ALL-HAZARDS PREPAREDNESS IMPROVEMENT ACTION PLAN AND REPORT

A message board on the H1 let drivers know that it was a false alert on Jan. 13, 2018.
Anthony Quintano/Civil Beat

Iao Valley, Maui Flood 2016. Governor Ige surveys flood damage.
HING Photo

The Governor and Hawaii Emergency Management staff meet during the early hours after Hawaii received a tsunami watch in January, 2018.
HING Photo

Brigadier General Kenneth S. Hara
Deputy Adjutant General
State of Hawai'i, Department of Defense

18 February 2018

ALL-HAZARDS PREPAREDNESS IMPROVEMENT ACTION PLAN AND REPORT

Brigadier General Kenneth S. Hara
Deputy Adjutant General
State of Hawai'i, Department of Defense (HI-DoD)
18 February 2018

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FORWARD

On January 13, 2018, the Hawai‘i Emergency Management Agency's (HI-EMA) State Warning Point erroneously activated a statewide Civil Danger Warning (CDW) ballistic missile alert through the Federal Emergency Management Agency's Integrated Public Alert and Warning System (iPAWS). As designed, the iPAWS automatically distributed the CDW message through the Wireless Emergency Alert (WEA) to cellular phones and through the Emergency Alert System (EAS) to radio and television stations. Although efforts were taken to notify the public that the message was in fact a false missile alert, it took HI-EMA 38 minutes to send a second message on the WEA and EAS notifying the public that the first message was a false alert. HI-EMA staff had to create an event code to distribute the follow-on false alert message during the confusion that followed because that capability was not a part of the original alert system. The failure to have systems in place in response to a false alert was the primary contributing factor for the delay and resultant internal and external communication failures.

The false missile alert and the long duration it took HI-EMA to send the WEA and EAS message confused, panicked, and angered the public. This unfortunate event severely degraded the public's trust of HI-EMA and the systems used to notify the public of impending dangers.

It is important to note that HI-EMA is prepared for and stands ready to immediately respond to and provide support to the counties of Hawai‘i ensuring rapid recovery from natural and man-made disasters – with the exception of nuclear capable ballistic missile attack.

On January 15, 2018, Governor Ige signed Executive Order 18-01 (EO 18-01) directing Brig. Gen. Kenneth S. Hara to review current emergency response systems, including notifications and warnings, and make recommendations for improvement.

Subsequently, Brig. Gen. Hara selected seven core team members bringing together experience and backgrounds in state and county government, emergency management, emergency communications, community outreach, and legal expertise. This report

summarizes the approach used to conduct research, gather information, and organize information for decision making and problem-solving. To meet the requirements of EO 18-01, the team's goal was to provide a 30-day initial action plan and a 60-day All Hazards Preparedness Improvement Report. However, Governor Ige acknowledged that this report meets the requirement of EO18-01, thus a 60-day report will not be published.

Although this report recommends critical actions that need to be accomplished immediately and for the long-term, the effort to listen and gather additional knowledge and input will continue well beyond this report.

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EXECUTIVE SUMMARY

The people of Hawai‘i expect the Hawai‘i Emergency Management Agency (HI-EMA) to be trained, ready, and prepared for all hazards. However, preparedness – deterring, mitigating and reducing vulnerability; preventing; knowing what to do; responding to; and; rapidly recovering from a major disaster – requires a multi-tier, interoperable, and whole of community approach. Resultantly, preparedness for major disasters is resource-intensive.

EVENTS LEADING UP TO THE INCIDENT

In response to the ballistic missile threat stemming from geopolitical tensions with North Korea, Hawai‘i led the way in the implementation of alert systems and procedures to increase our preparedness and keep our citizens informed of potential threats from ballistic missiles. In April 2017, HI-EMA initiated a ballistic missile preparedness campaign. A month later, Administrator Vern Miyagi provided Governor Ige and Maj. Gen. Joe Logan general information about HI-EMA’s Ballistic Missile Preparedness Campaign. In support of the Ballistic Missile Preparedness Phase I, HI-EMA initiated a robust public outreach campaign. However, the events and panic observed following the January 13, 2018 false missile alert clearly showed that the outreach campaign was limited in its success.

Vern Miyagi

“Initiating the Ballistic Missile Preparedness Campaign was my idea. We needed to get ahead of the threat.”

HING Photo

DETAILS OF THE INCIDENT

There are several factors that led to the January 13, 2018 false missile alert, most of which were identified in Brig. Gen. (Retired) Bruce Oliveira’s investigation. The Core Team concurs with all the findings. The people of Hawai‘i, including loved ones from afar, suffered unnecessary fear and pain resulting from human error, exacerbated by a series of HI-EMA leadership failures in rapid decision-making and communications plan to correct the initial error. While the false missile alert was costly in terms of public fears and statewide disruptions in all sectors, it revealed systemic issues that must be fully understood and actions taken over time to implement enduring solutions. The following depicts what the Core Team collectively deduced as four significant contributing factors of the January 13, 2018 false missile alert and lag in correction messages:

1. A complete comprehensive annex or plan to address the Ballistic Missile Preparedness (BMP) threat had not been fully developed prior to commencement of missile alert siren testing and internal missile alert drills. This approach was contrary to HI-EMA’s established all-hazards approach and collaborative planning protocols. The response and recovery sections of the plan were minimally developed. The plan lacked details for sheltering, county coordination, and protocols for decision to send out all clear or false missile alert messages, e.g., interception, missile impact without effect to Hawai‘i, etc. This also explains why public outreach was deficient in providing more comprehensive directions to citizens.

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2. There is a misconception that Governor Ige and other elected officials are primarily responsible for timely warning and notification. Hawai‘i Revised Statutes §127A-7 mandates that ". . . the State Warning Point [SWP] shall be continually staffed by [HI-EMA] to monitor warning systems and devices and shall have the ability to provide timely warning and notification to government officials, county warning points and emergency operations centers and, when directed, the general public." During the 38 minute lag several people, including elected officials, attempted to get the false missile alert message out to the public as soon as possible. The SWP's established Ballistic Missile Alert Checklist did not have a step to notify the HI-EMA Public Information Officer (PIO). The missing key step to notify the PIO contributed to the delay in rapidly informing the media and public.

3. The responsibility to identify requirements for the existing alert system and rapid notification remained with HI-EMA. The FEMA Authorized Originator Software Provider (FEMA AOSP), a service hosted web application, lacked features that could have prevented human error that resulted in the false missile alert. The software used to activate the Ballistic Missile Alert message lacks a "credentialed" two-person feature. Furthermore, not all shifts within the SWP mandated a two-person requirement to send Ballistic Missile Alert messages. A lack of efficient and reliable communications channels between the SWP, key state leadership, and the media clearly hampered rapid dissemination of emergency information.

4. Observations point to the improper management of HI-EMA. HI-EMA senior leadership lacked awareness of personnel issues within the SWP. Moreover, mid-level management failed to take appropriate personnel actions for employees who demonstrated poor performance; lack of knowledge; skills, and abilities to perform their duties to standard. Mid-level management also failed to inform senior leadership of the issues observed at the lower level units and sections within HI-EMA.

EMERGING THREATS AND CHALLENGES

Our immediate problem focused on correcting and improving key systems and procedures to enhance public notification, timely decision making, and collaboration between state and counties. The Core Team considered the following questions: What actions would HI-EMA need to do to reduce the risk of human errors? Are there existing technology that would improve public notification, rapid decision-making, and collaboration?

Hawai‘i faces a daunting task of building capacity for resilience and preparedness given our challenges across multiple domains and functions. Our problem is to quickly develop a baseline assessment: where we need to be, and how we are going to get there. This report provides "immediate action" requirements in response to the January 13, 2018 false missile alert and also recommends long-term considerations for All-Hazard Preparedness improvement that should be enduring.

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This report is not a plan, rather the report intends to provide a road map for future actions necessary to make Hawai‘i’s preparedness actions the model for others who could benefit from the lessons learned.

OBSERVATIONS AND RECOMMENDATIONS

The Core Team’s analysis produced 12 major observations and 44 recommendations to address emergency management preparedness in general and ballistic missile preparedness in specific.

- A comprehensive review and assessment of organizational roles and performance should begin immediately: Observations highlight errors in judgment over time within HI-EMA where leaders did not follow or ignored internal standard operating procedures (SOP), planning in isolation, or failed to follow through on leadership responsibilities. Recommendations include complete review of and corrections on personnel management, reinforcement of well-established internal SOP, accelerated development of Ballistic Missile Operations Plans, and development of Strategic Plan for HI-EMA.

- Improvements in technological capabilities needed: Observations point to the limitations inherent in the missile alert software application – the FEMA AOSP. Recommendations for immediate actions include improvements to the software features such as additional safety features (two-person authentication; color-coded test-real-world que) and remedy features (recall; cancellation; error message options); improvements in communications infrastructure to ensure maximum and reliable dissemination of alerts and warnings and developing high-capacity websites to manage surge during emergencies.

- Enforce current statutes and executive orders dealing with emergency management: Observations noted confusion over roles of key leaders in informing the public as well as internal coordination. There are key statutes and executive orders in place that, once enforced, will improve Hawai‘i’s preparedness posture. Recommendations include review and development of Emergency Operations Plans, collaboration between state and counties, and reinvigoration of the whole community approach to improving preparedness through public-private partnerships.

- Develop and deliver training and education programs for the public, government leaders, and EM employees: Observations identified a lack of individual and collective training in HI-EMA as well as other departments in the area of emergency management. A robust effort in public education and engagement produced marginal success. Recommendations include review of HI-EMA training requirements, development of detailed training programs, persistent and creative ways of public education, and leader training.

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INTRODUCTION

AUTHORITY AND SCOPE

By EO 18-01, the Governor of Hawai‘i appointed Brig. Gen. Kenneth Hara to lead the effort to examine all relevant and available information. He in turn formed the Core Team consisting of seven members. The Core Team members supported EO 18-01 requirements. They were selected to create diverse representation with experience and background in state government, county government, emergency management, interoperable communications, complex problem solving, public outreach, and strategic communication. The Core Team received guidance from the governor to conduct all activities in a transparent, unbiased, and comprehensive manner. The Core Team conducted group sessions, focused interviews, preparedness surveys, researched and assessed gaps and vulnerabilities as well as developed actions/recommendations/options for preparedness improvements. The team devoted over 700 hours conducting interviews, researching, capturing observations and developing recommendations.

Executive Order 18-01 directed the following tasks: Review the current emergency response system, including notifications and warnings, and make recommendations for improvement with such review to include:

1. Facilitating efforts to identify capability and resource gaps and develop an action plan that recommends prioritization for resources required to enhance resilience, preparedness, and response capabilities.

2. Identifying actions to strengthen and expand government, private, and public partnerships for preparedness for all hazards.

3. Revising and recommending emergency notification procedures to ensure immediate notification, confirmation, or cancellation of threats

4. Strengthening information sharing, collaboration, and communication.

5. Improving public education to help the public know what to do when an alert goes out.

6. Produce an initial action plan no later than 30 days of this executive order, a final report no later than 60 days of this executive order, and identify any portions of these documents that should not be released to the public for security or other legal reasons.

LIMITATIONS OF THIS REPORT

This Action Plan is intended to capture gaps and vulnerabilities within the emergency management framework. Given the compressed timeline and the urgency that the circumstances demand, the report endeavors to identify the needs and possible corrections and solutions in order to inform key guiding documents such as HI-EMA

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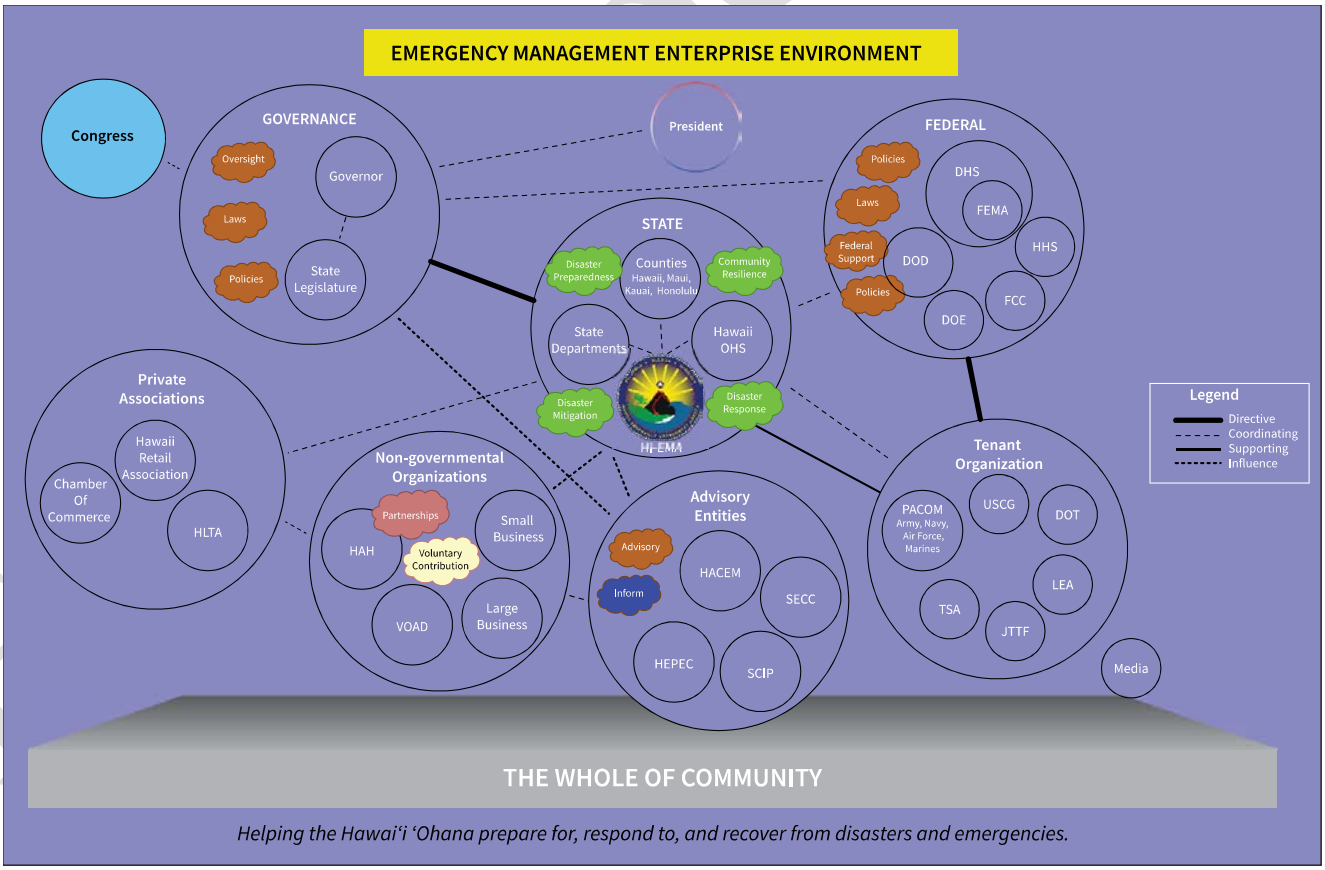
Strategic Plan and Emergency Operations Plans to further develop its capabilities and prevent any future mishaps to ensure effective operations and restore public trust.

This report is not intended to be a directive document. Rather, it will provide a roadmap for all Emergency Management stakeholders to improve and increase capability, especially in the area of ballistic missile threats. Although the Core Team is no longer required to produce a 60 day report, select members from the team will continue working with Emergency Management stakeholders and pass collected information to HI-EMA.

ORGANIZATION

The Core Team of seven members with diverse experience and backgrounds was drawn from those Departments whose role is to play a key role in emergency management. All members have had extensive experience in their relevant fields and brought subject matter expertise to the task. See Appendix C for Core Team organization composition.

The Core Team envisioned a process through which a greater group of stakeholders can engage and collaborate on the campaign of increased preparedness. The full team of stakeholders will be drawn from those organizations and entities shown in the map of Emergency Management Enterprise Environment shown below, or see Appendix D:

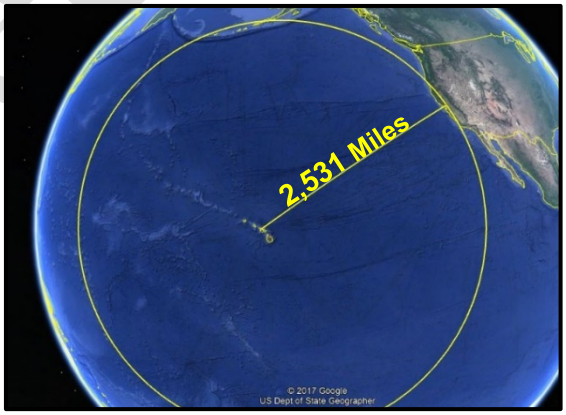


METHODOLOGY

The team utilized the Design Thinking Method (DTM) as a practical strategic thinking approach to organizing information for decision-making and problem-solving in the midst of complexity and uncertainty, thereby mitigating risk and ensuring organizational sustainability. The DTM, as a strategic thinking construct arrayed in five spaces – operating environment; problem set; solutions; assessment; and adaptation-prototyping-enables planners to chart the way from a current undesirable situation to a future desired situation. The DTM approach helps to clearly define problems and set conditions for the implementation of solutions, assessment methods and adaptation mechanisms as the environment and problems change. The Methodology helps leaders overcome limitations of current strategic planning models and enables them to manage complexity. Rather than collecting decisions in to discrete bundles to be decided on in advance, DTM is continuous and dynamic, and adapts decision-making in response to interactions and learning within the environment over time.

OVERVIEW OF THE ENVIRONMENT IMPACTING EMERGENCY MANAGEMENT

Hawai‘i’s population of over 1.4 million surges, on average, with its 200,000 visitors on any given day. Its communities are spread across seven islands and is also the most geographically isolated location on the planet. The challenge of time and distance while securing and preparing Hawai‘i requires continuous attention and strategic commitment. All levels of government, the private sector, and the general public must be part of the solution. In the past two years, HI-EMA systemically analyzed most of the state’s critical capabilities and organizational capacity. The following provides a summary of the analysis:



LOGISTICS

Hawai‘i has a complex but fragile logistics system due to four primary factors:

- The importation of over 90% of its goods,

- Majority of goods are shipped via sea transportation requiring six to eight days transit time,

- A “Hub and Spoke” logistics chain that incorporates three modes of transportation (sea, air, land) to ship products primarily form the Continental United States to Oahu. Most products destined for the neighbor islands are then shipped utilizing the same three

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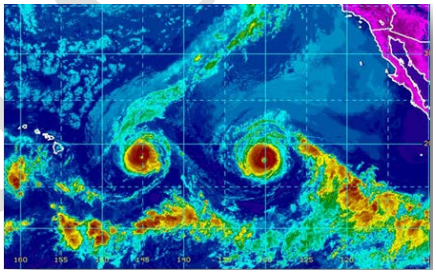
modes of transportation with remote market areas receiving products as much as 14 days from point of origin,

- No emergency surplus of goods in the state: the high costs of land and warehousing make emergency surplus storage financially impractical for businesses. All industry/critical systems operate on a “just-in-time” or “on-demand” basis.

STATUS OF INFRASTRUCTURE

In general, the state’s infrastructure is aging, which has consequences for its resiliency to the effects of natural disasters and the costs of mitigation projects to reduce impacts. There are several single points of failure in critical systems that will greatly lengthen recovery times in a catastrophic event such as tsunamis generated by seismic events such as Aleutian earthquakes or Category IV hurricanes.

- The Port of Honolulu is by far the most significant single point of failure, as its capability cannot be duplicated in any other commercial port in the state. The state possesses no heavy salvage or dredging equipment organic to government capabilities. Hence, port damage that requires such equipment for restoration will result in the loss of mass importation for 19 – 30 days. For each day the port is closed, it takes approximately five days of importation to reestablish inventories.



Central Pacific Hurricane Center

- Similarly, Daniel K. Inouye International Airport (HNL) in Honolulu is the major air hub, and estimates three days to restore one runway. Depending on the severity of the disaster, it is estimated that the HNL could be partially operational between 3 – 12 days. If the Port of Honolulu is closed, HNL has about four days of jet fuel on-hand.

- Food and Water supplies are very limited without constant importation. Upon port closure, there is an estimated five to seven days of food within the state. After five days of no food importation, the market capacity will be below forty percent. No large stores of surplus emergency rations exist.

- Electrical System/Grid is not a mutually supporting system between the Hawaiian Islands. Power restoration in some areas is expected to take months. Sixty percent of the major power plants are located in inundation zones. Power is delivered through an overhead transmission & delivery system that is extremely vulnerable to high wind events. The logistical response to support power restoration is enormous and requires tremendous mutual aid resources from outside the state, which will be delayed by impacts to transportation and the lack of on-hand resources. The electric generation systems also

MidWeek Kauai

Footnote Copy

have limited surplus equipment with some components requiring up to nine weeks for delivery.

- Fuel/fuel products are entirely imported through sea transportation. Single points of failure in the fuel importation and distribution system that will further complicate emergency response are: one major offload area for direct discharge; refineries located in the same geographic area; and limited number of tankers and barges. Most fuel storage facilities are in inundation zones, making them highly susceptible to high wind and water damage.

Caribbean Air and Marine Branch

- Hurricane evacuation shelters are a last resort option for residents and visitors who do not have a safer place to stay. There are insufficient hurricane evacuation shelters to meet the estimated demand of the population and these shelters have no supplies. The designated hurricane evacuation shelters and the post-impact sheltering systems are in need of retro-fitting and improvement. Currently, the state does not have any plans to reinstitute fallout shelters. However, significant challenges exist that require further analysis and significant resources. If the state decides to establish a fallout sheltering plan the state would need support from the federal government.

- Healthcare and Medical Capabilities. In general, hospitals have 72 hours of emergency surplus of major medical material, pharmaceuticals, fuel for generators, and food/water for patients.

  - There are approximately seven days of pharmaceuticals in the system after shipments cease.

  - Hospitals currently operate at about 90% occupancy rate. On average, about 2,505 of 2,784 staffed beds in Hawaiʻi are filled, thereby reducing the capability to handle a large surge of mass casualties.

  - One impact estimate of a Category III hurricane making landfall concluded that the state would experience six times the normal increase of patient admissions.

  - In general, the Hawaiʻi medical field has a workforce shortage with some reports showing a shortage of over 700 medical doctors in Hawaiʻi with shortages more acute at neighbor island facilities.

Hawaiʻi's unique geographical challenges, organizational shortfalls, and fiscal difficulties continue to highlight the importance of deliberate, collaborative, and persistent effort over time to manage the complex emergency management problem. **These unique constraints require that everyone who benefits must also contribute to sustained resilience.**

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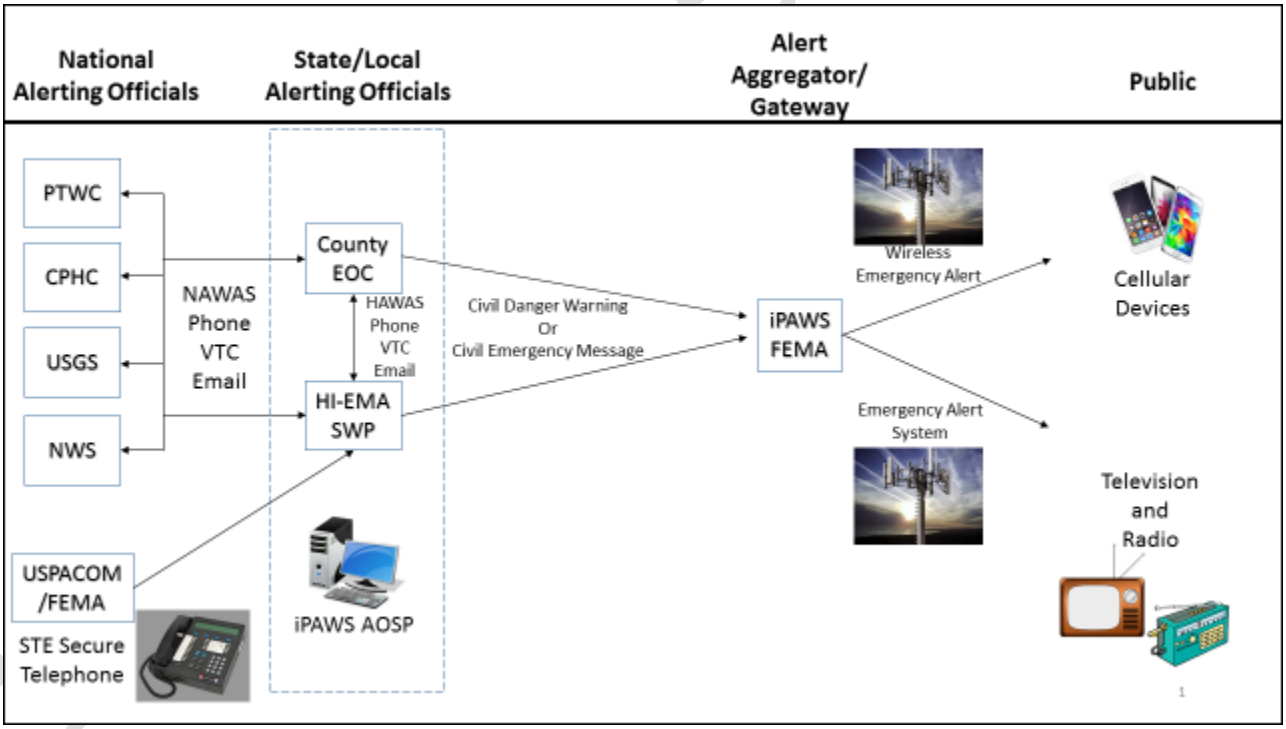
ALL-HAZARDS WARNING AND ALERT NOTIFICATION SYSTEM

On June 1, 2017, HI-EMA invested in the development of a “one button” statewide Siren Activation Control System. Previously, each siren system was activated separately by the counties. The system change took months of engineering to develop and became operational on December 1, 2017.

During this same period, HI-EMA migrated its current FEMA AOSP to a new vendor. The previously used FEMA AOSP interface was very labor intensive and cumbersome. The new system proved to be much more user friendly.

The Hawai‘i SWP and/or the county Emergency Operations Centers (EOCs) receives alerts and warnings, depending on the threat, from the Central Pacific Hurricane Center (CPHC); Pacific Tsunami Warning Center (PTWC); United States Geological Survey (USGS); Hawai‘i Volcano Observatory (HVO); or United States Pacific Command (USPACOM). With the exception of USPACOM, the state and county receive warnings, alerts, and updates via the National Warning System (NAWAS), Hawai‘i Warning System, telephone, email, or Video Teleconferencing. USPACOM utilizes Secure Terminal Equipment (STE) to alert and notify HI-EMA SWP of a ballistic missile threat. In turn, the SWP disseminates alerts and warnings in Civil Danger Warning, or Civil Emergency Message formats utilizing the FEMA AOSP origination tool to FEMA’s iPAWS.

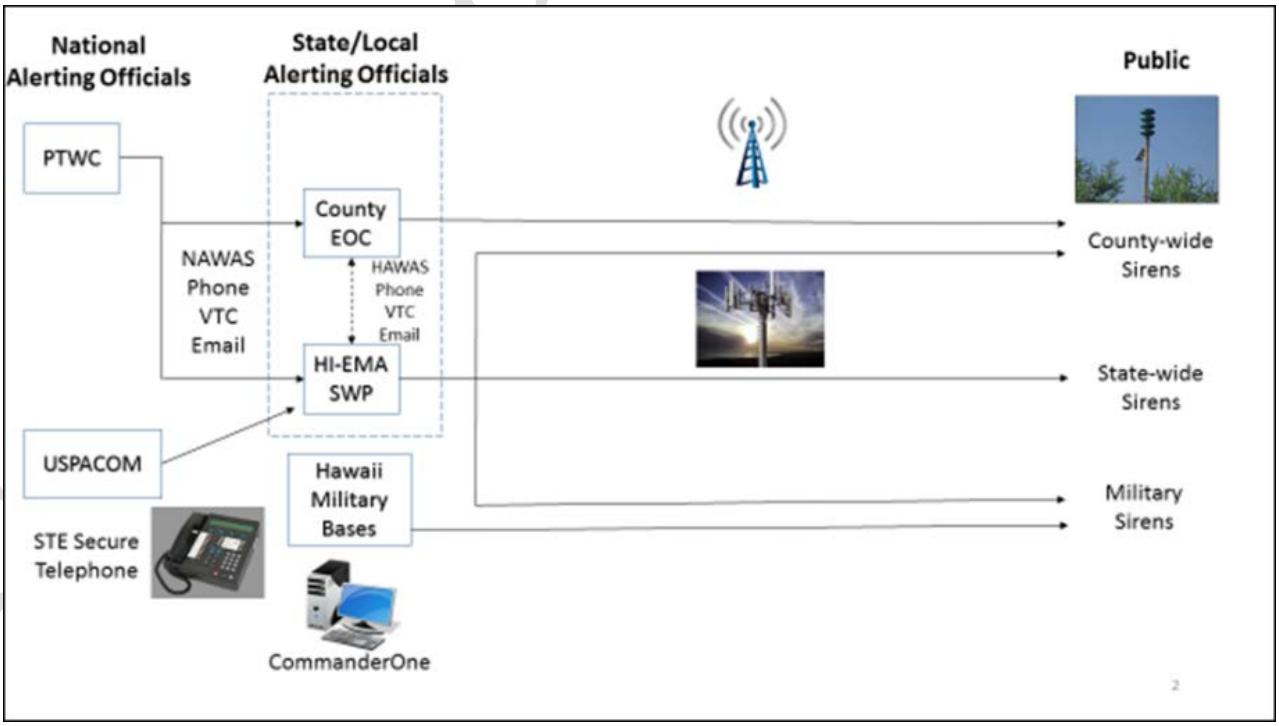


NAWAS is an automated telephone system used to convey warnings to United States-based federal, state and local governments, as well as the military and civilian population. HAWAS is an automated telephone system, similar to the NAWAS, used to convey warnings and updates with the counties. The STE is an encrypted telephone

communications system for wired or "landline" communications. The FEMA AOSP is a service hosted web application that interfaces with iPAWS. iPAWS allows public safety officials, at all levels of government, to send one message, over multiple devices, to more people through existing communication technologies, including: radio and television stations. iPAWS is an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), NOAA Weather Radio and other public alerting systems from a single interface.

The EAS is a national public warning system that requires broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service providers, and direct broadcast satellite providers to provide the communications capability to the President to address the American public during a national emergency. The FCC, in conjunction with Federal Emergency Management Agency (FEMA) and the National Oceanic and Atmospheric Administration's National Weather Service (NOAA NWS), implements the EAS at the federal level. The system is also used by the SWP and county EOCs to deliver important emergency information. The WEA is a public safety system that allows customers who own certain wireless phones and other enabled mobile devices to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their area. Wireless companies volunteer to participate in WEA.

HI-EMA activates state-wide, county-specific, or map-based siren warnings utilizing the CommanderOne cloud based platform. With this system, the counties have the ability to activate all of their county's sirens or specific areas with the map-based function. CommanderOne enables HI-EMA and the counties to monitor and control warning sirens from any desktop or mobile device. CommanderOne communicates with the state's system through a secure network communications interface.



PUBLIC OUTREACH

In support of the Ballistic Missile Preparedness Phase I, HI-EMA initiated a robust public outreach campaign. However, the events and panic observed following the January 13, 2018 false missile alert clearly showed that the outreach campaign was limited in its success. Due to the urgent and complex nature of the warning systems and procedures, the campaign plan was segmented into three phases. Phase I (April 2017 – November 2017) focused on conducting initial analysis and planning, improving the emergency notification and warning, and developing public preparedness and response guidance. Phase II, which began in November 2017, shifted efforts to immediate response operations and gap analysis during the first 72 hours of a missile detonation in Hawai‘i. Phase III - planning response and recovery operations 72 hours and beyond - would commence upon completion of Phase II.

Appendix B (List of Public Outreach and Education Activities on Ballistic Missile Preparedness) details key Ballistic Missile Preparedness coordination, media coverage, and outreach and education events conducted by the HI-EMA from March 2017 through January 2018. All told, HI-EMA conducted 41 Town Hall or Community Meetings with 1,670 attendees; six Preparedness Fairs with estimated 3,400 attendees; over 100 media engagements with international, national and local media (Television, Newspaper, radio and web-based) and 1,200 Radio and 1,449 Television Public Service Announcements.

Public Outreach

- 41 Town Hall/Community Meetings, 1,670 attendees
- 6 Preparedness Fairs, 3,400 attendees
- Over 100 media engagements, 1,200 radio, 1,449 TV PSAs

EMERGING THREATS AND CHALLANGES

Emergency management is a core mission of the State of Hawai‘i spanning the entire spectrum of state and local governments and communities. The state’s primary responsibility is to enable a safe, secure, and prosperous Hawai‘i where the entire population is prepared and ready to absorb, respond to, and rapidly recover from all disasters and emergencies. The end goal of the state’s emergency management systems is to mitigate key vulnerabilities and minimize the impact of the hazards and threats to our state and its citizens, prevent fatalities, and undue suffering through holistic planning for essentials for sustainment in all critical systems, and ensure rapid recovery from any emergency or disaster.

Section 127A-1(b), Hawai‘i Revised Statutes requires “. . . all emergency management functions of Hawai‘i and its counties be coordinated to the maximum extent with the comparable functions of the Federal government, including its various departments, and agencies of other states and localities, and with private-sector and nonprofit organizations, to the end that the most effective preparation and use may be made of the nation's personnel, resources, and facilities for dealing with any emergency or disaster that may occur.”

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The diverse and dispersed emergency management stakeholders – Federal, state county, private sector, and the public – presents a significant challenge to incorporating shared understanding of roles, responsibilities, and authorities that enable all stakeholders to synchronize, integrate, and coordinate disaster prevention, protection, mitigation, response, and recovery efforts.

Following the end of the Cold War, national nuclear preparedness programs fell by the wayside, fallout shelters became a thing of the past, and emergency management focused on new issues and threats to the public. However, in response to the ballistic missile threat stemming from geopolitical tensions with North Korea, Hawaiʻi led the way in the implementation of alert systems and procedures to increase its preparedness and keep Hawaiʻi's citizens informed of potential threats from ballistic missiles. Due to the immensely urgent and complex nature of the warning systems and procedures, Hawaiʻi suffered an unnecessary crisis resulting from human error, exacerbated by a series of failures in rapid decision-making to correct the initial error. While the false missile alert was costly in terms of public fears and statewide disruptions in all sectors, the false alert revealed systemic issues that must be fully understood and actions taken over time to implement enduring solutions.

Our immediate challenge focused on correcting and improving key systems and procedures relating to ballistic missile preparedness in order to eliminate the possibility of human errors leading to false alert, optimal leveraging of communications infrastructure to inform the public with minimal lag time and maximum dissemination, increasing the capacity for information technology networks to manage crisis action operations, improving collaboration between the state and counties and applying rapid decision-making tools and procedures to increase our ability to make timely decisions.

Hawaiʻi faces a daunting task of building capacity for resilience and preparedness given our challenges across multiple domains and functions. Our problem is to quickly develop a baseline assessment, identify where we need to be, and establish how we are going to get there.

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INITIAL OBSERVATIONS AND RECOMMENDATIONS
Internal to HI-EMA

HAZARD KEY	
All Hazards	
Weather Related	
Tsunami	
CBRN	

STATUS KEY	
0-59% Completed	
60-79% Completed	
80-99% Completed	
Completed	

Observation 1	HI-EMA lacks a comprehensive Strategic Plan that provides vision and direction, prioritizes energy and resources, facilitates decision making, and identifies goals and objectives.	Status
Recommendation 1.1	Immediately begin the process to publish a functional Strategic Plan to align all activities to the organization's vision, mission, and core competencies. Additionally, the strategic plan will drive organizational and cultural change to institute the desire to be the best emergency management agency in the world.	0%
Recommendation 1.2	Coordinate with the HI-DoD for resources required to produce an effective and functional strategic plan. Estimated cost: $800,000	0%
Recommendation 1.3	Closely coordinate with the four counties' Emergency Management and Civil Defense offices in the strategic planning process.	0%
Recommendation 1.4	Ensure that all employees and leaders of HI-EMA fully comprehend and support the plan after the Strategic Plan is published.	0%
Recommendation 1.5	Update any plans, policies, procedures, position descriptions, and training and education to align with the priorities of the strategic plan as required.	0%

Observation 2	HI-EMA began their Ballistic Missile Preparedness testing and internal drills prior to publishing an annex to the 2017 State of Hawai'i, Emergency Operations Base Plan to addresses Chemical, Biological, Radiological, and Nuclear (CBRN) threats.	Status
Recommendation 2.1	Suspend all activities related to the Ballistic Missile Preparedness Campaign, with the exception of the monthly ballistic missile alert tone siren testing, until the CBRN Annex is published and the majority of Hawai'i's public know "what to do, where to go, and when to do it."	100%

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Recommendation 2.2	Coordinate with the federal government (DOE, DHS, DOD, DHHS, DOT) to determine their future plans to address the emerging CBRN capable ballistic missile threat. Will federal funds be provided to states that would offset costs of shelters, food and water, medical supplies, and other personal protective equipment? (State authorities)	0%
Recommendation 2.3	Ensure full participation of the federal, state, county, and private Emergency Management stakeholders during the CBRN Annex planning process.	0%
Recommendation 2.4	Coordinate with the HI-DoD for resources required to publish a comprehensive CBRN Annex to 2017 State of Hawai'i, Emergency Operations Base Plan that includes coordinated response and recovery plans. This annex must also inform the public of what to do and when to do it – not just immediately following a CBRN attack, but the weeks following. The planning team must include a whole of government and community approach. Planning efforts should review the feasibility of reinstituting "fallout shelters." Estimated cost: $875,000	0%
Recommendation 2.5	Initiate coordinated public outreach and education. Conduct assessments to measure the effectiveness of the outreach once the CBRN Annex is published. $500,000	0%
Recommendation 2.5.1	Establish Measures of Effectiveness and assessment plan to determine public understanding. Program goal: the public fully understands what to do and where to go during an actual missile alert. More importantly, the public needs to know what to do following a missile detonation.	0%
Recommendation 2.6	Identify criteria to determine when to reinstitute the Ballistic Missile Preparedness Campaign. This must include, but is not limited to recommendations 2.6.1 through 2.6.6.	0%
Recommendation 2.6.1	Publish an SOP that addresses ballistic missile warning procedures. The SOP must be executable, understood by all SWP Personnel, and complied with.	0%
Recommendation 2.6.2	Update the Ballistic Missile Alert Checklist to provide clarity and standardization.	100%
Recommendation 2.6.3	Work with the FEMA AOSP vendor to institute two-person "credentialed" activation.	50%
Recommendation 2.6.4	Establish secure communication between US Pacific Command and the SWP.	100%
Recommendation 2.6.5	Ensure that the SWP employees are fully trained and possess the adequate knowledge, skills, and abilities	75%

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	to activate the missile alert message through a certification program. (HI-EMA)	
Recommendation 2.6.6	Establish a separate stand-alone computer with the FEMA AOSP software. During internal drills activation of the test message be exercised on the separate, stand-alone system. (HI-EMA)	0%

Observation 3	Hawai‘i Revised Statutes §127A-7 mandates that ". . . the SWP shall be continually staffed by the agency to monitor warning systems and devices and shall have the ability to provide timely warning and notification to government officials, county warning points and emergency operations centers and, when directed, the general public." There is a misconception that the Governor of the State of Hawai‘i and other elected official are primarily responsible for timely warning and notification. Accordingly, several people including elected officials attempted to get the false missile alert message to the public – through multiple means – as soon as possible.	Status
Recommendation 3.1	Maintain the HI-EMA SWP as the primary center that provides timely warning and notification. This will ensure that the warning and notification is credible and accurate.	0%
Recommendation 3.2	Coordinate with FEMA for recommended upgrades to the iPAWS system. Increase text limitations to the WEA and EAS messages. Allow SWPs to include a logo or other unique identifier to establish that the message is from a credible source. (HI-EMA Tele-communications Branch)	75%
Recommendation 3.3	Add an additional step in the SWP Ballistic Missile Checklist to notify HI-EMA's Public Information Officer.	100%

Observation 4	Some managers within HI-EMA did not follow proper procedures to deal with unsatisfactory performance within the organization. The lack of quality management in personnel led to subpar performance which was a contributing factor to the false missile alert.	Status
Recommendation 4.1	Establish, implement, and coordinate training programs for supervisors and managers in HI-EMA to address employee development, setting expectations, teaching new skills, and dealing with unsatisfactory performance.	0%
Recommendation 4.2	Establish an internal policy that augments state policies and identifies options for supervisors and managers to sustain an effective performance management program.	0%

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INITIAL OBSERVATIONS AND RECOMMENDATIONS
External to HI-EMA

HAZARD KEY
All Hazards
Weather Related
Tsunami
CBRN

STATUS KEY
0-59% Completed
60-79% Completed
80-99% Completed
Completed

Observation 5	Many cellular/wireless phones did not receive a wireless emergency alert (WEA) on January 13, 2018.	Status
Recommendation 5.1	Coordinate with the State Emergency Communications Committee (SECC) to improve rapid notification and updates. Establish redundant means to contact broadcast media. (HI-EMA)	80%
Recommendation 5.2	Coordinate with the SECC to determine why some cellular customers did not receive the WEA and identify solutions to improve WEA effectiveness. (HI-EMA)	75%
Recommendation 5.3	Coordinate with the wireless carriers to determine what actions can be taken to eliminate or minimize non-receipt of WEAs, If the non-receipt of the WEA occurred on all networks. (HI-EMA)	0%
Recommendation 5.4	Coordinate with FEMA on any updates or changes to the implementation of WEA in Hawai‘i. Current implementation of WEA requires utilization of the Integrated Public Alert and Warning System (iPAWS) administered by FEMA. (HI-EMA)	0%

Observation 6	Citizens in certain locations did not have access to WEA or other alert notification services and were unaware of the missile alert.	Status
Recommendation 6.1	Identify the primary means of electronic communications available and/or being used in remote areas of the state to determine the fastest and most cost-effective methods to expand alerts in these areas. (SECC)	0%
Recommendation 6.2	Coordinate with the wireless carriers to expand coverage in these areas. (SECC)	0%
Recommendation 6.3	Develop an alternate means of mass communication for emergency broadcast. (SECC)	0%

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Observation 7	Key government personnel were unable to communicate with each other on January 13, 2018 because wireless networks were saturated.	Status
Recommendation 7.1	Provide key personnel with access to the DHS Government Emergency Communications Services (GETS & WPS) for priority voice calls on wireline and wireless telephone networks. (All departments)	5%
Recommendation 7.2	Equip and train key department personnel to use the Hawai‘i Wireless Interoperability Network (HiWIN) communications system. (HI-DoD, SWIC and departments)	0%
Recommendation 7.3	Encourage all state agencies to utilize HiWIN as their primary network for their land mobile communications systems.	0%
Recommendation 7.4	Departments that have an Emergency Management response and recovery role should investigate the feasibility of satellite voice and data systems for backup communications. Cost estimate needs to be further researched. (All departments)	10%
Recommendation 7.5	Provide key personnel with access to the FirstNet Public Safety Broadband Network to allow priority communication using dedicated applications. (SWIC)	0%

Observation 8	Wireless broadband service is limited in Diamond Head Crater which hampers media’s capability to broadcast live.	Status
Recommendation 8.1	Coordinate with telecommunications provider to improve signal within Diamond Head crater. (HI-EMA)	75%

Observation 9	ETS reports that HI-EMA (ready.hawaii.gov) website logged over 40,000 hits within the first three minutes of the missile alert. As a result, HI-EMA servers crashed five minutes later.	Status
Recommendation 9.1	Create a static website that the public can access for latest updates without service interruptions. (ETS)	50%

Observation 10	HI-EMA initiated a robust public outreach campaign. However, the events and panic observed following the January 13, 2018 false missile alert clearly showed that the outreach campaign was limited in its success. The public reaction confirmed the fact that it will require persistent and creative methods to improve public awareness that will be enduring. (HI-EMA, Public)	Status
Recommendation 10.1	Develop missile threat-specific information to match appropriate media venues to increase public awareness following the completion of CBRN Annex.	0%

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Recommendation 10.2	Maintain Community Outreach/Town Halls/Neighborhood Board Meetings in all counties and most neighborhoods within a calendar year. Conduct assessment following each event to measure effectiveness and assist in constant improvement on the presentation.	0%
Recommendation 10.3	Create new Public Service Announcements.	0%
Recommendation 10.4	Coordinate to establish a public private partnership with the local TV stations and produce a news special highlighting what to do in case of a missile warning and also include the other hazards.	0%

Observation 11	On August 11, 2015 Governor Ige signed Administrative Directive No. 15-01 (AD 15-01) that directed minimum emergency management requirements for each department and agency in the executive branch. AD 15-01 required that all departments and agencies conduct an analysis of the department's functions and identify essential functions following a disaster; develop a Departmental Emergency Operations Plan (DEOP); develop/update Department Continuity of Operations Plan (COOP); designate an Emergency Management Officer; assign State Emergency Response Team (SERT) members; Designate Emergency Workers; and participate in emergency management training and exercises.	Status
Recommendation 11.1	Departments and the Governor's office review the requirements of AD 15-01 and update their DEOP and COOP to address gaps and vulnerabilities identified as a result of the false missile alert.	35%
Recommendation 11.2	Departments review the requirements of AD 15-01 to identify additional personnel that could augment HI-EMA during disasters.	35%

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Observation 12	Based on systemic analysis, Hawai'i requires additional long-term solutions and programs that require revisions to the Hawai'i Revised Statutes and additional funding. HI-EMA's operating budget in the preceding years had been down-trending/flat lined while the operational requirements consistently increased. • Total HI-EMA budget saw slight decrease over the last 2 years. • No projects and programs to mitigate known capability gaps had been approved.	Status
Recommendation 12.1	Coordinate appropriations submission to mitigate current shortfall and future programs essential to preparedness: • Joint Emergency Management Center (JEMC) construction: Cost estimate - $135 million • HI-EMA Annex build out: Cost estimate – to be determined. • Operationalize Office of Homeland Security: Cost estimate – to be determined. • Establish statewide evaluation program: Cost estimate – to be determined. • Second deep draft port study and construction and ports improvement: Cost estimate – to be determined. • CBRN Civil Defense capability improvement program for counties: Cost estimate – to be determined. • Infrastructure Improvement Program (multi-purpose shelters, sea ports and airports, subsistence storage capacity, and emergency energy infrastructure): Cost estimate – to be determined.	0%

WAY-AHEAD APPROACH TO SOLUTIONS AND ASSESSMENTS

Hawai'i's vulnerabilities to catastrophic disasters require persistent and robust solutions. It is imperative that Emergency Management stakeholders continually assess capability gaps and vulnerabilities. Identifying solutions to identified gaps and vulnerabilities is not the end state. Solutions should be measured for effectiveness. An assessment is inherently systemic in nature and requires systems thinking to connect the components of critical systems with performance of the entire state as a system. To achieve maximum returns on Hawai'i investments, consistent procedures and tools will be needed to capture the data and analyze it according to identified measures of effectiveness and measures of performance.

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The assessment processes and tools such as FEMA's Threat and Hazard Identification and Risk Assessment and capability gaps/vulnerability analysis must be used to make informed decisions regarding all matters of resources. Further, HI-EMA is capable of taking the leading role in integrating and analyzing data to provide a systemic common operating picture to key decision-makers to help them make informed, if not easy, decisions in improving preparedness for the state. Establishing a venue where issues of strategic nature can be fully assessed in order to make actionable recommendations to the state leadership will be key to success in improving Hawai'i's capabilities. The emergency management community of practice should and must adhere to a continuous learning process going forward.

While this report focused on the near-term solutions, the Core Team also developed a set of solutions and recommendations that require long-term planning and resourcing as well as a collaborative and interdependent approach to bring them to fruition. The long-term recommendations are:

- Increasing port capacity along with constructing a second deep-draft port on another county, to enable a "reverse hub-and-spoke" logistical distribution system. Estimated cost: To be determined.

- Construction of Joint Emergency Management Center (JEMC) that will enable fully joint, multi-functional, and multi-domain capability for planning and operations to manage All-Hazards emergencies and support to federal operations. Estimated cost: $135 million.

- Establish a recurring state-level evaluation process to obtain a holistic assessment to provide recommendations and adaptations needed to refine long-term solution projects and programs. Estimated cost: To be determined.

- Incorporate a senior leader participation program in the state's annual disaster response exercises e.g., Makani Pahili such as Senior Leader Seminars and table-top exercises. Estimated cost: None.

- Initiate an Infrastructure Improvement Program to close the capability gaps and vulnerabilities in multi-purpose shelters, sea ports and airports, subsistence storage capacity, and emergency energy infrastructure. Estimated cost: To be determined.

- Develop CBRN Civil Defense capability to increase the state's and counties' ability to respond to and recover from CBRN events. Estimated cost: To be determined.

- Publish the State of Hawai'i Homeland Security Strategy and Implementation Plan to improve unity of effort for the prevention of terrorism, enhancing security, safeguarding and securing cyberspace, and defending the homeland with emergency management response and recovery activities. Estimated cost: None.

- Operationalize the Hawai'i State Office of Homeland Security - codify the Hawai'i State Fusion Center (HSFC) in law, establish nine permanent positions in the next four

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years, relocate the HSFC to the HI-DoD headquarters, and construct a Sensitive Compartmented Information Facility. Estimated cost: To be determined.

- HI-EMA complete assessment of remaining critical systems capability gaps and vulnerabilities: Cyber, Sewer, Debris Management, and Mass Care.

CONCLUSION

Emergency Management challenges for Hawai‘i’ will not improve without a concerted and persistent effort by the whole community, particularly due to the inherent obstacles stemming from geographical isolation, economic hurdles of transportation, and distribution of material and energy. The January 13, 2018 incident was an avoidable mistake. But Hawai‘i’s major vulnerabilities affecting preparedness will amplify the risks to the communities and all economic sectors when no actions are taken to reduce those vulnerabilities and to close the capability gaps as much as possible.

In this Action Plan and Report, the Core Team provides a set of observations and recommendations/solutions that are already being implemented. Observations 1 - 11 and associated recommendations should be initiated within the next 90 days. These near-term solutions can produce measurable progress, addressing the most pressing issues at hand. However, complex problems associated with improving preparedness against all hazards over time require adaptive solutions that can affect more than one system at a time. Observation 12 and associated recommendations address long-term solutions that will take significant time and resources to achieve. As one of several issues, building capacity through improvement of ports or material distribution infrastructure will be costly and protracted in its implementation but essential for resilience. The Core Team together with the emergency management enterprise including committed citizens should continue to collaborate and develop a comprehensive roadmap by adding detailed substance to long-term recommendations. The team foresees the observations and related improvement recommendations will take several years to achieve success.

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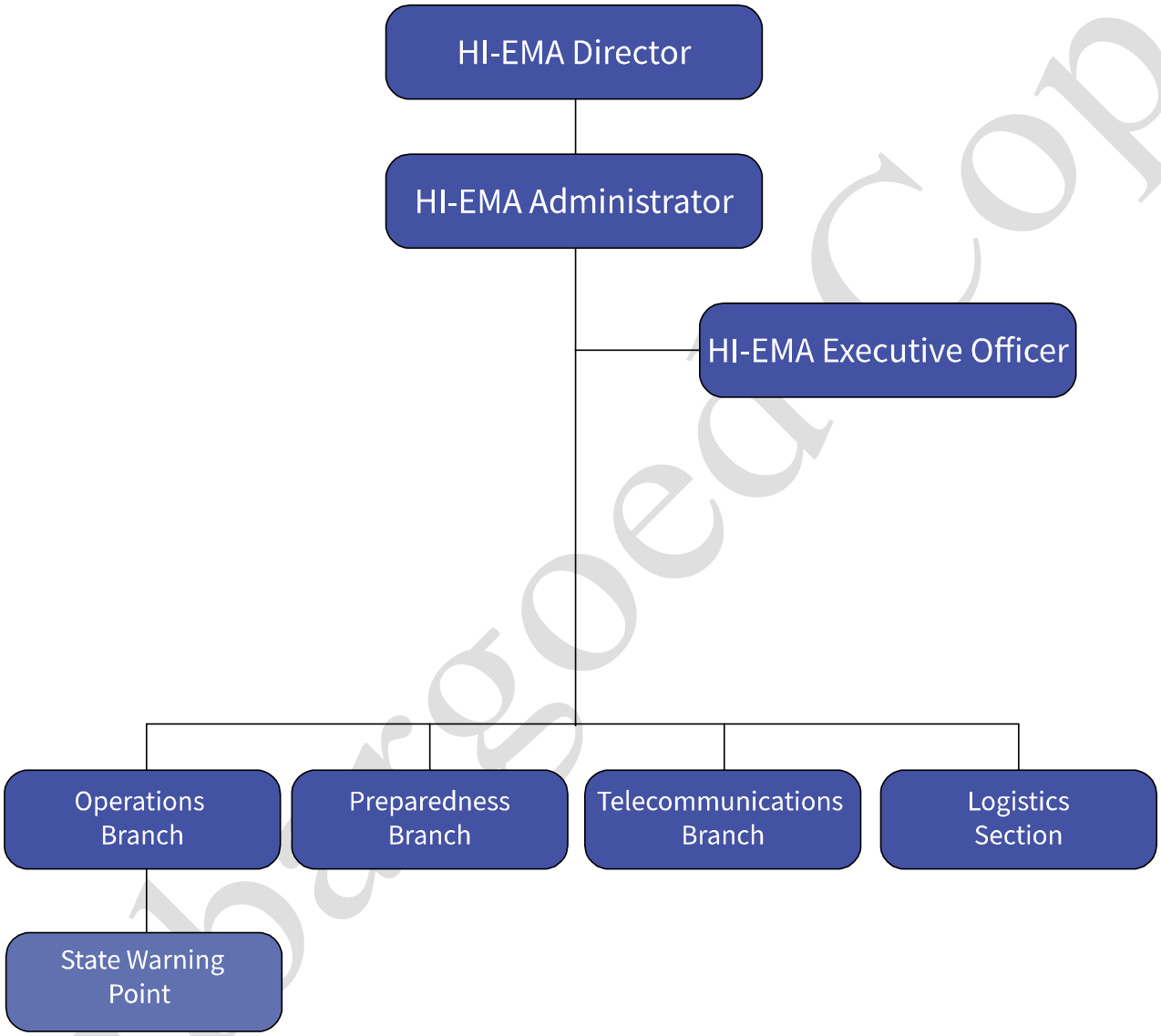
APPENDIX A
HI-EMA Organizational Chart

HI-EMA Basic Organizational Chart



The Hawai‘i Emergency Management Agency (HI-EMA) is the emergency management agency for the State of Hawai‘i. In its headquarters in Diamond Head Crater, HI-EMA serves as the coordinating agency between the four county emergency management agencies. The State Warning Point is located in Birkheimer tunnel, within Diamond Head Crater.

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APPENDIX B

List of Public Outreach and Education Activities on Ballistic Missile Preparedness

The following list details key Ballistic Missile Preparedness coordination, media coverage, and outreach and education events conducted by the HI-EMA from March 2017 through January 2018:

March 6, 2017: Coordination meeting with US Pacific Command to coordinate Operation Noble Eagle (ONE) and Ballistic Missile Preparedness (BMP) concepts.

March 29, 2017: Star Advertiser article by William Cole - What is Hawai‘i Doing In Case of Nuclear Missile Attack.

April 7, 2017: Follow-on coordination meeting with USPACOM for ONE and Ballistic Missile Preparedness.

April 10, 2017: Regional experts unequivocally declare North Korea as a threat.

April 19, 2017: Senate Concurrent Resolution - requesting the state to modernize its disaster preparedness plans - including threats from North Korea. The resolution did not pass.

April 26, 2017: NBC News releases "What to Do In Case of Attack from N. Korea" - advisory on immediate actions (get inside, don't run) and that not everyone will die as a result of a nuclear capable Intercontinental Ballistic Missile attack on Hawai‘i.

April 27, 2017: FOX News interview - Malia Zimmerman asks “what is Hawai‘i doing in response to growing nuclear threat?”

May 3, 2017: HI-EMA Administrator Vern Miyagi proposed a draft of news release/information paper to TAG, DAG, PAO, HI-EMA staff, and county Emergency Management and Civil Defense Administrators - regarding BMP preparedness. The information paper provided a summary of: what is happening regarding the threat, what the state is doing, and what counties should be doing and to inform the public on what the state is doing is response to the emerging Ballistic Missile Threat.

May 3, 2017: The Missile Defense Advocacy Alliance - Riki Ellison provided information briefing on the North Korea threat to the state legislature.

May 12, 2017: The HI-EMA facilitated media coordination planning for Ballistic Missile Preparedness with HI-DoD PAO, Department of Education, and the Governor’s Communication team.

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APPENDIX B
Continued

July 7, 2017: HI-EMA provided talking points, an information paper, and guidance to Governor's Communication team to ensure consistent public messaging. The public messaging plan was continually updated as preparedness planning progressed.

July 12, 2017: Brigadier General Hara and Vern Miyagi attended Governor Ige's cabinet meeting and provided the Governor and his cabinet updates to the HI-EMA Ballistic Missile Preparedness Campaign and details that would be shared with the media during the scheduled July 21, 2017 press conference.

July 19, 2017: Conducted pre-media event meeting with the Governor's Chief of Staff, Mike McCartney and the Hawai'i Tourism Authority and other tourism officials to discuss the July 21,2018 Press Conference.

July 20, 2017: Star Advertiser article by William Cole - State to Roll-Out Plan on How to Deal with the North Korea Nuclear Threat.

July 21, 2017: HI-EMA Press Conference announcing state's Ballistic Missile Preparedness Campaign

Following the July 21, 2017 Press Conference Administrator Vern Miyagi and HI-EMA Executive Officer Toby Clairmont conducted several interviews focused on public education and information. The message to "Get inside, stay inside, and stay tuned" was shared during each interview.

July 24, 2017: Governor Ige and Vern Miyagi conducts a FACEBOOK Live segment on Ballistic Missile Preparedness.

July 25, 2017: New York Times media engagement.

July 26, 2017: CBS media engagement.

July 28, 2017: HI-EMA facilitated an After Action Review to measure the effectiveness of the public outreach campaign. Overall assessment at the time reflected coordinated messaging and positive coverage – both nationally and locally.

August 8, 2017: CNN and Hawai'i News Now (HNN) media engagement.

August 11, 2017: Ruptly (International news agency) and Dutch TV media engagement.

August 16, 2017: Deutsche Wella (German news) media engagement.

August 29, 2017: Feature Service News (FSN) media engagement.

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APPENDIX B
Continued

August 25, 2017: Briefed the Kauai Managing Director, Kauai County Council Chair, and Council members on the state's Ballistic Missile Preparedness Campaign.

September 6, 2017: Danish TV media engagement.

September 8, 2017: Briefed Mayor Caldwell and staff on updates to the state's Ballistic Missile Preparedness Campaign.

September 15, 2017: Norway News media engagement.

September 18, 2017: Briefed Mayor Arakawa, Mayor Kim, and their staff on the state's Ballistic Missile Preparedness Campaign. During this meeting and in an email sent to HI-EMA on October 9, 2017 and a letter sent to HI-EMA on November 7, 2017, Mayor Kim voiced strong reservations about HI-EMA's plan to test the ballistic missile alert siren without a comprehensive response and recovery plan. A decision was made to postpone November 1, 2017 siren test to December 2017.

September 20, 2017: UNTV (Philippines TV) media engagement.

September 19, 2017: Conducted a pre-briefing on the HI-EMA Ballistic Missile Preparedness Campaign to members of legislature public safety and other committees.

September 21, 2017: Conducted a public briefing on the state's Ballistic Missile Campaign at legislature.

October 1, 2017: Commenced Public Service Announcements on Hawai'i Television and Radio stations. A total of 1,449 radio segments and TV spots.

October 6, 2017: Emergency Management and Civil Defense held a quarterly meeting. At this meeting Emergency Management and Civil Defense Administrators obtained consensus to institute the Ballistic Missile Alert siren testing on December 1, 2017. Mayor Harry Kim's still expressed reservations regarding lack of a comprehensive response and recovery plan associated with the Ballistic Missile Threat.

October 13, 2017: Briefed Mayor Kirk Caldwell and his cabinet updates to the BMP campaign.

November 2, 2017: Sky News media engagement.

November 28, 2017: Conducted a joint news conference with Gov Ige, County Mayors, or their designated representatives to announce upcoming December 1, 2017 missile alert tone siren test. HI-EMA conducted the new siren tone testing on December 2017, January 2018, and February 2018 without issues.

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APPENDIX C

Core Team Organization and Composition

Lines of Effort	BG Kenneth Hara	Mayor Harry Kim*	Mr. Chels Chae	Mr. Michael Vincent	Mr. David Lopez	MAJ Jeffrey Hickman	Mr. Everett Kaneshige
Emergency Management	Lead	X	X	X	X		
Public Outreach		X			X	Lead	
Emergency Communication		X	X			X	Lead
Legislation	X	X		Lead			
Plans, Policies, Procedures	X	X	X		Lead		X

* Advisory

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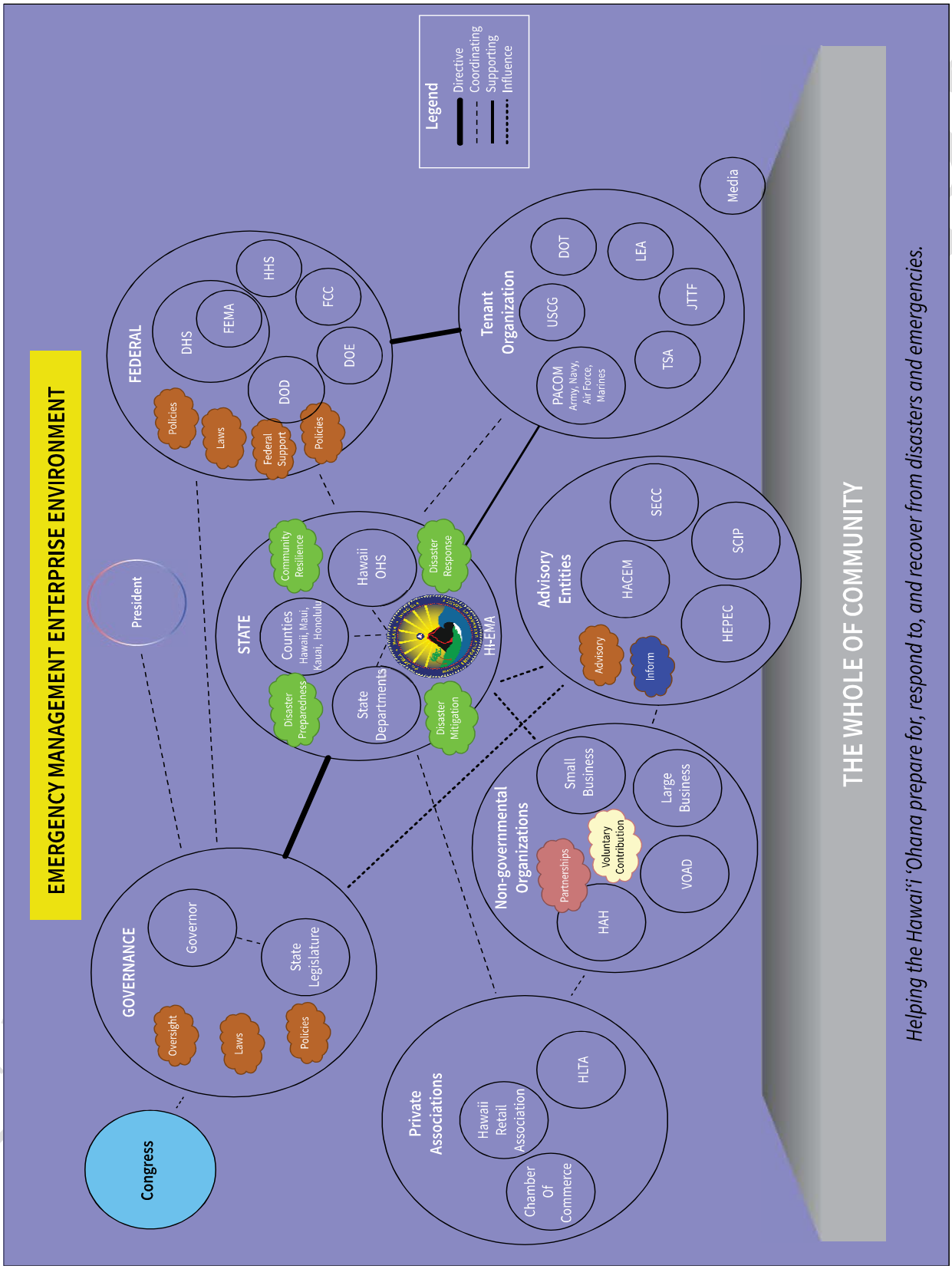
APPENDIX D

Emergency Management Enterprise Environment



APPENDIX E
Glossary of Terms

AOSP	Developers that furnish the software interface that alerting authorities use to generate Common Alerting Protocol (CAP) messages. The software then delivers those messages to the Integrated Public Alert and Warning System Open Platform for Emergency Networks (IPAWS-OPEN) for dissemination to the public.
CBRN	Chemical, biological, radiological and nuclear defense (CBRN defense or CBRNE defense) is protective measures taken in situations in which chemical, biological, radiological or nuclear warfare (including terrorism) hazards may be present.
CPHC	The Central Pacific Hurricane Center (CPHC) issues tropical cyclone warnings, watches, advisories, discussions, and statements for all tropical cyclones in the Central Pacific from 140 Degrees West Longitude to the International Dateline. For current outlook and detailed information: http://www.prh.noaa.gov/cphc/pages/mission.php
EOP	Emergency operations plans (EOP) describe how people and property will be protected in disaster and disaster threat situations; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available for use in the disaster; and outlines how all actions will be coordinated.
FCC	The Federal Communications Commission (FCC) regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia and U.S. territories. An independent U.S. government agency overseen by Congress, the Commission is the federal agency responsible for implementing and enforcing America's communications law and regulations. For specific functions and committees, see: https://www.fcc.gov/about-fcc/what-we-do
HACEM	Hawai'i Revised Statutes §127A-4 authorizes the Hawai'i Advisory Council on Emergency Management (HACEM). Originally established in 1951, the Advisory Council serves as a resource to the Governor and the Director of Emergency Management on emergency management topics and concerns. The council was known as the Civil Defense Advisory Council until July 1, 2014 when HRS 127A became effective. The council consists of seven members nominated by the governor. The Senate Committee on Public Safety, Intergovernmental, and Military Affairs conducts an "Advise and Consent" hearing to review the qualifications of each nominee. The committee provides all senators a recommendation prior to the full Senate confirmation vote.
HAH	The Healthcare Association of Hawai'i' is a 160-member organization that includes all of the acute care hospitals in Hawaii, all public and private skilled nursing facilities, all the Medicare-certified home health agencies, all hospices, all assisted living facilities, durable medical equipment suppliers and home infusion/pharmacies. One of HAH's primary focus is emergency preparedness.

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HWIN	The Hawaiʻi Wireless Interoperability Network (HiWIN), named FirstNet as a Federal program, is a statewide Land Mobile Radio network which supports the State government first responders and state agencies. It consists of a vast system of sites connected by the State's Anuenue microwave network and is built to public safety standards including survivability of hurricanes up to a CAT 4 designation.
HLTA	Hawaiʻi Lodging & Tourism Association is a statewide trade association of lodging properties, lodging management firms, lodging owners, suppliers, and other related firms and individuals for education, advocacy, and philanthropy and relating to public safety.
JTTF	Joint Terrorism Task Forces (JTTF) is located in 104 cities and provide information regarding terrorist activities. JTTFs engage in surveillance, electronic monitoring, source development and interviews in their pursuits. The FBI provides funds to pay for participating agencies' expenses, such as officer overtime, vehicles, fuel, cell phones, and related office costs.
NAWAS	The National Warning System (NAWAS) is an automated telephone system used to convey warnings to United States-based federal, state and local governments, as well as the military and civilian population. The original mission of NAWAS was to warn of an imminent enemy attack or an actual accidental missile launch upon the United States. NAWAS still supports this mission but the emphasis is on natural and technological disasters. NAWAS is operated and fully funded by the Federal Emergency Management Agency (FEMA).
NWS	The National Weather Service (NWS) is an agency of the federal government that is tasked with providing weather forecasts, warnings of hazardous weather, and other weather-related products to organizations and the public for the purposes of protection, safety, and general information. It is a part of the National Oceanic and Atmospheric Administration (NOAA) branch of the Department of Commerce.
PTWC	The Pacific Tsunami Warning Center (PTWC) is one of two tsunami warning centers that are operated by NOAA in the United States. Headquartered on Ford Island, Hawaiʻi, the PTWC is part of an international tsunami warning system (TWS) program and serves as the operational center for TWS of the Pacific issuing bulletins and warnings to participating members and other nations in the Pacific Ocean area of responsibility. It is also the regional (local) warning center for the State of Hawaiʻi.
SECC	State Emergency Communications Committee. The Federal Communications Commission (FCC) required Hawaiʻi to adopt an Emergency Alert System (EAS) plan and tasked the State Emergency Communication Committee ("SECC") with maintaining and administering EAS in the state. The FCC requires all broadcast stations and Cable Systems to participate in EAS for national alerts. Stations may participate in state or county alerts on a voluntary basis.
SERT	State Emergency Response Team: Requirement under Hawaiʻi Administrative Directive 15-01 for staff augmentation in each Emergency Support Functions (ESFs) such as Transportation; Communications; Public

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	Works and Engineering; Mass Care, Emergency Assistance, Housing, and Human Services.
VOAD	Voluntary Organizations Active in Disaster (VOAD) is the forum where organizations share knowledge and resources throughout the disaster cycle—preparation, response and recovery—to help disaster survivors and their communities. Members of National VOAD form a coalition of nonprofit organizations that respond to disasters as part of their overall mission. National VOAD was founded in 1970 in response to the challenges many disaster organizations experienced following Hurricane Camille, which hit the Gulf Coast in August, 1969.

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REFERENCES

Hawai‘i Revised Statutes, Title 10 – Public Safety and Internal Security, Chapter 127A, Emergency Management.

Hawai‘i State Executive Order 18-01, 15 January 2018.

Hawai‘i Catastrophic Plan, Version 2, July 16, 2009.

Hawai‘i Emergency Management Agency, “Critical Systems: Vulnerabilities Overview”, December 2017.

U.S. Department of Homeland Security Federal Emergency Management Agency Region IX, Hawai‘i Catastrophic Hurricane Plan, 2015.

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