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# SECTION 6. MITIGATION STRATEGY

## 2023 SHMP Update Changes

- ❖ The mitigation goals were reviewed and validated. Overall, all 2018 SHMP goals were maintained with enhancements to strengthen the wording, and one new goal (goal 7) was added.
- ❖ Mitigation objectives were added to support the goals and measure mitigation success.
- ❖ A comprehensive review and evaluation of the 2018 SHMP mitigation action plan was conducted, and a synopsis of notable achievements was developed.
- ❖ The 2018 SHMP mitigation actions, updated risk assessment, updated capability assessment, and County local HMP actions were used to identify mitigation actions for the 2023 SHMP Update.
- ❖ The updated action plan only includes projects that State agencies have the authority to implement. Actions that individual counties have the authority to implement will be included in their respective local HMPs.
- ❖ The State Repetitive Loss Strategy has been comprehensively reviewed and updated.

## 6.1 OVERVIEW

The mitigation strategy Sets the State’s mitigation program priorities and helps guide the Counties as they update their plans. The mitigation strategy is composed of goals, objectives, and actions that directly address the risks and vulnerabilities identified in the risk assessment as well as the findings of the capability assessment. The following sections outline the State’s mitigation goals and objectives; reviews, evaluates, and updates the mitigation actions identified in the 2018 SHMP; identifies new actions; and prioritizes all actions for implementation over the performance period of the 2023 SHMP Update.

## 6.2 MITIGATION GOALS AND OBJECTIVES

**Element S9, HHPD3, and 44 § CFR 201.4(c)(3)(i):** The State Plan must include goals to reduce long-term vulnerabilities from the identified hazards. The goals represent what the State seeks to accomplish through mitigation plan implementation using a wide range of funding, including non-FEMA funding. The goals must be consistent with the hazards and vulnerabilities identified in the risk assessment.

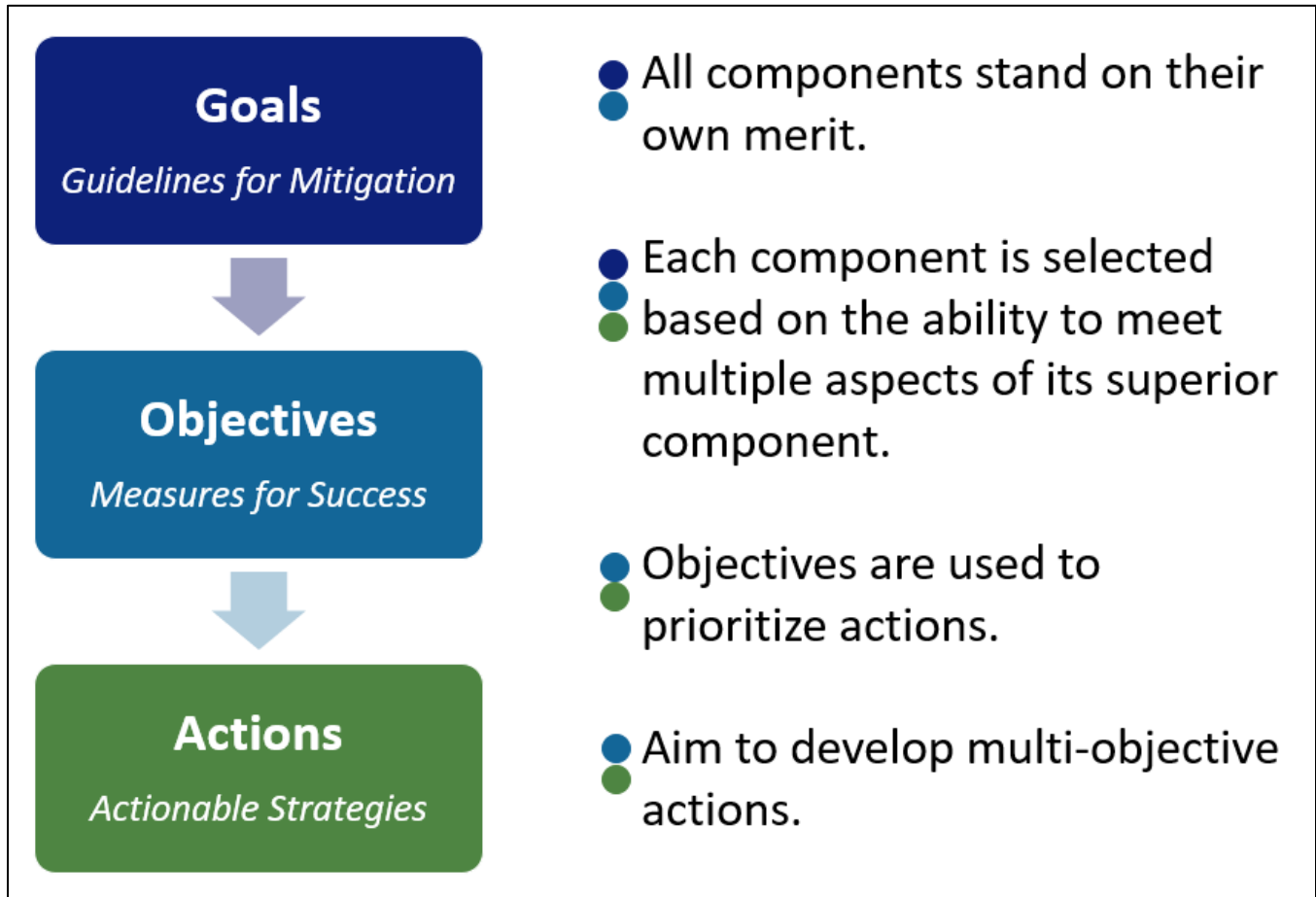
Mitigation goals are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy. Objectives are defined, short-term measurable actions that lead to achieving an overall goal.

As part of the 2023 SHMP Update process, the 2018 SHMP goals (listed in Appendix G [Mitigation Strategy Supplement]) were reviewed and validated. State objectives were developed to meet multiple goals and align with objectives already established in County HMPs; objectives were used to prioritize actions.





Figure 6.2-1. Linear Goal Setting



The goal review and objective development was led by HI-EMA with input from the Forum and was conducted over the course of the planning process. This linear approach to goal setting provides greater detail to identify what the State aims to achieve over the next five years.

At the October 2022 State Planning Team and Forum meetings, the 2018 SHMP goals were reviewed and discussed to determine if the goals: (1) led to mitigation projects and changes in policy that reduced risk over the performance period of the 2018 SHMP; and (2) continue to articulate the long-term vision for mitigation activities in the state addressing both current and future vulnerabilities. Based on these discussions, modifications were made to the wording of goals to more closely align with the State’s updated vision; two of the 2018 SHMP goals were revised; and a new goal was added (please see Appendix A [Planning Process Documentation] and Appendix G [Mitigation Strategy Supplement] to review the 2018 SHMP goals and modifications that were made).

Throughout the planning process, HI-EMA, the Forum, and State agency stakeholders reviewed the goals to ensure that the goals: (1) reflected the updated risk assessment; (2) supported changes in mitigation capabilities; and (3) supported other State-level priorities. Upon this review HI-EMA and the Forum confirmed the goals for the 2023 SHMP Update as follows:

- **Goal 1**—Reduce the long-term vulnerability of Hawaii’s people, property and jurisdictions, including State-owned or operated buildings, infrastructure and critical facilities, to natural hazards while conserving the State’s natural, historical, and cultural assets. This includes High Hazard Potential Dams and high-risk properties such as repetitive loss (RL) and severe repetitive loss (SRL) properties.





- **Goal 2**—Promote actions designed to ensure long-term resiliency to natural hazards and climate change impacts.
- **Goal 3**—Strengthen partnerships and leverage existing resources and capabilities to identify, assess and reduce the impact of natural hazards.
- **Goal 4**—Utilize state-of-the-art methods and technology and local knowledge to identify and analyze natural hazards and assess State capabilities to reduce the impact of those hazards.
- **Goal 5**—Promote public awareness of natural hazard risks and public action to reduce the long-term risks.
- **Goal 6**—Provide a framework for robust local hazard mitigation planning and mitigation strategy implementation in alignment with this plan.
- **Goal 7**—Build capacity and capabilities to increase disaster resiliency among historically underserved populations, individuals with access and functional needs, and in communities disproportionately impacted by disasters and climate change.

Objectives were reviewed for their ability lead to achieving an overall goal. HI-EMA and the Forum confirmed the objectives for the 2023 SHMP Update as follows:

- **Objective 1**—Establish and maintain public-private partnerships among all levels of government, community groups, the private sector, and institutions of higher learning to improve and implement methods to protect life, property, and the environment.
- **Objective 2**—Utilize the best available data, science, and technology to identify and communicate the risk exposure to hazards, climate change risks, and vulnerabilities to inform risk reduction measures, preparedness response, and adaptation strategies.
- **Objective 3**—Improve the understanding of the locations, potential and cascading impacts, and linkages among the threats, hazards, vulnerabilities, and measures needed to protect life, community lifelines, the environment, property, and infrastructure.
- **Objective 4**—Promote, coordinate, and implement hazard mitigation planning and projects to reduce the negative impacts of hazards, to foster and reinforce resilient communities, and to be consistent with longer-term climate action and adaptation.
- **Objective 5**—Foster a comprehensive, statewide, whole community approach to hazard mitigation with equitable and inclusive engagements, plans, strategies, and actions that minimize disproportionate impacts on underserved populations and historically marginalized communities. Prioritize efforts to improve resilience of community lifelines in socially vulnerable communities.
- **Objective 6**—Identify and encourage the use of statewide recommended criteria to develop and inform a shared data repository to integrate into State, local, and non-governmental plans, strategies, and actions.
- **Objective 7**—Develop and implement mitigation policies, protocols, programs, and procedures to address the State’s changing environment and climate.
- **Objective 8**—Incentivize and implement mitigation measures into the built environment, especially in areas with substantial hazard risk and those known to have repetitive loss.
- **Objective 9**—Promote and implement the retrofit, hardening, acquisition or replacement of at-risk structures and lifelines to increase community resilience.
- **Objective 10**—Adopt and enforce building codes and standards that are affordable and feasible for life and property protection.
- **Objective 11**—Annually review the effectiveness of current land use related plans, codes, and standards for appropriate future development within hazard areas, and amend them as necessary to account for climate change effects.
- **Objective 12**—Minimize impacts of hazard incidents on the economic drivers for the State.





- **Objective 13**—Recognize and support the disaster resilience inherent in host culture traditions and practices, including holistic watershed management, community connectivity, and local, ahupua'a based decision-making.
- **Objective 14**—Support hazard mitigation measures that promote and enhance natural infrastructure and natural processes to minimize adverse impacts on the ecosystem and minimize public safety risks.
- **Objective 15**—Improve warning and emergency communication systems and utilize a diversity of communication media.

Mitigation actions were selected and prioritized to move the State and its Counties closer to achieving these goals and objectives over the performance period of the 2018 SHMP Update. Actions that were selected are discussed in Section 6.4 (Updated Mitigation Actions).

## 6.3 REVIEW AND EVALUATION OF 2018 SHMP MITIGATION ACTIONS

**Element S12 and 44 § CFR 201.4(d):** The State plan must reflect progress in statewide mitigation efforts and changes in priorities by providing a narrative of the status of each mitigation action in the previous plan identifying which actions have been completed and describing if an action is no longer relevant or included in the updated plan. The prioritization of mitigation actions and activities must be updated based on the updated analysis of risks, capabilities, and progress.

### 6.3.1 COMPREHENSIVE REVIEW AND EVALUATION OF THE 2018 SHMP MITIGATION ACTIONS

The 2023 SHMP Update included a comprehensive review of the 124 mitigation actions identified in the 2018 SHMP. This review was led by HI-EMA and involved a wide array of State and County agencies and other stakeholders. Progress on each identified mitigation action was reviewed to determine the status of each action, the source of funding used to implement the completed actions, and, for those actions that were not completed, if the action should be carried forward to the 2023 SHMP Update or discontinued. Actions that were identified for inclusion in the updated mitigation strategy were reviewed and evaluated to determine if the action should be revised to reflect any new information obtained as part of the plan update process (for example, changes in the risk assessment, capabilities, or lead agency).

The following is a summary of the progress in mitigation efforts over the performance period of the 2018 SHMP:

- 17 actions (14% of total actions) were completed.
- 63 actions (51% of total actions) were initiated but were not completed.
- 6 actions (5% of total actions) were determined to be ongoing activities.
- 24 actions (19% of total actions) were not initiated or had no reported progress.
- 13 actions (10% of the total actions) were discontinued for many reasons, including changes in priorities or the action no longer under the State's authority.

The actions listed above include 34 actions that were considered high priority in County HMPs. The 2023 SHMP mitigation action plan does not include actions already listed in the HMPs developed by individual counties.

Regarding actions that are under the State's authority, 68 actions were reviewed and revised for inclusion in the 2023 SHMP Update mitigation strategy.





The comprehensive review and evaluation of the 2018 SHMP actions can be found in Appendix G (Mitigation Strategy Supplement).

## 6.4 UPDATED MITIGATION ACTIONS

**Element S10, FMAG2, HHPD4, and 44 CFR 201.4(c)(1), 201.4(c)(3)(i), 201.4(c)(4)(ii), and 204.51(d)(2):** The State plan must prioritize mitigation actions to reduce vulnerabilities identified in the risk assessment to reduce the vulnerability of jurisdictions within the state as well as the vulnerability of State-owned assets. The plan must describe the process to evaluate and prioritize actions that are cost-effective, environmentally sound, and technically feasible. Actions must contribute to goals and the State must describe how local government mitigation strategies link to the State mitigation strategy.

### 6.4.1 IDENTIFICATION OF MITIGATION ACTIONS

Mitigation actions for inclusion in the 2023 SHMP Update were identified through four primary sources:

- **2018 SHMP Mitigation Strategy**—Actions that were not completed during the 2018 SHMP were reviewed, revised, and included as described in Section 6.3.
- **Risk Assessment**—The results of the updated risk assessment were reviewed with the Forum and individual sector groups, and problem statements were developed. Mitigation actions were considered to address identified problems.
- **Capability Assessment**—Challenges and opportunities identified during the capability assessment were reviewed with the Forum and individual sector groups. Mitigation actions were considered to address challenges and capture opportunities.
- **County Actions**—County local HMPs were reviewed to understand community vulnerabilities and priorities and to identify opportunities for the State to develop actions to support its Counties in their mitigation efforts.

Not all potential actions identified from the above sources were ultimately selected for inclusion in the 2023 SHMP Updated mitigation strategy. Those actions that were selected are described in the following sections.

### 6.4.2 STATE MITIGATION ACTION PLAN

Implementable mitigation actions require more than just a statement of activity as actions are led by different departments and agencies, require various levels of effort, and have varied resource needs. The State of Hawai'i Mitigation Action Plan (see Table 6.4-1) includes information on implementation including:

- **Mitigation Action Title and Numbering**—The action plan assigns a numeric identifier to each action for tracking and progress reporting. Actions with a “2023” prefix are new actions identified for this SHMP update. Actions with a “2023-2020”, “2023-2018” or “2023-2013” prefix are actions carried over from their respective mid-cycle or complete action plan updates.
- **Responsible Departments or Agencies**—The lead department or agency responsible for implementation is listed first, followed by any supporting departments or agencies.
- **Location**—The action plan lists the islands where the mitigation action will be implemented.
- **Existing or Future Development**—The action plan identifies whether each action will reduce risk to new assets as they are built, existing assets (i.e., retrofits), or both.
- **Community Lifelines Addressed**—The action plan lists which of the seven FEMA categories for lifelines each action will protect.





- **Estimated Costs**—The action plan lists estimated costs to implement the action.
- **Potential Funding Sources**—The action plan lists options for funding the action.
- **Timeline**—The action plan provides general project implementation timing as follows:
  - **Short-Term**—The action can be completed within the 5-year performance period for the SHMP.
  - **Long-Term**—The action is likely to take longer than 5 years to complete.
  - **Ongoing**—The action is already funded and being implemented by the State.
- **Hazards Addressed**—A list of hazards addressed by each mitigation action is contained in Appendix G (Mitigation Strategy Supplement).

**Table 6.4-1. 2023 SHMP Update State of Hawai'i Mitigation Action Plan**

Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-001— Lualualei Navy Lands Drainage Improvements:</b>						
The DOH and the watershed coordinator will work with the Navy to identify depressions or relatively flat areas along stream channels to construct small detention ponds and/or check dams to reduce peak flood flows. These are easier to construct than a full sediment basin and will help reduce some of the sediment load and peak flows, potentially reducing flooding downstream.						
DOH	O'ahu	Existing	All	>\$100,000	State budgets; U.S. Navy; FEMA; USGS; NRCS	Long
<b>2023-002— Micro Grids for Critical Health Infrastructure Support:</b>						
Install micro grids to support medical facilities such as hospitals and dialysis centers in the event that the island's primary power grid goes down.						
DOH	O'ahu	Existing	Health and Medical	>\$100,000	State budgets; FEMA; BRIC; HMGP	Long
<b>2023-2020-001—Modernization and hardening of the State Emergency Operations Center:</b>						
<ol style="list-style-type: none"> <li>1. Acquire suitable land</li> <li>2. Acquire funds for design and engineering to include environmental assessment</li> <li>3. Acquire funding for construction</li> </ol>						
HI-EMA	O'ahu	Existing	Safety and Security; Communications	>\$100,000	State budgets; FEMA; BRIC; HMGP; DHS	Long
<b>2023-2020-002—Warning systems and outreach programs:</b>						
High risk areas will be evaluated by subject matter experts to include governmental agencies having statutory responsibility for those activities.						
HI-EMA	All islands	Existing	Communications	>\$100,000	State budgets; FEMA; BRIC; HMGP	Short
<b>2023-2020-003—Hardening/retrofit/protection of food and agriculture facilities which involve production, storage, distribution, and research functions:</b>						
<ol style="list-style-type: none"> <li>1. Structural Analysis of priority facilities</li> <li>2. Acquire funds for design and engineering</li> <li>3. Acquire funds for construction</li> </ol>						
HI-EMA	All islands	Existing	Food, Water, Shelter	>\$100,000	State budgets; FEMA; BRIC; HMGP	Short





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2020-004—American Red Cross (ARC) Hawai'i Chapter will conduct Disaster Emergency Life Safety Sheltering and Outreach training programs throughout the State:</b>						
Increase the number of trained volunteers capable of responding and providing emergency support services at public shelter during a disaster.						
HI-EMA	All islands	Both	Food, Water, Shelter	\$10,000 to \$100,000	State budgets; Red Cross; FEMA; HMGP	Short
<b>2023-2018-001—Conduct non-structural retrofits of schools and hospitals in Hawai'i County and Maui County:</b>						
<ol style="list-style-type: none"> <li>1. Assess and prioritize schools and hospitals</li> <li>2. Prepare work plans</li> <li>3. Procure funding</li> <li>4. Implement</li> </ol>						
HI-EMA, HETAC, DOE (Schools), HAH (Hospitals)	Hawai'i; Maui	Existing	Safety and Security, Health and Medical	\$10,000 to \$100,000; >\$100,000	State DOE and DOH budgets; FEMA; BRIC; HMGP	Short
<b>2023-2018-002—Feasibility study of multi-hazard, non-structural retrofit of Hawai'i County and Maui County hospitals and schools:</b>						
Engage FEMA in a Cooperating Technical Partnership (CTP) to acquire technical assistance to assess the Hawai'i and Maui County hospitals and schools for possible seismic, high wind and flooding non-structural vulnerabilities. The study would prioritize the hospitals and schools, prioritize non-structural actions, develop information for funding applications and develop documentation for benefit-cost analysis.						
HI-EMA, HETAC	Hawai'i; Lāna'i; Moloka'i	Both	Safety and Security; Health and Medical	>\$100,000	FEMA Mitigation Grants, NEHRP	Short
<b>2023-2018-004—Additional mitigation staffing:</b>						
<ol style="list-style-type: none"> <li>1. Document current shortfalls in implementing recent mitigation opportunities</li> <li>2. Prepare justification for additional positions</li> <li>3. Provide technical assistance to upcoming local mitigation plan updates</li> </ol>						
HI-EMA	All islands	Both	Safety and Security	>\$100,000	State funding to DOD HI-EMA	Long
<b>2023-2018-005—Earthquake mitigation training:</b>						
Work with public and private sectors to determine specific training needs and resources to reduce vulnerability from earthquakes.						
HETAC, HI-EMA	All islands	Both	All	>\$100,000	HI-EMA Department Funds	Short
<b>2023-2018-006—Implement actions from Natural Disaster Economic Recovery Strategy (NDERS):</b>						
<ol style="list-style-type: none"> <li>1. Coordinate with the Office of Planning to re-engage with the NDERS stakeholders</li> <li>2. Review and prioritize recommendations with a focus on implementation</li> <li>3. Identify strategy “champions” and potential funding sources</li> <li>4. Provide logistical support to champions and support agencies</li> <li>5. Schedule regular follow up stakeholder meetings to track progress and identify gaps and solutions</li> </ol>						
HI-EMA	All islands	Both	Communications	\$10,000 to \$100,000	FEMA, EDA, State Funding	Short
<b>2023-2018-007— Enhanced Coordination between HI-EMA and DLNR on Flood Mitigation Projects:</b>						
HI-EMA will continue to work with DLNR to identify flood vulnerability, identify flood mitigation projects and provide technical assistance to secure grant funding to implement the mitigation projects to reduce flood losses in the State. Mitigation measures may include but are not limited to structural projects, plans, studies, outreach and training.						
HI-EMA and DLNR	All islands	Both	All	<\$10,000	Operating Budgets – State Funding	Ongoing





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-009—Acquire GIS staff, training, and technology:</b>						
<ol style="list-style-type: none"> <li>Determine GIS needs and requirements for the Resilience Branch</li> <li>Hired GIS staff for Resilience Branch to conduct project tracking and assist with mitigation planning</li> <li>Acquire GIS licenses and equipment</li> <li>Analyze results and provide recommendations for implementing statewide GIS for Emergency Operations Centers that leverage existing resources, are cost effective, and technologically feasible</li> </ol>						
HI-EMA, Counties	All islands	Both	Communications	\$10,000 to \$100,000	FEMA Grants, cost reduction through State/ESRI (ArcGIS developer) Enterprise Licensing Agreement for software license and instructor-led training	Short
<b>2023-2018-011—Housing Vulnerability Assessment:</b>						
Conduct a housing stock and social vulnerability assessment for seismic, high wind, and flooding vulnerabilities. The study would prioritize the retrofit actions, including incentives for homeowners to strengthen their residences, and to develop guidance for shelter retrofit guidance consistent with FEMA’s grant program guidance.						
HI-EMA, HETAC	All islands	Both	Food, Water, Shelter	>\$100,000	FEMA Mitigation Grants, NEHRP	Short
<b>2023-2018-012—Retrofit of the Kaua’i War Memorial Convention Hall (KWMCH)-emergency shelter:</b>						
Perform a structural analysis to determine suitability of KWMCH to serve as an emergency shelter and to determine scope of work. The retrofit will include hardening of the doors (33) and windows (40) which will serve as a minimum Type B Shelter (category 1 hurricane). This project will add about 1,668 shelter spaces for the County and the heavily populated area of Lihue. This increases by 44% the number of residents/visitors seeking shelters during hurricanes in the central portion of the Island.						
HI-EMA, County of Kaua’i Department Parks and Recreation	Kaua’i	Both	Food, Water, Shelter	>\$100,000	State CIP Funds	Short
<b>2023-2018-013—Retrofit of Moloka’i High School gym-emergency shelter:</b>						
This facility involves extensive retrofit of the building envelope, doors, windows and other hardening measures. A initial engineering structural analysis has been completed, and a secondary SAM (Simulation and Analysis of Mechanisms) will be completed to ensure the retrofits are able to meet the Enhanced Hurricane Protection Areas (EHPA) standard.						
HI-EMA, State DOE, State DAGS	Moloka’i	Both	Food, Water, Shelter	>\$100,000	State CIP Funds, HMGP	Short
<b>2023-2018-016—Enhance the State Technical Assistance Program to support State agencies and Counties:</b>						
Enhance HI-EMA’s technical assistance program to support State agencies and Counties in all aspects of mitigation. Examples of program expansion and enhancement include:						
<ol style="list-style-type: none"> <li>Working with specific state agencies to support obtaining grant funding, such as DHHL, and submit projects for implementation</li> <li>Developing a standard operating procedure for providing counties technical assistance in updating their local hazard mitigation plans and implementing hazard mitigation actions to reduce future losses in the State.</li> </ol>						
HI-EMA, Forum	All islands	Not applicable	Safety and Security	\$10,000 to \$100,000	Operating Budget – State Funds	Short





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-017—Monitor water resources and conduct drought forecasts and impact assessments:</b>						
<ol style="list-style-type: none"> <li>Continue to and expand monitoring of hydrologic elements (rainfall, stream flow, reservoir water levels, ground water levels)</li> <li>Improve drought forecasting</li> <li>Increase drought research</li> <li>Collaborate with the National Integrated Drought Information System</li> </ol>						
<b>DLNR – CWRM</b>	All islands	Not applicable	Food, Water, Shelter	\$10,000 to \$100,000	Federal (NOAA), State (CWRM, University of Hawai'i), County (water departments)	Other
<b>2023-2018-018—Increase water conservation, reuse, and recharge:</b>						
<ol style="list-style-type: none"> <li>Implement the Hawai'i Water Conservation Plan</li> <li>Incentivize and promote reuse (e.g., grants, rebates, policies, etc.)</li> <li>Protect and restore watersheds important to water supply (e.g., fencing, invasive species removal, replanting, etc.)</li> </ol>						
<b>DLNR – CWRM, DLNR – DOFAW, County water and wastewater departments, County planning departments</b>	All islands	Both	Food, Water, Shelter	>\$100,000	Federal (Bureau of Reclamation Title XVI program), State (CWRM, DOFAW Watershed Grant), County (water departments, watershed funding), Private grant funding	Other
<b>2023-2018-019—Support the Hawai'i Association of Watershed Partnerships:</b>						
<ol style="list-style-type: none"> <li>Seek dedicated, long-term funding for watershed protection, restoration, and maintenance</li> <li>Support forest stewardship programs</li> </ol>						
<b>DLNR - DOFAW</b>	All islands	Not Applicable	Food, Water, Shelter	>\$100,000	Federal (USDA Forest Service), State (DOFAW Watershed Grant, general funds), County (water departments), private (Firewise Grant), Private funding	Other
<b>2023-2018-021—Provide drought public education awareness and outreach:</b>						
<ol style="list-style-type: none"> <li>Continue to promote drought awareness campaigns and public outreach events( e.g., Wildfire &amp; Drought LOOK OUT!; Halawa Xeriscape Garden Open House and Unthirsty Plant Sale, etc.)</li> <li>Seek cooperative outreach &amp; education opportunities with agricultural agencies and organizations to promote drought awareness and conservation actions</li> <li>Encourage water purveyors, businesses, and agricultural producers to develop individual drought plans</li> </ol>						
<b>DLNR – CWRM, County water departments, Soil &amp; Water Conservation Districts</b>	All islands	Not Applicable	Food, Water, Shelter	\$10,000 to \$100,000	Federal (USDA, NOAA), State (CWRM; DOFAW; University of Nebraska – NDMC), County (water departments), Private funding	Other





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-022—Statewide public information campaign to increase citizen resilience to flooding:</b>						
<ol style="list-style-type: none"> <li>1. Work with federal agencies with a role in insurance and State insurance regulator (DCCA) to develop campaign strategy and key messages</li> <li>2. Develop a public information campaign including public service announcements, fact sheets, and other forms of communication on the types of insurance and the need to purchase flood insurance</li> <li>3. Measure Change in the number of active flood insurance policies compared to baseline levels (57,941 policies statewide as of October 31, 2022)</li> </ol>						
DLNR	All islands	Existing	Food, Water, Shelter	< \$10,000	FEMA Mitigation Grants	Ongoing
<b>2023-2018-023—Integrated hazard mitigation of State coastal highways and beaches from chronic coastal flooding:</b>						
<ol style="list-style-type: none"> <li>1. Identify coastal highway segments across the state based on vulnerability to coastal hazards exacerbated by sea level rise and geological and physical viability for landward beach migration. (DOT)</li> <li>2. Select top five state coastal highway segments, in consultation with county and community stakeholders, to develop coastal highway mitigation alternatives and evaluate feasibility of each alternative. (DOT)</li> <li>3. Develop design specifications and implementation plan for the preferred alternative for each coastal highway segment (DOT)</li> <li>4. Implement coastal highway-beach mitigation (DOT)</li> <li>5. Conduct hazard mitigation utilizing nature-based approaches along coastal roads that are vulnerable to chronic and storm flooding and erosion, where relocation can't be implemented in the near-term, to improve public safety and community resilience and protect public trust resources. (CC)</li> <li>6. Update coastal hazards modeling and vulnerability assessment as needed based on new climate science, sea level rise projections, and methods. (CC)</li> </ol>						
Hawai'i DOT Highways Division (DOT), Hawai'i Climate Change Mitigation and Adaptation Commission (CC), DLNR OCCL	All islands	Both	Transportation	>\$100,000	FEMA, Federal DOT, State DLNR and DOT	Short
<b>2023-2018-024—Reduce and/or convert hazardous fuels on fallow agricultural lands:</b>						
Implement fuel management through alternative land uses, such as reforestation and active agriculture. Also create and maintain fuel and fire breaks.						
DLNR-DOFAW and DOA	All islands	Both	Food, Water, Shelter; Hazardous Material	>\$100,000	USFS Grant (Federal Funds); Private Landowner Assistance Programs (State and Federal Funds); Private Sector Funds	Ongoing





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-025—Reduce and/or convert hazardous fuels in the Wildland Urban Interface (WUI) to reduce the threat of wildfires to communities and conservation land near them:</b>						
Implement fuel breaks, including green breaks or vegetated fuel breaks; managed grazing; and as necessary, prescribed burns. Increase plant propagation for outplantings in the green breaks.						
<b>DLNR, DHHL, DOA, County Fire Departments, HWMO</b>	All islands	Both	N/A	>\$100,000	Operating Funds (State Funds); Operating GIA pursuant to Chapter 42F, HRS (State General Funds); USFS Grants (Federal Funds); Private Landowner Assistance Programs (State and Federal Funds); Private Sector Funds	Ongoing
<b>2023-2018-026—Assess, identify, and implement State nursery improvements needed to provide native plants for green breaks:</b>						
Nursery improvements are needed in order to increase plant propagation for outplantings in the green breaks.						
<b>DLNR-DOFAW</b>	All islands	Both	N/A	>\$100,000	CIP (State General Obligation Bond Funds); Operating Funds (State Funds)	Ongoing
<b>2023-2018-027—Continue to develop water sources, including installation of additional water storage structures:</b>						
Install additional water storage structures, such as portable catchment tanks, reservoirs, and dip tanks.						
<b>DLNR-DOFAW, DLNR-CWRM, DOA, DHHL, County Water Supply Agencies</b>	All islands	Both	Food, Water, Shelter	>\$100,000	CIP (State General Obligation Bond Funds); Operating Funds (State Funds)	Ongoing
<b>2023-2018-028—Provide wildfire awareness, preparedness, and prevention education involving all sectors:</b>						
<ol style="list-style-type: none"> <li>1. Create a statewide, inter-agency wildfire prevention plan</li> <li>2. Continue all-agency, unified wildfire and drought awareness campaign annually</li> <li>3. Hold National Wildfire Community Preparedness Day events in each county annually</li> <li>4. Establish Outreach and Education Specialists at each DLNR-DOFAW District Office</li> <li>5. Reach a wider audience by participating in inter-agency wildfire outreach and education efforts at community emergency preparedness fairs.</li> </ol>						
<b>DLNR-DOFAW, DLNR-CWRM, HWMO, PFX, County Fire Departments</b>	All islands	Both	N/A	\$10,000 to \$100,000	Operating Funds (State Funds); Operating GIA pursuant to Chapter 42F, HRS (State General Funds); USFS Grants (Federal Funds)	Ongoing
<b>2023-2018-029—Maintain and improve fire and fuel breaks/access roads on State land:</b>						
<ol style="list-style-type: none"> <li>1. Clear, reduce, and convert hazardous fuel in fire and fuel breaks and on both sides of access roads</li> <li>2. Monitor vegetative regrowth due to year-round growing season and invasive, fire-prone grasses that grow back quickly</li> <li>3. Improve access roads, including paving, repaving, or grading.</li> </ol>						
<b>DLNR-DOFAW</b>	All islands	Existing	Transportation	>\$100,000	Operating Funds (State Funds); CIP (State General Obligation Bond Funds); USFS and USFWS Grants (Federal Funds)	Ongoing





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-030—Establish additional Community Wildfire Protection Plans (CWPP):</b>						
There are 14 CWPPs established throughout Hawaii, which cover over half of the State. Each county has at least one CWPP. Areas not covered by a CWPP will need to be prioritized. Once funding is secured, the entity writing the CWPP will hold community and agency meetings, process data, and write the plan.						
<b>HWMO, DLNR-DOFAW, County Fire Departments, County Emergency Management Agencies</b>	Hawai'i; Lāna'i; Maui; O'ahu	Both	All	>\$100,000	Operating GIA pursuant to Chapter 42F, HRS (State General Funds); USFS Grant (Federal Funds)	Long
<b>2023-2018-031—Prevent structure ignition from wildfires in the home ignition zone through home hardening:</b>						
Currently 15 communities are part of the Firewise program. Hawai'i Wildfire Management Organization (HWMO) program trains more assessors from the community and county fire departments so additional assessments can take place.						
<b>DLNR-DOFAW, DHHL, County Fire Departments, HWMO</b>	All islands	Both	Food, Water, Shelter	>\$100,000	Operating Funds (State Funds); Operating GIA pursuant to Chapter 42F, HRS (State General Funds); USFS Grant (Federal Funds); Private Sector Funds	Ongoing
<b>2023-2018-032—Install and maintain remote automated weather stations (RAWS):</b>						
Purchase and install additional RAWS. Continue to maintain existing RAWS to ensure that all stations within Hawaii's network are operational.						
<b>DLNR-DOFAW for State operated RAWS.</b>	All islands	Both	Communications	>\$100,000	Operating Funds (State Funds); USFS Grant (Federal Funds)	Ongoing
<b>2023-2018-033—High Priority Area Cesspool Abatement Program:</b>						
Implement a public-private cost share program between the State, counties, and the private landowners to incentivize upgrades of qualified cesspools to a septic tank or aerobic treatment system, prioritizing identified high priority areas and cesspools posing the greatest risk to ground water contamination and/or surface water impairment as a result of system overflow during heavy rainfall events.						
<b>DOH, DBEDT – OP, City &amp; County Planning Departments</b>	All islands	Existing	Food, Water, Shelter	>\$100,000	State & County - Capital Improvement Plan budgeting; Public-private partnership	Long-term and ongoing
<b>2023-2018-034—Harden State laboratory facility to increase all-hazards resilience:</b>						
<ol style="list-style-type: none"> <li>1. Add protective closure for cooling tower</li> <li>2. Add shatter proof window films</li> <li>3. Provide second transformer and double ended switchgear</li> <li>4. Provide separate feeders to mechanical equipment</li> <li>5. Provide redundant emergency generator</li> <li>6. Provide additional fuel tank for 7-day supply of emergency generator fuel (5 additional days from current capacity)</li> <li>7. Construct a 1,200 +/- square foot biosafety level 3 addition</li> </ol>						
<b>DOH</b>	O'ahu	Existing	Safety and Security	>\$100,000	FEMA Pre-Disaster Mitigation Grant; State appropriation of funding through CIP budget	Short and Long





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-041—Comprehensive education/outreach plan for the State:</b>						
<ol style="list-style-type: none"> <li>2017 HB-571 – Requires Comprehensive Education and Outreach Plan. Implement strategies to reach all individuals and all organizations</li> <li>For 2022-2023, under the HMGP Program, this is being addressed with the Project Aloha Safe Homes—Community Behavior, which targets unreceptive or difficult to reach citizens.</li> </ol>						
UH Sea Grant	All islands	Both	Food, Water, Shelter	>\$100,000	Some limited State Funding under HB571, University of Hawai'i, Sea Grant	Ongoing
<b>2023-2018-042—Homeowner's Handbook to prepare for natural hazards:</b>						
Update Homeowner's Handbook for hazard events. Obtain funding to reprint and incorporate lessons learned such as from Hurricane Ida in Louisiana						
UH Sea Grant	All islands	Both (Includes Retrofits of existing houses – measures for new)	Food, Water, Shelter	\$10,000 to \$100,000	State – 20 partners (companies, flood insurance program, CZM) and FEMA	Short and Long
<b>2023-2018-043—Comprehensive Wastewater Management Plan:</b>						
<ol style="list-style-type: none"> <li>Implement statewide wastewater management program with funding to inventory and maintain database of onsite systems.</li> <li>Implement statewide code that requires maintenance contracts.</li> <li>Develop robust education and outreach program.</li> </ol>						
DOH, County Planning Dept., OP, UH Sea Grant	All islands	Both	Food, Water, Shelter	>\$100,000	State and County – Capital improvement plan budgeting, public-private partnerships, Philanthropic Foundations (NOAA)	Long and ongoing
<b>2023-2018-045—Building code amendments to reduce existing and future stock vulnerability to coastal hazards &amp; climate impacts for the Counties and the State:</b>						
Report to be produced for the counties to implement as useful						
State of Hawai'i DBEDT OPSD-CZM	Hawai'i; Kaua'i; Moloka'i; O'ahu	Both	Safety and Security; Food, Water, Shelter; Health and Medical	TBD; estimated at \$10,000 to \$100,000	National Oceanic and Atmospheric Administration and TBD	Short
<b>2023-2018-046—Green infrastructure study and plan:</b>						
<ol style="list-style-type: none"> <li>Identify green infrastructure opportunities in the State, including any related costs and savings</li> <li>Identify green infrastructure planning and development best practices in the State for potential application, including financing and community engagement practices.</li> <li>Complete a plan that details how the State can move forward to cost effectively take advantage of identifies opportunities, including and related costs and savings</li> <li>Identify any legal or regulatory changes that will be needed to execute the completed plan</li> </ol>						
DBEDT OPSD	All islands	Both	Safety and Security; Food, Water, Shelter; Health and Medical	\$750,000	NOAA, State Appropriation	Short





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-048—Infrastructure managed retreat and/or nature-based solutions engineering pilot project to protect threatened Hawai'i infrastructure:</b>						
<ol style="list-style-type: none"> <li>1. Develop criteria to rank infrastructure most threatened by chronic coastal flooding, climate change and sea level rise</li> <li>2. Develop mitigation strategy to either retreat threatened infrastructure or nature-based engineering solution to harden, if retreat is not possible</li> <li>3. Retreat or harden infrastructure</li> </ol>						
State of Hawai'i DBEDT OPSD-CZM	All islands	Both	All	TBD; estimated >\$100,000	National Oceanic and Atmospheric Administration and TBD	Long
<b>2023-2018-049—Development of Comprehensive High Resolution Probabilistic Tsunami Design Zone Maps compatible with ASCE 7-16 for the Island of O'ahu, State of Hawai'i:</b>						
<ol style="list-style-type: none"> <li>1. Develop Phase I project work plan</li> <li>2. Conduct modeling and mapping of the City &amp; County of Honolulu (urban core south coast and Hale'iwa)</li> <li>3. Complete modeling and mapping for entire City &amp; County of Honolulu Island of O'ahu</li> <li>4. Conduct independent technical review to ensure compliance with the ASCE 7-16 Chapter6 Probabilistic Tsunami Hazard Analysis mapping criteria</li> <li>5. Draft proposed language for the Honolulu City Council to consider amending the City &amp;County of Honolulu Building Code to adopt the probabilistic Tsunami Design Zone maps and model data developed pursuant to this project along with styles of maps appropriate for use in the City &amp; County of Honolulu Building Code and the ASCE Tsunami Design Geodatabase</li> </ol>						
State of Hawai'i DBEDT OPSD-CZM	O'ahu	Both	All	\$430,000	National Oceanic and Atmospheric Administration	Short
<b>2023-2018-050—Development of Comprehensive High Resolution Probabilistic Tsunami Design Zone Maps Compatible with ASCE 7-16 for the Counties of Hawai'i, Maui and Kaua'i, State of Hawai'i:</b>						
<ol style="list-style-type: none"> <li>1. Initiate modeling and mapping for Hawai'i, Maui, and Kaua'i counties</li> <li>2. Complete modeling and mapping for Hawai'i, Maui, and Kaua'i counties</li> <li>3. Conduct independent technical review to ensure compliance with ASCE 7 criteria</li> <li>4. Draft and complete proposed language for county councils of Hawai'i, Maui, and Kaua'i to consider amending their building codes to adopt the probabilistic Tsunami Design Zone maps and model data developed pursuant to this project along with styles of maps appropriate for use in their respective county building codes and the ASCE Tsunami Design Geodatabase</li> <li>5. Draft proposed language to adopt the probabilistic Tsunami Design Zone maps and model data developed pursuant to this project along with style of maps appropriate for use in State of Hawai'i Building Code</li> <li>6. Present building code amendments for SBCC review and approval</li> <li>7. Conduct rulemaking in accordance with HRS Chapter 91</li> </ol>						
State of Hawai'i DBEDT OPSD-CZM	Hawai'i; Kaua'i; Moloka'i; Maui	Both	All	TBD; estimated >\$100,000	National Oceanic and Atmospheric Administration and TBD	Long and Ongoing





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-051—Flood engineering analysis of Waimanalo watershed:</b>						
<ol style="list-style-type: none"> <li>1. Form workgroup of affected state and county agencies and affected landowners and stakeholders.</li> <li>2. Develop a public information campaign including public service announcements, fact sheets, and other forms of communication on the types of insurance and the need to purchase flood insurance.</li> <li>3. Measure change in the number of active flood insurance policies compared to baseline levels.</li> </ol>						
HI-EMA	O’ahu	Existing	All	>\$100,000	FEMA, State funding, US Geological Survey, US Department of Agriculture, Natural Resources Conservation Service	Short
<b>2023-2018-053—Coordinate the compilation of projected development to assist with future local and State HMPs:</b>						
HI-EMA will work with other departments at the state and local levels to coordinate the compilation of projected development in a spatial format to enable a more comprehensive analysis to identify problems and exposure prior to construction. This information will be included in the future update of local and state hazard mitigation plans; and be available to all entities for planning use.						
HI-EMA	All islands	Future	Other	< \$10,000	Operating Funds (State Funds)	Ongoing
<b>2023-2018-054—Reduce number of repetitive loss properties:</b>						
The State of Hawai’i Department of Land and Natural Resources (DLNR), HI-EMA and the four County Governments will continue to work together to reduce the number of properties remaining on the repetitive loss list. The State Hazard Mitigation Forum will provide technical and scientific assistance. Mitigation measures to be considered for each property are: acquisition, re-location, elevation, or small flood control projects.						
HI-EMA in coordination with DLNR Engineering Division and the four Counties	All islands	Existing	Safety and Security; Food, Water, Shelter; Health and Medical	>\$100,000	FEMA HMA grants, State Appropriation	Ongoing
<b>2023-2018-055—Reduce and/or convert hazardous fuels along roadsides:</b>						
<ol style="list-style-type: none"> <li>1. Roadways, portions of highways and private streets shall be cleared of combustible vegetation and other combustible growth</li> <li>2. Certain ground covers shall be permitted to be exempt provided that they do not form a means of readily transmitting fire</li> <li>3. Keep invasive, fire prone grasses and shrubs short</li> <li>4. Monitor vegetative regrowth due to year-round growing season and invasive, fire-prone grasses that grow back quickly.</li> </ol>						
State DOT and County Departments of Transportation	All islands	Both	All	>\$100,000	Operating Funds (State Funds)	Ongoing
<b>2023-2018-056—Collaborate with partners and the State Hazard Mitigation Forum to evaluate and update the State Hazard Mitigation Plan on an annual basis</b>						
HI-EMA, Counties, FEMA Region IX	All islands	Not applicable	Safety and Security	< \$10,000	Operating Funds (State Funds)	Ongoing
<b>2023-2018-057—Coordinate access to Hawai’i State Historic Preservation Division (SHPD)-maintained cultural resource information:</b>						
HI-EMA will work with (SHPD) in order to access to cultural resource information for inclusion in future state hazard mitigation plan updates.						
HI-EMA and State Historic Preservation Division	All islands	Existing	Safety and Security	< \$10,000	Operating Funds (State Funds)	Short





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2018-058—Implement the mitigation measures as outlined in the Statewide Highway Shoreline Protection Study:</b>						
Final Report of Preliminary Field Investigation, Rankings and Recommendations of August 2019 has recommendations for next steps and has prioritized the roadways that require attention.						
State of Hawai'i DOT	All islands	Existing	Transportation	>\$100,000	US Fed Highways, NOAA, State Appropriation	Long
<b>2023-2013-001—By 2028, update the design standards for new high-occupancy public buildings that can provide enhanced hurricane protective areas, and consider Mass Care Working Group recommendations</b>						
HI-EMA	All islands	Future	Safety and Security; Food, Water, Shelter; Health and Medical; Communications; Hazardous Material	\$10,000 to \$100,000	Department funding; FEMA CTP	Short
<b>2023-2013-002—Evaluate vulnerability of critical infrastructure systems in the storm surge inundation zone (power, water, fuel, communications, ports, airports) and identify protective measures or back-up resources to the most practical extent</b>						
HI-EMA	All islands	Existing	All	>\$100,000	EMPG Funding; Department Funding; FEMA CTP	Long
<b>2023-2013-004—Improve Building Codes to the most current standards. Adopt wind design standards for the installation of photovoltaic panels, power walls, and other alternative energy sources on residential/commercial buildings.</b>						
HI-EMA, Building Code Council	All islands	Future	Food, Water, Shelter; Energy	\$10,000 to \$100,000	DR4062 HMGP Funds	Short
<b>2023-2013-018—Continue to support the Counties in the evaluation of existing policies for the use of buildings for vertical evacuation and update as necessary. Develop a standard procedure for evaluating existing multi-story buildings as tsunami (and hurricane) refuge structures</b>						
HETAC, All Counties	All islands	Existing	Food, Water, Shelter	<\$10,000	State Appropriation, FEMA HMA Grants	Ongoing
<b>2023-2013-021—Develop maps of probabilistic tsunami inundation and runup for use in designing or retrofitting critical infrastructure facilities, including bridges, major multi-story buildings, and vertical evacuation refuge buildings (required ASCE-7 implementation). Adopt tsunami-resistant design provisions. Enable "tsunami-ready" designation for risk category III and IV structures.</b>						
DBEDT OP CZMP	All islands	Both	All	>\$100,000	NOAA Funding	Short, Ongoing
<b>2023-2013-024—Conduct all hazard evaluations and develop cost-effective seismic retrofits for priority facilities in the Counties of Hawai'i and Maui</b>						
HETAC, Counties of Hawai'i and Maui	Hawai'i, Maui, Moloka'i, Lāna'i	Existing	Safety and Security; Food, Water, Shelter; Health and Medical; Communications; Hazardous Material	>\$100,000	FEMA CTP Funding; Department Funding; NOAA Funding	Short
<b>2023-2013-025—Provide public outreach on how to retrofit and establish anchorage of post &amp; pier foundations of Hawai'i light-frame housing</b>						
HETAC, Counties of Hawai'i	Hawai'i, Maui, Moloka'i, Lāna'i	Existing	Food, Water, Shelter	\$10,000 to \$100,000	FEMA CTP Funding; Department Funding	Short





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2013-026—Require implementation of seismic bracing requirements for equipment and ceiling systems in renovation and post-disaster repairs of schools and hospitals, and assisted living facilities</b>						
Building Code Council	All islands, emphasis on Hawai'i and Maui	Existing	Safety and Security; Health and Medical	<\$10,000	FEMA CTP Funding; Department Funding	Short
<b>2023-2013-028—Compile detailed County of Maui bridge seismic retrofit performance objective information from DOT for 50-60 bridges, and update HAZUS inventory to reflect more accurate expected bridge loss estimates in data products</b>						
State of Hawai'i DOT	Maui, Moloka'i, Lāna'i	Existing	Transportation	<\$10,000	US Fed Highways, State Appropriation, NEHRP	Short
<b>2023-2013-033— Conduct testing of the performance of current and future assets for the promotion of life-saving measures (single wall construction, pillar and post construction, and post disaster housing) when subjected to major earthquakes and hurricanes</b>						
HI-EMA, UH	All islands	Future	Food, Water, Shelter	\$10,000 to \$100,000	Department Funding; FEMA Grants	Short
<b>2023-2013-034— Explore the use of subsea cabling for tsunami warning and earthquake monitoring systems</b>						
HETAC, USGS	All islands	Not applicable	All	<\$10,000	Operating Funds (State Funds)	Ongoing
<b>2023-2013-035—Generate ShakeMaps that incorporate soil conditions and the new seismic hazard model information for Hawai'i</b>						
HETAC	All islands	Future	All	\$10,000 to \$100,000	Department Funding; FEMA Grants	Short
<b>2023-2013-061—Develop Zones of Required Special Investigations near hillsides. If mandated by the State Legislature, use these zones to define as a "duty to notify" during real estate transactions.</b>						
UH, DLNR, State of Hawai'i DOT	All islands	Both	All	\$10,000 to \$100,000	State Appropriation, FEMA HMA Grants, NRCS	Short
<b>2023-2013-071—Develop a pre-incident mission-ready package (MRP) for EMAC requests (Emergency Mutual Aid Compact) for licensed healthcare professionals</b>						
DOH	All islands	Not applicable	Health and Medical	\$10,000 to \$100,000	PHP; HPP	Ongoing
<b>2023-2013-072—DOH to develop standard operating procedures for sharing information across agencies</b>						
DOH	All islands	Not applicable	Safety and Security; Health and Medical; Communications	<\$10,000	PHP	Ongoing
<b>2023-2013-078—Develop templates for public health emergency messaging</b>						
DOH	All islands	Not applicable	Health and Medical; Communications	<\$10,000	PHP/Operating Funds	Ongoing
<b>2023-2013-086—Investigate how to warehouse supplies to account for supply chain disruption. Continue preparedness messaging to residents to have food and water on hand for 14 days.</b>						
HI-EMA	All islands	Existing	Food, Water, Shelter	\$10,000 to \$100,000	Department Funding, FEMA Grants, EDA	Short
<b>2023-2013-088—Using the "Hurricane Shelter Retrofit Procedural Guide" HI-EMA will continue to retrofit public shelter buildings to increase capacity to decrease the sheltering deficit:</b>						
These shelter hardening actions will result in EHPA-rated hurricane shelters that will achieve category 3 hurricane protection.						
HI-EMA, All Counties	All islands	Existing	Food, Water, Shelter	>\$100,000	HMGP, State CIP Funds	Long





Responsible Departments or Agencies	Location	Existing or Future Development	Community Lifelines Addressed	Estimated Costs	Potential Funding Sources	Timeline
<b>2023-2013-095—Augment and expand education and outreach for earthquake and tsunami hazard reduction activities</b>						
HETAC	All islands	Both	All	\$10,000 to \$100,000	NOAA Funding	Short
<b>2023-2013-116—Continue to develop Operational Support Plans:</b>						
1. Account for adequacy of critical marine/ground transportation to address supply chain and alternate port operations plan						
2. Include Natural Systems Protection (NSP) elements						
HI-EMA	All islands	Existing	Transportation	>\$100,000	EMPG Funding	Short
<b>2023-2013-121—Continue to develop harbor maps to define regimes of currents and timeframes for several scenarios of tsunami to estimate necessary period of ship evacuation</b>						
HI-EMA	All islands	Existing	Transportation	\$10,000 to \$100,000	NOAA Funding	Short

Note: See Appendix G (Mitigation Strategy Supplement) for additional information on implementation

### 6.4.3 ACTION PLAN PRIORITIZATION

Mitigation actions in the 2023 SHMP Update were prioritized based on the risk assessment, capabilities, and progress on previously identified actions. The prioritization schema for action implementation differs from the process and criteria the Forum uses to rank planning and project proposals for FEMA mitigation grant funding (see Appendix C – Capability Assessment Supplement). Each action in the 2023 SHMP Update was ranked based on the following criteria:

- Will the action result in life safety?
- Will the action result in property protection?
- Will the action be cost-effective? (future benefits exceed cost)
- Is the action technically feasible?
- Will the action mitigate impacts from climate change?
- Does the State have the legal authority to implement?
- Is funding available for the action?
- Will the action have a positive impact on the natural environment?
- Does the action benefit socially vulnerable communities?
- Does the State have the administrative capability to execute the action?
- Will the action reduce risk to more than one hazard?
- Can the action be completed in less than 5 years?
- Is there an agency/department local champion for the action?
- Will the action support other local objectives (such as capital improvements, economic development, environmental quality, or open space preservation?) or policies of other plans and programs?

The answers to each of these questions are weighted as follows:

- Yes = 3 points
- Not sure, could be either yes or no, or question is difficult to quantify = 1 point
- No = 0 points





Following scoring of each action, priorities are assigned based on the following metrics:

- 31 or more = High Priority
- 15 to 30 = Medium Priority
- 0 to 14 = Low Priority

Table 6.4-2 shows the goals and objectives that each action supports, the action type, and the priority for implementation.

- **Mitigation Goals**—Goals are listed in detail in Section 6.2 (Mitigation Goals and Objectives)
- **Mitigation Objectives**—Objectives are listed in detail in Section 6.2 (Mitigation Goals and Objectives)
- **Action Type**—Mitigation actions are summarized into the following four types define by FEMA:
  - **State & Local Plans and Regulations**—Include government authorities, policies, or codes that encourage risk reduction, such as building codes and state planning regulations. This may also include planning studies.
  - **Structure & Infrastructure Projects**—Involve modifying existing structures and infrastructure or constructing new structures to reduce the impact of hazards.
  - **Natural Systems Protection**—Minimize losses while also preserving or restoring the function of natural systems.
  - **Education and Awareness Programs**—Include long-term, sustained programs to inform and educate citizens and stakeholders about hazards and mitigation options. This category could also include training.
- **Priority**—The ranking criteria discussed above. See Appendix G (Mitigation Strategy Supplement) for the prioritization summary of each action.

*Table 6.4-2. 2023 SHMP Update State of Hawai‘i Action Plan Goals, Objectives, Action Type, and Priority*

Action Number	Mitigation Goals	Mitigation Objectives	Action Type				Priority
			State & Local Plans and Regulations	Structure & Infrastructure Project	Natural Systems Protection	Education & Awareness Programs	
2023-001	1, 2, 3	1, 3, 4, 5, 14		◆	◆		Medium
2023-002	1, 2, 3, 4, 7	1, 2, 4		◆			High
2020-001	1, 2	4, 8, 9		◆			High
2020-002	3, 4, 5, 7	2, 15				◆	High
2020-003	1, 2, 3, 7	4, 8, 9		◆			Medium
2020-004	3, 5, 7	2, 15				◆	Medium
2018-001	1, 2, 4, 7	4, 8, 9		◆			High
2018-002	1, 2, 4, 7	4, 8, 9		◆			High
2018-004	2, 3, 4	1, 2, 3, 4, 5, 6, 9	◆				Medium
2018-005	2, 5	1, 2, 3, 4, 5, 6, 9				◆	High
2018-006	1, 2, 3, 4, 6	1, 2, 5, 12	◆				Medium
2018-007	3, 4, 6	1, 4, 6, 9, 14	◆				High
2018-009	2, 3, 4	1, 2, 3, 6, 9, 13	◆	◆		◆	High
2018-011	1, 2, 3, 5, 7	2, 3, 4, 5, 6, 7, 8, 9, 10	◆	◆			High
2018-012	1, 2, 4, 7	1, 8, 9, 10	◆	◆			High
2018-013	1, 2, 4, 7	1, 8, 9, 10	◆	◆			High
2018-016	3, 6	1, 2, 3, 6, 8	◆			◆	High
2018-017	2, 3, 4, 7	2, 3, 4, 6, 7, 11, 13, 14	◆			◆	Medium
2018-018	2, 3	4, 5, 7, 13, 14	◆	◆	◆		Medium





Action Number	Mitigation Goals	Mitigation Objectives	Action Type				Priority
			State & Local Plans and Regulations	Structure & Infrastructure Project	Natural Systems Protection	Education & Awareness Programs	
2018-019	2, 3	1, 3, 4, 7, 13, 14			◆		High
2018-021	2, 3, 5	1, 2, 3, 4, 5, 7, 13				◆	Medium
2018-022	2, 3, 5	1, 2, 3, 4, 5, 7, 9, 12, 13, 14, 15				◆	High
2018-023	1, 2, 4, 6	2, 4, 6, 8, 9, 11, 12, 14	◆	◆	◆	◆	High
2018-024	2, 3	1, 2, 3, 4, 5, 14	◆		◆		High
2018-025	1, 2	2, 4, 7, 8, 9, 11, 12, 14	◆		◆		High
2018-026	2, 3	3, 4, 7, 14	◆	◆	◆		High
2018-027	1, 2, 4, 7	4, 5, 7, 8, 13, 14	◆	◆	◆		High
2018-028	2, 3, 5	1, 2, 3, 4, 5, 7, 9, 12, 13, 14	◆		◆	◆	High
2018-029	1, 2	8, 9, 10	◆	◆	◆		High
2018-030	2, 4, 6	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14	◆	◆	◆	◆	High
2018-031	1, 2, 3, 4, 7	1, 2, 3, 4, 8, 9, 10	◆	◆		◆	High
2018-032	2, 4	1, 2, 3, 6	◆		◆		High
2018-033	1, 2, 3, 5, 7	1, 4, 5, 8, 9		◆	◆	◆	Medium
2018-034	1, 2, 4	2, 4, 9, 10		◆			High
2018-041	2, 3, 5	1, 2, 3, 4, 5, 7, 8, 9, 10, 12				◆	High
2018-042	2, 3, 5	2, 3, 4, 5, 8, 9, 12				◆	High
2018-043	1, 2, 3, 4, 6	1, 2, 5, 6, 7, 11, 12, 13, 14	◆			◆	High
2018-045	1, 2, 4	4, 10, 11, 12	◆				High
2018-046	2, 3, 4	2, 3, 4, 5, 6, 8, 9, 13, 14	◆		◆	◆	High
2018-048	1, 2, 3, 4	1, 2, 3, 4, 5, 6, 8, 9, 13, 14		◆	◆	◆	Medium
2018-049	1, 2, 4	2, 3, 4, 6	◆			◆	Medium
2018-050	1, 2, 4	2, 3, 4, 6	◆			◆	Medium
2018-051	2, 4	2, 4, 6, 13				◆	Medium
2018-053	3, 4, 6	2, 3, 4, 6	◆			◆	High
2018-054	1, 2, 3, 4, 7	2, 3, 8, 9, 10, 12		◆			High
2018-055	1, 2	4, 8, 14	◆		◆		High
2018-056	3, 6	1, 4, 11	◆			◆	High
2018-057	5, 7	1, 2, 3, 5	◆			◆	High
2018-058	4, 6	1, 4, 5, 6, 11, 13, 14		◆			High
2013-001	1, 2, 4	4, 8, 9, 10	◆				Medium
2013-002	1, 2, 3, 4	8, 9, 10, 11	◆	◆			Medium
2013-004	1, 3, 4	10	◆				High
2013-018	1, 2, 3, 4	2, 11	◆				Medium
2013-021	1, 2, 4	2, 4, 6, 8, 9	◆			◆	High
2013-024	1, 2, 3, 4	10	◆	◆			High
2013-025	2, 3, 5, 7	1, 3, 4, 8, 9, 12				◆	High
2013-026	1, 2, 6	4, 8, 9, 10		◆			High
2013-028	2, 3, 4	1, 2, 6	◆			◆	Medium
2013-033	4	2, 8, 9, 10		◆		◆	Medium
2013-034	4, 6	15	◆			◆	Medium





Action Number	Mitigation Goals	Mitigation Objectives	Action Type				Priority
			State & Local Plans and Regulations	Structure & Infrastructure Project	Natural Systems Protection	Education & Awareness Programs	
2013-035	4	2, 6	◆				Medium
2013-061	2, 3, 4, 5	1, 2, 5, 6, 7, 11, 12	◆		◆	◆	Medium
2013-071	1, 3, 5	1, 2, 3, 5	◆				Medium
2013-072	3	1, 2, 3, 6	◆			◆	Medium
2013-078	2, 4	15				◆	Medium
2013-086	1, 2, 3, 4, 5, 7	3, 4, 12, 15	◆			◆	High
2013-088	1, 2, 3, 6, 7	4, 8, 9		◆			Medium
2013-095	3, 5	1, 2, 3, 4, 9	◆			◆	Medium
2013-116	2, 3, 4, 5, 6	2, 3	◆				Medium
2013-121	2, 3, 4	2, 3	◆				Medium

## 6.5 REPETITIVE LOSS STRATEGY

**44 CFR 201.4(c)(3)(v):** A State may request the reduced cost share authorized under §79.4(c)(2) of this chapter for the FMA and SRL programs, if it has an approved State Mitigation Plan ... that also identifies specific actions the State has taken to reduce the number of repetitive loss properties, which must include properties identified as severe repetitive loss, and specifies how the State intends to reduce the number of such repetitive loss properties.

To be eligible for an increased federal cost share, a FEMA-approved SHMP that addresses RL properties must be in effect at the time of grant award and the property must be a RL property. The State of Hawai'i received approval for its Repetitive Loss Strategy in October 2013. The updated RL Strategy, as detailed in this section, identifies actions the State has taken to reduce the number of RL properties. In addition, it describes the State's strategy to ensure that Counties with RL properties take actions to reduce the number of these properties, including the development of local HMPs.

### 6.5.1 REPETITIVE LOSS PROPERTIES IN THE STATE OF HAWAI'I

Properties that are located within the SFHA and have federally-backed mortgages or were constructed using federal or federally-related financial assistance are required to purchase flood insurance. When an National Flood Insurance Program (NFIP)-insured property is damaged by flooding, a claim is filed. If the NFIP-insured property has had at least two paid flood losses of more than \$1,000 each in any 10-year period since 1978, it is referred to as a RL property. An NFIP-insured property is known as a SRL property if: (1) the insured property has had four or more paid flood losses of \$5,000 (amount of each claim) and a total amount of claims payments of \$20,000; or (2) the insured property filed at least two separate claims that have been paid with the cumulative amount of claim payments exceeding the fair market value of the insured building on the day before each loss (FEMA 2020).

Section 4.6 (Flood) discusses the RL and SRL properties in each county. As of August 21, 2022, the State has 262 RL properties and 53 SRL properties throughout all four Counties. Refer to Table 6.5-1 for a summary of these statistics. Over the performance period of the 2018 SHMP, the number of RL properties has increased from 227 to 262 (an approximate 13% increase).





**Table 6.5-1. NFIP Statistics for the State of Hawai‘i**

County	Repetitive Loss Properties		Severe Repetitive Loss Properties	
	2018	2023	2018	2023
	Total	Total	Total	Total
County of Kaua‘i	31	46	0	2
City and County of Honolulu	117	132	1	13
County of Maui	34	38	2	6
County of Hawai‘i	45	46	6	32
<b>Total</b>	<b>227</b>	<b>262</b>	<b>9</b>	<b>53</b>

Source: FEMA 2022; State of Hawai‘i SHMP 2018

### 6.5.2 GOALS TO ADDRESS RL AND SRL PROPERTIES

The State of Hawai‘i is committed to reducing the number of RL and SRL properties by increased education, outreach, and successfully maximizing grant opportunities. This strategy aligns with the State’s overall 2023 goals as outlined in subsection 6.2 above. More specifically, Goal 1 is to reduce long-term vulnerability of Hawai‘i’s people and property, which includes high-risk properties such as RL and SRL properties. Goal 6 centers on the State providing a framework for robust local hazard mitigation planning and implementation of their mitigation strategy, including the support to reduce RL and SRL properties.

- **Goal 1**—Reduce the long-term vulnerability of Hawai‘i’s people, property, and jurisdictions, including State-owned or operated buildings, infrastructure and critical facilities, to natural hazards while conserving the State’s natural, historical, and cultural assets. This includes High Hazard Potential Dams and high-risk properties such as RL and SRL properties.
- **Goal 6**—Provide a framework for robust local hazard mitigation planning and mitigation strategy implementation in alignment with this plan.

The local HMPs were reviewed to identify goals or objectives that also address the reduction of RL and SRL properties.

- County of Kaua‘i
  - Goal 1 – Reduce the long-term vulnerability of the County of Kaua‘i’s people, communities and property—including government-owned or operated buildings, lifelines, and infrastructure—to hazards, while conserving the County’s natural, historical, and cultural assets. This includes high-risk properties such as RL and SRL properties.
  - Objective 2 – Reduce repetitive property losses due to floods, erosion, high winds, tsunamis, fire, and sea level rise through acquisition, retrofitting, design, and updated construction and land use regulations.
  - Objective 3 – Incorporate mitigation measures into repairs, major alterations, new development, and redevelopment, especially in areas with substantial hazard risk and those known to have RL.
- City and County of Honolulu
  - Goal 2 – Plan, design, and construct future development and retrofit existing structures within hazard areas to become resilient and minimize losses.
- County of Maui
  - Goal 1 – Protect the life, health, safety, and welfare of Maui County residents and visitors
  - Goal 3 – Protect and adapt property and infrastructure from the impacts of natural hazards and climate change.





- County of Hawai'i
  - Goal 2 – Ensure that all critical facilities and infrastructure withstand hazard incidents and have contingency plans to restore services quickly.
  - Objective 4 – Promote and implement the retrofit, hardening, or replacement of at-risk structures and lifelines to increase community resilience.

### 6.5.3 PRIORITIZATION OF RL AND SRL MITIGATION ACTIONS

The State's criteria to rank project proposals for FEMA mitigation grant funding programs is listed below and described in greater detail in the Capability Assessment Appendix (Appendix C – Capability Assessment Supplement). Several ranking criteria ensure the projects that include the reduction of RL and SLR properties are ranked high to proceed with proposal submission and project award. One of the ranking criteria for project selection is to give priority to problems that are "repetitive" (Resolve Significant Problems); and projects that are long-range solutions (Long-range). In addition, the hardening or retrofit of essential facilities and flood control projects are determined as high priority project types (Priority in the State).

- **Environmental/Historic Preservation**—Must be environmentally sound and in conformance with Floodplain Management, Historical Preservation, and Protection of Wetlands and Endangered Species laws and regulations.
- **Resolve Significant Problems**—Addresses a problem that has been repetitive or a problem that poses a significant risk to public health and safety if left unresolved.
- **Long-range**—Solution should be long-range.
- **Cost-effective**—Be cost-effective and substantially reduce the risk of future damage, loss, hardship, or suffering from a major disaster.
- **Priority in State Plan**—Types of projects which have been determined high priority for the State of Hawai'i.

### 6.5.4 CURRENT AND POTENTIAL FUNDING SOURCES TO IMPLEMENT REPETITIVE LOSS MITIGATION ACTIVITIES

The primary source of mitigation funding for flood mitigation projects is through FEMA's Hazard Mitigation Assistance grant programs which provide funding for eligible mitigation activities that reduce disaster losses and protect life from future disaster damages. These three funding opportunities require an approved local or State HMP and are listed below.

- Hazard Mitigation Grant Program
- Building Resilient Infrastructure and Communities (BRIC)
- Flood Mitigation Assistance (FMA)

The Capability Assessment and Capability Assessment Supplement Appendix (Section 5 and Appendix C, respectively) describe the pre- and post-disaster funding sources available for mitigation in the State. The FEMA HMA grant programs are also described in Table 6.5-2, followed by their cost share (Table 6.5-3) and eligible activities under each program (Table 6.5-4). Therefore, with the inclusion of the RL Strategy in this plan, cost shares of up to 90%/10% and 100%/0% are available for eligible projects as noted below.





**Table 6.5-2. Summary of FEMA Hazard Mitigation Assistance Grant Programs**

<p><b>Hazard Mitigation Grant Program (HMGP)</b></p> <p><b>Purpose:</b> To provide funds to states, territories, Indian tribal governments, and local communities to significantly reduce or permanently eliminate future risk to lives and property from natural hazards. HMGP funds projects in accordance with priorities identified in State or local hazard mitigation plans and enables mitigation measures to be implemented during the recovery from a disaster.</p> <p><b>Availability:</b> Post-Disaster. When authorized under a Presidential major disaster declaration in areas of the State requested by the Governor.</p>
<p><b>Purpose:</b> To provide funds to states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency.</p> <p><b>Availability:</b> Pre-Disaster</p>
<p><b>Purpose:</b> To implement cost-effective measures that reduce or eliminate the long-term risk of flood damages to buildings, manufactured homes and other structures insured under the National Flood Insurance Program (NFIP). As noted, the FMA combines the previous Repetitive Flood Claims and Severe Repetitive Loss grants into one grant program.</p> <p><b>Availability:</b> Pre-Disaster</p>

Source: (FEMA 2023)

**Table 6.5-3. FEMA Hazard Mitigation Assistance Grant Program Cost Share**

Programs	Mitigation Activity (Percent of Federal/Non-Federal Share)	Recipient Management Costs (Percent of Federal/Non-Federal Share)	Subrecipient Management Costs (Percent of Federal/Non-Federal Share)
HMGP	75/25	100/0	—/— <sup>(a)</sup>
BRIC	75/25	75/25	75/25
BRIC – subrecipient is small and impoverished community	90/10	100/0	90/10
FMA – insured properties and planning grants	75/25	75/25	75/25
FMA – repetitive loss property	90/10	90/10	90/10
FMA – severe repetitive loss property <sup>b</sup>	100/0	100/0	100/0

Source: (FEMA 2023)

- a. Subapplicants should consult their State Hazard Mitigation Officer (SHMO) for the amount or percentage of HMGP subrecipient management cost funding their State has determined to be passed through to subrecipients.
- b. To be eligible for an increased Federal cost share, a FEMA-approved State or Tribal (Standard or Enhanced) Mitigation Plan that addresses RL properties must be in effect at the time of award, and the property that is being submitted for consideration must be a RL property.





**Table 6.5-4. FEMA Hazard Mitigation Grant Program Eligible Activities**

Eligible Activities	HMGP	BRIC	FMA	HHPD
Property Acquisition and Structure Demolition	√	√	√	
Property Acquisition and Structure Relocation	√	√	√	
Structure Elevation	√	√	√	
Mitigation Reconstruction	√	√	√	√
Dry Floodproofing of Historic Residential Structures	√	√	√	
Dry Floodproofing of Non-residential Structures	√	√	√	
Generators	√	√		
Localized Flood Risk Reduction Projects	√	√	√	
Non-Localized Flood Risk Reduction Projects	√	√		
Structural Retrofitting of Existing Buildings	√	√	√	
Non-structural Retrofitting of Existing Buildings and Facilities	√	√	√	
Safe Room Construction	√	√		
Wind Retrofit for One- and Two-Family Residences	√	√		
Infrastructure Retrofit	√	√	√	
Soil Stabilization	√	√	√	√
Wildland Fire Mitigation	√	√		
Post-Disaster Code Enforcement	√			
Advance Assistance	√			
5 Percent Initiative Projects*	√			
Aquifer and Storage Recovery**	√	√	√	
Flood Diversion and Storage**	√	√	√	
Floodplain and Stream Restoration**	√	√	√	
Green Infrastructure**	√	√	√	
Miscellaneous/Other**	√	√	√	
Hazard Mitigation Planning	√	√	√	√
Technical Assistance			√	√
Management Costs	√	√	√	

\* FEMA allows increasing the 5% Initiative amount up to 10% for a Presidential major disaster declaration under HMGP. The additional 5% Initiative funding can be used for activities that promote disaster-resistant codes for all hazards. As a condition of the award, either a disaster-resistant building code must be adopted or an improved Building Code Effectiveness Grading Schedule is required.

\*\*Indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

## 6.5.5 SUPPORT OF LOCAL HAZARD MITIGATION PLANS

**Element S14 and 44 CFR § 201.3(c)(5) and 201.4(c)(4)(i):** The State plan must include a discussion of the process to support the development of approvable local government mitigation plans. This includes providing technical assistance, training, and funding. The plan must provide a summary of barriers to developing or updating, adopting, and implementing FEMA-approved local government mitigation plans and steps to remove barriers to help local governments advance mitigation planning.

As discussed in Section 5 (Capability Assessment), HI-EMA is committed to educating its Counties on grant availability, grant applications, and managing mitigation funds. Over the performance period of the 2018 SHMP, when funding opportunities became available, HI-EMA placed notifications in local newspapers, notified appropriate State and County agencies via email





and other means, and communicated opportunities through networks via word of mouth. In addition, HI-EMA has provided training in groups and/or one-on-one on benefit-cost analysis (BCA), the E-Grants system, the environmental and historic preservation (EHP) review process, the Hazard Mitigation Assistance (HMA) program, and applicant briefings and trainings for the Hazard Mitigation Grant Program (HMGP).

Over the performance period of the 2023 SHMP Update, HI-EMA will work to expand discussion and outreach for these and other programs that provide funds for mitigation activities. Additional information on trainings is provided in the Section 5 (Capability Assessment).

As outlined in Section 7 (Plan Maintenance) HI-EMA has updated the plan maintenance strategy. Through the coordination of the SHMO and/or Chair of the Forum, the Forum will continue to meet quarterly. In addition to these meetings, the SHMO and Forum Chair may request the Forum meet following disaster events, to assure that procedures and resources are appropriate for plan maintenance and implementation. It is at these Forum meetings that project proposals for FEMA mitigation grant funding programs are ranked.

As each County's expiration date on their current hazard mitigation plan approaches, the SHMO will continue to notify each County regarding their status and advise to submit a FEMA HMA planning grant application to FEMA; refer to Section 7 – Plan Maintenance for further details.

## 6.5.6 STATE AND LOCAL CAPABILITIES FOR FUNDING AND IMPLEMENTING RL AND SRL MITIGATION ACTIONS

**Element S11, HHPD5, and 44 CFR § 201.4(c)(3)(iv):** The State plan must identify current and potential sources of funding to implement mitigation actions and activities, including the identification of current and/or potential sources of federal, state, local, or private funding for implementation. At a minimum, the plan must identify FEMA mitigation funding sources.

State and local capabilities for funding and implementing the mitigation of RL and SRL properties provide a basis for effectiveness of the RL Strategy. As discussed in the Capability Assessment (Section 5), HI-EMA administers the State's hazard mitigation program, with the SHMO serving as the official point of contact. As discussed in this plan, HI-EMA recognizes that the HI-EMA Mitigation Section is limited in staffing capacity, as discussed further in Section 5 (Capability Assessment), and that Forum meetings since the adoption of the 2018 SHMP have been sporadic. In addition, the COVID-19 pandemic and the frequency of hazard events and the State's necessity to redirect attention to disaster response and recovery diverted attention and resources away from the outlined 2018 SHMP maintenance process. The updated RL Strategy in the 2023 SHMP Update re-emphasizes the State's commitment to reducing the number of RL and SRL properties in the State.

DLNR is designated as the State Coordinating Agency responsible for assisting the coordination of the NFIP between the Federal and County agencies in the State of Hawai'i. Refer to Table 5.2-1 in Section 5 for a summary of the State's capabilities for the flood-related hazards of concern (climate change and sea level rise, flood, hurricane storm surge, and infrastructure (dam) failure).

The State's 2023 updated mitigation strategy includes focused actions carried over from the 2018 SHMP to reduce the number of RL and SRL properties as follows:

- 2023-2018-007—Better Coordination between the HI-EMA and DLNR on Flood Mitigation Projects
- 2023-2018-022—Statewide Public Information Campaign to Increase Citizen Resilience to Flooding
- 2023-2018-054—Reduce the number of RL properties





All four of the Counties are participating in and are in good standing with the NFIP; and each community has a representative County floodplain manager (refer to Table 5.3-2 in Section 5 [Capability Assessment] for information on County floodplain management programs). Hawai'i is the first state in the nation in which all Counties participate in the Community Rating System (CRS) program. In terms of local capabilities, the local HMPs were reviewed to examine the following (summarized further in Section 5.3 [Section 5 – Capability Assessment]):

- Foundational Capabilities
- Floodplain Management Capabilities
- Land Use Planning
- Evaluation and Effectiveness

A review of the County local HMPs reveals that there is limited discussion of the effectiveness of mitigation actions and specifically regarding RL and SRL properties. A summary of the results of the review are provided below. In addition, the local HMPs were reviewed to examine the local mitigation actions identified to reduce the number of RL and SRL properties in the State. The following summarize these findings by County; note, this is not considered an exhaustive list of all flood-related hazard mitigation actions identified in each plan.

- County of Kaua'i Multi-Hazard Mitigation and Resilience Plan, 2021
  - The County of Kauai's HMP summarizes the County's flood mitigation capability in Chapter 7 and Appendix L. The probable causes of flooding for all properties in identified RL areas has been determined to be commensurate with the risk reflected in the SFHA mapping. Since the development of the 2021 Kaua'i HMP, the County has been admitted into the CRS program.
  - Mitigation Actions:
    - Work with the State NFIP Coordinator to develop the program for participation in the CRS
    - Develop and maintain public awareness of hazards, vulnerability, mitigation and adaptation strategies.
- City and County of Honolulu Multi-Hazard Pre-Disaster Mitigation Plan, 2020
  - The City and County of Honolulu summarized RL in Chapter 8. Since the development of the 2020 HMP, the County has been admitted into the CRS program.
  - Mitigation Actions:
    - CRS: Participate in the NFIP Community Rating System to reduce flood losses and lower flood insurance premiums.
    - Critical Facilities Plan: Plan for flood control public works for the defense of critical facilities and major economic assets. Harden critical facilities, utilities, power and communication networks, and port facilities.
- County of Maui Hazard Mitigation Plan Update, 2020
  - The County of Maui's HMP summarized RL in its flood hazard profile. All but one RL property in Maui County have been identified as residential structures. Many RL properties are clustered in specific areas.
  - Mitigation Actions:
    - Where appropriate and feasible, provide technical assistance and administer financial support to willing property owners for the completion of projects to protect structures located in hazard-prone areas from future damage, with RL and SRL properties as priority.





- Participate in the CRS program and identify opportunities across all relevant County departments and programs to improve current CRS class.
- County of Hawai'i Multi-Hazard Mitigation Plan, 2020
  - The County of Hawai'i HMP summarizes RL in Chapter 11. All of the properties are within or immediately adjacent to the FEMA-mapped SFHA; most are residential. The probable causes of flooding for all properties in identified RL areas has been determined to be commensurate with the risk reflected in the SFHA mapping.
  - Mitigation Actions:
    - Vulnerable Property Protection. Where appropriate, support retrofitting, purchase or relocation of structures located in hazard areas, prioritizing those that have experienced repetitive losses and/or are located in high- or medium-risk hazard areas.
    - Maintain CRS Participation. Continue to maintain and enhance (where feasible) the County's classification under the CRS program.

The results of this assessment were used by the State to develop its mitigation strategy and strengthen the RL Strategy for the 2023 SHMP Update.

DRAFT

