along Hanapēpē River, dechannelize the stream and create wetlands for habitat and water retention (Hanapēpē)
Youth Summit	vulnerability	the degradation of native forests due to crop agriculture industry
Youth Summit	experience	the people in my area talk about how hot it has gotten (Kaumakani)
Youth Summit	experience	Iniki 92: water raised 3 feet and Kekaha was underwater (Kekaha)
Youth Summit	experience	Hanalei landslide 3/2021 (Hanalei)
Youth Summit	Experience	north shore flooding landslides 2018 rain bomb (Hanalei, NS)
Youth Summit	vulnerability	wind knocked over and broke the Hanapēpē swinging bridge in the last year (Hanapēpē Swinging Bridge)
Youth Summit	vulnerability	Brennekes in Kōloahas changed. it used to have no rocks and big backwash (Koloa, Brennecke's Beach Broiler?)
Youth Summit	vulnerability	the sandbar at Po'ipū beach is completely eroded (?), while it was totally there less than a decade ago (Po'ipū)

Youth Summit	vulnerability	flooding (Wailua-Kapa'a area)
Youth Summit	vulnerability	'Anini beach park: update the septic system! ('Anini)
Youth Summit	vulnerability	we should focus on hillsides along the highway past Princeville towards Hanalei (Hanalei)
Youth Summit	vulnerability	Sea level rise along Hanapēpē River (Hanapēpē River)
Youth Summit	vulnerability	the Hanalei bridge is at risk of being unusable due to severe weather worsened by climate change (Hanalei Bridge)
Youth Summit	vulnerability	the bridge by Kalapaki could be flooded (Kalapaki)
Youth Summit	adaptation	rehabilitating bleached coral in Kalapaki (Kalapaki)
Youth Summit	adaptation	Kapa'a library will have to be relocated due to sea rising (Kapa'a Public Library)
Youth Summit	vulnerability	water has been redirected, causing bad flooding (2018 NS flood). wetlands unmanaged in general have devastating effects (stand in Hanalei area)

### Comment Cards

Event Location	Theme	Comment
Hale Halawa'i Hanalei	Mitigation ideas	airlines should give tutorials as tourist fly to Hawaii on how to take care of coral, turtles, monk seals, ex: don't stand up and talk on the coral; stay away and quiet if there is a monk seal or turtle on the beach
Hale Halawa'i Hanalei	Process Vulnerability Mitigation ideas	talk with rotary club; would like to see interviews/take posted on social media; want to learn more about sea level rise adaptation options- speaker series; transportation, want to learn more; noticed coral more degraded in 30 years; car centric island, do not feel comfortable riding bike
Kekaha Open House	Adaptation	stop cutting down trees, plant more trees for oxygen and shade
Kekaha Open House	Vulnerability Process Equity	-WKCDP: understanding why input wasn't incorporated. follow up w/community. - outreach difficulty, not feeling heard. -political will *challenge* - biggest challenge is AG, less rain, hotter, more evaporation and transpiration. - finances are a challenge. - migration is #1 social problem. - electric car difficult for Kauai. - hydrogen as a way forward. - scenic resources need better management and prioritization
Kekaha Open House	Adaptation	the state needs to move the Kekaha highway inland
Kekaha Open House	Vulnerability Process Equity	concern over ocean-front property. - who will look after local people? - we need to listen to locals and make sure this plan represents their interests
Kekaha Open House	Process Equity	i think that many poor Hawaiians may think that there is nothing they can do to impact climate change and that they can't afford to make changes. we need to let them know the power of voting and holding our elected officials accountable. We also need to let them know that they need to speak up. People will listen and care about them
Kekaha Open House	Mitigation ideas	-GHG reduction through EV cars; photovoltaic as GHG reduction; however, they have a 20-30-year lifespan; subsidies for EV vehicle
Kekaha Open House	Mitigation ideas Vulnerability adaptation	shift to wind ASAP; complete recycling of everything that comes to Kauai. we have too much plastic; cans and glass easier to recycle; current mayor not trying to recycle (?)
Līhu'e Open House	Mitigation Ideas	we cannot adapt our way out of this. We must change the way we live to eliminate fossil fuels and sequester carbon, and restore our natural environment on land and sea
Kekaha Open House	Mitigation ideas Vulnerability adaptation	bring back the Hawaii super ferry catamaran ship
Līhu'e Open House	other	you guys are doing a great job by spending time reaching out. Kauai needs to be safer and more enjoyable. Concerns: because of you guys, I have no concerns. Questions: what will it take to get all Kauai to get involved in climate change on this island and all the other islands?
Līhu'e Open House	Process	at KOD (planning to re-open in 4 weeks), feel free to discuss having static displays, handouts, etc. on climate change, resilience, disaster planning, etc. (808)-651-1457
Līhu'e Open House	Adaptation Education	need help by government in the following areas: A) CERT: reactivate/revitalize/strengthen CERT. CERT provides valuable training and resources at the community/neighborhood level. B) CERT: improve coordinated response to emergency/catastrophic events or allow communities to self-activate. C)

		emergency shelters/evacuation shelter-need to be retrofitted to withstand min. level 3 hurricane D) Hanapēpē-build a new multi-purpose building that is also usable as an emergency shelter/evacuation shelter that is not at a school and is west of Hanapēpē river (where both bridges are vulnerable to flood damage- severing the vital link to emergency services and current shelter at 'Ele'ele school. Location 9preferred) is on state land adjacent and makai of Kaumualii Hwy, west of Hawaiian cemetery. Include a parking lot that is usable as a temporary "tent city" during post-catastrophic event recovery
Līhu'e Open House	Adaptation	allow sandy beaches to retreat (rather than lose the beach) set aside/acquire sufficient land to allow that to happen (ex: salt pond beach park). Expand/landbank state-owned land beyond current park boundaries for shoreline retreat expansion of beach park mauka and westward
Līhu'e Open House	Resources	take into consideration the work of Dr. Chuck Blay on seasonal shoreline/beach changes that is different from Dr. Chip Fletcher
Līhu'e Open House	Vulnerability Adaptation	in Hanapēpē-'Ele'ele, there is insufficient capacity at 'Ele'ele school and shelter-in-place is encouraged. A) need to help homeowners (many in single wall homes) create safe rooms or external toolshed/safe room/shelter. County could create a suite of pre-approved building plans for saferooms, bldgs. this would lower cost to homeowner and speed up approval process. This is a critical need that the county could do now.
Līhu'e Open House	Vulnerability Adaptation	in Hanapēpē heights-the surface drainage system needs to be improved in the following ways: A) re-grading of grass swales on both sides of all roadways. B) rebuild or fix drainage culverts/drains that the swales drain into. * there is currently sheetflow during high rain events mid-blocks that jeopardize house foundations and force some homeowners to buy federal flood insurance because of the vulnerabilities caused by poor maintenance of grass swale and drainage culverts.
Līhu'e Open House	Process Mitigation	adaptation is important, mitigation is critical. Adaptation alone is a losing race. If I had to do %, adaptation is 10%, mitigation is 90%
Kapa'a Open House	Adaptation Green-Blue Infrastructure	I noticed the reef right out front of the community center here in Kapa'a has some deep-water areas which show where the coral is not growing? If we could encourage coral growth, it could also keep waves from crashing into the cliffs and eroding the shore
Kapa'a Open House	Process Outreach	biomass burning concerns make social vulnerability easier for people to understand. Use more descriptive and Lamens terms to described discrepancies
Kapa'a Open House	Equity Adaptation	most coastal property owners are very wealthy. I think we should give out monetary assistance to these homeowners with this in mind
Kapa'a Open House	Equity	what's happening with the Loop Road KIUC projects (hydroelectric?). It seems like most of the coastal erosion/SLR will affect wealthy residents that may not be as severely affected by it
Kapa'a Open House	Other	contributing to too many people coming in and out of the island is the amount of airline traffic. We are at an advantage as an island. Pretty much the only way to get here is by plane. There are too many planes coming in every day. Kauai's airport, roads, beaches, etc. is too small to sustain all of that. do we need that many mainland flights daily? we don't have enough gates, parking, and especially employees. to handle that. sometimes the balance to everything is not to build more, make bigger. sometimes it's just to wait. not yet. come when there's room. not to mention the gas emissions that all contributes to congestion of air
Kapa'a Open House	Resources	ref: wheelabrator baltimore is an integral part of an energy environmental and economic infrastructure, providing sustainable waste management. <a href="http://www.wtienergy.com/plant-locations/energy-from-waste/wheelabrator-baltimore">www.wtienergy.com/plant-locations/energy-from-waste/wheelabrator-baltimore</a>
Kapa'a Open House	Process Mitigation Adaptation	add mitigation to the title-prevention and mitigation should be our first responsibilities! Actions and legislation: support KIUC goals of 100% renewable energy; support electrifying transportation; increase promotion of chargers; reduce rental cars (promote busses); require greater setbacks for all new construction or major modifications; mandate solar H2O ON ALL RESIDENCES; INCREASE DENSITY IN URBAN CORE; WORK WITH STATE AND FEDS TO REDUCE EMISSIONS FROM AIRLINES; KEEP FOODWASTE OUT OF LANDFILL (Reduce methane)
Kapa'a Open House	vulnerability	Drainage issues are never resolves- still have odors from Wailua WWD
Kapa'a Open House	Mitigation	GGM goal: to reduce CO2 emissions from transportation, which is 62% of COK GG emissions currently. COK goal of 25% GGE by 2025 is admirable. My recommended means to approach the goal above: INCREASE KC EV CHARGING STATIONS. Reason 1: a significant surge in EVs is coming from auto and truck manufacturers. reason 2: KC may have 60 EV charging stations but that is insufficient public charging stations. improvement: use federal and HI state transportation funds to rapidly increase the number of EV charging stations
Kapa'a Open House	Process	KIUC partnerships-muy importante. YOLO the biomass nonsense. Restructure/re-word materials for info: reason being it's fairly difficult for someone who already knows about these kinds of things to process and interpret the info. Make it easier to read and understand. try catering to the demographic who doesn't know those things already- they're who you can convince. ie: scientific big words work great for grant writing; bad for marketing
Kapa'a Open House	Other	Kauai county is lucky, it has a jewel of a public golf course. Whatever happens, we should to everything we can do to keep it sparkling

Kapa'a Open House	Adaptation Mitigation	need to plan for 10' by 2100 and elevate yearly! We as an island can completely electrify faster than anywhere else. Let's do it and save money. Let's make a goal of 80% reduce in fossil fuel imports, by air, land, etc. by 2030!
Kapa'a Open House	Mitigation	Mahalo for opportunity! Near 50 years in Hawaii. Wrinkles, numerous skin cancer, no sunscreen 70s great grandmother. Provide funding to CAP. KPD issue speeding tickets-cut down on emissions. Higher speeds = more gas burned. Implementation ACTION. Don't waste millions on consultants and studies. order KIUC to stop burning coal at port Allen. increase tax breaks (solar panels, solar hot H2o heater). Methane archaic sewage (waste H2o plant at Wailua is attributing to climate change)
Kapa'a Open House	Process Mitigation	mitigation vs. adaptation: as Kauai is potentially much more high risk than others, while however having a small impact globally on climate change, it's likely our focus will be more adaptation than mitigation... but of course, they are not mutually exclusive, and mitigation will boost all our livelihoods. food security, public trans, renewable energy, recycling, waste treatment.
Kapa'a Open House	Mitigation Vulnerability Adaptation	increase tax breaks for solar hot water. True plastic recycling (produced by oil companies) ie: picnic tables and other uses- fund an industry = job creation. Composting toilets vs. cesspools ties into Kauai planning dept CAP sewage seeping into ground water and Kauai ocean reef creating increased climate crisis.
Kōloa Open House	Adaptation	southside needs green waste transfer center
Kōloa Open House	Experience Vulnerability	in Hanapēpē town our home in 4504 Puna Road and our neighbor's yard has severe flooding after big rains for the past 30 years. The water goes mauka on the highway from 'Ele'ele and the cross road by Berts Auto, coming down to Hanapēpē then floods down makai on Puna road flooding the roads and yards. the water misses the drainage designated areas. please-need to re-design the water drainage to work. have spoken with Paul Togioka about this in past
Kōloa Open House	Vulnerability Experience Action	Pakala village coastline has completely changed. SLR will make us lose our connection to the ocean. Heed to be hopeful, look at what KIUC did with renewable energy. Involved the youth
Kōloa Open House	Other	put a skate park in Kōloa so we don't have to drive all the kids all the way to Kapa'a to skate. Kukui ula development was supposed to build one in 2014 but has never done so. Hold them accountable for one.
Kōloa Open House	Vision Historical resources	I am interested in seeing the historic Sugarmill preserved and restored. Can we find a way to use it for multipurpose industrial? So much of Kauai's industrial land is tied up in sugar mills. I would love to help apply for grants to make the sugar mills safe for use and to restore them best we can
Kōloa Open House	Experience	swimmer, has observed high tides and warmer waters. Including algae blooms
Kōloa Open House	Adaptation Mitigation	watershed management: high rainfall = more runoff=more landslide=decrease in water replenished aquifers= more sediments in storms, rivers = flooding= sediments in coral reefs and killing coral and marine life. Solutions: watershed management! Increase native plant restoration along all rivers and streams. no extra burden on coral and stream life. no herbicide, fungicide, pesticides on all waterways. fresh and coastal! more ecofriendly buildings allowed in planning. construction is one of the biggest impacts on greenhouse gases. to mitigate, planning needs to allow alternative building methods (bamboo, local wood, recycled materials). we need to improve our public transport! more busses everywhere! allow surfboards. more local shuttles especially in Po'ipū area. make it easier for tourist not to rent a car. make it easier for locals to take the bus
Kōloa Open House	Adaptation Vulnerability	in my opinion, the number one thing we can do to mitigate these "climate issues" is to stop all development. By stopping development, we will not put pressure on our waterways, increasing water demands. Why is this important: increase in water demand increases diversions, leading to flooding in some areas and drought in others. when you change the natural course of water you completely alter the balance of all ecosystems and EARTH. this must stop! time to do the pono thing!
Kōloa Open House	Adaptation	water diversions from the pristine environmental system that was noted to be the most complex system in the world prior to modern day society is a solution toward climate change
Kōloa Open House	Vulnerability Adaptation	Waita reservoir stores 3.2 billion gallons of water life has been lost when breached in the past. There is also a possibility of a dry day piping failure. No in-depth mapping or studies of caves and water. There is no evacuation plan or warning system! lives have been lost. Kōloa elementary school is inaccessible in a flood. shoreline development is still occurring. many beaches I could once fish at are now nonexistent. native species and plants have been depleted. water quality has declined (salt and fresh)
Kōloa Open House	Adaptation Experience	house along spouting horn road have lava rock frontages. They have sea walls. No erosion issues. Yet county rules do not allow for rebuilding if less that 60' from ocean. It deprives people the right to use their property. The rule should be change for spouting horn road
Kōloa Open House	Adaptation	weatherproof buildings - hurricane resistant, flooding, action plan in construction. More public water fountains with expected heat spikes.
Kōloa Open House	Mitigation Adaptation	electric bus- how will we incentivize bus usage? Tourist on busses? Improve bus availability. How are we working to have our energy be sustainable? What is the county doing with KIUC? Emergency power system for catastrophe. Better warning systems for severe weather events. trash repurposing. recycled buildings

Kōloa Open House	Equity Adaptation	over development, progress shouldn't mean the cost of 'āina. 'āina means consumption. Over consumption equals disaster. Safety of the current and pre-existing Kanaka. Impacts of progressive change on cultural and religious practices predating occupation 1893 to modern day. water diversion, water pollution, water usage, loss of wetlands. ahupua'a is key! balance solution
Kōloa Open House	Equity Vulnerability	luxury homes don't support the local housing crisis. Instead creates more of a strain on the housing market. It effects the climate as the large yards have decorative landscapes that use a lot of water in drought and have lots of runoff in the rainy season. which goes into the Po'ipū harbor and kills reef and contaminates ocean. 2) golf courses are a waste of space for locals on Kauai. how many courses are needed on the south is too many and a waste of resources. 3) planning- none of these new developments have any public parks to preserve the land. examples like ala moana beach park or pakiolani parks are the only greenery on the south of Oahu. Kauai isn't planning ahead. Also, no additional community features all the old neighborhoods on Kauai have parks. Waikomo Weliweli track. 'Ele'ele all have fields for playing and sports. now the south only has private clubs and gated neighborhoods sad to see locals have no place in the community you rather push people to work for housing with no path to home ownership
Kīlauea Open House	Process	community member went to Kīlauea neighborhood center because county events are typically held there
Kīlauea Open House	Adaptation	great, friendly, knowledgeable group of people. spreading knowledge is helpful and useful for all. more awareness could prove beneficial, more people showing up, possible pictures, video, could also make the community more aware and concerned.
Transcribed over the phone by Marie Williams from Makaala 4/20/2022	Vulnerability Experience	DLNR has been closing/decommissioning dams around the island for the past few years. This is reducing our potable water supply. With climate change and the threat of drought, we need reservoirs to ensure we have a supply of fresh water. One reservoir of concern for the North Shore is the Kalihiwai Reservoir.
Emailed Comment 4/7/2022	Experience Vulnerability	<p>First, I want to say thank you. We live on the ocean in Kekaha, and Graham and I are quite aware of the threat of rising seas. A plan to address this fact is needed and you all are doing the heavy lifting. "Graham and I have been unable to attend the community meetings, but I've scoured the Adaptation Plan Website, the master plan for Waimea 400, and the West Community Plan for specifics. We understand the county is still in the planning phase and that more decisions will be made in 2023. In Brittany Lyte's article today, a ""theoretical mitigation strategy"" is in the works for the most vulnerable homes on the West side. However, though these are the details I've been searching for, I cannot find them in the reams of pages posted on these websites. I have found maps that outline the vulnerable areas in Kekaha (there are many!), but not details about which homes might or will be demolished according to the land swap plan, nor a proposed timeline for this action. Could you point me to documents or web links where I can access these up-to-date discussions?</p> <p>A picture of our home with sandbags was featured in the adaptation plan (FYI, erosion near our home is accelerating due to the poor design of Kikiaola Harbor). And we're under no illusion our home will last forever. But we would like to be the first to know what the county has planned for us.</p> <p>I'm a (retired) scientist and have most recently taught high school science at Island School, including a course on climate change. The problem is real, and the challenges are hard. Please know I'm an ally.</p> <p>Thanks for reading this long email. And thanks for any information you can provide- Marisa (and Graham) Chelius</p>
Kōloa Open House	Other	Concern: Sweetheart deals to developers who do not care about "Climate Change"
Kōloa Open House	Vulnerability	My confusion... over development= greenhouse gas mitigation and adaptation to climate change?
Kōloa Open House	Adaptation	STOP DIVERTING OUR WATERS STOP PERMITTING LUXURY HOMES AND TOURIST DEVELOPMENTS
Kōloa Open House	Other	Cement (two upward arrow "Increase?") Polluter. Rep. Morita --> Sonar Missile Radar. Gary Hoozer
Kōloa Open House	Resources	Does this qualify for Kaua'i? Sola Installation- Tesla - incentive programs for solar installation. PACHAMAMA.ORG
Kōloa Open House	Adaptation	Food Forrest. Curbside recycling. Greenwaste program and processing for fuel. Community septic treatment.
Kōloa Open House	Adaptation	(Upward arrow "Increase") Community support and partnership with NGOs, Local Orgs.
Emailed comment 4/1/2022	Experience	Many people say that in light that climate change is a moral and values problem vs a science problem, climate change can't really be addressed without addressing the underlying moral compromises of our culture such as our unexamined past of racism, colonialism and gross inequality. That the callousness with which the earth is treated is related to the callousness with which we hold these other issues.

Kekaha Open House	Other	In Hawaii that has very specific implications. Is it possible to somehow incorporate this thinking into the county's climate change plans? Like how nationwide covid \$ has gone to addressing the wider equity issues?
Emailed comment 4/5/2022	Adaptation Mitigation	<a href="#">This Is Some Good Shit - Nautilus   Science Connected</a>
Emailed comment 6/1/2022	Mitigation Education Action	<p>1: Have you noticed any changes in your community and/or the work that you do over time that you feel is related to climate change? If so, can you tell me more about these changes?  A: Not enough. People are not responding mindfully enough in our everyday lives and govt action. I see large changes in forest plants in places like Alakai as they heat up. Not juts ohia but many native species have galls rusts etc. that were not there ten years ago. Bogs drying up. Coral disease increase with temperature.</p> <p>2. In your opinion, how does climate change affect Kaua'i?  A: Hugely because we are an island impacted by sea level rise and impacts to coral reefs that feed and protect. More so because so many people including residents use high emitting air travel to reach our island.</p> <p>3. What qualities or attributes of Kaua'i do you feel need to be preserved as the climate changes?  A: Native species and ecosystems. Forests rivers Muliwai reefs. Self-sufficient lifestyles reliant on resources people harvest and gather for food and other uses. Lei etc. some of these will now need to be farmed.</p> <p>4. Thinking of recent disasters like the 2018 flooding, can you share any lessons learned from coping with or responding to these events?  A: Distribute funds to community level. Local NGOs etc. use funds for jobs not just infrastructure. Don't build back to new normal. Invest in green infrastructure. Cleaned streams. Lo'i parks. Planted hillsides. Versus hardened.</p> <p>5. How do you perceive the County's response to disasters as well as to chronic climate change hazards, such as sea level rise? How can the County improve its response and preparedness to disasters and to chronic climate change impacts?  A: Great plans and talk. Need to be more assertive against state and feds in actual action. Also, most responsive and adoptive level of govt post disaster. So grateful</p> <p>6. What would you say are key issues and opportunities that Kaua'i faces in adapting to climate change?  A: Equity. Where do you resettle people and how with cost of land so high. Need to preserve large open spaces and ability to grow food. Helping people to adapt in ways that elevate key aspects of Kauai life versus lose them Teaching and making change together comfortable. Taking about the issues. Taxing fuel hugely. On Flights and trucks. All imports. And taxing large box stores with removing the waste they are being. And offsetting carbon.</p>
Emailed comment 3/23/2022	Planning	Last year our planning branch completed the HDOT Highways Climate Adaption Action Plan, please see the attached document. This information is statewide, but you can filter down to Kauai County related information for your needs. HDOT also has a GIS viewer on the HDOT website showing a hazard assessment map, please use the below link: <a href="https://hidot.hawaii.gov/resilience/">https://hidot.hawaii.gov/resilience/</a> Please look through this information and let us know if you have additional questions you'd like to discuss.