

HANALEI TO HĀ`ENA COMMUNITY DISASTER RESILIENCE PLAN

PREPARED BY THE HANALEI TO
HĀ`ENA DISASTER RESILIENCE
PROJECT AND TEAM

2021 UPDATE



2021

Acknowledgements & Plan Update History

Plan Development & Amendment

This Plan was prepared initially in 2014, amended partially to include updated maps and action plans in 2016, with this current update in 2019.

This plan was developed by:

Sarah Henly-Shepard, MPH, Ph.D.
Executive Director, Disaster Resilience LLC
www.DisasterResilience.org
disasterresiliencellc@gmail.com

This Plan was prepared for:

The communities of Hanalei to Hā`ena, the Hanalei to Hā`ena Community Disaster Resilience Committee, the Hanalei Watershed Hui and other partners to guide ongoing community preparedness, response, relief and recovery work to promote sustained community resilience.

Community Contact:

Maka'ala Ka'aumoana
Executive Director
Hanalei Watershed Hui
P.O. Box 1285
Hanalei, HI 96714
808-826-1985
808-346-5458 cell
808-431-4444 fax

Acknowledgements

We'd like to extend sincere Mahalo for all stakeholders involved in this planning process, and the local disaster response, relief and recovery efforts led by incredible community members and partners.

The development of this Plan, and most importantly the use of the plan (Section 2) to support ongoing preparedness, response, relief and recovery efforts of community, would not have been possible without the civic engagement of Hanalei to Hā`ena Community residents, government stakeholders and civil society organizations.

We'd also like to extend Mahalo for the funding and interim gap volunteer work that has supported this planning effort since 2008: the resilient recovery work was funded by the Hawaii Community Foundation from October 2018-May 2019, and a Coastal Resilience Networks grant through the National Oceanic and Atmospheric Administration (NOAA) funded the initial plan development in 2012-2014, after a NOAA NIDIS SARP drought award supported (in part) initial research from 2008-2010.

Fair Usage Claus:

For reprinting or other use of this plan, in part or in full, please refer all requests to the Community Contact listed above.

Table of Contents

<u>ACKNOWLEDGEMENTS & PLAN UPDATE HISTORY</u>	<u>2</u>
<u>EXECUTIVE SUMMARY</u>	<u>5</u>
<u>SECTION 1. PLAN INTRODUCTION, RESILIENCE ASSESSMENT FINDINGS & RECOVERY RECOMMENDATIONS</u>	<u>6</u>
INTRODUCTION TO PLACE, RESOURCES AND RISKS	6
RATIONALE FOR THE PLAN.....	7
RESEARCH FRAMEWORK, METHODS, TOOLS & FINDINGS.....	8
PHASE 1 DATA COLLECTION AND ANALYSIS: <i>SURVEYS & INTERVIEWS</i>	9
PHASE 1 RESULTS	9
PHASE 2 DATA COLLECTION AND ANALYSIS: <i>COMMUNITY MODELING WORKSHOPS</i>	15
PHASE 2 RESULTS	17
PHASE 3 DATA COLLECTION AND ANALYSIS: RESILIENT RECOVERY DEBRIEFING, WORKSHOPS & RECOMMENDATIONS.....	18
PHASE 3 RESULTS & OUTPUTS	18
RESEARCH-INFORMED RECOMMENDATIONS ACROSS THE 3 PHASES	19
<u>SECTION 2. INTRODUCTION TO THE ACTION PLANS FOR PREPAREDNESS, RISK REDUCTION, RESPONSE, RELIEF AND RECOVERY</u>	<u>21</u>
COMMUNITY-BASED DEFINITIONS, PURPOSE, MISSION & VISION	21
PEOPLE: PLANNING COMMITTEE, PARTNERS & NETWORKS & WORKING HUI.....	20
TARGET AUDIENCE AND USERS, PUBLIC AWARENESS	23
IMPLEMENTATION, MONITORING & EVALUATION STRATEGY & SUSTAINABILITY.....	23
<u>HANALEI TO HĀ`ENA COMMUNITY DISASTER RESILIENCE ACTION PLAN, PRINCIPLES & TOOLS.....</u>	<u>24</u>
HANALEI TO HĀ`ENA COMMUNITY DISASTER RESILIENCE PLAN WORKING HUI ROLES & RESPONSIBILITIES	23
PRINCIPLES FOR COMMUNITY PREPAREDNESS, RESPONSE, RELIEF & RECOVERY	24
COMMUNITY RISK, RESOURCE AND RESPONSE MAPS FOR FLOOD/HURRICANE AND TSUNAMI.....	25
HANALEI TO HĀ`ENA COMMUNITY DISASTER RESILIENCE MAP: AVERAGE & EXTREME TSUNAMI ZONES..	26
HANALEI TO HĀ`ENA COMMUNITY DISASTER RESILIENCE MAP: FLOOD & HURRICANE STORM SURGE.....	27
COMMUNITY DISASTER PREPAREDNESS, RESPONSE & RELIEF RESOURCES & TOOLS	28
ACTION PLAN 1. PREPAREDNESS & RISK REDUCTION	28
ACTION PLAN 2. EMERGENCY RESPONSE & ACTION PLAN 3 RELIEF PLAN / CHECKLIST.....	37
ACTION PLAN 4. COMMUNITY-CENTERED NEEDS ASSESSMENT & RESILIENT RECOVERY RECOMMENDATIONS.....	43
<u>SECTION 2 APPENDIX. COMMUNITY DISASTER RESPONSE GO-KIT RESOURCES</u>	

- Appendix A. Emergency Communications Plan
- Appendix B. Community Disaster Leadership Contact Roster by Response Zone & Working Hui
- Appendix C. Community Resource Mapping List
- Appendix D. Disaster Response Kit Lists
- Appendix E. North Shore Incident Report
- Appendix F. North Shore Intake Form-HHOOH
- Appendix G. Personal Disaster Go Kit List
- Appendix H. Family Communications Plan
- Appendix I. Radio Equipment Disaster Go Kit List
- Appendix J. Community Risk & Resource Maps
- Appendix K. Spontaneous Volunteer Registration Form
- Appendix L. DoH Resources

SECTION 3 APPENDIX. PAST RESEARCH RESULTS & MAP UPDATE GUIDANCE

- Appendix 1 Acronyms & Glossary
- Appendix 2a Research Framework (2014)
- Appendix 2b Community modeling workshops (2014)
- Appendix 3 Household survey (2008)
- Appendix 4 Household survey Indicators
- Appendix 5 Key informant interviews (2008)
- Appendix 6 Gap analysis (2010)
- Appendix 7a PGIS & ArcGIS instructions
- Appendix 7b PGIS Mapping Data Plan (2014)
- Appendix 7c PGIS Instructions for GIS Specialists
- Appendix 7d PGIS Notes
- Appendix 7e PGIS Workshop Facilitator Instructions
- Appendix 7f Teaching Workshop Participants the Technology
- Appendix 7g PGIS Setup
- Appendix 8 Post-flood Survey
- Appendix 9 References

EXECUTIVE SUMMARY

Purpose

Hawai'i is the most isolated landmass in the world, is prone to a myriad of natural hazards from hurricane, extreme weather events, tsunami and others, and is at great risk to impacts from climate change like sea level rise, acidification and warming of ocean waters leading to coral bleaching and coral reef ecosystem collapse, increasing public health vector-borne diseases, and other threats.

The rationale for development of this plan since 2008 was to understand current demographics and dynamics of community and what they mean for local resilience to disasters, including identifying vulnerable and resilient populations and areas, and developing an Action Plan and Community Maps to promote local resilience. This plan represents a history of 11 years of research and planning efforts grounded in identifying gaps in preparedness community risks and vulnerabilities, resources, knowledge and visions for improving resilience for the communities of Hanalei to Hā`ena.

Given the last update to the plan was 2016, and the devastating impacts of the 2018 rain events and the changes it made on place and people, this plan update addresses new challenges, resources and opportunities relevant to community resilience.

In addition, the plan lays out principles, actions and policy recommendations for community members, government, non-government organizations, faith-based groups, private sectors and others to improve resilient recovery, and how to collaborate on ongoing community preparedness, response, relief and recovery efforts for future emergencies in ways that don't undermine community, the environment, the economy and future resilience.

Who

Research and planning were done jointly with project facilitators and the Hanalei to Hā`ena Community Disaster Resilience Planning Committee (Committee), consisting of community members and diverse stakeholders from government, non-governmental organizations, faith-based and community organizations, in order to promote cross-collaboration of disaster resilience planning efforts.

Audience & Users

Community disaster resilience is an ongoing process and requires continued attention and support. This plan is intended to both guide the current and sustained disaster preparedness, response, relief and recovery activities of the Committee and of the larger communities, and to inform and engage local residents, visitors, government and non-governmental organizations of the local plan through plan distribution, public awareness materials and events. In addition to verbal confirmations of solidarity, Memorandums of Understanding may be signed between the Committee and particular organizations, government departments and individuals to acknowledge local planning efforts and ensure access to resources and land needed to support local response and recovery efforts.

Sustainability

Opportunities for addressing gaps in resilience are highlighted in the proposed Action Plan programs, policies and community-building processes, which will serve as a guiding resource to document the planning process so it can be updated and sustained over time, and encourage capacity-building. The long-term sustainability of the plan convening will be led at the grassroots-level by the Hanalei to Hā`ena Community Association, with support by the Hanalei Watershed Hui and other committee stakeholders.

The community maps were developed to identify vulnerable populations and areas, and stage current and new resources, materials and supplies that can be leveraged after a disaster. Both the Action Plan and maps should be continually monitored and evaluated bi-monthly to support the continued Committee meetings and associated activities, and should be updated at least annually by the Committee and shared with the public. Detailed information on the project research and planning process, tools and methods used, and guidance for the Committee on how to update the Action Plan and Maps in the future is listed in Section 3 Appendix. Confidential information including Resource Mapping Databases and disaster kit locations with names and addresses will be available to Committee members only.

Section 1. Plan Introduction, Resilience Assessment Findings & Recovery Recommendations

Overview

Resilience in Hanalei to Hā`ena communities means the ability for community to come together to prepare, respond, and bounce back better through relief and recovery after a disaster. It means kuleana and kokua of all, to remember the past, recognize the present changes of climate, environment and society, developing peaceful pathways and having the foresight to restore and protect the ‘āina for current and future generations.

The community-driven Hanalei to Hā`ena Community Disaster Resilience effort began in 2008, and this Plan was originally developed in 2014 in partnership with the Hanalei to Hā`ena Community Disaster Resilience Committee, based on six years of community-engaged research, resilience assessment analyses, and resilience planning workshops, with map and Action Plan updates done in 2016. This Plan Update for 2019 follows the unprecedented destructive rain events of 2018, and is designed to drive resilient recovery and to strengthen ongoing community preparedness and future response, relief and recovery efforts.

The Plan is designed in three sections. The first section includes an Executive Summary, a community resilience assessment, and a resilient recovery recommendations report following the 2018 flood events. The second section includes the “living” plan tools that can be taken out as a packet for community zone captains and first responders to utilize and update as needed, including communications tools and lists, community resource lists and contact information, disaster supply go kit lists, guidance on mass care and spontaneous volunteer management, action plan “checklists” for zone captains and local responders to use for preparedness, response, relief and recovery, and community risk and resource maps for hurricane/flood and tsunamis. The third section includes appendix to be used as references and resources to update the plan in the future.

Introduction to Place, Resources and Risks

Hanalei to Hā`ena communities are geographically isolated and vulnerable to many natural hazards, including sea level rise associated with climate change. Resting at sea level in valleys surrounded by steep mountains, the only exits from the communities are coastal roads and one-lane bridges; the main road exit, via the Hanalei Bridge, closes in the event of flood, tsunami and hurricane, causing issues with evacuation, search and rescue, and accessing the communities post-disaster. Seasonal flooding is a part of life, however land use changes and shifts in weather events have caused acute damaging floods leading to road closure and community isolation for many days at a time such as in 2012. The area is also at risk to landslides and rock fall, particularly during high rainfall and flooding events, as was evidenced in the 2012 floods, creating areas of isolation across the North Shore. The area is at risk to earthquakes and tsunami generated from earthquakes or massive landslides, originating anywhere in the Pacific Ring of Fire or the neighboring Big Island.

The last devastating tsunami occurred in 1957 with 47 feet maximum height run-up recorded on the North Shore of Kaua`i leaving 250 homeless but with no deaths due to improved tsunami warnings, and in 1946 from an Aleutian Islands-generated earthquake of 7.8 magnitude with 45 feet maximum height run-up, resulting in 15 deaths and 3 missing but presumed dead, many injuries and over 200 left homeless. Wildfires and drought are possible in the area as well, leading to water resource quality and scarcity issues impacting the environment and farming and fishing livelihoods, among factors. High wave events and coastal inundation are important hazards for coastal areas as well. Dam failure is also important to note for neighboring areas, as on March 14, 2006, extreme storms and rainfall led to the failure of the Ka Loko Dam, killing seven people (State of Hawaii Hazard Mitigation Plan 2010). Recently, the rain bomb event of April 2018 caused massive flooding, landslides, destruction of many homes and the coastal highway in

several areas, and many close-calls where people were rescued by their fellow community members within inches of their lives. The long-term impacts of the heavy footprint of visitors include damaging the sense of community connectedness and belonging, eroding the natural environment, and become an evacuation safety issue and a drain on local people and resources during an emergency as evidenced in both the March 2012 and April 2018 floods.

Hanalei to Hā`ena communities are also at risk to impacts from sea level rise which threaten the majority of the coastal communities' infrastructure and assets, including critical coastal ecosystems and public recreation areas, the coastal highway, homes, businesses, schools and livelihood areas like agriculture. Additional threats from climate change such as ocean warming, acidification, and coral reef bleaching will greatly impact the health and productivity of the coastal ecosystems and fishing stock as a result. As impacts from climate change continue, increased intensity and severity of storms like the April 2018 rain bomb and the March 2012 flood events will likely become more common, along with periods of prolonged drought and challenging climate variability, so recovery and ongoing development must take these considerations into account to ensure long-term risk reduction and adaptation measures are built-in to ensure these communities can have a sustainable, safe future in the face of these changes.

Rationale for the Plan

Hurricane Iniki, a Category 4 storm on the Saffir-Simpson scale that hit Kaua'i in 1992, was the most recent destructive disaster to impact Hanalei. Discussions with community leaders revealed that although Hanalei to Hā`ena communities had no formalized disaster resilience programs or policies in place at the time, residents report having coped and adapted well. They attributed this to close familial and social support networks, self-organization and self-sufficiency, material preparedness, and experience and knowledge of past disasters. Community members actually turned away much of the external disaster relief aid, showing the importance of local social resilience to ensuring protection of property, lives and livelihoods.

Since Iniki in 1992, Hanalei to Hā`ena have experienced changes that many residents feel have weakened the community's social capacity ([Coffman and Noy 2009](#)). Small family homes have been replaced by gated vacation rentals, cost of housing and land taxes has displaced permanent and long-term residents, giving way to short-term visitors (i.e. tourists) or empty second residences. Currently the daily average visitor count is 10,000 for the entire North Shore of Kaua'i, including the towns from Hanalei to Hā`ena, as compared to the resident count of 450, producing a visitor to resident ratio of 22:1 ([HTA 2010](#); [Vaughan and Ardoin 2013](#)) (Fig. 1). The high daily visitor count creates traffic congestion, utility and infrastructural overload while also degrading natural and cultural resources. Visitors are ill prepared for natural hazard events, presenting a burden on local residents and their resources even during common floods. The Plan research was initiated in response to a community-based request for assistance to engage in a process to understand current community demographics, resilience characteristics, risks and opportunities to increase resilience from 2008 to 2010, and workshops done in 2012-2014, with the following findings. The research framework can be found in the appendix for more information.

In the wake of the April 2018 historical flood event, people were left houseless, many without access to their homes or jobs, and unable to access markets and stores for basic goods for many weeks and months. Local response and relief work was led in large part by those community members involved in this disaster resilience planning effort along with new community leaders who stepped up, working alongside government and civil society actors that had mostly been a part of the disaster resilience committee prior. This Plan Update supports a refresh of the past Action Plans for Preparedness, Risk Reduction, Response, Relief and Recovery, an update of the risk and resource maps, and a re-energized commitment for community mobilization for ongoing disaster resilience planning and action.

The rationale for development of this plan since 2008 was to understand current demographics and dynamics of community and what they mean for local resilience to disasters, including identifying vulnerable and resilient populations and areas, and developing an Action Plan and Community Maps to promote local resilience. This plan represents a history of 11 years of research and planning efforts

grounded in identifying gaps in preparedness for community risks, resources, knowledge and visions for improving resilience for the communities of Hanalei to Hā`ena.

Given the last update to the plan was in 2016, and the devastating impacts of the declared disaster 2018 rain event and the impacts on place and people, this plan update addresses new challenges, resources and opportunities relevant to community resilience. In addition, the plan (Section 2) lays out principles, actions and policy recommendations for community members, government, non-government organizations, faith-based groups, private sectors and others to improve resilient recovery, and how to collaborate on ongoing community preparedness, response, relief and recovery efforts for future emergencies in ways that don't undermine community, the environment, the economy and future resilience.

Research Framework, Methods, Tools & Findings

Planning approaches that carefully consider the social, economic and cultural dimensions of affected communities are more likely to be successful and are critical to fostering sustainable development and disaster resilience (Berkes et al. 1998, Crane 2010). In 2008-2010, the research team collaborated with community leaders on the disaster resilience planning effort, in order to identify the elements for (and culturally-appropriate delivery of) the household survey that reflect "What resilience looks like for us," through Key Informant Interviews (Appendix 5) as indicators are most successful when they are developed with those who make decisions and will implement the action plans (Chambers 1994, TRIAMS 2006). This work was then followed by a series of community resilience planning workshops from 2012-2014 (see Figure 12) as detailed below.

First, we developed a conceptual framework adapted from Bollin and Hidajat's (2006) *Conceptual framework to identify disaster risk* to create a place-based conceptual framework for quantifying resilience (Fig. 1) utilizing a household survey (Appendix 3) (Birkmann 2006, Bollin and Hidajat 2006, Wood et al. 2007, Rev. 2008). Through community collaboration, we designed the survey and discussion questions based on the conceptual framework's social vulnerability and social capacity components, consisting of qualitative and quantitative indicators (Appendix 4). The objectives were to: 1) identify populations with varying levels of social resilience in the community; 2) conduct a gap analysis (Appendix 6) between resources and needs, to inform a community-based long-term resilience and recovery plan to increase social, economic and ecological resilience to hazards and climate change; and, 3) understand what social vulnerability or social capacity components are determinants of a household's perceived preparedness, adaptive capacity and coping capacity.

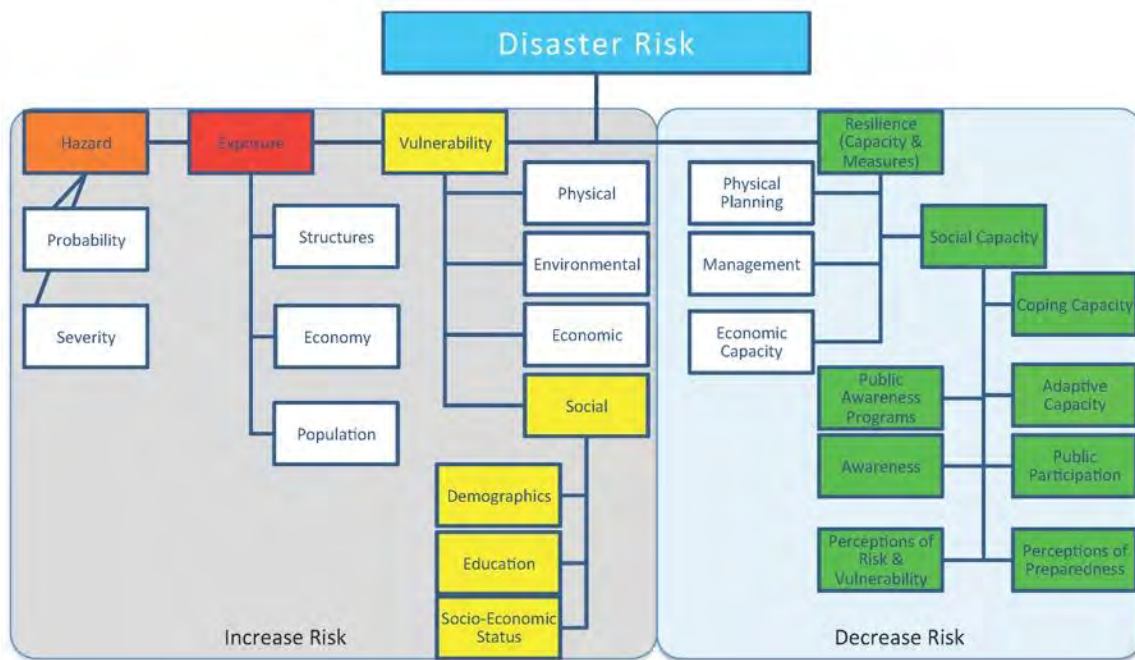


Figure 1 Conceptual framework of community-based household disaster risk. Adapted from Bollin et al. (2006).

The following explains the data collection and analysis, followed by the findings and recommendations, for the phased research: Phase 1) surveys and interviews; Phase 2) participatory scenario-based modeling; and, Phase 3) resilient recovery debriefing and planning.

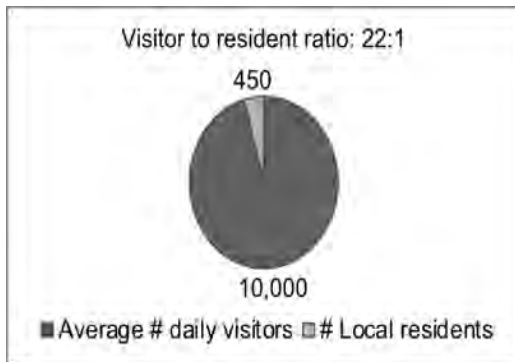
Phase 1 Data collection and analysis: *Surveys & Interviews*

Initial key informant interviews along with talk-story sessions, provided the cultural and social context to develop the household survey. The conceptual framework indicators measured through the household survey facilitate a broad and multi-disciplinary perspective of current community vulnerabilities as indicators of critical gaps in household and community-level hazard resilience. We implemented a door-to-door household survey (Appendix 3) of long-term and part-time Hanalei residents and visitors from August to October 2010, to examine perceived household preparedness, coping and adaptive capacity. The survey enabled quantitative and qualitative data collection for particular components of the conceptual framework (Fig. 1). Within the vulnerability component, indicators (Appendix 4) were captured as categorical variables measured through questions regarding demographics, education and socio-economic status. The resilience component was measured through categorical variables and composite indices for various social capacity indicators, including public awareness programs, coping and adaptive capacity, public participation, awareness, and perceptions of preparedness, risk and vulnerability (Appendix 4).

All 279 households in the community were visited twice, and leaflets were left to offer an opportunity to take the survey online or be contacted for an in-person survey. The majority of houses (70.6%) visited were not surveyed, due to 28.3% (79/279) being inaccessible due to locked gates, guard dogs or no trespassing signs, and 42.3% (118/279) with no one home. The decline rate was relatively low, with nearly 62% (37/60) of long-term residents and 91% (20/22) of visitors completing the survey. An informal post-flood interview was conducted in March 2012 to gauge social memory of the flood, changes in perceived preparedness and open-ended feedback to inform resilience-planning efforts.

Phase 1 Results

Figure 2. Ratio of average daily visitor count to resident population



Community structure and demographic shifts

Of the visitors surveyed (n=20), 90% were from the mainland U.S. and 10% were from other countries. Most (75%) visitors stay over a week and are repeat visitors (63%), raising the concern that if a significant disaster affects the area, arranging logistics for visitor evacuation may prove difficult (Figure 2). As with other U.S. coastal areas ([Colburn and Jepson 2012](#)), the increasing influx of visitors and new residents over the past few decades has changed the demographic profile of Hanalei, such that 73% of the resident respondents are not from Hanalei or

Kaua'i (Figure 3) and 86% of the population is Anglo, with 43% of residents having lived there less than twenty years (Figure 4), showing a loss of long-term residents and potentially their associated social networks, knowledge and resources. Despite demographic and socio-cultural changes, 64.7% of respondents say they receive fish as a gift from local fisherman or family members, a long-held tradition of sharing natural resources and foods with family and community in this region and in Hawai'i ([Vaughan and Vitousek 2013](#); [Kittinger 2013](#)).

Figure 3. Origin of residents.

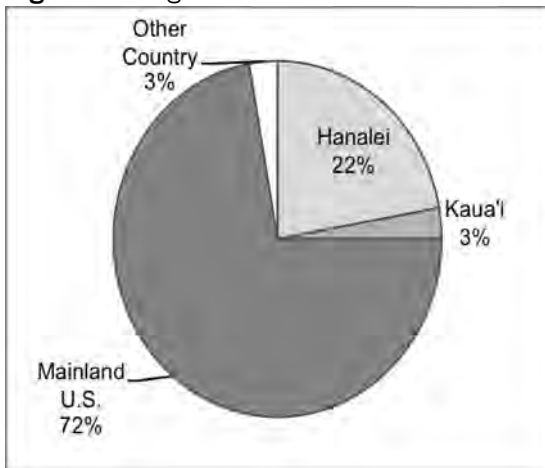
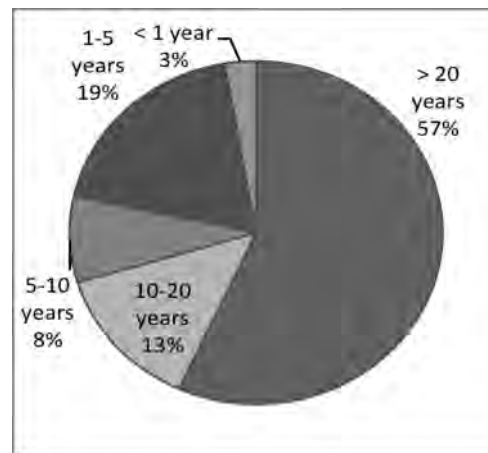


Figure 4. Longevity of residence.



Geographic Coverage & Population

The target population of the Plan includes all long-term and transient residents, employee and businesses (estimated at 1344 from the 2010 Census), and visitors (estimated at 10,000 on any given day) in the communities and areas of Hanalei, Wai'oli, Waipa, Waikoko, Lumaha'i, Wainiha and Hā'ena (Figure 5).

Figure 5. Hanalei to Hā`ena Community Disaster Resilience Plan Boundary Map



Figure 6. Perceived self and community-wide preparedness.

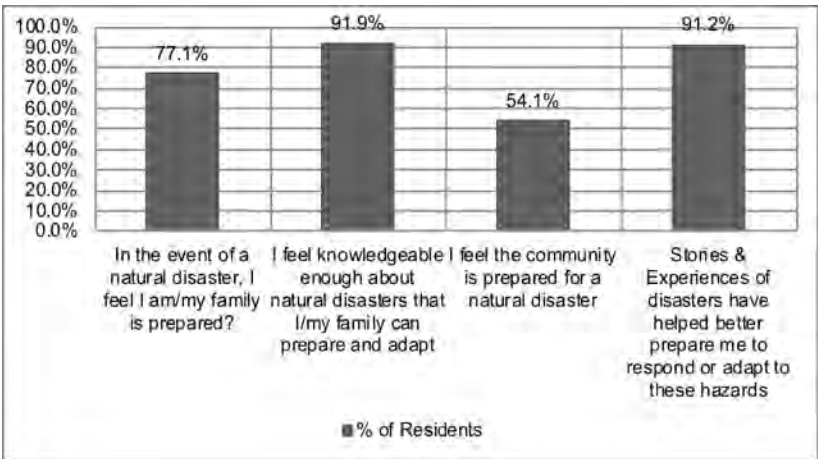


Figure 6 illustrates that many resident respondents (77.1%) feel prepared for a natural disaster, with 92.1% having heard stories or personal experiences in disasters and strong levels of disaster preparedness knowledge (91.9%). However, only 54.1% felt that the community, as a whole, is prepared for a disaster, due in large part to the strain that the unprepared (90%), vulnerable and dependent visitors may place on residents.

Figure 7. Visitor versus resident preparedness, ability and willingness to help others.

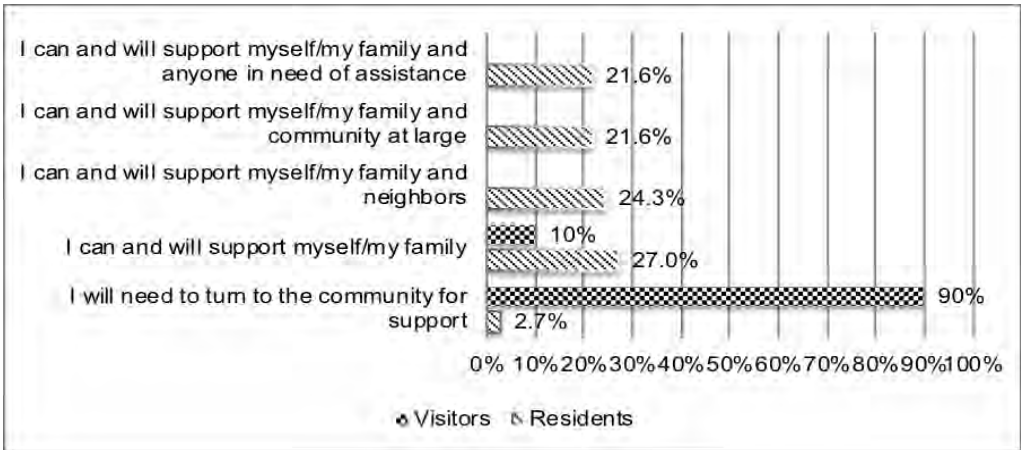
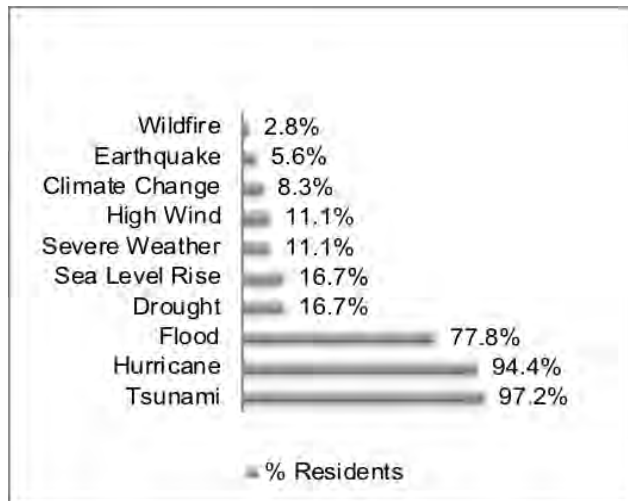


Figure 7 illustrates residents' and visitors' perceptions of their preparedness for disasters, along with their ability and willingness to assist others. Many resident respondents reported an ability and willingness to help neighbors (24.3%), community members (21.6%) and visitors or anyone in need (21.6%), though 21.6% are not willing or able to help tourists (21.6%) and feel they are not a part of community.

Perceptions of risk and vulnerability

The hazards of greatest concern to respondents included tsunami (97.2%) ranked as first by 52.8%, hurricane (94.4%) ranked first by 11% and flood (77.8%) ranked first by 30.6% (Fig. 7). Experience recall of these hazards ranged from once (18.5%) for new resident respondents, 2 to 3 times (25.9%), 4 to 5 times (14.8%), and more than 7 times (18.5%) with 22.2% unsure.

Figure 8. Hazards of concern among surveyed households in Hanalei, Kauaʻi.



We found some evidence of asymmetry of knowledge and awareness of hazards among households. For example, while many residents informally mentioned that floods were not a threat to Hanalei, flooding was still one of the top hazards of concern. Only 16.7% of respondents felt drought was an issue, while at the time of the survey, all counties in the State of Hawaiʻi had been declared a disaster area by the U.S. Department of Agriculture due to drought from January 2008 to August 2010 ([NIDIS 2012](#); [CWRM 2012](#)).

Resident respondents reported the following impacts from natural disasters: agriculture or crop loss (6.9%); cattle health impacts and death (6.9%); water scarcity/water rationing (20.7%); change in rainfall amount/patterns (13.8%); loss of life (41.4%); loss of

property (69.0%); loss of jobs/livelihood (69.0%); school/community facilities (62.1%); public health (20.7%); social (13.8%); culture (6.9%); environment (31.0%); well-being (10.3%); food/water insecurity (44.8%); and recreation (3.4%).

While 91.9% of resident respondents knew of community meeting areas or safe refuges to evacuate to, only 87.5% would evacuate in the event of hurricane or tsunami. Many stated that although they perceive this risk, they accept it, rather than evacuating only to not be able to get back to their homes if the road is closed. Participants also indicated a desire to receive more disaster information and education, particularly around plans and protocols to address the needs of the visitor population.

Lessons learned from March 2012 Floods

After the community-wide household survey was conducted in Hanalei in 2010, a major flood occurred over the course of 4 days in March 2012, closing the road to the single-lane bridge and causing multiple points of isolation due to landslides and flooded roads. Initial post-flood interviews determined that residents and business owners were more unprepared than they originally communicated. Local health emergencies occurred and first responders had difficulty identifying and accessing those in need. Evacuation of tourists was inadequate and led to multiple tourists becoming trapped on store porches or in their rental cars for days without food, water, shelter or bathroom facilities. Some residents cared for them, offering shelter or provisions that as a result caused residents to run short.

Figure 9. Hanalei valley pre- and post-March 2012 floods (photo credit: Jane Vogel, 2012).



Changed perceptions in local preparedness and response capacity were expressed in informal post-flood interviews, and prompted continued research and planning efforts to identify and address ongoing vulnerabilities.

Community involvement, governmental roles and expectations

Many (70.3%) resident respondents participate in a range of community or volunteer groups, with 79.2% participating frequently and 12.5% participating often. Many resident respondents (32.4%) expect no assistance from government or relief agencies, while 13.5% expect provision of basic services (evacuation, food, water, shelter) only for those most in need, and 51.4% expect provision of basic services for all residents including visitors. In addition, 21.6% expect job protection and/or financial support, 51.4% expect assistance with cleanup and reconstruction and 40.5% expect provision of emergency health services, with others noting a need to uphold safety, public order and property protection. Many residents emphasized the need for their community members to rebuild connections and collaborate towards self-sufficiency.

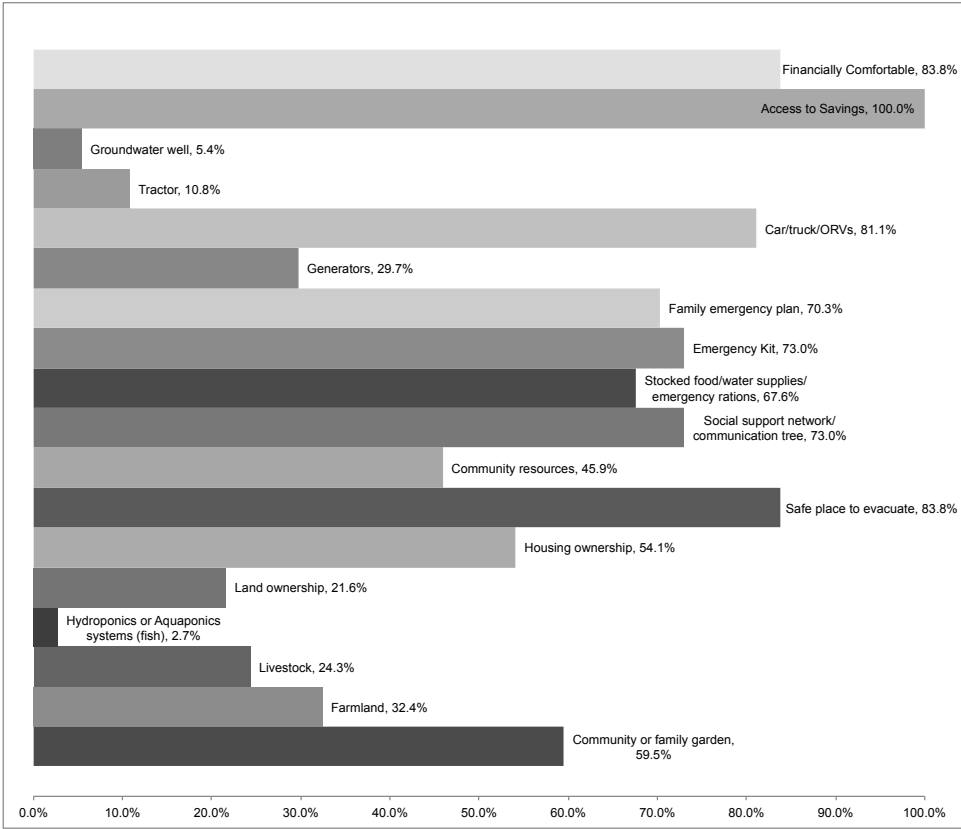
Regarding awareness of public disaster communications sources, 73% of resident respondents report exposure to at least one, including governmental and non-governmental agencies, community members, families, radio, newspapers, internet, television and others. All residents were aware of the early warning systems with the majority (66.7%) rating them as “very effective,” however 5.6% rated them “not effective” and 27.8% rated them “somewhat effective” due to insufficient coverage of sirens, slow repair of broken sirens, and lack of warning information for visitors.

Coping and adaptive capacity¹

As illustrated in Figures 9 and 10, local residents exhibit comparatively medium to high coping capacity, as demonstrated by material preparedness, access to resources as well as social networks and financial assets, and also show strong adaptive capacity due to knowledge, expertise and skills sets in diverse fields.

¹ Henly-Shepard, S. and Anderson, C., Burnett, K., Cox, L.J., Kittinger J.N., Ka’auomoana M. (2014). Quantifying household social resilience: a place-based approach in a rapidly transforming community. *Natural Hazards*. January 2015, Volume 75, *Issue 1*, pp 343-363 <http://link.springer.com/article/10.1007%2Fs11069-014-1328-8#> DOI 10.1007/s11069-014-1328-8.

Figure 10. Household coping capacity characteristics.

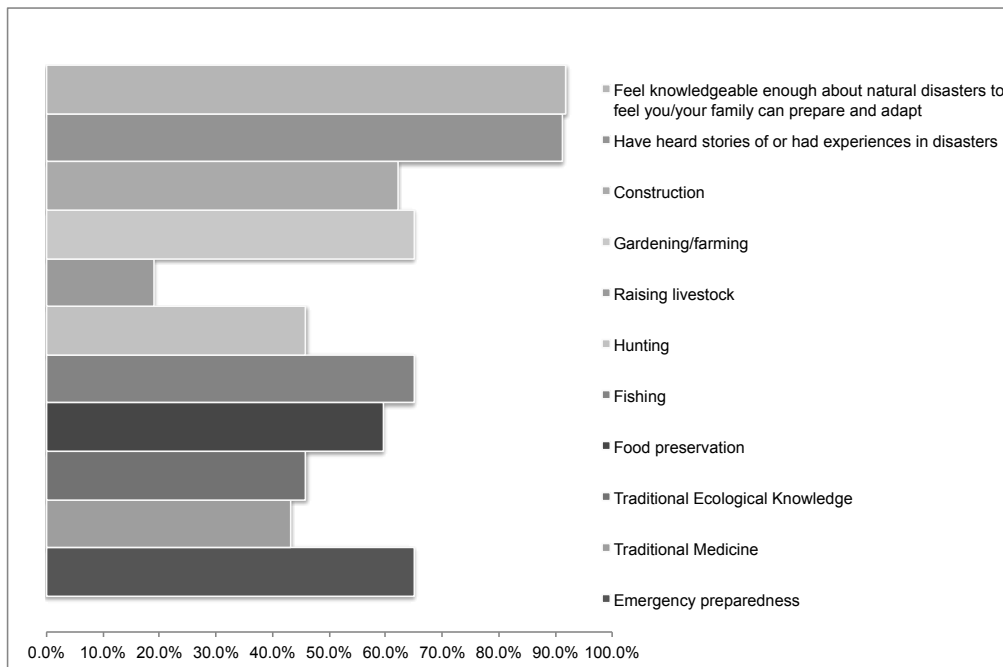


Our research shows how a transition from long-term affordable residential housing to high-cost homes, rentals and transient vacation rentals has changed the demography of Hanalei. These shifts appear to have severed social-ecological linkages at the community level by diminishing the proportion of residents that have detailed knowledge of the community’s ecosystems, resources and hazards, as well as the coping and adaptation mechanisms for dealing with such disturbances. These shifts appear to have fractured the sense of community and social networks that prove critical during disasters. Despite these changes, our results illustrate a high level of social cohesion as seen in significant community involvement and a high ability and willingness of community members to support their neighbors, community, and visitors in disasters (Fig. 6).

Coping capacity principally concerns the timeframe of pre-disaster, during and short-term post-disaster, as resources may become depleted or strained until normal services and productivity are restored ([Yohe and Tol 2002](#)). Access to resources during and post-disaster help households absorb the shock of the disaster and the resulting impacts of damage ([Adrianto and Matsuda 2002](#); [Mayunga 2007](#)) offering targets for households with lower coping capacity due to particular characteristics. Access to savings and other liquid assets enables households to continue to pay for basic needs despite a lag or loss of employment income or inability to access banks (*ibid*). Ownership of, or access to, farms, gardens, livestock, hydroponic systems and stocked food and water supplies will facilitate provision of food and water to enable survival, with many residents having access to such resources (Fig. 10).

Social networks will enable households to shelter or seek other temporary resources or support until they are able to recover on their own, and home ownership and insurance facilitate repayment of losses and the ability to rebuild (Fig. 9 and 10). Resilient populations, defined as households with high adaptive and coping capacities, were found to be local residents. The resident origin results (Fig. 2) support the findings that familiarity with place, establishment of extended family and friend networks and resources due to origin in Hanalei and the State of Hawai‘i, support increased coping and adaptive capacity, with the anomaly

that the Kaua'i resident (n=1) had comparable index scores to that of mainland residents. However, results (Figures 10 and 11) also contradict the notion that with increased longevity in a place, coping and adaptive **Figure 11.** Household adaptive capacity characteristics.



capacity would also increase ([Adger et al. 2004](#)), however bias due to small sample size is possible.

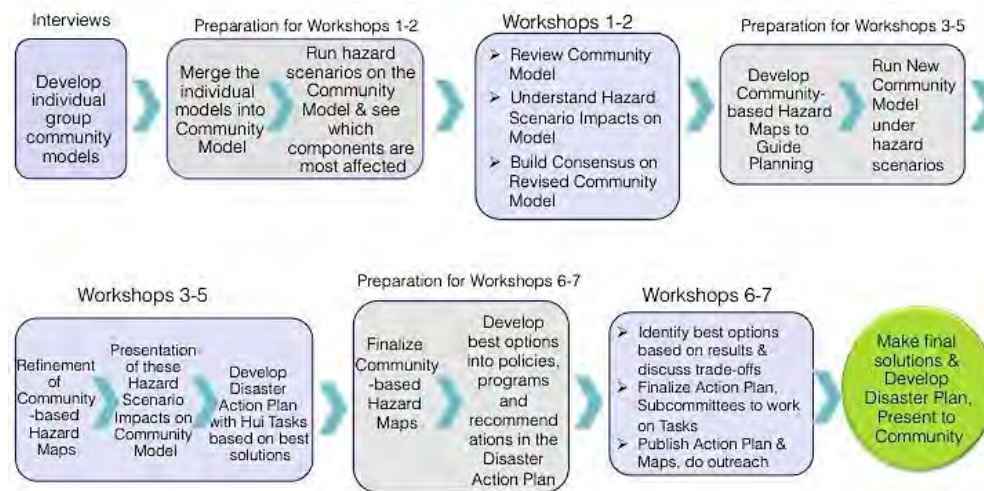
Females exhibit a lower coping and adaptive capacity index than males, which may mean that inequities exist relative to access for resources and networks as well as differential knowledge sets and experiences. Targeting females to improve their coping capacity through increasing access to resources like emergency materials and supplies, improved social networking through recruiting them for engagement in the disaster resilience planning committee work, and improved adaptive capacity through increasing knowledge and training through disaster education, awareness and coursework may address this issue ([Anderson 2008](#); [UNISDR 2008](#)). The lack of desire to evacuate may increase loss of lives, injuries, health emergencies, and requires additional considerations discussed in the Gap Analysis (Appendix 6).

Enhancing natural resource management knowledge and practices also increases coping and adaptive capacity through resource knowledge sharing and environmental stewardship ([Tomkins and Adger 2003](#); [Tompkins and Adger 2004](#); [Armitage 2005](#)). Many long-term residents and the few remaining indigenous individuals have maintained various hazard risk mitigation and adaptation techniques. Linking cultural resources and passing down of traditional ecological and other knowledge systems helps build adaptation mechanisms and resilience within communities ([Bettencourt et al. 2006](#); [Magis 2010](#); [Tomkins and Adger 2003](#); [Vaughan and Ardoin 2013](#)). Diversity of knowledge, skills and livelihoods supports longer-term adaptive capacity of residents, such that disaster response and recovery will be supported by local preparedness and emergency medical care, debris removal and re-construction, and food and water security through hunting, farming, fishing and water resource management. Reliance on fishing and farming still exists in Hanalei, which both increases social capacity and place-based resource management while also creating vulnerability from overdependence upon these resources which may be impacted by climate change and disasters ([Tompkins and Adger 2004](#); [Vaughan and Ardoin 2013](#); [Armitage 2005](#)). Enhanced food security can also be achieved through supporting such initiatives as the farmer's markets, local food production and consumption, sustainable agriculture and fishing, and local food kitchens.

Phase 2 Data collection and analysis: *Community Modeling Workshops*

Building on this data gathered from key informant interviews and household surveys, community-based workshops were held with the planning committee using mental modeling under various hazard scenarios through the process indicated in Figure 12 (below).

Figure 12. Community Modeling Workshops



Community modeling addresses the micro (short-term), meso (short to midterm) and macro (long-term) scales of social learning, to achieve single-, double- and triple-loop learning utilizing a type of ‘mental modeling’ (Gray et al., 2013a) in order to construct measurable targets and benchmarks for resilience planning. A novel computer-based software tool called Mental Modeler (Gray et al., 2013a) was used during the planning process to: (1) iteratively construct and revise visual representations of stakeholders’ mental models to ultimately develop a consensus community model; (2) use these models to understand how communities anticipate being impacted by hazards; (3) define preferred targets for components of their community; and, (4) test potential mitigation strategies. This approach facilitates the exploration of the dynamics and learning features of mental model representations by collecting and standardizing individual and collective community knowledge using simple modeling tasks (Gray et al., 2012; Ozesmi and Ozesmi, 2004) in a real-time and participatory modeling environment (Gray et al., 2013a).

To facilitate disaster planning through social learning, we used a FCM-based software called Mental Modeler (Gray et al., 2013a) in every workshop, which allowed the committee to represent and revise their collective understanding over time. Using an FCM approach in a three-phase process, project facilitators standardized, aggregated and revised the committee’s understanding of the structure and dynamics of the community in relation to tsunami hazard, their top concern. Each phase was designed to guide the committee through progressively higher order learning loops, and increase expected adaptive capacity through social learning (Fig. 2). Phase I focused on project organization and a workshop targeting short-term single-loop learning of the committee, through the development of two small group shared models of their community. Phase II included merging the small group mental model representations, building consensus on the structure and dynamics of their community, and understanding the potential impacts of tsunami in order to target double-loop learning. Phase III focused on eliciting triple-loop longer-term learning by iteratively modeling the expected impacts of a tsunami and the proposed mitigation strategies. The four most effective strategies for achieving disaster planning targets were examined more closely by the committee and developed into the implementable Action Plan including benchmarks for evaluation.

Phase 2 Results²

Hazards prioritized through this process, that were as a result the focus of the planning process, were tsunami, hurricane and flood. Building out a digital map or model of community including physical, social, cultural, environmental and economic assets of importance, we then ran scenarios under each hazard (tsunami, hurricane and flood) to visualize and quantify the impact on each aspect of community under each hazard. This process greatly improved awareness and understanding of where and how community was most at-risk to these hazards, and informed decision-making for the planning process of which aspects to prioritize for risk reduction and resilience-building.

Outputs: Community Vulnerability & Resource Analysis

The **Community Vulnerability and Resource Analysis** was based on two main components: 1) a **Gap Analysis** identifying current gaps in preparedness and response capacity of communities; and, 2) a **Community Modeling** process to model values, assets, resources and risks and inform decision-making.

1. Gap Analysis

The initial Gap Analysis (see Appendix 6) identified the perceived current gaps in resilience using a qualitative review of open-ended survey and interview questions, summarizing overarching themes by category (e.g. communications, evacuation, and food and water security), and listing the identified problems or gaps followed by potential mitigation and adaptation solutions.

The congruent categories of concern listed by resident respondents included gaps with evacuation, food and water security, energy and continuity of utilities, communication and information systems, special populations, the visitor population, infrastructure, sheltering and mass care, education, leadership and local capacity building, early warning systems and emergency services. The majority of gaps reflect the lack of community-wide awareness and education, asymmetry of information from governmental and community regarding disaster plans, protocols and expectations of assistance, and inadequate physical or infrastructural measures. The gaps and associated solutions proposed do not all represent the opinion of the majority of respondents, however there were many commonalities in both gaps and recommendations.

2. Community Modeling

Risks to coastal socio-ecological systems like coastal communities may be due to deeply rooted social issues, lack of awareness or information, misperceptions, or inadequate infrastructure and planning. In order to adequately identify, understand and address these risks, structured planning opportunities utilizing scenario-based modeling are needed to enable diverse community stakeholders to formulate cross-sector solutions together. Over a series of workshops, stakeholder-driven dynamic socio-ecological modeling was facilitated to inform decision-making around community disaster planning and adaptation across scales and time. Utilizing diverse stakeholder knowledge in the committee, the community model included things of importance in the community (social, physical, cultural, environmental, etc.) and how particular hazards (i.e. tsunami, hurricane, flood) affect these things of importance. The committee shared, explored and actively questioned their perspectives, beliefs and expertise, wherein they identified the root causes of community risks. Through running hazard scenarios on the model, the committee was able to quantify potential direct and indirect effects of hazards, develop and pilot-test mitigation strategies, resulting in the selection of the four most effective strategies. Modeling promoted social learning and facilitation of community disaster planning and improving adaptive capacity. More detailed information on this process is in Appendix 2B.

In addition to the household survey (Appendix 3) and post-flood surveys (Appendix 8), the Gap Analysis (Appendix 6) and community modeling informed the development of the Community Resource and Hazard

² Henly-Shepard S. and Gray, S., Cox, L.J. (2014). The use of participatory modeling to promote social learning and facilitate community disaster planning. *Regional Environmental Change*. Vol. 35 January 2015 pp. 109-122.
[doi:10.1016/j.envsci.2014.10.004](https://doi.org/10.1016/j.envsci.2014.10.004).

Maps (Appendix J) and ultimately the Action Plans to address the identified gaps through proposed community-based solutions.

Phase 3 Data collection and analysis: Resilient Recovery Debriefing, Workshops & Recommendations

Given the flooding impacts of April 2018 of a record “rainbomb” event in which North Shore Kaua’i received 48 inches of rainfall within a 24-hour period, setting the US record, the focus is now to grow the Plan and Committee to support community-centered Resilient Recovery Planning. Based on a series of response, relief and recovery debriefs with community members and other stakeholders from July to November 2018, a storyline was constructed to document the diverse experiences, impacts, how people coped and adapted during and after the floods, the lessons learned, unmet needs, and community-centered recommendations for integrated resilient recovery. These recovery recommendations include actions and policies that improve future preparedness, response and relief efforts, as well as support social justice and cultural protection, sustainable education and economic opportunities, environmental restoration and climate change adaptation (see Section 2 Table for “Community-centered Needs Assessment & Resilient Recovery Recommendations”).

Phase 3 Results & Outputs

The following summarizes the flood storyline following the debrief activities, including successes and lessons learned, captured in the Action Plans.

What went well & needs protection:

- **Natural community leaders stepped up** using their own skills, resources and know-how to support community response, rescues, evacuation, relief and recovery.
- **Having a disaster resilience plan & committee in place that knew their kuleana in a disaster, helped with disaster response & relief coordination.**
- Having external first responder, government and non-governmental organization connections within the disaster resilience committee improved logistics, accessing and sharing on-the-ground information with the Emergency Operations Center.
- **Resilient recovery policies and interventions must balance current and future economic, educational, social and environmental justice and restoration goals, while protecting the community rebirth and reconnection** from restricted visitor access.

What lessons were learned and need to improve:

- **Protecting and respecting community-centered planning** is critical to **ensuring a sustainable, equitable and resilient recovery process**, and not undermining local leadership, capacities and values; **all recovery entities and funds must respect this process and cultural protocols.**ⁱ
- **Strengthen the disaster preparedness and response skills training and emergency kit resourcing** for the disaster resilience committee, to improve community-led preparedness, response and relief communications and coordination.
- **Improve trust and communications platforms and agreements between government and community;** enable response decision-making authority for vetted disaster resilience committee community leaders.

Outputs from this phase will include: 1) updated risk and resource maps; 2) updated action plans for preparedness, response/relief and recovery (Policy and action recommendations); 3) an updated communications plan & coordination resources; 4) updated community leadership contacts; and, 5) staged disaster go-kits and stationed kits around the community to support local response.

Figure 12. Children’s Activity: Experiences in the April 2018 Flood



Research-Informed Recommendations Across the 3 Phases

It is critical to engage diverse stakeholders from community, alongside collaborative partnering agencies, organizations and groups. Community-based resilience planning will have a higher probability of success if stakeholder-driven descriptions of the their communities, inherent resources systems and the issues of concern (Abarquez and Murshed, 2004; Adger, 2003; TRIAMS, 2006; USAID, 2007) can be formalized into a set of scenarios that capture the major uncertainties in the system's future dynamics (Walker et al., 2002). To adapt to change, communities must be able to anticipate a problem, collect and share knowledge about it, reflect, and together develop a shared vision for action (Tschakert and Dietrich, 2010). Tools and processes that promote such interaction in an organized and participatory manner are limited (Gray et al., 2013a; Walker et al., 2002).

Anticipatory learning that addresses adaptation is expected to increase community understanding and the ability to respond to system crises and shocks (Tschakert and Dietrich 2010). Community disaster planning should provide opportunities for stakeholders to communicate iteratively (Osbaahr, 2007), evaluate risks and mitigation options (Leary et al 2008), learn from mistakes (Adger, 2003) and innovate (Armitage, 2005) amidst uncertainty, emerging events, past, present and future conditions (Nelson et al., 2007) and new information (McGray et al., 2007).

To foster social-ecological resilience research and planning at the community level, collaborative support should be given to local initiatives and organizations already working to enhance local resilience. Recommendations identified in this research address differential social vulnerabilities, which center primarily on community-based coping and adaptive capacity-building and leadership development to support community-wide awareness, preparedness, response and recovery planning. Interview and survey results show that rebuilding a sense of community is key to enhancing coping capacity. Attention must be paid to underrepresented populations, persons with special needs and populations in high hazard exposure areas.

These efforts have been targeted for collaboration and integration with parallel governmental, non-governmental and community group efforts, in order to address cross-sector gaps through place-based solutions. Disaster preparedness and relief agencies positioned to offer trainings, education and resources should be leveraged to increase coping and adaptive capacity. Staging of resources and training of local residents enhances self-sufficiency and the capacity to respond and recover with less dependence on external aid.

This framework (Fig. 1) illustrates the multiple sectors and targets included within this community-centered resilient recovery, natural resource management and climate adaptation planning process.

Through the resilient recovery planning process workshops, community events and meetings from November 2018 to April 2019 and beyond, the Hanalei to Haʻena Community Resilience Committee, community members and partners will continue to advocate to address the identified needs for immediate, mid- and long-term recovery and adaptation. In the next round of community workshops in the spring, these results will be reviewed through participatory mapping and action planning activities, in order to facilitate discussion of nexus win-win resilient recovery strategies, including policies and activities or interventions that balance social, economic and environmental response, relief and recovery goals for which additional funding and advocacy will be solicited.

“Resiliency in the context of disaster recovery strives to balance expediting reconstruction and rapid return to normalcy with building back safer, healthier, and more equitable communities that are better able to absorb, recover from, and successfully adapt to future adverse events”

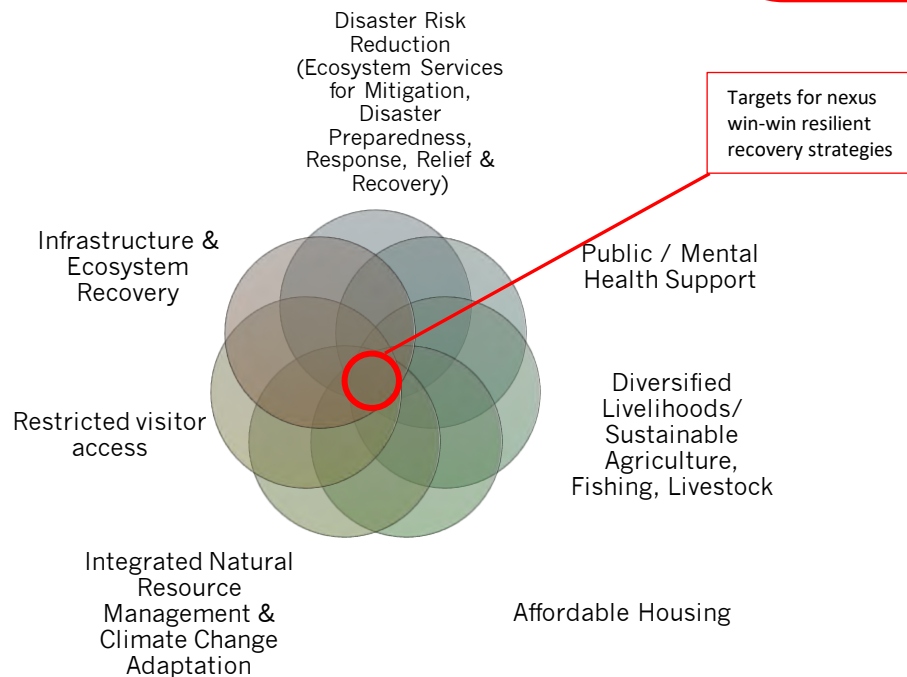


Figure 13. Community-centered Resilient Recovery Framework

Section 2. Introduction to the Action Plans for Preparedness, Risk Reduction, Response, Relief and Recovery

Based on the results above and the participatory planning process, through a series of participatory workshops with the committee, committee members developed a collaborative setting to establish resilience planning goals and objectives. Within the Disaster Resilience Team (formerly an Advisory Committee), smaller working hui were formed to address particular issues based on findings from the Community Vulnerability & Resource Analysis (Outcome 1) and directly informing the Community Hazard & Resource Maps (Outcome 2) and the Action Plan (Outcome 3), as discussed in Part III.

Community-based Definitions, Purpose, Mission & Vision

Disaster resilience can be understood as the ability of a system, such as a community, to cope and adapt to severe stressors like disasters and severe environmental shifts and degradation such as impacts from climate change, using their own resources, skills, knowledge and networks. It is critical that resilience-building be developed through an integrated bottom-to-top and lateral approach, to engage citizenry and multiple stakeholders, establish cross-boundary relationships and networks, and leverage resources in disaster and climate change adaptation planning. Community-based disaster resilience and climate change adaptation planning facilitates local identification of vulnerabilities to hazards and climate change, as well as enables establishment of local values, assets, resources, skills and knowledge which will support a community's coping and adaptive capacity.

Defining Resilience

The committee worked to define what resilience meant to them and how to work towards becoming more resilient to disasters:

What is resilience?

The ability to recover, bounce back or adapt after a disaster or big change.

To be Resilient:

Involves people, government, place; is an ongoing process; is locally defined & planning for the future.

In addition to a local definition of resilience, the following purpose, mission and vision were developed with the Disaster Resilience Committee.

PURPOSE: The rationale for development of the Action Plan was to understand current demographics and dynamics of community and what they mean for local resilience to disasters, including identifying vulnerable and resilient populations and areas, and developing an Action Plan and Community Risk & Resource Maps to promote local resilience.

MISSION: Implement & sustain the Hanalei to Hā`ena community-based disaster resilience plan & committee.

VISION: The isolated, rural coastal communities of Hanalei to Hā`ena are safe and resilient to natural hazards, the impacts of climate change and social, cultural, economic, developmental and environmental threats.

Approach

The approach used was Community-based Participatory Research & Learning, which draws from many disciplines, engages stakeholders from community and government, non-government and community-based organizations, in order to develop sustainable collaborative goals and outcomes.

The Hanalei to Hā`ena Community Disaster Resilience Advisory Committee previously included the following stakeholders:

- Community members from Hanalei to Hā`ena

- Hanalei Watershed Hui
- Hanalei to Ha'ena Community Association
- Governor State of Hawai'i
- Kauai County Mayor Kawakami
- State of Hawai'i Department of Land & Natural Resources, State of Hawai'i
- State of Hawai'i Department of Transportation
- State of Hawai'i Department of Health
- University of Hawai'i @ Mānoa, Department of Natural Resources & Environmental Management, College of Tropical Agriculture & Human Resources
- County of Kaua'i Police & Fire Department, Civil Defense, Council
- E Alu Pū (Move Forward Together), Kua (kua 'āina ulu 'auamo)
- National Oceanic & Atmospheric Administration (NOAA)

The Hanalei to Hā'ena Community Disaster Resilience Team

Since 2008, community members and the Hanalei Watershed Hui have collaborated with local organizations, businesses and government stakeholders to support community-based disaster resilience, or the ability to be prepared for, reduce risks to and overcome disasters better together. We are continuing this work and looking to recruit and train more volunteers to strengthen community resilience to disasters and climate change.

Community volunteer leadership for the Hanalei to Hā'ena Community Disaster Resilience Team includes two types of smaller teams that work closely together (**see figure Emergency Communications Structure**).

The first team is at the community-wide disaster coordination level, and includes 1-2 alternating/back-up positions for six positions which are in charge of their respective teams (if applicable): 1) the Community Disaster Coordinator; 2) an Emergency Operations Center (EoC) Liaison; 3) a Public Information, Outreach and Safety Team Captain; 4) a Spontaneous Volunteer and Donations Management Team Captain; 5) an Operations, Communications and Logistics Team Captain; and, 6) a Finance/Fundraising and Administrative Team Captain.

The second team includes neighborhood or "zone" disaster resilience teams for each of the 9 zones or community areas that get cut off during landslides and flooding, and these teams include five positions with 1-2 alternating/back-up people, including: 1) a Zone Captain coordinating the Zone Disaster Resilience Team; 2) Emergency Communications and Logistics hui; 3) Evacuation, Early Warning and Transportation hui; 4) Mass Care (Shelter/Feeding) hui; and, 5) Public Health (Emergency Medical Services/First Responders) hui. Communications happens between zone captains across zones, and between zone captains and up to the Disaster Coordinator through in-person, cell phone and/or 2-way FRS radio communications.

The role of a Zone Captain is to support and lead community disaster resilience efforts before, during and after a disaster, by coordinating your Zone Disaster Resilience Team, coordinating across all Zone Teams and with other partners, and using the Disaster Action Plan, Maps and Go-Kits, and your networks and skills.

Zone Disaster Resilience Team Volunteers engage in the following roles and responsibilities before (planning) and during/after (response) a disaster:

Sheltering & Feeding (Mass Care) Hui: PLAN: Identify & secure potential shelter & feeding venues;
RESPOND: Shelter & feeding site management

Emergency Medical Services/First Responders Hui: PLAN: Support identification of potential emergency landing zones, areas for mass care/triage & medical volunteers.
RESPOND: Coordinate with other hui to respond to medical emergencies (and evacuation) during disaster

Emergency Communications & Logistics Hui: **PLAN:** Improve & practice communications plan and radios. **RESPOND:** Provide communications and logistics support for community disaster response, particularly for shelters, feeding sites, emergency medical responses & staging areas

Evacuation (including checking on vulnerable households), Transportation & Early Warning Systems (EWS) Hui: **PLAN:** Coordinate with Transportation & Civil Defense to plan locally-effective early warning and evacuation; **RESPOND:** Support with early warning (through social media, verbal messages, among others) to alert and support evacuation of visitors and residents.

Fundraising, Financial Oversight & Administration Officer or Hui: **PLAN:** Support fundraising for ongoing plan implementation, funding of staging area supplies, for public events. **RESPOND:** Support disaster response by organizing donations (receiving & distributing).

What is in a Zone Captain Go-kit?

Emergency Supplies will be provided in a backpack, to be used by Zone Captains and other respective leadership to ensure your survival and ability to serve as Zone Captain during and after a disaster. This should not supplement any personal supplies the Zone Captains need for yourself during a disaster, nor your household preparedness kit. These are owned by community and must be maintained and cared for as such, after signing a Memorandum of Understanding.

Target Audience and Users, Public Awareness

This plan is intended to guide the Planning Committee's disaster resilience efforts over time, as well as to inform the public and collaborating stakeholders. It may also offer guidance and best practices for other communities to adapt and utilize for their disaster resilience planning. Through outreach and public awareness of the developed Plan and associated outcomes (e.g. community hazard and resource maps, action plan policies and programs, etc.), community members and partnering agencies will be engaged in continued disaster planning. Public outreach will occur through public educational events, disaster training education through partnering agencies, television (i.e. on the visitor information channel "we care about our visitors" info on hazards & safety), public meetings and Mayor's talks, and maintenance of the Plan social media outlets and communications strategies, public workshops and educational materials distribution.

Implementation, Monitoring & Evaluation Strategy & Sustainability

Continued implementation, monitoring and evaluative updating of the Community Hazard & Resource Maps and the Action Plan is supported by the How-To guidance in the Appendix and continued capacity-building, and will be informed by continued bi-monthly Committee meetings and participatory workshops, culminating in an annual Plan update. Recommendations may be policy, programmatic or institutional-level, and will be reflected in the Action Plan and any other outcome documents that are generated. The long-term sustainability of the plan convening will be led at the grassroots-level by the Hanalei to Hā`ena Community Association, with support by the Hanalei Watershed Hui.

HANALEI TO HĀ'ENA COMMUNITY DISASTER RESILIENCE ACTION PLAN

Purpose & Background

This Action Plan forms the basis of the larger Hanalei to Hā'ena Community Disaster Resilience Plan, in order to guide community-based disaster preparedness, response, relief and recovery activities and address identified risks and vulnerabilities, utilizing and building upon stakeholder knowledge and resources through activities, programs and other recommendations. The Action Plan is driven by community-based research and planning processes and with guidance from the Hanalei to Hā'ena Community Disaster Resilience Team volunteers, which support particular disaster functions and issues. The Action plan should be monitored and evaluated quarterly to revisit activities and goals, identify the status of accomplishment of particular action items, retire completed items, and establish new priorities.

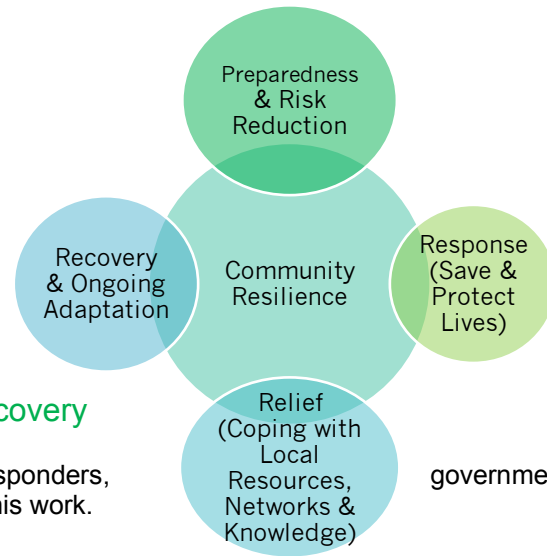
Structure

- Specific problems were identified, focusing on the gaps in preparedness and the underlying root causes of vulnerability
- Goals to address the root causes of these gaps and problems are in italics at the top of each issue
- Actions taken by the Working Hui to achieve the goals include policy or programmatic recommendations, call for funding, and others
- Many issues are cross-cutting and require participation and cooperation of more than one working hui, and the status of the action item is indicated
- The Action Plans are divided by Phases: 1) Ongoing Preparedness & Risk Reduction; 2) Response/Emergency Management & Relief; 3) Relief
- The Hanalei to Hā'ena Disaster Resilience Team members responsible for working on the action item are indicated, (listed in detail in the Appendix) and may include: 1) Fundraising, Finance & Admin Hui; 2) Disaster Volunteer and Donation Management (spontaneous & regular); 3) Emergency Operations, Communications & Logistics; 4) Mass Care (Shelter & Feeding); 5) Early Warning System, Evacuation & Transportation; 6) Public Outreach & Awareness; 7) Public Health EMS/Search & Rescue/First Responders.

Action Plan 1: Preparedness & Risk Reduction
Sharing the Plan with all community members, encouraging them to review and implement the plan; mobilize resources needed; conduct disaster preparedness training and raise awareness; monitor disaster threats, conduct drills and draw lessons to improve plan; network and coordinate with government mgt. and other communities; engage in advocacy and lobby work regarding disaster mgt. and development-related issues; expand membership and involvement in community.
Action Plan 2: Response/Emergency Management & Phase 3: Relief
Depending upon the hazard event or particular emergency, activate the Community-based Disaster Management Structure through the designated communications plan; Issue Warnings; Support Evacuation, sheltering & feeding; support Search and Rescue with FD, CERT and community participation; Provide First Aid & support subsequent medical assistance; conduct damage assessments and report for assistance. Coordinate, plan and implement relief delivery operations with aid agencies, donations and spontaneous volunteers.
Action Plan 4: Recovery
Facilitate social, economic & physical rehabilitation of community (livelihoods, trauma counseling, reconstruction); coordinate receiving assistance; evaluate performance of plan & committee/group and identify areas for improvement

Disaster Cycle & Community Resilience Action Planning





government agencies, non-profit

emergency management protocols,

Principles for Community Preparedness, Response, Relief & Recovery

The following principles are to be understood and agreed to by community responders, organizations, faith-based groups, private sector and any others involved in this work.

These principles frame the following Disaster Resilience Action Plans, and are informed by community engagement ethics and environmental protection guidance.


- Principle 1. Emergency response efforts **prioritize the safeguarding of life**, first and foremost, as well as the protection of public health, the environment, social, cultural and economic resources, and public and private property.
- Principle 2. Emergency/Disaster **response is done in a way that reinforces the importance of household and community-wide preparedness and self-sufficiency** for at least 72 hours;
- Principle 3. Emergency **preparedness, response and relief work utilize these Action Plans, resources and tools** to support local preparedness, minimization of potential effects of the emergency on people through early warning, evacuation and emergency communications and coordination.
- Principle 4. Emergency efforts **leverage use of all available resources** (local, non-local, public, private)
- Principle 5. Ensure that the **response and relief work is community-driven** and in done in partnership with this plan, committee and leadership in ways **that don't undermine community, the environment, the economy and future resilience**
- Principle 6. Disaster **assistance is prioritized for the most vulnerable, affected and in-need, and ensures community accountability** that prohibits hoarding, stealing and other unethical behaviors that aren't pono.
- Principle 7. Community-based, Eco-Solutions for **Resilient "Green" Recovery** will:
 - **Ensure "Do-no-harm" to people and communities** recovering from disaster by addressing environmental sustainability
 - Recognize that **addressing the environment has multiple benefits** for livelihoods, risk reduction, wellbeing


- Support **community ownership, diverse partnerships**
- **Build back safer** to future hazards/climate change
- Be **solution-oriented, and think long-term, promoting climate change adaptation measures** as part of recovery
- Emphasize the **use of local knowledge**
- **Reduce current & future vulnerabilities**, and
- **Implement protective policies and actions**



Action Plan 1. Preparedness & Risk Reduction


Disaster cycles are not linear, and preparedness and risk reduction require ongoing community kuleana and kokua. Based on over ten years of participatory community workshops and research, this first plan focuses on addressing the most important preparedness and risk reduction measures in Hanalei to Hā`ena communities. This includes laying out action items and policies (📋) for sustaining the plan, the Committee and the working hui to foster ongoing community mobilization around this Plan, and increase the resources and capacity for local response, relief and recovery.



The preparedness and risk reduction action plan also includes: raising awareness of the Plan; increasing individual and household preparedness support disaster preparedness, response training and raising awareness, knowledge and skills; monitor disaster threats, conduct drills and draw lessons to improve plan; network and coordinate with government management, civil society organizations and other communities; engage in policy and advocacy actions indicated in the Plan or as new issues arise for reducing risk; and expand membership and involvement in community.


Issue	Actions/Steps	Hui (Lead)	Status
 Disaster Resilience Plan Sustainability & Coordination	<p><i>Goal: Update & maintain the Disaster Resilience Plan through participatory workshops, meetings and public disaster fairs</i></p> <ul style="list-style-type: none"> - Strengthen volunteer community-based Disaster Resilience Committee as unified and coordinating voice of community before/during/after disaster - Establish disaster response “zone captains” for each isolated community, identify point people/teams at distribution points, update & practice the response action plan - Identify & coordinate planning with other local plans that relate to this process; notify/engage representative community members, agencies, organizations & stakeholders in the process - Join county VOAD—be Community Committee’s Liaison to VOAD—will give us more access to VOAD activities we can leverage & give us visibility - Publicize disaster plan to community, organizations and businesses, government officials: 	Disaster Plan Development Hui with Public Outreach & Awareness Hui	Planned to compete June 1, 2019 Ongoing to maintain plan Ongoing Ongoing




	<ul style="list-style-type: none"> Facebook, twitter & committee website (include info on meanings of terms (what do advisory, watch and warning mean?), types of shelters (evacuation vs. congregate care vs. refuge area, etc.), Community Disaster Fair Ho'ike broadcast (interviewing members) Create a disaster preparedness education video to show on Channels 54 and 6 (e.g. "Get Ready Hawaii" YouTube video (Kaua'i-wide) Provide emergency & disaster information: evacuation map, on visitor website, county website, other high-traffic venues (Focus on technology (smart phones) and online resources) phone alert and materials in TVR's, hotels, and in visitor shops, bars and restaurants Improve communication via VOAD, 211 or directly with Red Cross to advise if people will use shelters so they have time to remain open Develop online internal/confidential repository for data/document sharing amongst Disaster Resilience Committee Transition Disaster Planning to HHCA for long-term sustainability and maintenance build capacity to update plan and maps (utilizing Appendix) 		Planned Planned Planned
	Actions/Steps	Hui (Lead)	Status
 <p>Early Warning System & Evacuation</p>	<p><i>Goal: Evacuate visitors from North Shore hazard zones through targeted Early Warning & Evacuation.</i></p> <p>Develop a system of accountability for ensuring Early Warning & Evacuation of visitors:</p> <ul style="list-style-type: none"> Identify & Confirm Evacuation Alert Points: places to inform visitors to evacuate (e.g. check points at hiking areas and parks, beaches, stores and restaurants/bars, sign at lookout/Princeville advising not to proceed down road if it may close Improve public and Committee subscription to apps, local news, radio, all alerts that can receive through text, cell Campers/independent travelers/day trippers: Work with County Parks & Rec, KVB to identify best strategy Work with local businesses, restaurants, hotels, etc. to communicate evacuation warnings Ensure evacuation plan prioritizes visitors to be blocked from coming in, and to be routed to airport Need to understand KKCR/FEMA/Skywarn spotters/SirenNet policy (local liaison protocol?) for early warning alerts TVRs (legal) & VRBO & TVRs (unregistered): <ol style="list-style-type: none"> Identify TVR's with land line phones &/or cell phone contacts 	<p>Evacuation, Transportation Hui & EWS Hui</p> <p>Emergency Communications, Logistics Hui & Public Outreach & Awareness Hui, Disaster Coordinator</p> <p>Evacuation, Transportation & EWS Hui</p>	Planned


	<ol style="list-style-type: none"> 2. TVR Managers to find out more information on getting all TVR home phones access to State Civil Defense Emergency Alert System; 3. TVR managers to get a uniform updated list of rental units (includes VRBO? campsites?) (utilize HTA website Visitor Industry Plant Inventory) 4. Create a call-down alert system: TVR owners or property managers? <p>Propose protocols/policies for:</p> <ol style="list-style-type: none"> 1. Expedited Evacuation out of Hanalei to Hā'ena areas (i.e. one way traffic only) <p>(Raise awareness on State Legislation from 2014 that enables public egress on private property during emergency declarations (to free up land for evacuation, sheltering, waterways/debris management)</p> <ol style="list-style-type: none"> 2. Restricting re-entry into hazard zones pre and post-disaster (i.e. into Hanalei from bridge during potential road closure and post-disaster to ensure local safety and recovery) 3. Establish helicopter evacuation disaster rates per seat (with prioritization for persons not luggage unless essential medical or other supplies) to prohibit/discourage price gouging (check current gouging law) <ol style="list-style-type: none"> a. Need variance for landing on North Shore (need planning commission approval) b. Get visitors to war memorial, KCC or other designated refuge area/hurricane shelter, etc. depending on hazard; eventually evacuate visitors to airport c. Divide island by sections, each has a responsible evacuation plan? d. Need more accurate counts of visitors (daily/weekly/monthly) over different seasons to estimate # people at risk e. Need advanced pre-approved procurement process/vetting list of vendors with preference for local companies, including trash hauling, debris removal f. Need quick RFPs to allow for faster spending of government emergency funds by community groups 	Public Awareness & Outreach <i>working with</i> Communications & Logistics Hui	Ongoing
	Actions/Steps	Hui (Lead)	Status
 <p>Visitor Awareness & Education</p>	<p><i>Goal: Increase Visitor Awareness & Education on Local Hazards</i></p> <ul style="list-style-type: none"> • Address the challenge that visitors pose, as they lack awareness and knowledge of the natural hazards in the area, are disconnected from early warning systems and are unaware of how and where to evacuate to, and, are unprepared and lack local networks and resources, presenting a burden on community members and resources. <p> Put in place policy and implementation measures for the following:</p> <ul style="list-style-type: none"> ◦ Mandatory posting of disaster flyers inside all TVRs and hotels including hazard, preparedness information and resources, emergency contacts, etc. 	Public Awareness & Outreach Hui	Check current TVR County Law for required measures

	<ul style="list-style-type: none"> Multi-hazard map with evacuation routes & protocols (including KCD estimates of 3.5hrs to evacuate 4500 people across Hanalei bridge) Amendments to County of Kauai TVR Ordinance Required clause in all TVR/VRBO rental contracts notifying renters of risk to multiple hazards (specifics on “Acts of God”) Emergency notification from property owners go-kit including basic supplies in all TVRs and hotels to ensure visitors are able to be 		Check on new legislation passed in 2019
	Actions/Steps	Hui (Lead)	Status
 <p>Community Awareness, Knowledge & Skills</p>	<p><i>Goal: Increase community awareness, knowledge, skills and practices of individual, household and community disaster preparedness, response, relief and recovery.</i></p> <p>Develop a <i>Disaster Information Handout or Portfolio</i> that is professionally done (small mail-out/clipboard size) including:</p> <ul style="list-style-type: none"> —Map of evacuation routes (all and backups) color coded; —Updated phone numbers for emergency services; residential emergency phone tree template for residents to fill out; —shelters/feeding/other resources —emergency preparedness pamphlets (short concise directives with large print); should be stuck next to phone/visually obvious place <p>Create a diversified public outreach & awareness campaign:</p> <ul style="list-style-type: none"> Maintain the Disaster Resilience facebook page Create a Committee Website <ul style="list-style-type: none"> 1-3 persons posting/identify other administrators Post/stream official warnings/alerts and other information Increase education & public awareness on expectations for local preparedness (e.g. minimum of 3-7 days supplies for shelters) Post our Disaster Plan and/or Action Plan (need to determine what information is public and what should be kept within the committee) —Hold Annual Disaster Resilience Fair & Educational Events —Increase household preparedness and response awareness (community fairs, meet-the-scientists events, materials, trainings, videos, child-friendly educational events, checklists) —Host partner disaster education and training classes (American Red Cross, CERT, First Aid & CPR) —Television show on how to do CPR/first aid; Have locals with experience in disasters talk story and share their lessons learned 	Public Awareness & Outreach Hui and Disaster Volunteers Hui	Planned, Ongoing
			TBD
	Actions/Steps	Hui (Lead)	Status

 Support Special Populations	<p><i>Goal: Ensure additional support and considerations for special populations pre- & post-disaster</i></p> <p>Identify special populations through Mapping & local networks:</p> <ul style="list-style-type: none"> • Single female-headed households • New residents (< 5 years) particularly those not from Hawaii with no networks/knowledge • Identify vulnerable populations and/or populations possibly needing special evacuation, special medical needs and/or needing to be checked in on, including: • Kupuna, Houseless, Non English-speaking, Low income/lack of resources & supplies, Mobility & differently abled needs, Chronic health condition or other health needs, Mental health needs • Kalalau residents (200 winter, 400 summer) if evacuated where will they go & who will take care of them? <p>Follow-up with these groups:</p> <ul style="list-style-type: none"> • “Partners in Care”—network of care providers for homeless populations (Hawaii State VOS System-Virtual Operations Support team) who monitors emergency management messaging and requests for assistance (non profit used in disasters) • ADA (Linda Newland is focusing on disaster planning for persons with disabilities?) • Chronic care companies • Churches 	Public Outreach & Awareness Hui and Disaster Plan Development Hui	Ongoing Need to plan
	Actions/Steps	Hui (Lead)	Status
 Resource Mapping	<p><i>Goal: Identify local resources, facilities, knowledge and skills that will enable community to be self-sufficient and coordinate the local disaster response for at least 7 days.</i></p> <p>Identify, inventory (in two database lists) and spatially map (in community hazard and resource maps) community resources for self-sufficiency and to support committee’s efforts</p> <p>Continue to update two inventory spreadsheet databases (resource mapping lists):</p> <ol style="list-style-type: none"> 1. Community Resource Mapping Database for, including: (1) Medical Emergency Resources (2) Shelters; (3) Feeding venues; (4) Staging/Communications sites; (5) Tsunami Refuge Areas; and, 2. Database of Local people with skills, supplies, equipment—both searchable by location, resource, POC, etc. to aid Committee in disaster staging and deployment of resources <ul style="list-style-type: none"> • Distribute a resource mapping survey & via Survey Monkey or in-person, collect & organize data for churches, businesses, and other establishments • Geocode the resources from spreadsheet into the community resource & hazard 	Disaster Plan Development Hui	Done, Ongoing Done, Ongoing Need to plan Done

	<p>maps (depending on privacy agreements of resource owners/providers)</p> <ul style="list-style-type: none"> • Establish Staging & Communications sites & Committee Disaster Go-Kits: <ul style="list-style-type: none"> - Identify Staging & Communications SITES (& POC) to stage resources (Go-Kits) & people to coordinate committee disaster response - Equip Zone Captains with Go-Kits including identification to support local disaster response - Equip staged kits (containers or bins) across secure, strategic sites for local disaster response - Have bi-annual go-kit and staged kit inventory reviews as part of standing HHCRP Committee / hui activities 	Emergency Communications, Logistics Hui & Public Outreach & Awareness Hui	Ongoing
	Actions/Steps	Hui (Lead)	Status
 <p>Local Health Emergencies Preparedness</p>	<p><i>Goal: Identify resource lists for Local Health Emergencies if the road is closed or is inaccessible</i></p> <ul style="list-style-type: none"> • Identify a community coordination center / site for an ambulance/medical station in Hanalei & Hā'ena (for Floods) like a volunteer fire department (Need a durable/hazard resistant site for disaster response coordination--County could acquire the lots near Naue for stand-up of temporary emergency services and shelters &/or establish a new disaster coordination building) • Consider staging medical triage centers at: <ul style="list-style-type: none"> ○ Hanalei School ○ Hanalei Colony Resort ○ Courthouse, West side of bridge, etc. including: <ul style="list-style-type: none"> ▪ helicopter landing areas for medevac (need to f/u) ▪ boat/jet ski landing areas (need to f/u) • Identify and recruit local health workers (doctors, nurses, first responders, first aid and CPR certified individuals) who can help respond to health emergencies in a disaster • Formalize community Search & Rescue group • Dial 911 to alert first responders of any medical emergencies or rescue needs • Utilize the Communications Plan to call-down medically-trained locals utilizing the local resources in the Resource Mapping database or others: <ul style="list-style-type: none"> ○ Medical Emergency Resources: Identify, network and have a call-down for local doctors, firefighters/search and rescue, EMS workers, lifeguards, and those with counseling, first aid, child care or other skills, etc. to have local medical services available and deployable in a disaster (Need to understand legal issues with non-Hawaii certified medical practitioners assisting during a disaster) • Increase # people trained in First Aid, CPR & AED/defibrillator use 	<p>Emergency Medical Services/ First Responder Hui</p> <p><i>with</i> Communications & Logistics Hui</p> <p>Disaster Volunteers Education & Training Hui</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Planned</p> <p>Planned</p> <p>Planned</p>

	<ul style="list-style-type: none"> - Need to engage lifeguards as they are first aid/CPR trained and good at extricating folks - AMR representative offered to train committee on First Aid/CPR/AED operation? 		
	Actions/Steps	Hui (Lead)	Status
 Sheltering	<p><i>Goal: Raise awareness of hurricane shelters (outside of Hanalei to Hā`ena) and local non-hurricane gathering areas (for tsunami) and post-impact shelter/gathering areas for residents of Hanalei to Hā`ena.</i></p> <ul style="list-style-type: none"> o Raise awareness of residents on nearest hurricane shelters o Get access to Hanalei School (new point of contact and keys) to use as staging center and/or shelter (for non-hurricane events) o Identify temporary structures that may be used as shelters o Identify large fields and tents for shelter during longer-term tsunami or flood evacuations (coordinate with Civil Defense) o Pre-stage tarps & tents, storage locations, how many people we have to house, and what structures will remain in specific scenarios o Raise awareness on locations of shelters under different hazards 	<p>Sheltering & Feeding (Mass Care) Hui & Public Outreach & Awareness Hui</p> <p>Public Outreach & Awareness Hui</p>	
 Feeding & Water, Sanitation & Hygiene	<p>Identify potential feeding venues, potential sources of catering service & food supplies, food storage, food distribution centers & networks:</p> <ul style="list-style-type: none"> • Pursue catering surveys/agreements via Red Cross and hui members for (formal and informal) feeding venues • Once identify feeding venues, need estimate of # meals/day for # days • Include local restaurants' resources (generator, ice machine, freezers, gas grills, etc.)—capacity and willingness to feed people? 	<p>Sheltering & Feeding (Mass Care) & Disaster Plan Development</p>	
	Actions/Steps	Hui (Lead)	Status
 Communications & Logistics for Local Disaster Coordination	<p><i>Goal: Build local capacity for communications & logistics critical for effective disaster preparedness and response.</i></p> <ul style="list-style-type: none"> • Set up Internal communications for the committee's disaster planning • Identify method of internal planning & communication: —Email & phone c/ Working Hui <ul style="list-style-type: none"> - Online interface: for internal information storage (sharing and updating documents): Basecamp, Webpage (Wordpress, Square Space, GoogleDocs, Huddle <p>Formalize emergency communications plan:</p> <ul style="list-style-type: none"> • Support community-led disaster communications and coordination through the Plan's Working Hui, pre-establishing and practicing on different platforms (including non-digital) 	<p>Public Awareness & Outreach Hui & Fundraising/ Finance/ Admin Hui</p> <p>Evacuation, Transportation & EWS Hui</p>	<p>Ongoing</p> <p>Done, Ongoing</p>

	<ul style="list-style-type: none"> Establish platforms and training in coordination with community leaders & VOAD Support committee/community leaders to get trainings on CERT, CPR, First Aid & Supply Chain Management, emergency communications Leverage social media & texting (worked well) to coordinate emergency response in the future Equip go-kits with Sat Phones, BGANs for wifi connection hotspots HAMM radios and charging stations and gateway devices Increase redundant communication methods, resources and training needed for disasters Create multiple strategies and sites for emergency & disaster communications to coordinate local disaster response <p>Maintain the Disaster Communications Plan (Protocol & Hierarchy)</p> <ul style="list-style-type: none"> Identify committee's disaster response lead/s who will be responsible for coordinating committee's disaster response communications, shelter & feeding (e.g. need to live/work locally if possible, alternating 12hr shifts) have on-call list every two weeks such as using Doodle, have everyone's contact info Need to understand protocol for communicating information between communities & from community-level to County/State (RACES/ARES) using ICS as a model <ul style="list-style-type: none"> Bulletin boards/community meeting sites at various locations Get access to community safe and sound database Train Committee on Communications Equipment Use & Protocol <ul style="list-style-type: none"> Connect with local HAM radio operators (Contact Bob Anderson/Tad for more HAM info); Update HAMM radio list (some folks on it are deceased); Identify CERT & other folks that may have HAM license Train & stage HAM radio & SatPhone operators, FRS radio operations Leverage committee's external communications Run Tabletop Exercise (TTX) testing communications plan 	<p>Emergency Communications, Logistics Hui, Zone Captains, Disaster Coordinator</p> <p>Emergency Communications & Logistics Hui (/KFD)</p>	<p>Planned</p> <p>Planned</p> <p>Done</p>
	Actions/Steps	Hui (Lead)	Status
 <p>Community Risk & Resource Maps</p>	<p><i>Goal: Update participatory risk & resource maps of for hurricane/flood and tsunami to guide disaster planning</i></p> <ul style="list-style-type: none"> Develop evacuation map and routes and protocols (dependent on County evacuation plan) through workshops: Identify landowners of tsunami refuge areas Develop flood/hurricane maps Link community resource & hazard maps with resource mapping databases Identify & map tsunami evacuation routes & refuge areas 	<p>Public Awareness & Outreach Hui</p> <p>Work with Evacuation &</p>	<p>Done, Ongoing</p>

	<ul style="list-style-type: none"> • Formalize helicopter/aerial evacuation plan • Formalize aid distribution points (boat & helicopter) • Establish tsunami evacuation routes & refuge areas: • Coordinate evacuation routes and plans with Hanalei School (4-level procedures) & pre-schools • Once routes established, need evacuation signage, more education & public awareness around new evacuation zones, routes, etc. • Make planning considerations & do public awareness and outreach to persons with disabilities, special needs, including transportation • Have pre-determined assembly points, cache stash locations (Staging locations), shelters, special needs areas—for Hanalei School, work with Red Cross &/or school to have arrangements to utilize as shelter/staging site under different hazard scenarios • Support for critical relief distribution & evacuation points on public lands and waterways and lands (e.g. Wainiha river park) • Map ports of entry, distribution sites, evacuation sites by land, air and water (including Wickman and Robeson property access to stream) 	Transportation Hui	
--	--	--------------------	--

Action Plan 2. Emergency Response & Action Plan 3 Relief Plan / Checklist

Depending upon the hazard event or particular emergency, this Response & Relief Action Plan serves as a checklist to activate the Community-based Disaster Management Structure and enact and adapt this Plan given local needs, resources and conditions. These emergency preparedness and response actions may include the following: Issue Warnings; Support Evacuation, Sheltering & Feeding; support Search and Rescue with FD, CERT and community participation; Provide First Aid & support subsequent medical assistance; conduct damage assessments and report for assistance.

Hazard & Timeline	EMERGENCY TASKS/DUTIES	Person/s Responsible
TSUNAMI WATCH/ADVISORY Distant (8-22 hrs)	Tsunami WATCH/ADVISORY Issued (or bulletin says “Civil Defense is Evaluating the situation”) <input type="checkbox"/> Take care of personal/household emergency preparedness measures <input type="checkbox"/> Activate <i>Emergency Communications Plan</i> (<i>Contact List + Hierarchy Chart</i>) <input type="checkbox"/> Check go-kit (or staged kit if applicable) to make sure it’s good to go (charged, working comms, etc.) <input type="checkbox"/> DC to call down or mass text to Zone Captains and Working Hui to put volunteers on-alert <input type="checkbox"/> DC, Working Hui Leads check radio & official channels for emergency messages <input type="checkbox"/> Public Outreach & Awareness Lead monitor and update Facebook and Website pages with official DEM/SCD/NWS warnings as feasible, including warning visitors ASAP	Disaster Coordinator Working Hui Leads Zone Captains
Hazard & Timeline	EMERGENCY RESPONSE TASKS/DUTIES	Person/s Responsible
Tsunami WARNING	Tsunami WARNING Issued and/or as soon as Tsunami Sirens Sound (max 3 hrs pre-landfall) <input type="checkbox"/> DC to call down or mass text to Zone Captains/Working Hui to update status to warning & ensure zone captains are evacuating with their Go-Kits and have alerted their zone volunteers <input type="checkbox"/> DC to call down to Working Hui Leads to call-down their Working Hui members to be on-alert <input type="checkbox"/> KEMA & DOT to ensure the light at the bridge is greenlit for evacuation out of Hanalei <input type="checkbox"/> Get staged kits out of tsunami zone (trailer/bins) <input type="checkbox"/> Working Hui Leads, Zone Captains to grab evacuation go-kits (and personal kits) and deploy to tsunami staging/refuge areas <input type="checkbox"/> Emergency Warning, Evacuation & Transportation Working Hui to coordinate with CERT/Reserve Corps and other volunteers to direct local traffic to evacuation staging areas and to direct visitors out of the area <input type="checkbox"/> Zone Captains to coordinate with landowners to unlock gates for accessing tsunami refuge areas <input type="checkbox"/> DC & Emergency Comms/Logs, all Working Hui Leads and 1-2 member/s deploy with go-kit to a Relocated (out of Tsunami Zone) <i>Local Emergency Operations Center</i> (normally the Courthouse) to stage with Fire/Police and coordinate communications	DC Emergency Communications & Logistics Hui Working Hui Leads Zone Captains Emergency Warning, Evacuation & Transportation Working Hui Public Outreach & Awareness Working Hui

	<input type="checkbox"/> Public Outreach & Awareness Lead monitor and update Facebook and Website pages with official DEM/SCD/NWS warnings as feasible.	
Hazard & Timeline	EMERGENCY RESPONSE TASKS/DUTIES	Person/s Responsible
TSUNAMI is Imminent/ happening (same for **Nearshore Tsunami (10-30 minutes))	<input type="checkbox"/> **All Working Hui Leads & teams, and Zone Captains & teams, shelter in place in tsunami refuge/staging sites <input type="checkbox"/> Tsunami refuge area/staging sites Centers/Go-Kit Site Neighborhood Captains, provide emergency communications <input type="checkbox"/> Zone captains & working hui assist with managing evacuation refuge/staging site , including establishment of sanitary areas if needed, traffic control , communication of official emergency messages <input type="checkbox"/> Public Outreach & Awareness Lead monitor and update Facebook and Website pages with official DEM/SCD/NWS warnings as feasible.	Working Hui Leads Disaster Coordinator Mass Care, Logistics EoC Community Liaison
Post Tsunami (All-Clear Issued) 1 day—6 weeks post-event	<p><i>If a NO TO MINIMAL DAMAGE, ROADS NOT WASHED OUT</i></p> <input type="checkbox"/> Working Hui Leads/tsunami evacuation refuge responders assist with return traffic control, waste cleanup and exit of property. <input type="checkbox"/> Ongoing coordination and comms between Lihue EoC and DC &/or Local EoC on needs, damages, resources <p><i>If LOCAL IMPACTS ARE SIGNIFICANT, ROADS WASHED OUT (True-Disaster)</i></p> <input type="checkbox"/> For any life threatening issues or deceased individuals identified, call 911 <input type="checkbox"/> Conduct daily briefings (Led by DC, for Zone teams, Working Hui and Local EoC) <input type="checkbox"/> For any life threatening issues or deceased individuals identified, call 911 <input type="checkbox"/> Support with rapid damage assessment (on foot, using drones, boats, etc.) and conduct Search and Rescue and call 911 as needed for injured and deceased; support with first aid as feasible <input type="checkbox"/> Support with ongoing damage assessment, needs assessment and other data collection and entry <input type="checkbox"/> Make Incident Reports as needed <input type="checkbox"/> Manage refuge area shelters are opened/stood up	DC EoC Liaison, Zone Captains, Working Hui, DC First Responder Hui Zone Captains & Fundraising, Financial Oversight & Data Hui All Mass Care Hui, Zone Captains

	<input type="checkbox"/> Facilitate evacuation and/or bulk supply distribution of food, water, etc. if needed <input type="checkbox"/> Facilitate emergency communications until no longer needed <input type="checkbox"/> Provide updates (need standardized Refuge Site Report) to DC/Local Communications Center of status of refuge site, needs , etc. (TBD standardized Refuge form to report # cars, people, sanitation issues, food/water issues, health emergency issues, accessibility, if assistance needed) <input type="checkbox"/> Utilize emergency communications to open private shelters for congregate care and for community members at various local coordination sites <input type="checkbox"/> Post resource and other updates to community bulletins <input type="checkbox"/> Manage basic health emergencies with first aid <input type="checkbox"/> Manage spontaneous volunteers & donations (appendix)—coordinate with Hawaii VOAD and spontaneous aid organizations for coordination of donations requests and distribution <input type="checkbox"/> Use community resource list & maps to facilitate coordination of food, water, shelter, health , etc. <input type="checkbox"/> Ongoing coordination and comms between Lihue EoC and DC &/or Local EoC on needs, damages, resources <input type="checkbox"/> Conduct daily debriefings (DC leads for Zone teams, Working Hui and Local EoC)	Emergency Comms/Logs Hui, DC Zone Captains, Emergency Comms/Logs Hui, DC & EoC Liaison Emergency Comms/Logs Hui, Zone Captains, DC Public Outreach & Awareness Hui Mass Care & Public Health/EMS/First responder Hui
	<p>Once response is stabilized, if there is ongoing relief work:</p> <input type="checkbox"/> Coordinate, plan and implement ongoing relief operations with aid agencies, donations, and spontaneous volunteers utilizing the Action Plan, the Disaster Communications Plan, Go-Kits, Committee volunteers, Community Resource & Hazard Maps and Resource Mapping Databases <input type="checkbox"/> Conduct Final Debrief & After Action Report within 1-2 weeks post-event or as feasible once response has evolved into relief, incorporate lessons into Action Plan (All including fuller Hanalei to Hā`ena Community Resilience Committee-incl. government & NGO reps) <input type="checkbox"/> Document unmet needs, requests for funding, public service provision and recovery recommendations (policies, programs, etc.)	Public Awareness Hui EoC Liaison, Zone Captains, DC Zone teams, Working Hui and Local EoC

Hazard & Timeline	EMERGENCY RESPONSE & RELIEF TASKS/DUTIES	Working Hui
------------------------------	---	--------------------




		& Person/s Responsible
Flash Flood, Landslides	<u>WATCH Issued (i.e. for flash flood)</u>	Disaster Coordinator, Emergency Communications Lead, Working Group Leads
Preparation (if possible)	<input type="checkbox"/> Activate <i>Emergency Communications Plan</i> <input type="checkbox"/> <u>Disaster Coordinator</u> and all <u>Working Group Leads</u> put on-alert, check radio, news and online for official emergency messages <input type="checkbox"/> <u>Public Outreach & Awareness Lead</u> monitor and update Facebook and Website pages with official DEM/SCD/NWS warnings as is feasible <input type="checkbox"/> <u>DC</u> to call down to <u>Zone Captains</u> to call-down <u>Working Hui members</u> to be on-alert <input type="checkbox"/> <u>Working Group Leads</u> to check their go-kits, shelter volunteers to check their shelter kits Convene a Committee Briefing to Review Hurricane Response Plan	DC, Zone Captains, Working Hui
During-event	<u>WARNING Issued</u> <input type="checkbox"/> 3-12hrs flood WARNING: DC & Emergency Comms. DC & Emergency Comms. Working Group Lead and 1-2 member/s deploy with go-kit to Local Communications Center (Hanalei School) to stage with Fire/Police and coordinate HAM radio and FRS radio operations <input type="checkbox"/> All <u>Working Group Leads, members</u> seek emergency shelters utilizing maps and shelter updates via media <input type="checkbox"/> For those in emergency shelters, assist Red Cross shelter volunteers with managing shelter	Disaster Coordinator
Post-event	<u>If a Non-Event (Non-Disaster, minimal damages)</u> <input type="checkbox"/> Call down Committee emergency responders and notify of updated downgraded status; stand down emergency communications <input type="checkbox"/> Assist Red Cross with breakdown of shelters <input type="checkbox"/> Update Committee website/Facebook pages with final weather updates, damages <input type="checkbox"/> Conduct Committee debrief within 1 week post-event or when feasible, incorporate lessons learned into Action Plan for improvement <u>If an Event (True-Disaster)</u> <input type="checkbox"/> Facilitate transition of emergency shelters to congregate care shelters	DC, Emergency Comms Lead, Mass Care DC, Emergency Comms Lead

	<p>facilitate evacuation and/or bulk supply distribution of food, water, etc. via other non-coastal roads if needed (i.e. drum road);</p> <p><input type="checkbox"/> Utilize emergency communications to open private shelters for congregate care post resource and other updates to community bulletins</p> <p><input type="checkbox"/> Offer emergency communications for community at various coordination sites manage basic health emergencies with first aid, etc.</p> <p><input type="checkbox"/> Facilitate emergency communications until no longer needed; provide updates to IC/Local Communications Center of status of refuge site, needs, etc. (may want to get standardized form for HAMs to report i.e. # cars, people, sanitation issues, food/water issues, health emergency issues, accessibility, if assistance is needed, etc.)</p> <p><input type="checkbox"/> Manage spontaneous volunteers & donations (Appendix 9)—coordinate with Hawaii VOAD for coordination of donations requests and distribution</p> <p><input type="checkbox"/> Utilize resource mapping matrix to facilitate coordination of food, water, shelter, medical resources</p> <p>Once response is stabilized, if there is ongoing relief work:</p> <p><input type="checkbox"/> Coordinate, plan and implement ongoing relief operations with aid agencies, donations, and spontaneous volunteers utilizing the Action Plan, the Disaster Communications Plan, Go-Kits, Committee volunteers, Community Resource & Hazard Maps and Resource Mapping Databases</p> <p><input type="checkbox"/> As needed, conduct debrief / after action report within 1-2 weeks of post-downgraded event or when feasible, incorporate lessons learned into Action Plan for improvement</p>	<p>-Mass Care Hui -Public Outreach Hui -Disaster Coordinator</p>
--	--	--

Action Plan 4. Community-centered Needs Assessment & Resilient Recovery Recommendations

This final Action Plan focuses on resilient recovery recommendations following the April 2018 rain bomb and subsequent emergency events, covering several identified needs or themes, and specific actions or policy recommendations (indicated by the 📋 icon) to address that issue under varying timelines and sense of urgency, including : 1) Immediate and urgent actions to finalize the relief work and ongoing mitigation; 2) Mid-term/semi-urgent actions to support ongoing recovery and adaptation; and, 3) Long-term or systemic changes needed for adaptation and transformation to reduce risk and promote resilient recovery over several years.

Please note that several sections previously in the Recovery Recommendations report (including Community Leadership & Preparedness for Future Emergencies, Response, Evacuation, Early Warning, Communications, Search and Rescue, and Communications/Access to Information are now integrated in the Action Plan 2 Preparedness & Response Action Plan.

Identified Needs	<i>Immediate & URGENT</i> (Relief transition, Mitigation) JANUARY – APRIL 2019	<i>Mid-term / SEMI-URGENT</i> (Recovery, Adaptation) JANUARY - DECEMBER 2019	<i>Long-term / SYSTEMIC CHANGES</i> (Adaptation/ Transformation) (1-3 years) JANUARY 2019 – DECEMBER 2021
 Recovery Planning	<ul style="list-style-type: none"> - Increase local food production, establish community gardens (nutritional food + social bonding) in reclaimed & open spaces, including water resources / filters/ containers and energy access in emergencies - Identify culverts still needing cleaning, understand rules/regulations for clearing culverts/upstream causes of flooding on private property - Support to respectfully, sustainably transition people off of assistance dependency 	 <ul style="list-style-type: none"> Maintain limited visitor access at all times; prohibited visitor access during emergencies and warnings (moratoriums); as road opens up, have phased and capped entry of visitors - Establish plan to remove abandoned rental cars out of emergency zone - Update the Plan maps and action plans to include recent impacts from the floods, resources and staging sites used, and helicopter/barge/boat landing zones, including long-term flood management planning - Identify and fund Community Impact Grants/Quick Impact Projects for unmet needs in households/properties and community resources and for ongoing community-centered recovery initiatives (find 	 <ul style="list-style-type: none"> Enforce illegal TVRs - Increase emergency awareness for visitors going to N. Shore (including TVRs to have emergency awareness information, early warning system, contact #s, evacuation maps & instructions, and emergency supply kits for visitors) - Share N. Shore response, relief and recovery experiences with other communities/statewide - Recovery efforts must support nexus/synergistic strategies that support multiple wins for sustainable economic growth, environmental recovery and protection, and social justice and healing - Acknowledge what lands/homes cannot continue to be saved (repeat-losses in

*Identified
Needs*

*Immediate & URGENT
(Relief transition, Mitigation)
JANUARY –
APRIL 2019*

*Mid-term / SEMI-URGENT
(Recovery, Adaptation)
JANUARY - DECEMBER 2019*

*Long-term / SYSTEMIC CHANGES (Adaptation/
Transformation)
(1-3 years)
JANUARY 2019 – DECEMBER 2021*



***Community
Governance***

ways to compensate community-financed recovery and cleanup), supporting social bonding

hazard zones, areas that will be prone to sea level rise, etc.) and work with community/government to resettle households out of hazard zones into affordable, just housing (see housing)

- Improve understanding of how to direct, match (and localize) donation requests and sources, and cash-for-disaster response/recovery work / reimbursement services
- Need a disaster finance committee (HCF rep/government CBOs) to review missions, ensure people understand rules/regulations of receiving and using disaster funds, etc.--could include a 1-pager for how to govern and manage donation funds
- Need to raise awareness on how to raise \$ e.g. workforce emergency grant, unconditional cash grant support need to take into consideration cultural nuances
- Have trust-building activity for committee members

- Improve community awareness on future hubs for disaster services (rules and regulations for raising funds for Aid/Services/Donations/Disaster Recovery Centers)
- Formalize relationships with financial institutions or entities to support with oversight of financial assistance to (and reporting required of) individuals/homeowners, small businesses and non-profits
- Need an accountability map/list of how post-disaster funds were used and the resources remaining, including a cost-analysis of what has been spent on the road vs. environmental management, jobs and resilience benefits
- In Plan table top exercise workshop, explore adding an island-wide flood element to understand how local dynamics, governance and resources might change
- Have an annual Community Event/Public Awareness Fair to showcase the HHCRP and Committee, government, NPO and other partners

- Have better ways to count evacuees/returnees to improve aid estimates
- There should be a local organization or committee committed to collecting, organizing, and distributing donations, funds, and volunteer groups in future disasters (HHCA or VOAD type Community-based Organization/NPO)
- Need to share lessons learned with/through KUA to support intergenerational leadership and knowledge transfer, and so other communities statewide can learn about community resilience/Can-Do
- Need long-term community engagement (including youth) in the plan update process and future work & to be a catalyst to fill current gaps and to respond to new population dynamics

Identified
Needs

Immediate & URGENT
(Relief transition, Mitigation)
JANUARY –
APRIL 2019

Mid-term / SEMI-URGENT
(Recovery, Adaptation)
JANUARY - DECEMBER 2019

Long-term / SYSTEMIC CHANGES (Adaptation/
Transformation)
(1-3 years)
JANUARY 2019 – DECEMBER 2021



**Government
& CSO
Relations &
Coordination**

- Establish clear, trusted EoC-community liaisons (2-3 for backup) for more centralized communications between EoC liaisons, between NPOs, and from NPOs to Government, etc. (especially if VOAD doesn't stand up); consider relationship "floaters" to support with resolving/mitigating issues

- Need to improve understanding of the role of government agencies and NPOs before/during/after a disaster



Acknowledge and fund community-led services replacing or supplementing insufficient government services like transportation (walkability & shuttle), parking, basic maintenance like mowing fields (parks) and water quality in bay/cesspools (needing incentives to convert or update to updated systems, financial support, etc.) for all communities (not just Hanalei) and improved public health protections



Explore a % of taxes to be set aside for disaster response funds

-Improve VOAD representation by community leaders

-Ensure VOAD stands up to support community disaster response (regardless if county stands-up VOAD)

- Strengthen Committee relationships through disaster response mentorship partners and processes (e.g. IDs, forms) between government, VOAD and community for secured supply chain management and efficient disaster response coordination and communications

- Need one standardized damage assessment and needs assessment data form, collection process and case management referral system (HIPAA compliant)

- Need stakeholder list of who knows what, including forms, reporting, needs assessments & needs-based aid, etc.

- Improve needs-based vetting processes and support structures including FEMA, insurance representatives and others at disaster coordination sites;

-Pre-made questionnaires for disaster recovery information, including door hangers with communication information (where to find resources, survey, etc.)

- Improve/Update GIS Maps, use of Google Earth

- Ongoing emergency training including for county employees



Long-term government and external support for the Hanalei to Ha`ena Community Resilience Plan, committee and process is given, and respected through all Government (e.g. Development & Emergency) Plans, in alignment with the National Recovery Framework guidance that recovery be community-led



in future disasters, FEMA needs to come more quickly, before people have cleaned up substantially, to ensure timely and equitable assistance amounts are allocated



Need for suspension of certain minor rules (like parking tickets) during disasters

-Disaster-related streamline permitting to prevent repeat-losses

-Improved infrastructure for cell service in Ha`ena to support emergency communications

*Identified
Needs*

*Immediate & URGENT
(Relief transition, Mitigation)
JANUARY –
APRIL 2019*


*Mid-term / SEMI-URGENT
(Recovery, Adaptation)
JANUARY - DECEMBER 2019*


*Long-term / SYSTEMIC CHANGES (Adaptation/
Transformation)
(1-3 years)
JANUARY 2019 – DECEMBER 2021*


**Climate
Change
Adaptation**

- Understand the role of climate change in the April flood events and the following hurricanes, and what it means for future disaster risk (community educational events/fairs)
- Understand DLNR, DAR, State Parks, KEMA's role/plan for climate change adaptation (community liaison?)

- Integrate climate scenarios & models into recovery planning workshops, to understand impacts from (and develop adaptation plans for) sea level rise, increasing severity and frequency of storms, increasing air and oceanic temperatures, reef bleaching, etc.
- Community outreach on SLR tools (TAT fund) specific for disasters
- Do an EIS for Weke Road project that includes Sea Level Rise models


-  Integrate long-term climate change adaptation considerations into the resilient recovery planning process, policies and interventions

-  Implement a surcharge on houses, tourism, etc. in disaster areas
- Government should evaluate areas that they will be able to service with climate change and areas for relocation


**Social
Services,
Social
Justice,
Sense of
Place**

- Support shuttle system to reduce # visitors/cars on N. Shore (see Transportation)
- Protect what has gone well, like reclaiming and re-establishing ownership of community spaces—when road opens up again, need to protect this
- Need government social services to have increased surge capacity to deal with case load and needs, paired up with community leaders

- Improve awareness of visitors on respecting cultural / environmental protocols; balance tourism and the livelihoods dependent on it, with social/environmental health and sustainability
- Increase community access to public spaces (like Naue, restaurant and colony) for community convening activities
- Need to improve access to medication, daily healthcare, dialysis, etc. during emergencies (either bringing in medicines/medical care, or facilitating medical evacuation)





-  Support policies and actions that restrict access and improve attitudes and behaviors of visitors
- Preschools have waitlists, clearly need for more preschools and for safe playgrounds
- Install a natural, safe walk and bike trail along the highway





Health

- Increase access to psychosocial support services for those in need (including children)
- Improve disaster mental health and psychosocial support service access (KEO model of community services?) and training for public health professionals and lay persons, for during and after disasters

- Need long-term support for drug treatment, suicide and inability to access regular mental health services
- During disasters, need support for drug & alcohol detox therapy
- During disasters need better support from National Guard/PD & local leaders to monitor and secure ports of entry

- Support local medical/public health responders
- Supply first aid kits, medicines and vaccines (tetanus, cholera, leptospirosis, etc.) in emergency go-kits (move med supplies from storage bank to courthouse)
- KFD temporary substation out Ha'ena, co-located with multiple modular public services: police, DLNR, EMS, FD, Community

Identified Needs	<i>Immediate & URGENT</i> (Relief transition, Mitigation) JANUARY – APRIL 2019	<i>Mid-term / SEMI-URGENT</i> (Recovery, Adaptation) JANUARY - DECEMBER 2019	<i>Long-term / SYSTEMIC CHANGES</i> (Adaptation/ Transformation) (1-3 years) JANUARY 2019 – DECEMBER 2021
 Water & Sanitation, Waste Management	<p>(for those impacted and external responders)</p> <ul style="list-style-type: none"> - Department of Health needs to be engaged in emergency food distribution <ul style="list-style-type: none"> - Add cleanup crew trainings and local leaders as a Working Hui to support with quickly addressing water contamination, debris removal, water treatment and cleanup support to minimize hazard exposure and illnesses 	<ul style="list-style-type: none"> - Identify & engage in the Plan all local public health professionals and first responders, and add them to the Plan resources mapping/list (see previous note in Response) - Station (out of hazard zones) an AMR vehicle (and potentially a boat) and train local first responders near Ha`ena to support with search and rescue (day and night, land and ocean) and emergency medical services - Support households to pre-position/stock (and receive as soon after disaster as possible) cleanup kits to control mold remediation, and medicines to control water-related infections and diseases - Find out if the water tank up Wainiha-is potable? And can access for disasters? Or for pumping for wildfires/housefires? - Provide community with water filters even if just for individual use in disasters 	<p>Center (suggested acquisition of Canela Lots 5-8-12-6 for needed space)</p> <ul style="list-style-type: none"> - North Shore needs community health center to have dialysis services  Fix all cesspools, including all TVR's should be required to upgrade cesspools in order to maintain their license (Firm benchmarks for sewage including government assistance) <ul style="list-style-type: none"> - Create a better system for trash collection, sorting, and disposal after a disaster - Water catchment set up for water reservoir of local spring/for emergency use - Knowing where clean water is available in our area/water filling stations + foodbank provide water now
 Housing, Safety	<ul style="list-style-type: none"> - There are two problems and a common solution: homelessness, crowded housing and lack of affordable housing, matched with empty TVRs needing regular maintenance that are currently inaccessible to visitors. - For temporary housing options, allow displaced people to be safely housed, with 	<ul style="list-style-type: none"> - Need long-term permanent affordable housing outside of flood/tsunami zones, near the North Shore - Finish rehabilitation of damaged structures - Support homeless residents with semi-permanent tent structures (many already have, support reimbursement compensation of local leaders who have paid for this) 	 Support an ordinance (and enforcement) to make it illegal for vacation rentals to exist past the road closure for health, safety and welfare of residents, need policy change interpreted, particularly if they aren't using the structure (use it or lose it) <ul style="list-style-type: none"> - End transient vacation uses in the hazard zones in Wainiha & Ha`ena / all north shore

Identified Needs	<i>Immediate & URGENT</i> (Relief transition, Mitigation) JANUARY – APRIL 2019	<i>Mid-term / SEMI-URGENT</i> (Recovery, Adaptation) JANUARY - DECEMBER 2019	<i>Long-term / SYSTEMIC CHANGES</i> (Adaptation/ Transformation) (1-3 years) JANUARY 2019 – DECEMBER 2021
 Electricity / Access to Energy	<p>reduced rent and responsibility to maintain the properties in the interim</p> <p>- For disasters, need access to charging stations at disaster coordination sites, shared generators (with rules on how long you can run them, and for what) to support safe lighting and running of community kitchens and relief services</p>	<p>- Needs to be a public safety presence police, fire EMS, potentially neighborhood watch program</p> <p>- Solar hubs and generators at a baseyard/safe shelter in each disaster-prone area</p> <p>- Diesel generators; diesel and gas storage tanks at safe spots</p>	<p> Need to find policies to discourage flipping homes and encourage responsibility in those who move in</p> <p>-Long-term explore sustainable energy access ventures that are environmentally sustainable and resistant to hazards</p>
 Transportation / Parking	<p>- Convoy hindering job access, economic challenges—support ongoing community social media platforms and communications to work through this until roads are open</p> <p>- Better road signage on evacuation routes/zones</p> <p>-Need clear DoT point person for emergency evacuation/transport issues and to facilitate emergency decision-making with community committee</p> <p>-Need traffic lights and sensors for Hanalei bridge so that when traffic is backed up (in an emergency or not) past a certain point, the green light stays lit for those exiting Hanalei until traffic congestion is down; in an emergency, the light at Princeville would stay red, and only cars exiting Hanalei would be allowed out</p> <p>- Waipa convoy parking as staging site; need \$ to upkeep</p>	<p>- In future emergencies, important to keep placards & to identify who are residents vs. non-residents/staying in TVRs through placards), and need easier access to get placards (near community, not in Lihue);</p> <p> Keep flexible, fast-tracking of permitting during emergencies as it helped with continuing economic (however, balance with not compromising social justice and environmental safeguarding and policies)</p> <p>- Need to formalize Shuttle for visitors and restrict access/egress past the Hanalei bridge to residents only</p> <p>- Shuttle service needs to be community-engaged and driven to support residential restoration and responsible tourism to change how they treat community and what should/shouldn't be done and where</p> <p>- I.D. safe areas to park in during a flood/tsunami (create areas)</p>	<p>- Shuttle and no-visitor-entry regulations to aid with emergency evacuation of tourists/visitors</p> <p> Better advertisement enforcement in all visitor lodging, at airports, ads, etc. if they are staying in a hazard/s zone/s, and to have a plan for their tenants (some vacation rental businesses have apps for emergency notification, individual TVRs should do this)</p> <p>- Long-term support for resident-only parking stickers, and need to decide as community what to do with roads and parking/public property off of the roads</p>

*Identified
Needs*

*Immediate & URGENT
(Relief transition, Mitigation)
JANUARY –
APRIL 2019*

*Mid-term / SEMI-URGENT
(Recovery, Adaptation)
JANUARY - DECEMBER 2019*

*Long-term / SYSTEMIC CHANGES (Adaptation/
Transformation)
(1-3 years)
JANUARY 2019 – DECEMBER 2021*



***Nutrition/
Food
Security***

- Identify and address households with food and nutritional insecurity by referring them to food bank and other services (needs-based process needed)

- Support long-term funds for the N. Shore food bank (ongoing and emergency food stocks for a stockpile of at least 7-14 days)
- Establish Food hubs/community kitchens, food prep, food distribution and storage centers/pantries for disaster response/relief, with trainings on food preservation
- Support Waipa Foundation to get a backup generator that is flood-proof/raised to support community kitchen; and increase the # of mobile coolers for distributors of produce, to support community-wide food security in time of disaster

- Support community kitchen staging sites with needed resources and training (Waipa, Food Bank, Colony) + another in Hanalei
-Support access to community gardens in public or unused spaces to grow and access more food in times of disasters
- Identify and engage farmers and restaurants to support with provision of crops/livestock and potential retroactive reimbursement/compensation
-Need local (disaster-resistant) seed storage & farmer cuttings bank for post-disaster replenishment of crop



***Livelihoods
(Economic
Security)***

- Identify which livelihoods were most impacted, how and why, what the unmet needs are, and how to integrate these lessons into the planning process
- Improve communications to/from hotels and other resources to support them being more amenable to observing pre/post disaster protocols, and being more welcoming to offer safe harbor for residents seeking evacuation shelter

- Offer a quick training on human resources to help people identify paid or unpaid/volunteer jobs and their roles and requirements
- Immediate disaster employment fund to pay for work, easy system
- Support with agencies for unemployment, insurance, FEMA and other work program
- Understand through the planning process, the economic impacts of the disaster, and concerns/opportunities for shifting livelihoods
-Long-Term Recovery considerations – tourism for Hanalei, job loss for residents, cost to re-build, how to create jobs that promote and protect place and enable living wages despite commercial restrictions and high cost of living

- Identify & develop markets & training opportunities for improving sustainable adaptive livelihoods
- Identify and foster support in development plans and vocational training programs to enable new/adapted livelihoods that are amenable to impacts from future emergencies and climate change/sea level rise, climate variability
- Less restrictive access to trades, helpers, develop funding for agriculture economy, Support local worker skillsets
- Develop a list for craft fair, food fair, barter, community directory
- Better distribution reconciling reality of resident life with red tape of seeking recovery funds (state/fed/county, unequal distribution, requirements insufficient)

*Identified
Needs*

*Immediate & URGENT
(Relief transition, Mitigation)
JANUARY –
APRIL 2019*

*Mid-term / SEMI-URGENT
(Recovery, Adaptation)
JANUARY - DECEMBER 2019*

*Long-term / SYSTEMIC CHANGES (Adaptation/
Transformation)
(1-3 years)
JANUARY 2019 – DECEMBER 2021*



***Financial
Security &
Services***



***Environmenta
/
Management/
Safeguarding***

- Identify reimbursement needs and possibilities for community members who supported with community-wide disaster response/relief work and paid for resources (e.g. gas, boats, food, etc.) including community members who have done what should be state park services (cleaning) for years

- Support for funding final environmental cleanup projects / QIPs is needed for disaster recovery and for future disasters
- Figure out how to avoid/deal with donated plastic water bottle challenge (potential for recycling and using the funds for response supplies? Or using them as flotation devices)

- For disaster go-kits, recommended to have bucket filters and people bring their empty clean containers to fill

- Rock walls are causing flooding, impeding waterflow, needs to be addressed

- The water made new paths, need to map them

- Need to clean and manage private property by individual land owners

- Debris mapping and recovery

- Understand whether home mortgages, business loans, credit card agreements be modified by the financial institutions to allow for payment deferment/forbearance/late fee waivers/etc.

- Identify through the Plan workshops and mapping, the landscape scale of the environmental impacts, and the changes in hydrology post-flood, to inform future flood/landside hydro-meteorological events and impacts (environmental, livelihoods-like on taro farmers, etc.) and the resilience recovery plan

- Integrate into the Planning workshops, a Mauka to makai understanding (linked with the above) of impacts and changes to the reef/ecosystem health from impacts from climate change and future disasters

- Support ongoing long-term coral reef/coastal ecosystem health studies to understand impacts over time

- Develop social-eco-sustainable tourism options that match community values and give back (volunteer, cleanup, plant trees)

- For future disaster, set up cash disbursement systems and donors for emergency unconditional cash transfers as well as cash-for-disaster work programs

- Resilient Recovery Plan must integrate resource management strategies that improve environmental protection, restoration, sustainable land use (reduce infrastructural design decisions that increase hazard exposure and vulnerability) and community resilience planning (better use of ecosystem services for natural hazard mitigation, habitat protection) [see framework]




- Comprehensive land use planning in light of damage, SLR, flood plain & other studies (look into Hilo model post-tsunami)

- Look into setting up local recycling centers/local jobs, that have better green waste than Princeville river

- Hanalei historically full of water, and in use production, management, but now just shooting out to ocean, and how do we get that dirt back

- Somewhere to report and log observations now when it rains. Learn the paths of the water, the new places where it is going

Identified Needs	<i>Immediate & URGENT</i> (Relief transition, Mitigation) JANUARY – APRIL 2019	<i>Mid-term / SEMI-URGENT</i> (Recovery, Adaptation) JANUARY - DECEMBER 2019	<i>Long-term / SYSTEMIC CHANGES</i> (Adaptation/ Transformation) (1-3 years) JANUARY 2019 – DECEMBER 2021
	<ul style="list-style-type: none"> - Waipā + others to take part in leading education, training and support of environmental management - Tie jobs to environmental management for risk reduction and recovery/restoration, more scholarships and pathways to getting environmental degrees and jobs here in Hawaii - Better wetland management (buffalo farm Hanalei, waipa pasture) 	<ul style="list-style-type: none"> - Need new & improved NFIP regulations & new flood plain studies for Wainiha & Ha'ena - Need better shoreline setbacks - Potential tax for tourism during disaster recovery (fee) - Begin community-managed environmental review/assessment of recovery operations after 3-6 months - Watershed groups among renters/landowners in each valley to agree on their own land management plans 	<ul style="list-style-type: none"> - All the waterways were clogged, public and private – need to understand how to deal with the ones on private lands, putting money back into land, reinvesting in land etc. <p> End disaster exemptions to legal and coastal zone residents; no waivers for environmental regulations during emergency declarations, maintain CZM, NEPA, etc.)</p>
