

Hawaii County Hazard Mitigation Plan-Update

Phase 1 Public Meetings

Rob Flaner, CFM

Cindy Rolli, CFM

Tonight's Speakers

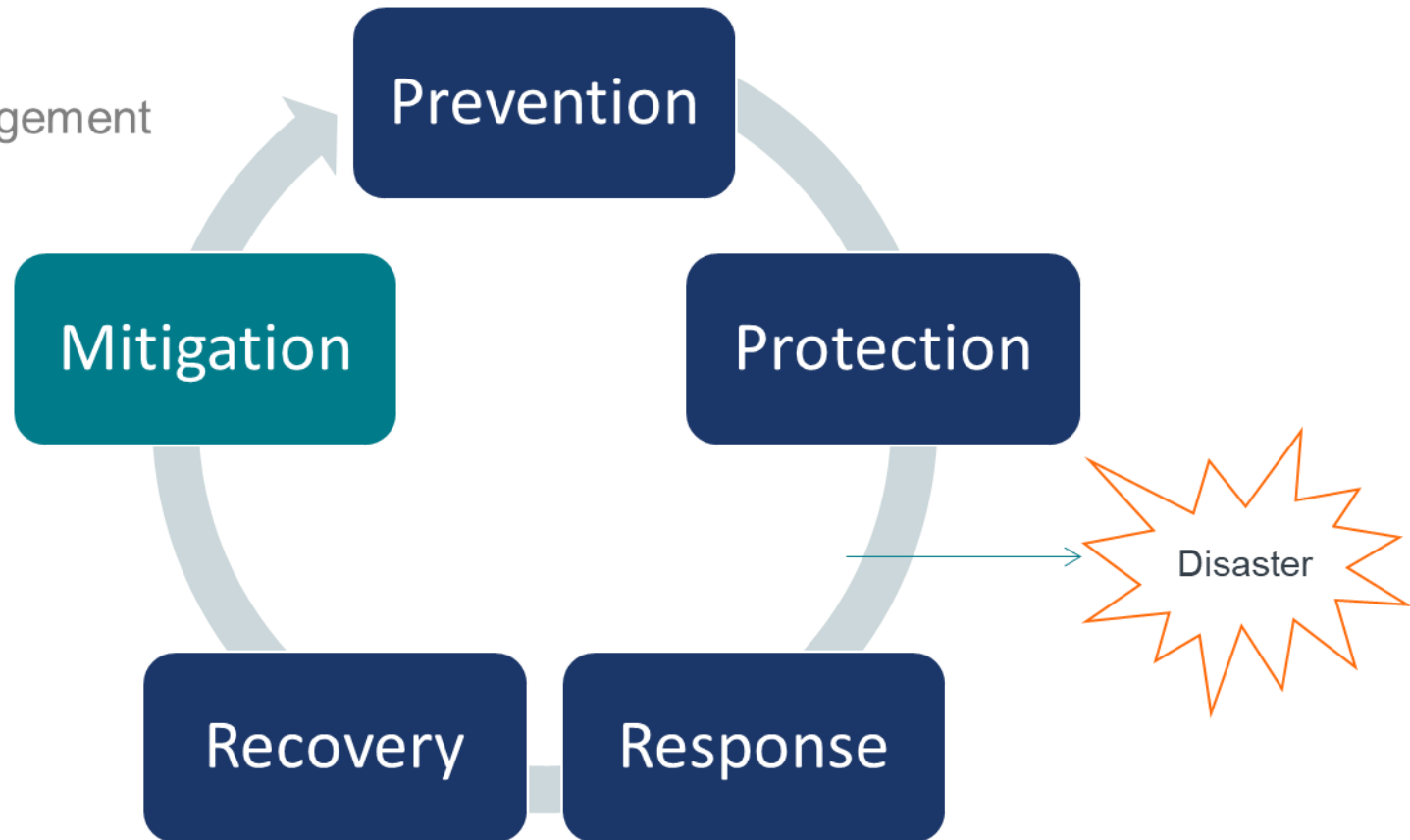
- Talmadge Magno – Civil Defense Administrator
 - 30 years with National Park Service providing; emergency management and law enforcement throughout western US and Hawai'i.
 - Last 8 years of career served as Chief Ranger of Hawai'i Volcanoes National Park
- Rob Flaner – Hazard Mitigation Program Manager, Tetra Tech, Inc.
 - Technical consultant to Hawaii County
 - Former Federal Emergency Management Agency (FEMA) contractor
 - Facilitated over 75 successful mitigation planning efforts since 2003
- Cindi Rolli – Lead Project Planner, Tetra Tech, Inc
 - Leading the planning process for this update
 - Also supporting the County's Recovery efforts

What are we going to talk about?

- Provide a brief overview of the drivers for planning
- Describe the Hawaii County planning process
- The Hazard Mitigation Working Group
- Vision and Goals for the plan
- The Risk Assessment
- Alternatives Analysis
- Next Steps
- Questions

What is Mitigation?

Five Phases of
Emergency Management



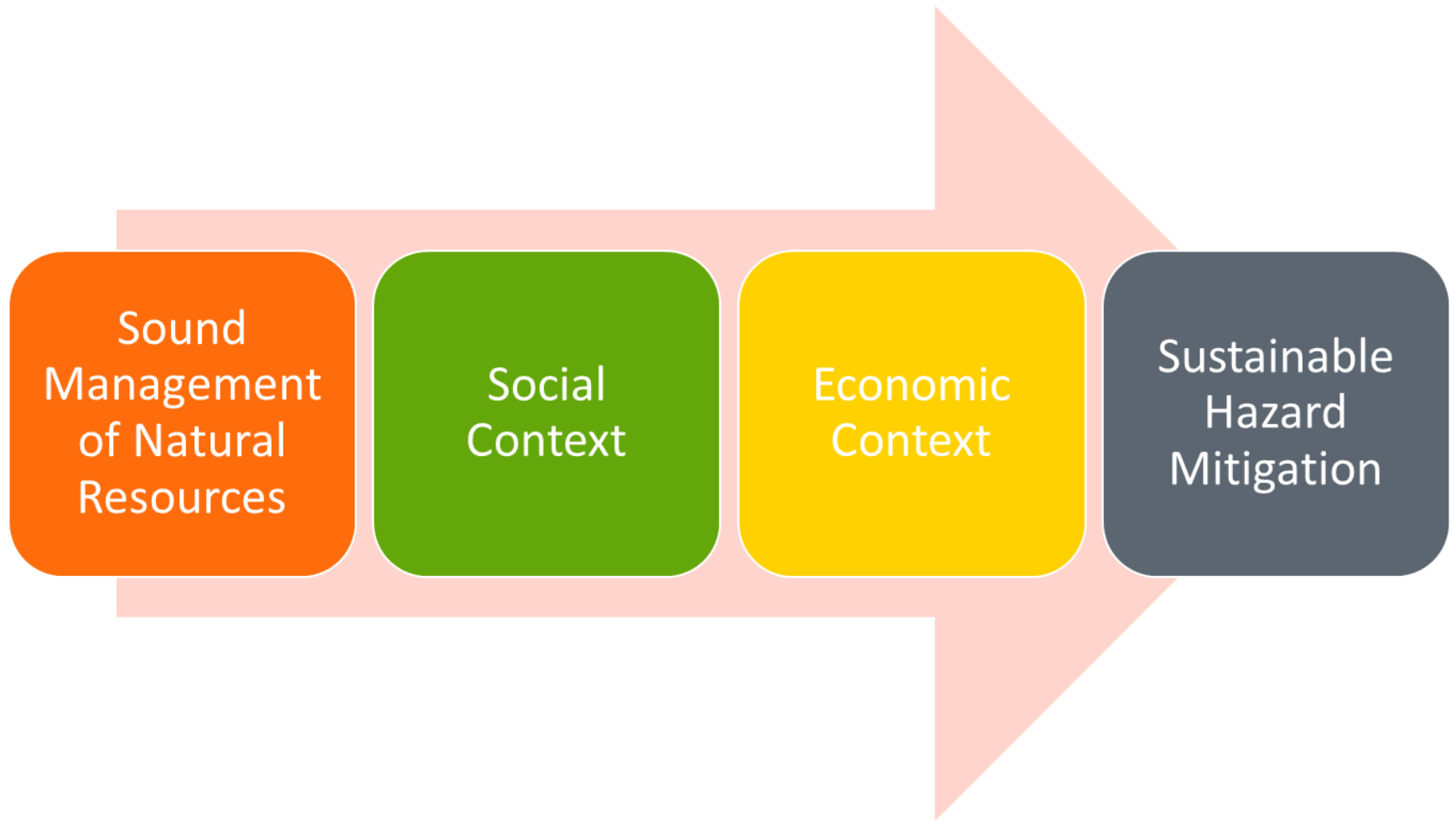
“Sustained action taken to reduce or eliminate long-term risk to life and property”

What is the Disaster Mitigation Act (DMA)?

Federal legislation that establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP)

“No Plan, no money!”

Disaster Mitigation Act of 2000



Why Plan?

- Establish/maintain eligibility for grant funds
- Preparedness: pro-active vs. reactive
- Sustainability
- Key element in emergency management
- Can set the course for response and recovery to impacts from natural disasters
- Requires commitment and support from both elected officials and their constituents



What is required in a DMA plan?

According to Section 201.6, 44CFR, an approved plan must:

- Engage the public through all phases of the plan's development
- Review and incorporate plans and programs that can support/enhance hazard mitigation
- Assess risk to natural hazards that impact a planning area
- Identify a plan maintenance strategy
- Identify and prioritize actions

This is a Plan Update

- FEMA Requires Local Hazard Mitigation Plans to be updated every 5-years.
- The last Plan for Hawaii County was approved in 2015
 - Addressed 13 hazards of concern
 - Identifies 8 goals and 20 objectives
 - Identified and prioritized over 30 actions to address those hazards with the greatest impact
- This plan update will:
 - Revisit the risk assessment
 - Reengage the public
 - Confirm vision, goals and objectives
 - Review core capabilities
 - Reconcile past actions
 - Identify and prioritize new actions

- Promote the wise use of resources and increase coordination among Hawaii County programs and stakeholders
- Leverage the County's on-going recovery efforts from the Kilauea volcano eruption
- Identify natural hazard risks and vulnerabilities for the people, property and economy of Hawaii County
- Develop specific strategies to reduce disaster risk and improve resilience

The Plan Update Work Plan

- 7 phase scope of work
- Follow the 10-Step Planning script from FEMA's Community Rating System (CRS Program).
- Centers on a comprehensive risk assessment and active public engagement strategy



The HMP Working Group

- A 24 member Working Group is overseeing the plan update
- Multi-disciplined representation
- Stakeholders (business, academia, government)
- Emergency Management
- Has met 2 times since October 2019
- Meets 3rd Tuesday of every month from 2-4pm at the Aupuni Center Conference Room
- All meetings are open to the public

The Plan's Mission Statement

Identify risks to life and property resulting from hazards events to determine viable actions that will reduce the risk and enable resilient communities.

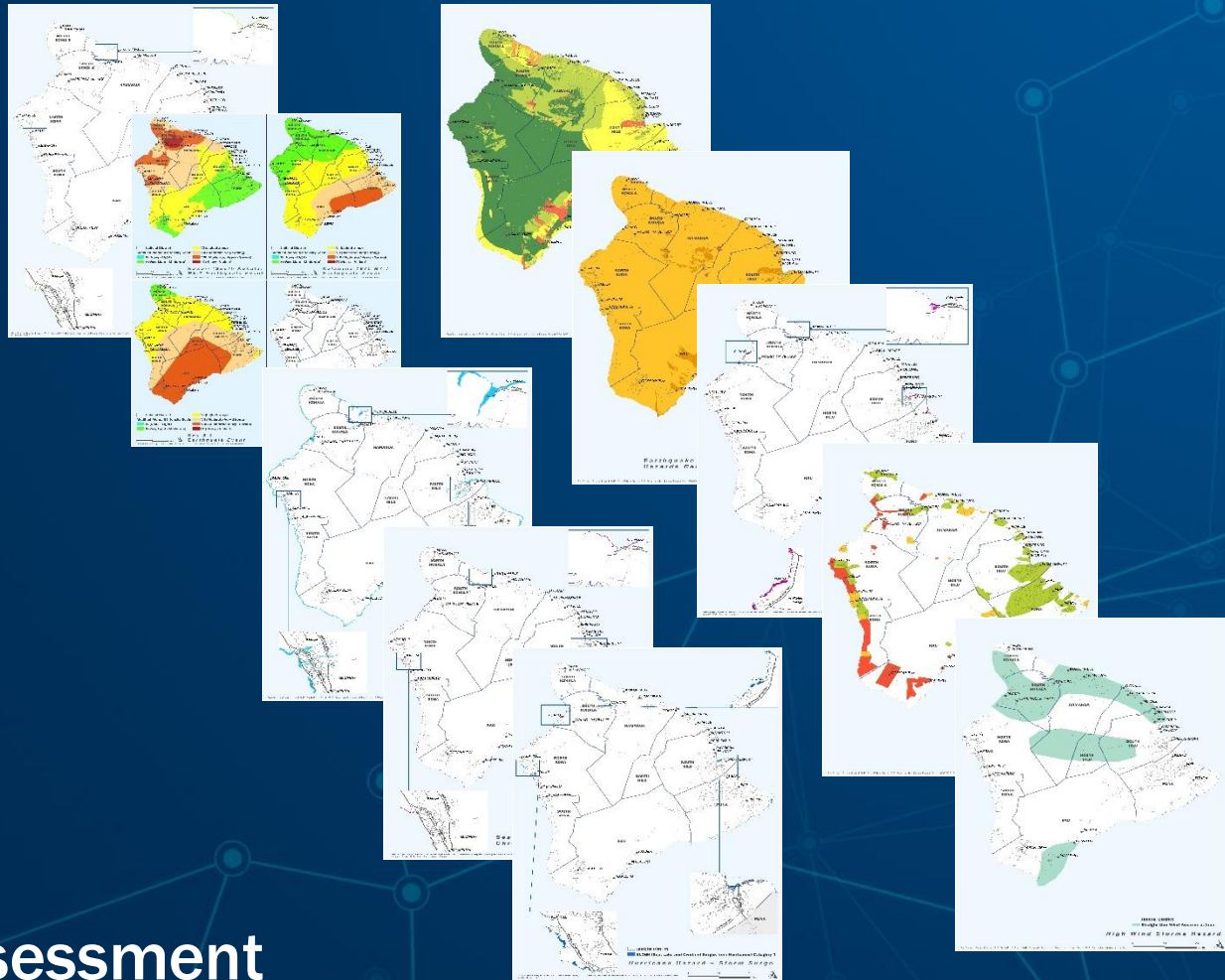




1. Utilize state-of-the-art methods and technologies as well as local knowledge to identify hazards, risks, and capabilities.
2. Ensure that all critical facilities and infrastructure withstand hazard incidents and have contingency plans to restore services quickly.
3. Protect natural and cultural resources to the extent practicable that mitigate hazards.
4. Promote actions that support land use planning and regulations designed to ensure long-term resiliency.
5. Promote community risk reduction and preparedness through public education, training, and awareness.
6. Improve capabilities to implement response protocols and continuity of operations and services.
7. Strengthen partnerships and leverage existing resources and capabilities to identify, assess, and reduce the impact of hazards.



TETRA TECH



The Risk Assessment

What is Risk?

Risk is defined as a function of :

- ☑ Hazard
 - *Source of potential danger or adverse condition*
- ☑ Exposure
 - *Manmade or natural features that are exposed to the hazard*
- ☑ Vulnerability
 - *Damage susceptibility of the exposed features*
- ☑ Capability
 - *Regulatory Capability*
 - *Technical Capability*
 - *Financial Capability*



Risk Reduction

To Reduce Risk:

☞ ***Manipulate the Hazard:***

- structural flood control

☞ ***Reduce Exposure:***

- property acquisition

☞ ***Reduce Vulnerability:***

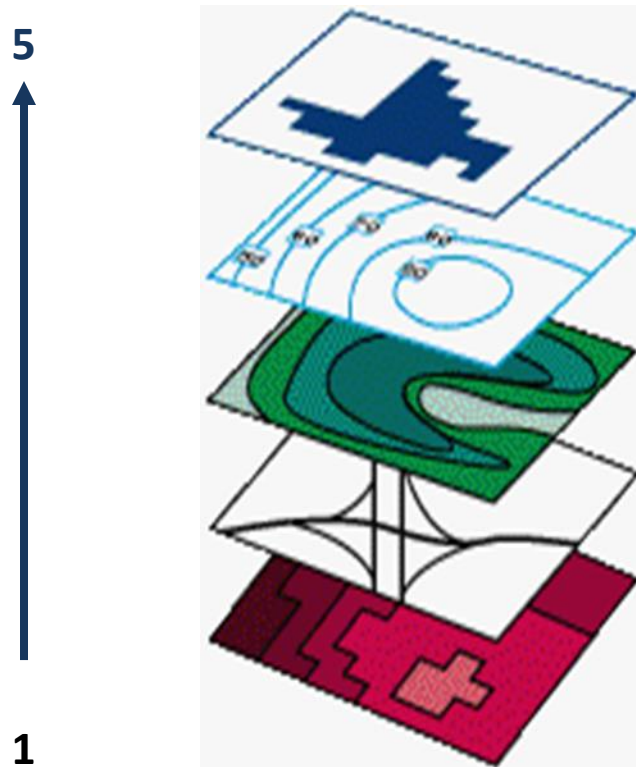
- retrofitting

☞ ***Increase capability:***

- \$, preparation, technical assistance, planning



Development of the Hawaii County Risk Assessment



1. **Hazard Locators (Soils, floodplains, landslides)**
2. **Inventories (Buildings, roads, critical areas)**
3. **Exposure (Direct and Indirect)**
4. **Disaster Scenario (Vulnerability Assessments)**
5. **Suggest Risk Reduction Measures**

What is Hazus?



- HAZUS-MH is a powerful risk assessment methodology for analyzing potential losses from floods, hurricane winds and earthquakes.
- HAZUS outputs include:
 - *Number, location, types, and occupancy of vulnerable buildings*
 - *Actual or assessed values of the vulnerable buildings*
 - *Critical facilities*
 - *An estimate of losses per hazard*
 - *Debris accumulation*

The Hawaii County Risk Assessment

- The foundation of the plan is a comprehensive risk assessment of 10 natural hazards of concern
 - ✓ Assess hazard
 - Past events
 - Areas most affected
 - Frequency
 - Severity
 - Warning time for response
 - ✓ Determine Exposure
 - ✓ Assess Vulnerability
 - Loss Estimation



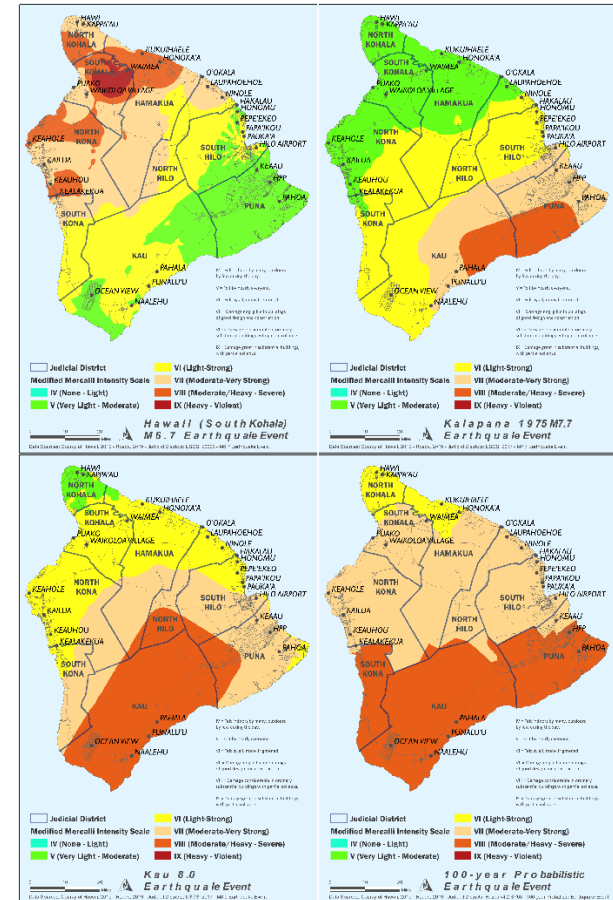
The Hazards of Concern

● Natural Hazards

- Volcanic Hazards
- Dam Failure
- Drought
- Earthquake
- Flood
- Landslide
- High Wind Storms
- Hurricane
- Storm surge/High Surf/Chronic Coastal Flood
- Climate Change/Sea Level Rise
- Tsunami
- Wildfire
- Invasive Species

● Non-Natural Hazards

- Supply Chain
- Mass Gathering Events
- Cyber



Hazard Scenarios

Hazard	Scenarios
Volcanic	Lava zones; lava flow areas for various events
Dam Failure	Waikoloa Reservoir No. 1 (HA0040), Reservoir No. 2 (HA0122), Reservoir No. 3 (HA0136) inundation areas.
Earthquake	Kalapana 1975 M7.7, Kau M8.0, and Hawaii (South Kohala) M6.7 ShakeMaps; 100-year probabilistic.
Flood	Effective FEMA 100-year flood; Puna flood study; High risk flood areas
Landslide	Landslide susceptibility; Landslide and coastal erosion hazard areas
High Wind	Straight line wind hazard areas
Hurricane	2015 Hawaii Catastrophic Hurricane Plan category 4; SLOSH (Sea, Lake and Overland Surges from Hurricanes).
Chronic Coastal Flood	Chronic coast flooding: Hawaii Sea Level Rise Vulnerability and Adaptation Report SLR-XA 1.1ft
Climate Change/Sea Level Rise	Hawaii Sea Level Rise Vulnerability and Adaptation Report SLR-XA 3.2ft (future chronic coastal flooding) and 1%CFZ + 3.2ft SLR (event-based coastal flooding plus sea level rise).
Tsunami	2010 study inundation area
Wildfire	Communities at Risk from Wildfire

Preliminary Results

Hazard	Exposure						Damage				Direct Economic Loss (include structure, contents, inventory capital-related income, wage, and rental income losses, and relocation expenses)
	Number of Structures Exposed	% of Total Structures	Structure RCV Exposed	% of Total Structure RCV	Content RCV Exposed	% of Total Content RCV	Structure Loss	% of Total Structure RCV	Content Loss	% of Total Content RCV	
Volcano - Lava Zone 1	974	1.2%	\$176,208,235	0.5%	\$90,926,904	0.4%					
Volcano - Lava Zone 2	6,555	7.9%	\$1,165,659,926	3.5%	\$629,128,584	2.5%					
Volcano - Historic Lava Flows	3,115	3.8%	\$659,395,772	2.0%	\$336,004,492	1.4%					
NEHRP Soils - D & E	2,502	3.0%	\$2,029,830,629	6.1%	\$2,221,022,969	9.0%					
Earthquake - Kalapana M7.7											\$2,677,830,163
Earthquake - Kau M8.0											\$3,183,699,401
Earthquake - Hawaii (South Kohala) M6.7											\$3,461,433,741
Earthquake - 100-yr Probabilistic											\$6,721,388,993
Landslide Susceptibility - High (Classes 7 - 10)	19,340	23.4%	\$6,652,124,337	19.9%	\$5,131,127,605	20.8%					
Flood - FEMA 100-yr	2,813	3.4%	\$5,923,557,684	17.7%	\$5,581,486,736	22.6%	\$50,839,332	0.2%	\$41,686,178	0.2%	
Flood - Chronic Coastal (SLR-XA 1.1 ft)	11	0.0%	\$90,736,503	0.3%	\$46,553,320	0.2%					
SLR - Event-based Coastal Flood Plus SLR (1%CFZ + 3.2ft SLR)	2,543	3.1%	\$6,126,641,646	18.3%	\$5,747,245,409	23.3%					
SLR - Future Chronic Coastal Flood (SLR-XA 3.2ft)	40	0.0%	\$100,723,818	0.3%	\$52,535,755	0.2%					
Tsunami - Tsunami Inundation Area	2,573	3.1%	\$1,768,001,486	5.3%	\$1,308,737,347	5.3%					
Hurricane - Category 4 Scenario Wind							\$7,440,752,904	22.2%	\$3,764,241,595	15.2%	
Hurricane - Category 4 Storm Surge Inundation Area	647	0.8%	\$748,405,776	2.2%	\$604,514,408	2.4%					
High Wind Storm - Straight Line Wind Awareness Area	16,987	20.5%	\$5,892,680,075	17.6%	\$3,509,221,044	14.2%					
Wildfire - Communities at Risk Level High	22,322	27.0%	\$8,431,259,276	25.2%	\$5,756,153,540	23.3%					
Wildfire - Communities at Risk Level Medium	7,003	8.5%	\$2,735,670,214	8.2%	\$1,550,290,168	6.3%					

Citizens Role in this Open House

- ✓ Educate yourself on risk!
- ✓ Provide feedback to the planning team on your perception of the risk. Does it appear accurate? Does it support what you may have experienced?
- ✓ ***Complete a Survey***
- ✓ Visit a Risk workstation



Hazard Mitigation Plan Public Survey

Please complete the Public Survey:

<https://www.surveymonkey.com/r/HawaiiCountyHMP>

Hawai'i County Hazard Mitigation Plan Survey

Hawai'i County Civil Defense and local stakeholders are working together to update the Hawai'i County Hazard Mitigation Plan (HMP). During the course of this update, local leaders and the community are working together to identify risks, assess capabilities, and formulate a strategy to reduce disaster vulnerability.

We want to understand your awareness and knowledge about the natural hazards that affect our communities. We also want to incorporate your recommendations to help residents prepare for hazard events and prevent unnecessary impacts. The following questions will help us look at community demographics, measure how much local citizens already know about disaster-related issues and will help us identify areas where we need to improve. The information you provide will help us organize activities and prioritize projects to reduce the risk of injury or damage to property from future hazard events.

The survey consists of about 26 questions and provides an opportunity to comment. It should take less than 10 minutes to complete the survey and it is anonymous.

Mahalo for taking the time to participate in the 2020 Hawai'i County Hazard Mitigation Plan Survey!

Hawai'i County Hazard Mitigation Plan Survey

1. Where do you live?

- Puna
- South Hilo
- North Hilo
- Hamakua
- North Kohala
- South Kohala
- North Kona
- South Kona
- Ka'u
- I don't live in Hawai'i County

1



For More Information

Please visit the County website at:

<https://www.hawaiicounty.gov/departments/civil-defense>

This site includes:

- FAQs
- Working Group
 - meeting Agendas/minutes
- The draft Plan
- Prior Plan



Next Steps

- Confirm Objectives
- Review Core Capabilities
- Identify alternatives
- Identify/Prioritize Actions
- Assemble the Plan
- ***Phase 2 public outreach***
- Submit the Plan
- Adopt the Plan

Questions?

