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<i>ADDITIONAL NOTES</i>	

Coordinating disaster prevention and management in Hawaii

By Ross Prizzia

Abstract:

This paper advances knowledge and application of public and private coordination in the field of homeland security, disaster prevention and management. A case study approach is utilized combined with a meta-analysis and general literature review of relevant studies and secondary sources. Hawaii's unique topography and geography has provided opportunities to experiment with new disaster prevention and management technologies and strategies of public and private sector coordination applicable to the Asia and Pacific region.

Purpose - To advance knowledge and application of public and private coordination in the field of homeland security, disaster prevention and management.

Design/methodology/approach - A case study approach is utilized combined with a meta-analysis and general literature review of relevant studies and secondary sources.

Findings - Hawaii's unique topography and geography has provided opportunities to experiment with new disaster prevention and management technologies and strategies of public and private sector coordination applicable to the Asia and Pacific region.

Originality/value - The analysis and synthesis of relevant studies relevant and sources from the Department of Defense (DoD) and federal, state and local agencies provide a comprehensive as well as unique context to explore and implement new strategies and improved methods of coordination in disaster prevention and management at the state, national and international level.

Keywords State security, Disasters, United States of America

Paper type Case study

Introduction and general background

Hawaii's unique geography has provided opportunities to explore and implement new disaster prevention technologies and strategies of public and private sector coordination applicable to the Asia and Pacific region. Utilizing a case study approach combined with a meta-analysis and general literature review of relevant studies and secondary sources, the coordination of critical aspects of disaster prevention and management in Hawaii are described and explained.

An analysis and synthesis of relevant studies and sources on the State of Hawaii from the Department of Defense (DoD) and other federal, state and local agencies provide a comprehensive as well as unique context for new strategies and improved methods of coordination in disaster prevention and management at the state, national and international level.

Coordination strategies, critical to disaster prevention and management that have been improved for the State of Hawaii, have been applied to maritime security, state and local law enforcement and the DoD, relevant state and county government agencies, public and private medical centers, homeland security and emergency warning systems, and relevant public and private organizations at the community level. Strategies for improved coordination in disaster prevention and management which have been implemented successfully at the regional (i.e. Asia-Pacific), federal, state, county and community level for Hawaii can provide positive examples for other jurisdictions facing similar challenges.

Coordinating maritime security

International efforts to coordinate and integrate activities in the critical areas of law enforcement, information sharing, transportation security, cyber security, and financial asset seizure in the Asia-Pacific region have become increasingly more urgent. One area where considerable progress has been made is maritime security.

International cooperation and coordination have been essential in the development of common standards and consistent procedures that allow countries to build upon existing protections to make shipping containers and the ports they reach more secure

(US Department of State, 2004). As a state highly reliant on shipped products and container security, Hawaii is especially vulnerable to disruptions in the normal flow of commerce. In fact, 98 percent of the goods imported into Hawaii are transported by sea. Honolulu Harbor receives more than one million tons of food and farm products and over two million tons of manufactured goods per year. In 2002, Honolulu received 1,300 foreign ships and about 300,000 containers. Over eight million tons of these goods arrive at Honolulu Harbor, which receives one-half of all cargo brought into the state.

For the first time, Hawaii and the Asia-Pacific nations are working to establish and implement a global standard for ship and port security (US Department of State, 2004). Coordination through programs such as the Container security Initiative (CSI) and alliances such as the Custom-Trade Partnership against Terrorism (C-TPAT) plays an important role in addressing vulnerabilities in the shipping industry. The CSI authorizes exchanges of customs inspectors between the USA and participating nations and allows the USA to place inspectors in 26 international ports including Singapore, Hong Kong, and Malaysia. The CSI enables custom officers to safely and efficiently screen for contraband, including weapons of mass destruction, by using large-scale γ ray and X-ray imaging systems. These units can scan the interior of a full-size, 40-foot container in under one minute. Other technologies such as electronic seals and container-tracking devices offer additional protection against container tampering and help to secure ports and ships from possible attack. These precautions are critical to the Asia-Pacific region that has some of the largest container ports in the world; one third of the world's shipping and half of its oil pass through the straits of Southeast Asia.

Attention to maritime security is critical for a State like Hawaii that is highly dependent on shipped goods. The potential consequences of a terrorist using a shipping container are, in the words of Customs Service Commissioner Bonner, "... profound... no ships would be allowed to unload at US ports after such an event" (US Senate Press Release, 2003).

Coordination with department of defense

After September 11,2001, the US Army, Pacific (USARPAC), in partnership with local, state, and federal authorities, developed a plan of preparedness for the State of

Hawaii. The Pacific Command (PACOM) identified USARPAC as the executive agent for joint rear area coordination (TRAC). The plan for JRAC is usually laid out and accomplished in a wartime theater of operation, but was undertaken in the context of Hawaii's role in homeland security. Teaming with local, state, federal agencies and private organizations, JRAC-Hawaii (HI) has made significant progress.

In the event of a natural or man-made disaster, JRAC-HI has fine-tuned its procedures for providing military support to civil authorities (MSCA). As the executive agent for MSCA in Hawaii, American Samoa, and neighboring islands, JRAC-HI provides a defense coordinating officer to coordinate military support of civilian consequence management operations. JRAC-HI maintains a close relationship with local and state government leaders who can leverage many of the standing MSCA concepts and plans of the JRAC operation. JRAC-HI's participation in steering committees and plenary groups, such as the Hawaii Emergency Preparedness Executive Committee, the Hawaii Energy Council, and the Joint Armed Services/State of Hawaii Civil Defense Coordinating Committee, facilitates its role in sharing information and developing joint and civil-military solutions to emerging challenges. For example, in May of 2002, in response to a suspicious aircraft accident, an emergency meeting was conducted with Army, Navy, Air Force, Coast Guard, Marine Corps, State Civil Defense, Oahu Civil Defense Agency (OCDA), FAA, Aviation General Council, Airport security, Honolulu Police and Fire Departments, and Hawaii National Guard.

JRAC-HI has worked to create a seamless unified front to secure Hawaii through coordination with all the military services in the state and local civil defense, US Coast Guard (USCG), National Guard, Honolulu Police Department, fire departments, and a host of other local and federal government agencies such as the state health and transportation departments. Also included in this effort are the FBI, Immigration and Naturalization Service (INS), US Customs Service (USCS), and the Federal Aviation Administration (FAA) as well as selected private firms and enterprises involved in supporting Hawaii's critical security infrastructure. The Joint Interagency Planning Group established by USARPAC within days after the September 11, 2001 attack has been the principal agency behind this effort.

In 2003, Commander in Chief Pacific (CINCPAC), now known as PACOM created an automated system called area security operations command and control (ASOCC).

ASOCC is an interactive computer-based system designed to provide situational awareness to commanders and collaborative planning capabilities for use by civil authorities. It can provide graphic and imagery-based photographs and maps with supporting data, a log and alert function, the ability to display time-phased force deployment data, and a means to access and display updated information from web-based status boards and databases. ASOCC is currently located at USARPAC and at the US PACOM (USPACOM). It provides JRAC-HI with a common operational picture that monitors friendly forces' developing situations and activities, both military and civil. By 2005, Hawaii acquired ten more computer-based systems with access to the civilian sector and plans to add more in the future.

USPACOM also established a communications interface system called the Pacific Mobile Emergency Radio System (PACMERS). PACMERS provides a narrow-band frequency, land mobile radio system in Hawaii and Alaska. This system allows first-responding emergency medical service providers, fire departments, and police departments to communicate securely with the military and each other through interoperable radios. PACMERS has two critical advantages: it is a radio "trunked" system, and it can interface to emergency 911 systems and other legacy networks. A trunked system is one that efficiently shares frequencies enabling multiple, separate talk groups to access the network. With PACMERS, there may be as many as 149 talk groups on the network, some of which are dedicated to homeland security. PACMERS is also compatible for use by ship and plane radio networks and frequencies.

Lieutenant General E.P. Smith, Commanding General, USARPAC, stated that "the two key pillars of JRAC-HI are intelligence fusion and standardized training models." To support these pillars, JRAC-HI has taken the following actions (Weldon, 2002).

- Created a 24-hour joint intelligence support element and a counterintelligence and law enforcement coordination cell to fuse, synchronize, and coordinate protection requirements, local law enforcement information and activities, and, as the law permits, selected domestic intelligence and information across a broad spectrum of sources. The information is analyzed and the results are made available quickly and efficiently using secure internet links to military audiences and the FBI, and a law enforcement-sensitive category of the report goes to the civilian sector. This unclassified version uses a password-protected

site on the Asia-Pacific Area Network, a web site that USPACOM manages. It is disseminated to local, state, and federal law enforcement agencies, the Honolulu mayor's office, the Hawaii State governor's office, the USCS, the INS, FEMA, state civil defense, and the outlying islands' county civil defense and police departments.

- Coordinated with state civil defense to develop a civilian version of the military's force-protection condition rating system for use in civilian communities. Within 30 days of September 11, Hawaii established a color-coded system that the Office of Homeland Security used as the model to develop the National Security Alert System.
- Coordinated with municipal, state, and federal agencies to help establish an FBI-led joint terrorism task force (JTTF) directed by the US Attorney General. This important office opened in Honolulu during the summer of 2002. DOD's intelligence role in JTTF capitalizes on two of DoD's core competencies: the ability to electronically move large amounts of information securely and its analytical capabilities.
- Instituted a significant information operations campaign and outreach program to inform the community and its leaders about JRAC-HI and how it is linked to civilian government efforts.

These initiatives were a challenge to implement, as the agencies involved historically have not worked together. What was accomplished in Hawaii is what is envisioned to occur on a national scale. The advantages associated with Hawaii's geographic isolation are tighter control and access, a large military presence with a military commander in chief, and the four armed services and the USCG in close proximity, already accustomed to working together with local, state, and federal agencies and officials. In addition, the spirit of "ohana," or family, helps people in Hawaii transcend normal bureaucratic and cultural barriers. Because of the unique circumstances in Hawaii, the local coordination effort is ahead of the national effort. However, further improvement of Homeland Security Systems and coordination is in progress in Hawaii and includes:

- Deployment, subject to legal approval, of remotely operated, closed-circuit cameras to zoom in on suspicious people and activity and take still

photography that could then be compared rapidly against a national database of faces or other criteria such as vehicles and license plates.

- Utilization of detection dogs or electronic sniffers that can quickly detect explosive, chemical, or biological materials.
- Reconsideration of the way local area networks are currently linked to determine which municipal, state, or national networks should be in the loop.
- Establishment of simple, secure, web-based training for those on the front lines, whether civil or military. This training would be available across military, interagency, state, and local boundaries to ensure one standard and to eliminate seams.
- Building an enterprise system that pulls diverse networks under one umbrella to ensure a common database and the ability to move data efficiently from one network or database to another.
- Institution of a national standard for drivers' licenses with biometric identification features so that they can unequivocally be linked to their owners.

Continual reduction of bureaucratic barriers is essential since terrorists are known to exploit those barriers and seams in the security system. While Hawaii has made great progress, still some bureaucratic resistance remains. However, the war on terrorism is a long-term engagement that requires coordinated collective talents and skills, and an unprecedented, seamless, permanent fusion of municipal, state, and federal capabilities.

Coordination at the state and county level

The State's primary responsibility is to provide leadership in rapid assistance during disasters with a full range of resources and effective partnerships (Hawaii State Civil Defense Bulletin, 2002). Federal requirements for each state to establish a community emergency response plan have been in effect since 1997 and are continually updated (OCDA, 1997). The primary responsibility for compliance for the city of Honolulu is through the OCDA and its Emergency Operations Plan.

The OCDA is a department in the City and County of Honolulu that functions as the primary government agency for disaster response. The Mayor acts as the CEO of OCDA and has the power to declare a disaster. Disasters are county specific. Each county (i.e. Honolulu, Maui, Kauai, and Hawaii) individually determines what

constitutes a disaster. The Mayor must regularly report on the progress of various aspects of disaster-response agencies such as the Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA). Both OSHA and EPA have regulations to help protect workers with hazardous waste and emergency operations. Certain areas within a county are designated to the Local Emergency Planning Committee (LEPC). The LEPC must develop a community emergency response plan (contingency plan) that contains methods and procedures to be followed by facility owners, police, hospitals, local emergency responders, and emergency medical personnel. The EPA generates these requirements and ensures that states implement emergency response planning programs. The State of Hawaii's Department of Labor and Industrial Relations is one of only 25 state departments to have an emergency response plan approved by OSHA.

Once the Emergency Operations Plan draft is approved by the Mayor and City Council, all city departments are required to adopt the plan and all county departments and coordinating county agencies follow suit accordingly. In May 2002, FEMA conducted a full-scale Hazardous Materials (HAZMAT) field exercise at Campbell Industrial Park to test Honolulu's Hazardous Materials Response Plan. This exercise named "Operation Kalaeloa", involved over 2,000 participants including 13 of 18 Oahu hospitals. It was a successful test of Hawaii's emergency response procedures and system (Oahu Civil Defense Agency Bulletin, 2002). It should be noted that most of Oahu's medical centers play a crucial role in disaster preparedness and response (Griffith and Oshiro, 1999). In particular, Queen's Medical Center (QMC), the largest and oldest hospital and main trauma center in Hawaii, is instrumental in coordination of disaster response and plays an active role on Honolulu's Disaster Committee (Prizzia, 2004).

Coordination of public and private medical centers

With 560 beds, QMC is the largest private hospital in Hawaii. Founded in 1859 by Hawaiian royalty, it offers a comprehensive range of primary and specialized care services and plays a major role in the overall response to natural disasters and other emergencies in the State of Hawaii. QMC currently has over 1,000 physicians on its staff, a total of 3,500 employees, and an annual budget of \$1 billion. The QMC's trauma facility has been certified as a level two trauma center by the Committee on

Trauma of the American College of Surgeons, the national accrediting agency for trauma services (Griffith and Oshiro, 1999).

QMC has its own internal Emergency Preparedness Committee that is responsible for developing and maintaining a system of emergency codes. When the appropriate code is activated (i.e., when an actual disaster or emergency occurs), an emergency command center is created and headed by the Administrative Disaster Officer at the medical center.

QMC achieves coordination primarily through the Healthcare Association of Hawaii (HAH). The HAH is a non-profit organization representing the State of Hawaii's acute care hospitals and two-thirds of the long-term care beds with a total of 41 facilities. It also represents community-based providers and many supporting organizations which provide services and supplies to the health care industry. HAH has an Emergency Preparedness Committee (EPC), that is responsible for providing hospital services in support of the state civil defense system as cited in Hawaii's Disaster Relief Act (Hawaii Revised Statutes, Chapter 127) and various federal, state, and county emergency response plans. The Chair of the EPC is appointed by the Chief Executive Officer (CEO) of HAH. Members are appointed by the CEO of their respective health care organization. The EPC coordinated "Island Crisis" a full-scale chemical terrorism response drill in May 1999 in which fourteen hospitals participated and five of these facilities demonstrated their ability to provide emergency casualty decontamination.

The Honolulu-based EPC is unique in the nation. Its strength is its ability to organize all key stakeholders involved in health care emergency response into one, well-aligned, and well-coordinated system. According to interviews with the former Vice-President of Hawaii's Kaiser Permanente Medical Center, who worked over 250 emergencies as well as other disaster coordination efforts over the past 25 years, three critical factors in successfully responding emergencies are:

- 1) family emergency preparedness;
- 2) local community emergency response teams; and
- 3) well-trained organizational coordinators.

Among its affiliate members HAH includes organizations such as Hawaii Air Ambulance and International Life Support, Inc. that support coordination in emergency response efforts. Moreover, a world wide web site was developed by the Emergency Preparedness Program (EPP) of the HAH. It is designed to provide information and data management services to health care facility emergency managers in the State of Hawaii. These organizations include the American Red Cross, Hawaii State Civil Defense, OCDA, and hotels which are also members of Honolulu's disaster committee at the City and County of Honolulu's Emergency Operations Center (EOC). This coordination extends to the neighbor islands. For example, in June 2001, the West Hawaii branch of the American Red Cross provided disaster response training to community-based volunteers in Kona (West Hawaii Today, 2001).

Other organizations in the network are Kaiser Medical Center, Kuakini Medical Center, St Francis Medical Center, Queen's Medical Center, Tripler Army Medical Center and the Blood Bank of Hawaii. The Blood Bank of Hawaii designates 10 percent of all donated blood to disaster victims suffering from trauma.

Facilitating inter-agency coordination

The OCDA promotes inter-agency coordination through facilitating communication, conducting training, establishing procedures, and disseminating information within the City and County of Honolulu. The OCDA also coordinates disaster responsibilities among various private organizations and educates the public about emergency preparedness. Interviews with OCDA personnel revealed that they are continuously reviewing, revising, and testing procedures outlined in the Emergency Operations Plan. The administrator of the OCDA works closely with the Mayor and acts as an advisor to the Mayor for disaster preparedness and emergency management. The OCDA also has hundreds of volunteers.

The Emergency Operating Center (EOC) is designed to facilitate coordinated agency emergency response including establishing operational policy, providing logistical and resource support, and initiating communications. Specifically, the EOC houses the communications system for the Emergency Broadcast System and provides a meeting area for the City and County of Honolulu's Disaster Committee. During a real disaster or training exercise, the City and County's Disaster Committee gathers around a

rectangle table equipped with a telephone for each seat, ready for instant and direct communication with various emergency response agencies. The Mayor sits on one end of the table, and the OCDA Administrator on the other. Other representatives from various City and County of Honolulu departments occupy the rest of the table (e.g., fire, police, public works, etc.). The EOC also houses the communications and radio devices for Emergency Medical Services (EMS), hospitals, police, fire, utility companies, and federal, state, and other county agencies.

In August 2003, the State of Hawaii obtained a \$6.9 million homeland security grant, most of it earmarked for Honolulu, to meet the high cost of responding to national security alerts. For example, the Honolulu Police Department incurs \$1.5 million a week in costs when the Code Red alert is on. The award terms state that 80 percent of the grant money must be sub-awarded to the City and County of Honolulu for equipment, training, and other costs associated with preparations for chemical, biological, radiological, nuclear and explosive attacks (Paafic Business News, 2003).

In May 2004, the OCDA increased the level of preparedness as part of a revised homeland security strategy to address potential terrorists of chemical or biological agents. Important emergency public information and instructions about personal protection measures, decontamination procedures, and health warnings and advisories were circulated via the Emergency Alert System (EAS) broadcast over radio and television, as well as the print media (OCDA, 2004). Recognizing that domestic and international terrorists can strike at any time, the City and County of Honolulu coordinates its activities with all levels of government to develop and implement effective strategies for deterring, preventing, and responding to terroristic incidents.

Coordination of homeland security and emergency warning systems

The Hawaii Homeland security Advisory System was designed to provide a means to disseminate information in the event of a terrorist attack in the State of Hawaii. This system provides warning in the form of "Threat Conditions" that increases as the risk increases. At each threat condition State and County agencies have a corresponding set of "Protective Measures" to reduce vulnerability and increase response capability during a period of heightened alert. Accordingly, the general public would be advised to take similar protective and preparedness measures at work, home and school. The Hawaii Homeland security Advisory System differs from the

Federal system by the addition of the color BLACK indicating that a terrorist incident has occurred in the State of Hawaii. The national threat advisory system applies primarily to federal agencies. States are free to adopt their own systems and to determine their own risk of terrorist attack. The Hawaii Homeland security Advisory System uses the following color codes to indicate the likelihood of a terrorist attack: GREEN for low risk; BLUE for general risk; YELLOW for significant risk; ORANGE for high risk; RED for severe risk; and BLACK indicating that a terrorist incident has occurred (OCDA, 2004).

The Pacific Disaster Center (PDC) located in Kihei on the island of Maui in Hawaii, enhances agency coordination by assisting emergency managers to network in Hawaii and throughout the Pacific Region to make informed decisions in times of crisis (Shirkhodai, 2003). The Research Corporation of the University of Hawaii (RCUH), in coordination with the Pacific Disaster Center (PDC), Hawaii State Civil Defense, PACOM for US DOD, FEMA, and other disaster organizations has begun to develop the automatic production of cloud-free base images using full-resolution Landsat 7 data. This advanced technology and Landsat 7 data will enable users at remote sites to evaluate the quality and coverage of images using browse data prior to ordering the full resolution scenes. This technology also will enable disaster managers to obtain an essentially cloud-free high resolution satellite image of their geographic area of interest. The image will be generated "on demand" using the most recent data available for the area that extends over much of the Pacific and Indian Oceans (Mouginis-Mark, 2005).

In October 2004, the Office for Domestic Preparedness' Homeland Security Grant Program awarded the Department of Molecular Biosciences and Bioengineering in UH Manoa's College of Tropical Agriculture and Human Resources (CTAHR) a two-year, \$300,000 grant. The grant is part of a \$22,286,000 federal award the State received to enhance its ability to prevent, deter, respond to, and recover from threats and incidents of terrorism (UH News, 2004). Qing Li, Professor in the Department and Head of the Environmental Biochemistry Laboratory, used the funds to purchase a liquid chromatograph-mass spectrometer (LC-MS) to enhance his laboratory's capability to identify unknown and threat chemicals present in environmental samples. He assured that, "Not only will we strengthen our research, we become part of the statewide homeland security infrastructure safeguarding Hawaii people and environment" (UH News, 2004). The Office for Domestic Preparedness (ODP) is the

principal component of the Department of Homeland security responsible for preparing the United States for acts of terrorism. In carrying out its mission, ODP is responsible for providing training, funds for the purchase of equipment, support for the planning and execution of exercises, technical and other assistance to states and local jurisdictions to prevent, respond to, and recover from acts of terrorism.

Public and private coordination at the community level

At the community level, FEMA, recognizing the importance of preparing citizens for a wide range of potential disasters, expanded training programs for the Community Emergency Response Team (CERT) from primarily fire to medical and eventually all hazards, natural and man-made. According to the OCDA Operations and Planning Director, many teams of Hawaii residents have participated in the various CERT training sessions since its beginning in 1997. More importantly, neighborhoods that have CERT trained teams are not only more aware of how to respond to disasters but are more effective and efficient in their response to actual emergencies (FEMA, 1999). Communities that actively participate in the CERT and FEMA's Project Impact are provided assistance to develop strategies to become more disaster resistant. The overall strategy involves coordination and a local partnership of government and business to reduce human and financial costs of disasters. In Hawaii, the County of Maui and Hawaii County were selected by FEMA's Project Impact and are part of a growing list of specially designated "disaster resistant communities" (West Hawaii Today, 2001).

Since, homeland security has become a salient concern of daily life, the Pacific and Asian Affairs Council (PAAC) wanted to assure that the younger generation of students understand what homeland security means. In February 2005, more than 150 students from schools across the State gathered at Sacred Hearts Academy for PAAC's High School Global Vision Summit 2005, where they learned about the US Department of Homeland security and its responsibilities, as well as the United States' policies on terrorism (Shapiro, 2005). The presenters included Civil Defense, the USCG, the Department of Health, the American Red Cross, US Customs and Border Protection, and The Honolulu Advertiser. A law professor from the University of Hawaii also discussed the federal Patriot Act (Shapiro, 2005). Neighbor island participants visited the State Civil Defense headquarters, while other students held a

mock press conference where they presented their plans for dealing with homeland security threats.

Conclusions and recommendations

In the aftermath of September 11, 2001 and the ensuing threats to homeland security, the urgency of disaster management and preparedness has escalated to heightened proportions. An acute sense of the threat of physical, chemical, biological, nuclear and other forms of terrorism has led to efforts to bolster homeland security. Many public and private sector agencies and organizations on the national, state and local levels have responded decisively by strengthening their existing security measures and developing new infrastructure, strategies and methods of protection where none formerly existed.

Not all states or regions are equally challenged by the specter of natural or man-made disasters. Some, like Hawaii, Alaska, and the US territories in the Pacific, have unique security needs because of their geographic location. Hawaii's location in the middle of the Pacific and its heavy reliance on shipped goods and products make it especially vulnerable to acts of terrorism via air and sea. The threats to homeland security compel public and private sector agencies and organizations on the local, state and national levels to cooperate and coordinate human, physical, and technological resources to efficiently and effectively protect the island State. Simply put, the collective efforts to forge a seamless, integrated homeland security system entail strategies that necessitate cooperation and coordination. Only then can the best of human expertise and technology be harnessed to prevent and respond to multiple forces that threaten homeland security.

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