



County of Maui

Department of Fire & Public Safety



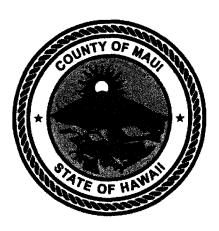
Standards of Cover

2016

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Fire Commissioners

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Standards of response coverage are an integral part of strategic planning for fire protection. They are the allocation and distribution of resources to meet the goals and objectives of a community's master fire protection plan.

- Commission on Fire Accreditation International-

What are Standards of Cover?

Standards of Cover (SOC), also referred to as Standards of Response Coverage or Deployment Analysis, is a system for analyzing resource deployment to determine whether a fire department is properly deployed to meet its community's risks and expectations. A SOC is applicable to every fire department and district, career and volunteer, large and small. However, there is no 'one size fits all' SOC. The SOC must take into account factors unique to the community the fire department serves.

The SOC states agency-specific performance goals to which fire service leaders compare actual performance to measure the effectiveness of their fire department. The SOC process is not just about the number of fire stations and firefighters. The SOC supports community and firefighter safety by identifying the number of personnel that should arrive at each risk type to safely and effectively accomplish the community's objectives (Center for Public Safety Excellence, 2008).



INTRODUCTION

The following report serves as the County of Maui Department of Fire & Public Safety's "Integrated Risk Management Plan: Standards of Cover" document. The CFAI defines the process, known as "deployment analysis," as written procedure which determines the distribution and concentration of fixed and mobile resources of an organization. The purpose for completing such a document is to assist the agency in insuring a safe and effective response force for fire suppression, emergency medical services, and specialty response situations in addition to homeland security issues.

Creating an Integrated Response Management Plan Standards of Cover requires that a number of areas be researched, studied and evaluated. The following report will begin with an overview of both the community and the agency. Following this overview, the agency will discuss areas such as risk assessment, critical task analysis, agency service level objective, and distribution and concentration measures. The agency will provide documentation of reliable studies and historical performance through charts and graphs. The report will conclude with policy recommendations.



MESSAGE FROM THE FIRE CHIEF



This Standards of Cover document is a result of a collaborate effort made by many Maui Fire Department employees. Much research and data collection was done to provide accurate and up to date information. Much of the information came from many other departments such as the Police Department, IT, GIS, Water and the Office of Management. I cannot thank them enough for the hard work that was put in to this document. I would also like to thank the Mayor and the Maui County Council for their continued support in making emergency services a priority for our communities. This document provides a point in time snapshot on what we are doing, but more importantly, where we need to be in providing top services to the Maui County community.

Sincerely,

Jeffrey A. Murray

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Fire Chief



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EXECUTIVE SUMMARY

The County of Maui Department of Fire and Public Safety is seeking accreditation by the Commission on Fire Accreditation International (CFAI) for the first time. Reaching this point has been the culmination of years of work and effort, with the recognition that the accreditation process will be a tool for ongoing self-improvement and accountability.

The 2016 Standards of Cover describes the community served, services provided by the Department, and expectations of the community. Performance objectives have been established based on a community risk assessment, and the Department can now measure past performance against those objectives. With quantifiable objectives in place, the Department will work toward improvement and monitor progress on a regular basis.

This is just the start of an ongoing accreditation process that will ensure that the Department continually improves and maintains the level of service needed to protect our community effectively and efficiently.



COMMUNITY SERVED

Legal Basis

Chapter 132 of the Hawaii Revised Statutes outlines the powers and duties of the Maui County Fire Chief. Those powers and duties include, but are not limited to, the investigations of fires, record keeping on fires, the adoption of a fire code, and periodic inspections to remove fire hazards.

Chapter 7 of the Maui County Charter directs the existence of the Fire Department, including the Fire and Public Safety Commission, the Fire Chief, and necessary staff. It outlines the powers, duties, and functions of the Fire Chief. (County of Maui, 2015)

Department History

Historical records of volunteer firefighting in Maui County go back to the late 1800s. At the time, organized fire protection was primarily for plantation camps and done by bucket brigade. Firefighting continued to be strictly volunteer until 1924, when several significant fires brought increased attention to fire protection on Maui. These incidents motivated the Board of Supervisors, predecessor to the County Council, to begin upgrading the County's fire protection.

They started with creation of the Wailuku Fire Department. On July 1, 1924, the Board of Supervisors appointed Joe F. Souza as Fire Chief with a monthly salary of \$125. The following month the Board approved 15 firefighting positions to be selected and filled by the Fire Chief.

Over the following years, paid fire departments in the Paia and Lahaina districts were also established and to supplement the volunteer firefighting efforts of plantation workers at the various plantation camps and mills. At the time, most mills had their own firefighting trucks and equipment.



Despite the increase in firefighting capability, significant fires continued to occur throughout Maui. The community advocated for adoption of building codes, improved hydrant systems, updated firefighting equipment, and expansion of the fire fighting force. On January 20, 1931, the Board of Supervisors passed regulations on new construction within the fire districts.

On January 18, 1939, additional personnel were hired to staff the Lahaina Fire Department and 24-hour shifts were implemented for around the clock fire protection. On March 18, 1939, temporary fire protection for Kaunakakai was established and the Lahaina fire truck was transferred to Moloka'i to provide protection. More firefighting equipment for Moloka'i was approved by the Board of Supervisors in 1940.

World War II brought an increased need for fire protection on Maui and throughout Hawaii. On May 2, 1942, Army and Navy firefighting trucks were stationed at Wailuku, Waikapu, Makawao, and Pu'unene. Firefighting equipment increased with at least eight publicly owned fire trucks on the island of Maui in addition to equipment owned by Maui Plantations. The added fire protection brought the need for formalized training. In 1943, firefighting training programs were delivered by military. U.S. Fire Chief for Maui County, Edward F. Schumacher, trained forty-four volunteers in pump operations from static water sources. A Honolulu Fire Department drillmaster provided rigid testing after 20 days of instruction.

In 1949, Maui County still had no centralized fire department with a single Fire Chief in charge of operations. Each district department had a lieutenant responsible directly to the Chairman of the Board of Supervisors. HC&S, Kahului Railroad, the Army, the Navy, and Maui sugar plantations all had fire trucks and firefighting forces, organized and paid for in a combination system. Private companies had their own interests in mind in regards to fire protection and the community expressed concern over the disconnect of fire protection in the County.

In the 1950s, efforts toward prevention included the adoption of fire prevention codes for the



Territory of Hawaii, which replaced the inadequate and obsolete Territorial Fire Marshals Rules and Regulations from 1917. In 1956, the General Insurance Association of Maui spearheaded Fire Prevention Week. The Hawaii Fire Rating Bureau upgraded the fire protection classes throughout the County of Maui.

In July 1954, construction began on the new Wailuku Fire Station, and the station was completed on June 3, 1955. This was the first permanent fire station constructed in the County. According to the Legislative Reference Bureau, in 1957 Maui County (including the islands of Maui, Moloka'i, and Lana'i) had the smallest staff of firefighters in the Territory of Hawaii at 49; Kauai Fire Department staffed 65, Hawaii Fire Department staffed 79, and the Honolulu Fire Department had 426 personnel. Communities without fire protection began looking for answers and turned to volunteer brigades in their districts (Kihei, Kula, Makawao, Haiku, and Kahului).

In 1964, a new State Fire Code was signed by Governor Burns to be applicable throughout the State of Hawaii. On April 14, 1965, twenty Lana'i men were appointed by County Fire Chief Alexander Oana to the Volunteer Fire Department on the island of Lana'i. On March 18, 1967, authorization was granted by the Maui Board of Supervisors to the County of Maui Fire Department to create eight new fire department positions to provide search and rescue services and operation of an aerial ladder truck. The Maui Fire Department purchased an 85-foot aerial ladder, the first aerial truck for the Maui Fire Department. On May 15, 1968, Honolulu Community College provided in-service training for the Maui Fire Department. According to Richard Miyashiro, Fire Science Program Coordinator, forty-six firemen had received training and were very happy with the program.

Major Accomplishments of the Last 10 Years

Kaunakakai Fire Station

The Department opened a new Kaunakakai Fire Station (Station 4) on Moloka'i in 2011. It is a replacement for (and a huge upgrade from) the old Kaunakakai Fire Station.





The new Kaunakakai Fire Station in when it opened in 2011.

New Positions

A total of 24 uniformed positions have been added to the Department in the last 10 years, 19 of which are operational personnel. The other five work as support staff on a 40-hour schedule.

- 2007: 13 positions (2 Captain, 3 Fire Fighter III, 8 Fire Fighter II) to staff Hazmat 10
- 2008: 1 position (Fire Fighter IV) for the Fire Prevention Bureau
- 2009: 2 positions (Fire Fighter III) for the Health & Safety Bureau
- 2009: 3 positions (Battalion Chiefs) for Battalion 2
- 2010: 1 position (Fire Fighter III) for the Fire Prevention Bureau
- 2012: 3 positions (Fire Fighter III) to permanently staff Tanker 3
- 2014: 1 position (Battalion Chief) for the Ocean Safety Division and Training Bureau
- 2016: 61 positions added for the Ocean Safety Division merger



New Apparatus and Vehicles

In the last 10 years the Department has purchased a number of new apparatus and support vehicles, as follows:

- 11 engines
- 1 ladder
- 1 heavy rescue apparatus
- 1 hazardous materials response apparatus
- 6 tankers
- 4 mini pumpers (4x4)
- 1 air/light truck
- 7 utility vehicles or SUVs (for emergency response)
- 11 staff vehicles (for support staff use)

Of the apparatus and vehicles listed above, many went to replace existing apparatus that were aging and in need of replacement. The remainder, listed in the chart below, were new additions that upgraded the service provided by the Department.

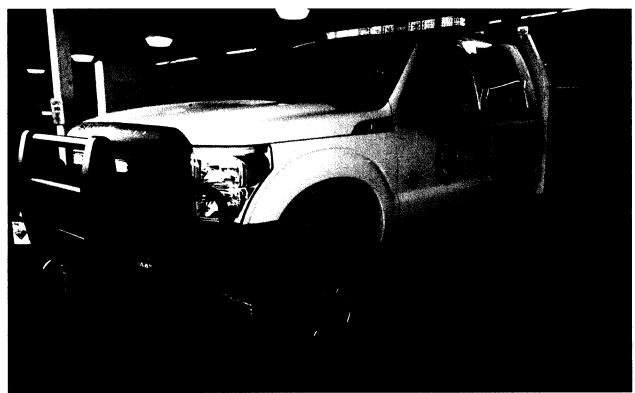
Year	Apparatus/Vehicle	Location
2007	Hazmat 10	Kahului Fire Station
2009	Air and Light Truck	Health and Safety Bureau
2009	Battalion Chief SUV	Battalion 2
2010	Tanker 3 Tanker 7	Lahaina Fire Station Hana Fire Station
2010	Mini 2 Mini 11 Mini 13	Paia Fire Station Napili Fire Station Kula Fire Station
2014	Wildland 8	Lana'i Fire Station

Note: New staff vehicles for staff support use are not included in this table.





Tanker 3, located at the Lahaina Fire Station, was purchased and fully staffed in 2010.



Wildland 8 significantly improved response capability to the unpaved areas that cover most of Lana'i Island.



Improved Training

Another significant area of improvement by the Department over recent years has been the substantial increase in the quality and quantity of training provided to personnel. An emphasis on developing in-house trainers in each discipline has paid off, with the majority of current instruction (both classroom and hands-on) being delivered by Department personnel. By sending instructors away to train-the-trainer courses, the Department has been able to provide improved and more consistent training while staying cost effective.

CORE TRAINING PROGRAMS		
Fire Apparatus Driver Operator	Rope Rescue	
Emergency Medical Responder / CPR	Hazardous Materials	
Fire Ground Survival / RIT	Technical Rescue	
Fire Ground Operations	Rescue Boat Operations	
Vehicle Extrication	Rescue Water Craft	
Wildland Firefighting	NIMS/ICS	
Fire Instructor I & II	Fire Inspector I	

In order to ensure national consensus standards are met, the Department is using verifying agencies where possible, including the National Registry of Emergency Medical Technicians (NREMT) to certify our Emergency Medical Responders and Pro Board for a variety of other disciplines. The following Pro Board Certifications are now being offered by the Department:

- Firefighter I and II
- Fire Instructor I
- Fire Inspector I
- Fire Officer I
- Airport Firefighter



In addition to instructional changes, the creation of the Maui Fire Joint Training Center (MFJTC) has allowed the Department to drastically increase the quality of fireground training. The facility includes a modular Class A burn structure that can be configured to simulate a variety of fire occupancies and conditions. Fireground training evolutions have improved essential skills in fire attack, rescue, forcible entry, and ventilation. The MFJTC also provides a layout and props for fire ground survival and rapid intervention team training.



Live fire training at the Maui Fire Joint Training Center.

New hires for the Department go through very rigorous training in structural firefighting, wild land firefighting, technical rescue, hazmat response, and airport firefighting. Since 2007 new hires are certified at Firefighter II and S-130, I S-190, Hazmat awareness and operations level.



Fire officers are certified at Fire Officer I and II, Fire Instructor I, II, and III, Inspector I, and Hazmat IC. In 2012, Fire Officers are also certified in the Blue Card Command Officer, ICS 300, ICS 400, and specific positions within the All-Hazards Incident Management Type 3 Team responsibilities.

Improved Incident Command

In the area of incident management, the Department began utilizing the Blue Card Command system in 2012 to train personnel from the rank of Fire Fighter III to Battalion Chief in standard command and control procedures for structure fires. For larger incidents, a Type 3 All-Hazards Incident Management Team has been established for the County of Maui after years of course work and practice. Called the Maui Incident Management Team (MIMT), it is listed as a resource for regional and national deployments. Already, the MIMT has been used for local disaster response for hurricanes and tsunami events and also participates in readiness drills and planned incidents. Several members have been deployed as trainees to Type 1 incidents in Arizona, California, Oregon and Washington to gain experience and credentials.





Funding Sources and Restrictions

The Department's budget comes from the general fund of the County of Maui municipal government. The general fund receives approximately 78% of revenue from real property tax, tourism tax and fuel tax with real property being the most significant. The remaining 22% of the revenue generation comes from fees such as water, solid waste, refuse and sewer. Other taxes also generate revenue but at a very small portion of the overall budget. All sales taxes generated go directly to the State of Hawaii and do not directly benefit the Department.

The Fire Chief submits an annual budget request to the Mayor. The Mayor reviews the Fire Chief's budget request and incorporates it into the County budget, which is then submitted to the Maui County Council for review and approval. Funds are allocated to specific accounts to be spent by the Department. The Fire Chief has some flexibility within a program budget but cannot transfer money from one account to another. Any money not spent by the Department during the fiscal year (July 1 – June 30) is returned to the general fund. The Department also applies for grants that have constituted around 0%-2% of the overall budget in recent years.

Topography

Size of the Service Area

Maui County includes the "Islands of Maui, Moloka'i, Lana'i, and Kaho'olawe and all other islands lying within three nautical miles off the shores thereof and the waters adjacent thereto, except that portion of the Island of Moloka'i known as Kalaupapa, Kalawao and Waikolu, and commonly designated as the Kalaupapa Settlement." (County of Maui, 2015) While the Kalaupapa Settlement is not technically a part of the County, the Department has a written agreement to provide service to the area as needed. Maui County encompasses 1,162 square miles of land and 1,237 square miles of water.



Description of Overall Terrain

Maui County contains four major islands, each of which is the result of millions of years of volcanic eruptions. These eruptions resulted in volcanic cones, some of which formed individual islands and some that were close enough together that lava flows on their flanks overlapped one another, merging into a single island. The resulting islands contain mountainous terrain with drastic elevation changes and wide variations in topography.

Maui is a volcanic doublet formed from two shield volcanoes that overlapped and formed an isthmus between them. The older, western volcano has eroded considerably and is cut by numerous drainages, forming the peaks of the West Maui Mountains. Pu'u Kukui is the highest of the peaks at 5,788 feet. The younger volcano to the east, Haleakalā, is much larger and rises to 10,023 feet above sea level. The north-eastern flanks of both volcanoes are cut by deeply incised valleys and steep-sided ravines that run downslope to the rocky, windswept shoreline. The large valley-like isthmus that separates the two volcanic masses is much less steep. Maui's last eruption was from Haleakalā in 1790. Haleakalā is now considered to be dormant.

Moloka'i is about 260 square miles. It is built from two distinct shield volcanoes known as East Moloka'i and the much smaller West Moloka'i. The highest point is Kamakou on East Moloka'i, at 4,970 feet. Today, East Moloka'i is just the remaining southern half of the original mountain. The northern half suffered a catastrophic collapse about 1.5 million years ago and now lies underwater. The remaining northern coastline now includes the highest sea cliffs in the world, the bases of which are largely inaccessible by land. The south shore of Moloka'i is bordered by the longest fringing reef in the U.S. at nearly 25 miles long.

Lana'i is the smallest inhabited island in the County at about 140 square miles. Its highest elevation is 3,366 feet. The island has a single population center (Lana'i City) and one resort area (Manele), with the rest of the island unpopulated accessible only by dirt roads.

Kaho'olawe, the fourth major island in the County, is uninhabited. Of the major islands, it is the



smallest (at about 45 square miles) and lowest (with a peak elevation of 1,477 feet). It was formerly used by the military for bombing practice and access is restricted.

Description of Other Features

The waters surrounding the islands of Maui County are often rough and subject to strong currents and large swells. There are no bridges connecting the islands, so all transportation is by air or boat. Distance from Maui to Moloka'i is 8.4 miles; Maui to Lana'i is 8.8 miles; and Maui to Kaho'olawe is 7 miles.

Climate

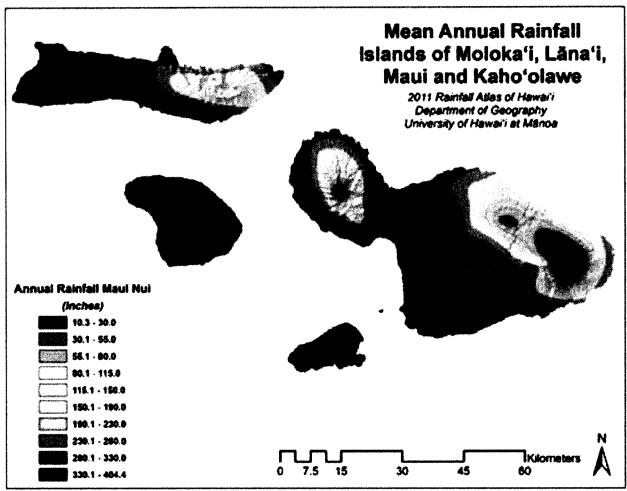
Temperature

The County's climate varies as a result of land elevation that goes from sea level to over 10,000 feet. Typical temperatures at sea level are relatively stable throughout the year, ranging from lows in the 50s to highs in the 90s Fahrenheit. Temperatures at the top of Haleakala can get below freezing, occasionally resulting in a light dusting of snow. Most of the population lives at elevations below 4,000 feet with temperatures that never drop below freezing.

Rainfall

The mountainous areas of Maui and Moloka'i experience significant annual rainfall, especially in areas most exposed to the predominant northeast trade winds. Pu'u Kukui in the West Maui Mountains receives an average of 366 inches of rainfall annually, making it one of the wettest places in the world. Windward areas of East Maui are also attributed with high annual rainfall. In contrast to the wet windward areas, most of the County sees less than 50 inches of rainfall annually and most of the population lives in these drier areas. The central, south, and west portions of the islands receive limited rainfall (under 20 inches annually in some places) and contain desert-like dry areas. (National Weather Service, 2012)







Weather History and Related Disasters

Hurricanes and tsunamis are the most concerning natural disaster threats in Hawaii. Maui has never had a direct hit from a hurricane, but hurricanes have frequently passed by and other islands in Hawaii have been devastated by direct hits in the past. Hawaii also has a significant tsunami history, with major events in 1946, 1952, 1957, 1960, and 1975.

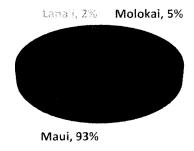
Date	Event, Magnitude & Origin	Location Affected
September 13-14, 2016	Flooding	Iao Valley / Lahaina
August 7, 2014	Tropical Storm Iselle	Maui County
October 27, 2012	Tsunami Warning 7.7 Canada	Hawaiian Islands
August 31, 2012	Tsunami Watch 7.7 Philippines	Hawaiian Islands
March 8, 2012	Storm & Flooding	Paia / Hana
March 10, 2011	Tsunami Warning 8.9 Japan	Hawaiian Islands
January 12, 2011	Storming & Flooding	Kihei
December 23, 2010	Flooding	Kihei
October 1, 2010	Flooding	Kihei
February 26, 2010	Tsunami Warning 8.6 Chile	Hawaiian Islands
October 7, 2009	Tsunami Watch 7.9 Samoa	Hawaiian Islands
September 9, 2009	Tsunami Watch 7.7 Vanuatu	Hawaiian Islands



Population

According to data from the U.S. Census Bureau, there were 154,924 residents in Maui County in 2010. Of those, 144,444 were on Maui, 7,345 on Moloka'i, and 3,135 on Lana'i. By 2013, the County's total resident population had grown to 160,880. The 2016 estimate, according to the U.S. Census Bureau, is 165,386.

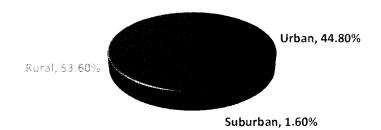
2010 RESIDENT POPULATION BY ISLAND



Development Levels and Areas

Maui County does not have a central metropolitan area. Areas that do have metropolitan population densities are small in size, contiguous with and intermingled with urban areas, and lacking the mid-rise and high-rise buildings characteristic of classic metropolitan areas. For those reasons, areas in the County with metropolitan population density will be considered urban for the purposes of this document.

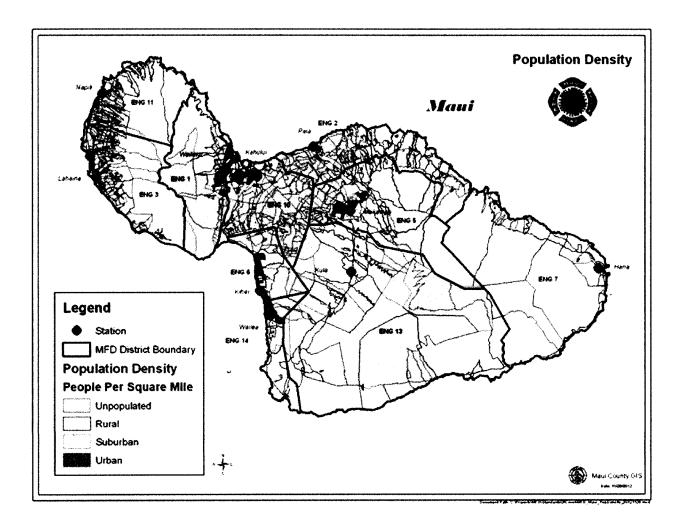
POPULATION DISTRIBUTION BY AREA CLASSIFICATION



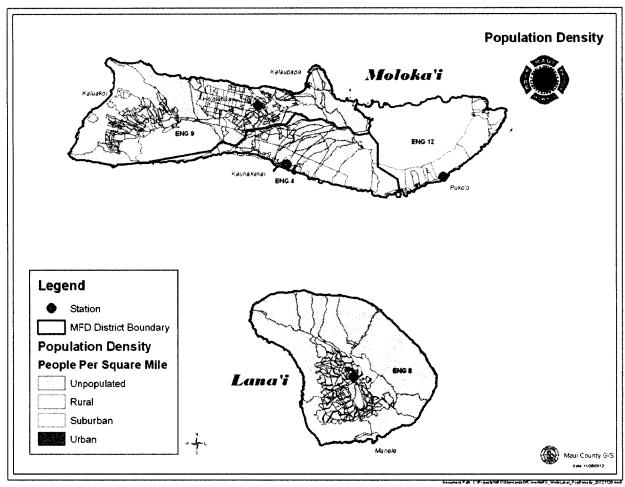


Population Concentration

The County's overall population concentration is 133 persons per square mile. Almost half of the population (about 45%) lives in urban areas that account for only about 30 square miles. The rest of the population reside in less densely populated suburban or rural areas. Large areas of land within the County are completely unpopulated.







Specific Characteristics of Population

Demographics

Age – In 2014, 22.3% of the County's resident population was under the age of 18 and 15.1% was over the age of 65. (U.S. Census Bureau, 2015)

Income – Per captia income for Maui County residents in 2013 was \$38,714. (County of Maui, 2014)

Education – According to U.S. Census Bureau data for 2009-2013, 90.2% of County residents over the age of 25 are high school graduates, and 25.7% have a Bachelor's degree or higher. (U.S. Census Bureau, 2015)

Race/Ethnicity - Maui County's resident population is ethnically diverse, with 34.2% identifying



as white, 28.66% as Asian, 10.55% as Native Hawaiian or other Pacific Islander, and 25.08% as two or more races. (County of Maui, 2014)

Transient Visitor Population

Maui is a popular vacation destination, with over 2.3 million people visiting the County during the 2013 calendar year. The Hawaii Tourism Authority estimates an average of 54,266 visitors present at any given time. (County of Maui, 2014) While the highest concentration of tourists is located in the resort areas on Maui's south and west shores, they can also be found in other areas of the County.

Disadvantaged Residents

While there is no large or concentrated area of disadvantaged residents that significantly affects the fire services, disadvantaged people do exist throughout the County. About 10.6% of the resident population live below the poverty level. (County of Maui, 2014) Maui also has a significant (but geographically dispersed) homeless population that is responsible for frequent calls for service for medical emergencies.

Elderly Living Facilities

The County has several large assisted living facilities located in Kahului and Kihei that house elderly residents and are staffed 24 hours a day. There are also eight non-assisted living elderly housing centers throughout the County that have hundreds of units and are operated by an organization called Hale Mahaolu. Hale Mahaolu residents account for a significant number of the Department's medical calls. State records also show at least 12 smaller adult residential care centers throughout the County. (County of Maui, 2014)

Elderly Population Centers

The areas of the County with the largest elderly (over 65) population per capita include Manele (37.9%), Ma'alaea (32.7%), Kapalua (28.9%), and Kā'anapali (24.5%). (County of Maui, 2014) However, a significant increase in medical calls to these areas have not been noted, perhaps



because they have a relatively small overall populations and significantly higher household incomes. Older and less affluent communities (e.g. Lahaina, Kahului, and Wailuku) are known to frequently house seniors and multi-generational households. Throughout the County, 38% of households contain people over 60, and 8% contain three or more generations. (Suburban Stats, 2014-2015)

Socio-Economic Trends

The tourism industry is the County's largest economic driver, accounting for about 40% of all economic activity and a larger percentage of jobs on the island of Maui. The industry took a hit following September 11, 2001 but has since rebounded. Future economic projections show the tourism industry remaining strong into the foreseeable future. (County of Maui, 2014)

Agriculture was traditionally a large part of the County's economy, but its strength has significantly declined over recent decades. The pineapple industry has largely disappeared and livestock operations at various ranches are not significant economic drivers. The County's largest agriculture crop until recently has been sugarcane, grown on approximately 37,000 acres of land by Hawaiian Cane & Sugar (HC&S), but HC&S ended sugar operations at the end of 2016 and laid off hundreds of employees. The future of agriculture on HC&S lands is uncertain but is likely to include diversified agriculture in some form. After HC&S, the next largest agricultural employer in Maui County may be Monsanto, but they employ a smaller workforce and operate on far less acreage than HC&S. The majority of the County's other agriculture operations are small scale.

Research and technology have been a growing part of the County's economic landscape in recent decades. Significant facilities include government and private research facilities at the summit of Haleakala and the Maui Research & Technology Park in Kihei.



Development within the Service Area

Maui County has a number of specific areas and occupancies that present a level of increased risk. There are areas in Kahului that store large amounts of hydrocarbon fuels. Being that all fuel must be delivered by ship, large holding tanks are present to store the fuels near the harbor and airport. Some other target hazard areas include:

Industrial Areas

Industrial areas and facilities can be found throughout the County. Kahului, Wailuku, Kihei, and Lahaina have industrial areas, and standalone industrial facilities (including power plants, cement plants, etc.) exist in other areas.

Business/Commercial Centers

Business and commercial centers are also widespread but are most concentrated in Kahului, Wailuku, Kihei, and Lahaina, and the various resort areas (Wailea, Kaanapali, Kapalua, etc.).

Downtown or Shopping Centers

The County's downtown shopping areas and centers are largely located in the same districts as the business and commercial centers. See above.

Large Recreational Facilities

The County's largest recreational facility is the War Memorial Complex, which includes a football stadium, a baseball stadium, a gym, and multi-use park space. Other recreational facilities are largely limited to local community parks and related structures, and high school athletic facilities. The County's largest recreational areas are not facilities, but outdoor locations including shoreline areas and surrounding waters, Haleakala National Park, State parks, and various hiking areas.



High Density / Mixed Use Areas

As was mentioned above, the industrial, business/commercial, and downtown shopping areas all tend to be concentrated in similar areas, resulting in high density, mixed use areas in all of the County's major towns.

Description of Overall Building Stock

The island of Maui has 71,118 housing units. The majority of housing units are single-family homes, with about 37% of the housing stock being multi-unit (County of Maui, 2014). The overall building stock ranges from historical plantation-style homes, consisting of lightweight, single-wall construction, to mid-rise concrete and steel constructed resort hotels. Most homes were built using single-wall construction until the 1970s, when a transition was made to double-wall, Type V construction that continues today. Nearly all residential dwellings are wood framed and lack fire sprinklers, while commercial structures are a combination of steel and wood-framed construction, and some contain fire sprinklers depending on their age and use.

The County contains approximately 20 high rise structures, all of which have fire sprinklers. Housekeeping in these structures is generally good as and the majority of them are hotels or condos used to house transient visitor populations.



SERVICES PROVIDED

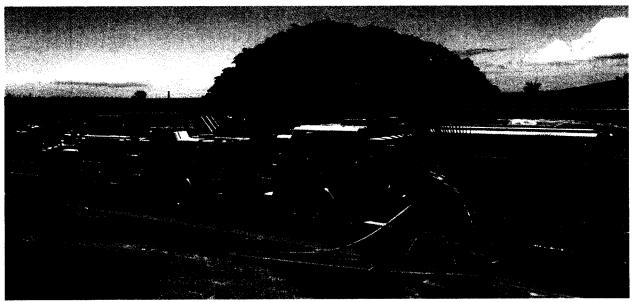
Services Provided

The Department responds to incidents that fall into the following four service categories:

- Fire suppression
- Search and rescue
- Emergency medical services
- Hazardous materials

Fire Suppression

The Department has 14 engines and 4 fire ground support (FGS) companies (Ladder 3, Rescue 10, Hazmat 10, and Ladder 14) available respond to structure fires. All fire companies are staffed with a minimum of 4 personnel at all times, except Pukoʻo, which has two personnel. The Department also has six water tankers available to provide mobile water supply for structure fires.



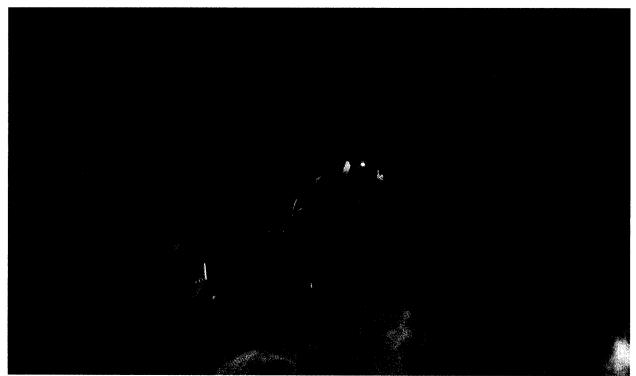
Ladder 3 and Engine 3, located at the Lahaina Fire Station.



The Department's 14 engine companies and 6 tankers also respond to brush/wildland fires. In addition, there are six mini-pumpers assigned to engine companies to assist with wildland firefighting. These mini-pumpers carry less water than an engine (500 gallons or less), but have better accessibility to wilderness areas due to compact size and four wheel drive capability. When wildland fires cannot be controlled by ground resources alone, the Department's Air-1 helicopter is available and equipped for water drops.

Technical Rescue

The Department has a dedicated heavy rescue company (Rescue 10) staffed with a minimum of four personnel. Rescue 10 performs and is equipped for high- and low-angle rope rescue, dive rescue and recovery, confined space rescue, vehicle extrication and ocean/surf rescue. The rescue apparatus is equipped with specialized equipment for all of these disciplines, along with a rescue watercraft (RWC), a rescue boat, and a utility truck. Rescue 10 also has access to a dedicated fire helicopter that can be used for search and rescue operations.



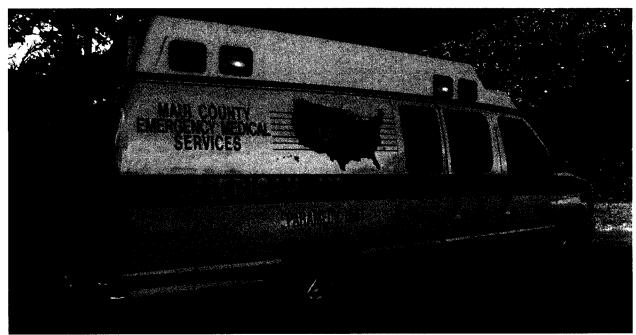
Air-1 is most commonly used for search and rescue operations and wildland fire fighting.



In addition to Rescue 10, other companies are trained and equipped to respond to a technical rescue incidents. All companies perform and are equipped for vehicle extrication. All personnel receive ocean rescue training and companies are equipped with basic ocean rescue equipment. In addition, Engines 4, 7, 9, and Ladder 14 have RWC. Ladder 3 and Engine 4 have rescue boats. Hazmat 10 personnel are trained to the technician level and capable of providing additional support for confined space rescue. Engines 4, 7, 8, 9, 13 and Ladder 3 are trained to the operations level for rope rescue and are equipped for high- and low-angle operations.

Emergency Medical Services

American Medical Response (AMR) is contracted by the State to provide ALS emergency response and patient transport throughout the County. The Maui Fire Department responds to medical calls in conjunction with AMR to assist medics and provide BLS care prior to their arrival. All Department personnel are trained to the Emergency Medical Responder (EMR) level and hold a current BLS for Healthcare Providers (CPR and AED) certification. All companies carry equipment for and are capable of performing patient assessment, bleeding control, splinting and bandaging, spinal immobilization, basic airway management, and CPR.



AMR operates all 11 of the ALS ambulances that provide emergency medical response for Maui County.



Hazardous Materials

The Department has a dedicated hazardous materials company (Hazmat 10) staffed with a minimum of four personnel. Personnel are trained to the Technician level. Companies are capable of Level A and Level B entries and are equipped with a variety of monitoring devices, tools, and equipment for response to chemical, biological, and nuclear incidents.

All Department personnel are trained to the Hazardous Materials First Responder Operations (FRO) level. All companies are capable of initial response and defensive actions on hazardous materials calls prior to the arrival of Hazmat 10. They are also trained in setting up technical decontamination corridors for fire personnel and mass decontamination corridors for the public.



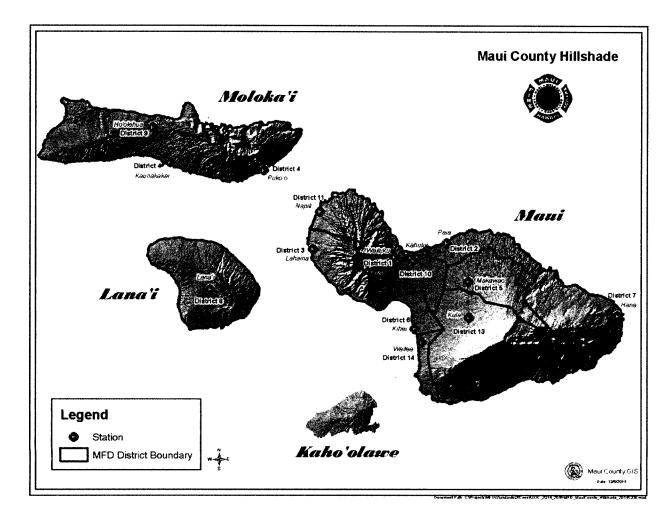
Hazmat personnel participating in a multi-agency training drill with the 93rd Civil Support Team (CST).



Current Delivery System

Stations and Staffing

The Department operates 14 fire stations spread across three different islands; ten on Maui, three on Moloka'i, and one on Lana'i. All are staffed 24 hours a day throughout the year.



At a minimum, every station houses an engine company, with some also housing support companies or other additional resources. All engine companies operate with a *minimum* of four personnel with the exception of Pukoʻo, which operates with two personnel. Minimum daily staffing is 77 firefighting personnel. A further breakdown of the Department's fire apparatus and associated staffing can be found in the tables on the following pages.



Apparatus Type	Quantity	Minimum Staffing Per Unit	Minimum Daily Staffing
Engines	14	4*	54
Tankers (Tenders)	6	1	5**
Ladder Trucks	2	4	8
Heavy Rescue	1	4	4
Hazmat	1	4	4
Battalion Chiefs	2	1	2
TOTAL			77

^{*} Engine 12 at Pukoo is staffed with only two personnel.

Minimum staffing is maintained 24 hours a day throughout the year. The Department operates on a "Kelly Schedule" at most stations, with personnel working three 24 hour shifts each nine day work cycle. Two remote stations (Hana and Lana'i) are staffed by personnel working 72 hours straight followed by six days off.

A further breakdown of station locations, resources deployed at each location, and staffing is available on the next page. The specialty column indicates response capabilities that exceed the baseline for an engine or truck company due to increased resources and training.

^{**}Tanker 7 in Hana does not have a permanently assigned operator. One of the fire fighters assigned to the station operates the tanker if it is needed.



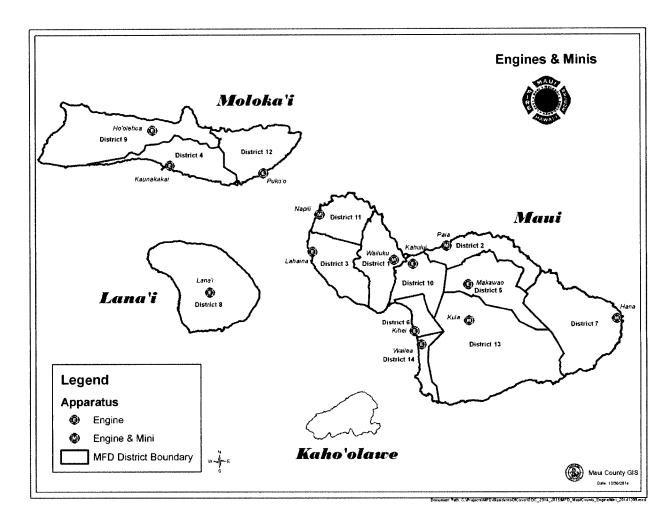
Station	Location	Resources	Staffing	Specialty
1-Wailuku	21 Kinipopo St.	Engine 1	4	Wildland Suppression
	Wailuku, Maui	Mini-1	-	
2-Paia	179 Hana Hwy	Engine 2	4	Wildland Suppression
	Paia, Maui	Mini-2	-	
		Engine 3	4	Ocean Rescue
3–Lahaina	1860 Honoapiilani Hwy	Ladder 3	4	Rope Rescue
5 Danama	Lahaina, Maui	Tanker 3	1	
		Rescue Boat 3	-	
		Engine 4	4	Ocean Rescue
	A1 'W' ''1 G	Tanker 4	1	Rope Rescue
4-Kaunakakai	Alanui Kaimiike St.	Rescue Boat 4	_	
	Kaunakakai, Moloka'i	RWC 4	-	
		Relief Engine 4	-	
5-Makawao	134 Makawao Ave.	Engine 5	4	
	Makawao, Maui	Engine 3	-	
6-Kihei	11 Waimahaihai St. Kihei, Maui	Engine 6	4	
		Engine 7	4	Wildland Suppression
- · · ·	4655 Hana Hwy	Tanker 7	_	Rope Rescue
7–Hana	Hana, Maui	Mini-7	-	Ocean Rescue
		RWC 7	-	
		Engine 8	4	Wildland Suppression
0 I amas:	1345 Fraser Ave.	Tanker 8	1	Rope Rescue
8–Lanaʻi	Lana'i City, Lana'i	Mini 8	-	-
		Relief Engine 8	_	
9-Hoʻolehua	2190 Farrington Hwy	Engine 9	4	Ocean Rescue
9-110 Olellua	Hoʻolehua, Molokaʻi	RWC 9	-	Rope Rescue
		Engine 10	4	Ocean Rescue
		Rescue 10	4	Rope Rescue
10-Kahului	200 Dairy Rd, Kahului	Hazmat 10	4	Dive Rescue
10 114414141	Kahului, Maui	Tanker 10	1	Confined Space Rescue
		Rescue Boat 10	-	Hazmat Response
	4050 11- ' C:	RWC 10	-	Wildland Suppression
11–Napili	4950 Hanawai St.	Engine 11	4	Wildland Suppression
- 12 D.J6-	Napili, Maui	Mini-11	-	
12-Pukoʻo	Pukoʻo, Molokaʻi	Engine 12	2	Wildle 1 C
13-Kula	50 Calasa Rd.	Engine 13	4	Wildland Suppression
	Kula, Maui	Mini-13	-	Rope Rescue
	200 1/1 1 5	Engine 14	4	Ocean Rescue
14Wailea	300 Kilohana Dr.	Ladder 14	4	
	Wailea, Maui	Tanker 14	1	
		RWC 14	-	



Resources Types and Response Areas

Engine Companies

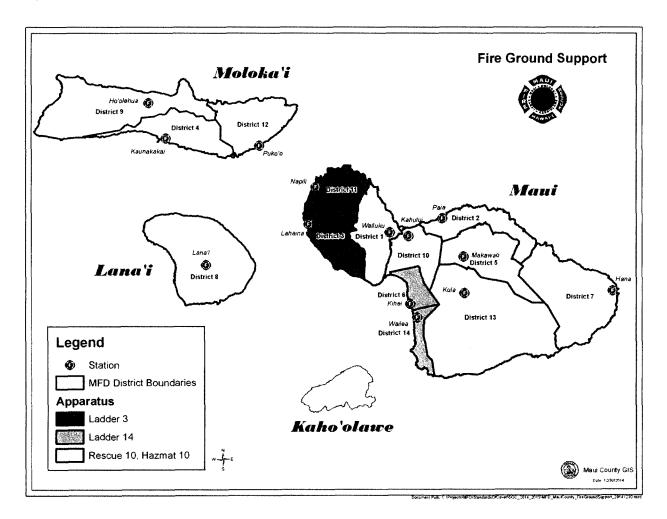
The Department's fire stations house a total of 14 engine companies, one at each station. With one exception, each engine company has a minimum daily staffing of 4 personnel; Engine 12 in Puko'o operates with 2 personnel. Some engine companies are also assigned a mini-pumper to assist with wildland fire response. First-due areas for each resource are within the district each station is located.





Fire Ground Support (FGS) Companies

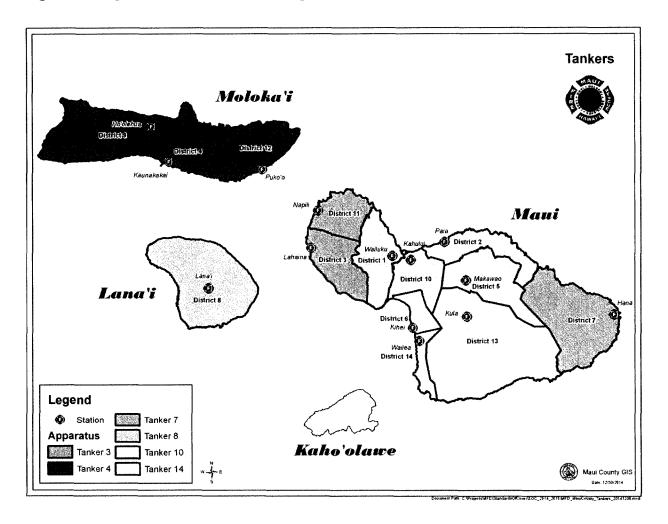
Four stations house Fire Ground Support (FGS) companies that perform truck company functions on structure fires. Each FGS company has a minimum daily staffing of 4 personnel. Rescue 10 and Hazmat 10 are housed at the Kahului Fire Station, while the Department's two ladder trucks operate out of Lahaina and Wailea. The map below shows the areas in which each company operates as the first-due FGS company for structure fires. For calls other than structure fires, these companies operate primarily within their home district unless their specialty capabilities are required elsewhere.





Tankers (Tenders)

The Department operates 6 tankers, 5 of which are permanently staffed with a driver. Tanker 7 in Hana is not currently staffed with a permanent driver, and instead is driven by one of the Engine 7 firefighters when needed. The map below shows the first-due areas for each tanker.

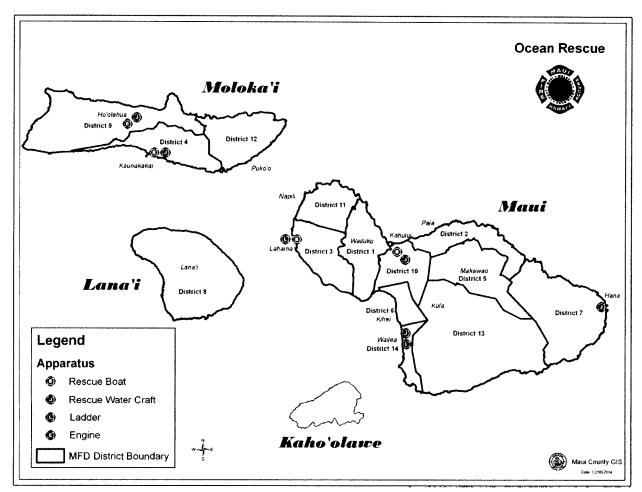


Tankers are used primarily as water sources for fighting structure and wildland fires in areas with poor water supply. The Department's most recent additions of tankers have been in Hana (which is not well supplied with adequate hydrants), and Wailea (a dry area of the island that experiences a lot of brush fires).



Ocean Rescue Resources

The Department operates three rescue boats and five additional rescue watercraft (RWC) to respond to ocean emergencies. The RWC have a limited range and typically respond to emergencies only in the waters nearby their respective districts, while the rescue boats have longer ranges and can respond to ocean emergencies anywhere in the County. Each craft is assigned to an engine, ladder, or rescue company, and is staffed by personnel from the company when needed.



During daylight hours, a dedicated helicopter (Air 1) is also available for the Department to use for ocean search and rescue.

D.T. Fleming Beach Park



On July 1, 2016, the Department took over management of the Ocean Safety Division including of 60 lifeguards and 1 administrative clerk. The Ocean Safety Division is divided into four separate districts (North, South, West, and Makena). There are 12 towers within those areas located at:

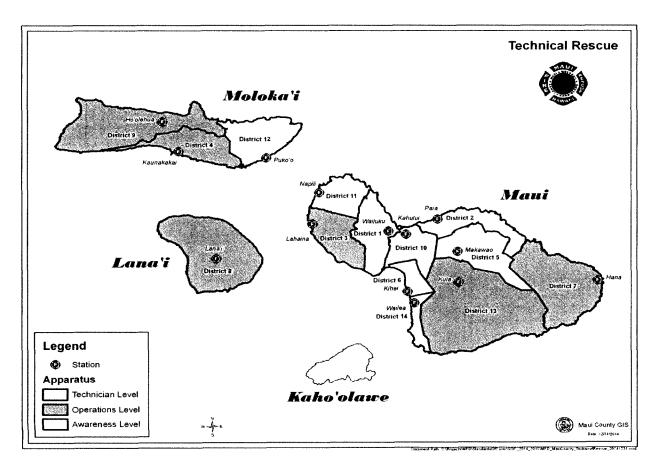
<u>North</u>	South .
Baldwin Beach Park	Kamaole I Beach Park
Hookipa Beach Park (2)	Kamaole II Beach Park
Kanaha Beach Park (2)	Kamaole III Beach Park
West	<u>Makena</u>
Hanakaoo Beach Park	Makena State Park (2)

Lifeguards operate RWC at beaches in all districts, and respond in conjunction with firefighting resources to 911 ocean rescue calls.



Rope Rescue Resources

The only technician level responders for rope rescue are located in District 10. They are the first-in rope rescue resource for their district and bordering districts (see map). Districts in blue are operations level for rope rescue, and are supported by Rescue 10 personnel as needed. Rescue 10 can respond in the helicopter during daylight hours for rescue incidents anywhere in the County.





Partnering Agencies

The Department has agreements in place with other emergency response agencies, County departments, State departments, and private companies throughout Maui County. These agreements are in the form of Memorandums of Understanding (MOU) and Memorandums of Agreement (MOA) and provide mutual aid coverage between jurisdictions. While each agreement is an individual contract, they have the common purpose of supporting public safety within each agency's jurisdiction.

Agency	Agreement Type	Updated
State of Hawaii Aircraft Firefighting (ARFF)	MOU	12/2010
Department of Health (DOH) – Kalaupapa Agreement	MOU	9/2015
United States Coast Guard (USCG)	MOU	2/2012
Haleakala National Park	MOU	12/2003
Maui County Office of Aging	MOU	2/2015
University of Hawaii Maui College	MOA	11/2013
United States Fish & Wildlife Service	MOU	4/2014
Hawaii State Emergency Response Commission (HSERC) / LEPC	MOA	10/1999
Maui Emergency Management Agency – CERT Program	MOU	9/2015
Department of Forestry, State of Hawaii	MOA	5/2005



Community Baselines

The following pages provide response time data on the Department's performance over the previous three years (2013-2015). **All times given reflect the 90th percentile.** This means that if a call processing time is listed as 4:26, on 90% of incidents the call processing time was 4:26 or less, and on 10% of incidents it was 4:26 or greater.

Overall Jurisdiction Performance

ENTIRE JURISDICTION Response Times at the 90 th Percentile						
	2013 2014 2015					
	4:15	4:32	4:31	4:26		
	3:52	3:50	3:52	3:51		
Turnout Time – Fire/Other	4:05	4:06	4:05	4:06		
	10:44	10:43	10:46	10:45		
	15:27	15:21	15:47	15:31		
Total Response Time – Fire/Other	17:52	17:32	17:49	17:44		
	16:36	16:23	16:41	16:34		



Station Response Area Performance

DISTRICT 1 – WAILUKU Response Times at the 90th Percentile					
	2013	2014	2015	Total	
Call Processing Time	4:16	4:06	4:17	4:14	
Turnout Time – EMS	3:45	3:43	3:27	3:38	
	3:45	3:50	3:42	3:46	
Travel Time	8:27	8:05	7:53	8:09	
Total Response Time – EMS	12:35	12:56	12:26	12:37	
Total Response Time – Fire/Other	15:56	15:30	15:06	15:25	
Total Response Time – All Incidents	14:24	13:59	14:04	14:10	

DISTRICT 2 – PAIA Response Times at the 90 th Percentile						
	2013	2014	2015	Total		
Call Processing Time	4:02	4:14	4:16	4:12		
Turnout Time – EMS	3:58	4:17	3:52	4:00		
Turnout Time – Fire/Other	3:50	4:29	3:59	4:04		
Travel Time	17:15	17:25	17:47	17:29		
	21:00	21:34	22:46	22:07		
	26:34	23:31	26:23	25:22		
	22:43	23:04	23:41	23:12		



DISTRICT 3 – LAHAINA Response Times at the 90 th Percentile						
2013 2014 2015						
	4:33	4:44	4:45	4:41		
	3:55	3:57	4:11	4:01		
	4:06	3:45	4:01	3:57		
Travel Time	11:01	10:14	10:10	10:25		
Total Response Time – EMS	15:04	14:39	15:03	14:57		
Total Response Time – Fire/Other	18:04	17:15	17:52	17:45		
	16:57	15:34	15:46	16:12		

DISTRICT 4 - KAUNAKAKAI Response Times at the 90 th Percentile							
	2013 2014 2015 Total						
Call Processing Time	4:19	3:45	4:16	4:07			
	2:59	3:08	3:26	3:09			
	3:35	2:32	3:34	3:18			
Travel Time	5:40	7:28	5:26	6:13			
Total Response Time – EMS	10:58	11:06	10:49	11:04			
	13:28	14:34	13:29	13:29			
	11:23	11:31	11:29	11:27			



DISTRICT 5 – MAKAWAO Response Times at the 90 th Percentile				
	2013	2014	2015	Total
	3:50	3:50	4:00	3:52
	3:23	3:40	3:54	3:44
	3:39	3:44	3:51	3:45
	9:27	9:39	9:07	9:20
	13:08	13:49	14:30	13:42
	17:10	16:21	16:55	16:45
	14:13	14:37	15:13	14:43

DISTRICT 6 – KIHEI Response Times at the 90 th Percentile					
	2013	2014	2015	Total	
Call Processing Time	3:53	3:56	3:54	3:53	
Turnout Time – EMS	3:44	3:33	3:30	3:34	
Turnout Time – Fire/Other	3:37	3:53	3:30	3:43	
Travel Time	8:15	7:43	8:00	8:00	
Total Response Time – EMS	13:29	12:37	12:41	12:46	
Total Response Time – Fire/Other	13:35	14:17	14:25	14:02	
Total Response Time – All Incidents	13:30	13:16	13:23	13:23	



DISTRICT 7 – HANA Response Times at the 90 th Percentile						
	2013	2014	2015	Total		
Call Processing Time	5:39	3:56	4:49	4:40		
Turnout Time – EMS	5:04	4:41	4:44	4:49		
	4:32	5:19	5:55	5:07		
Travel Time	29:38	23:41	35:27	29:36		
Total Response Time – EMS	41:06	33:00	36:17	36:05		
Total Response Time – Fire/Other	26:54	32:48	45:26	37:18		
	35:48	30:05	41:25	36:31		

DISTRICT 8 – LANA'I Response Times at the 90 th Percentile							
	2013	2014	2015	Total			
Call Processing Time	4:04	3:55	3:31	3:49			
	3:45	3:50	3:29	3:41			
Turnout Time – Fire/Other	4:59	4:06	6:16	4:04			
Travel Time	15:12	14:57	16:19	15:23			
Total Response Time – EMS	18:56	19:52	20:05	19:27			
Total Response Time – Fire/Other	24:23	21:15	50:01	23:39			
Total Response Time – All Incidents	20:00	20:01	20:52	20:08			



DISTRIC Response Tin				
	2013	2014	2015	Total
	4:52	5:00	5:35	5:10
	3:34	3:27	2:48	3:13
Turnout Time – Fire/Other	4:00	6:06	2:44	3:18
	19:31	18:46	21:35	20:21
	26:26	23:26	27:01	25:55
Total Response Time – Fire/Other	19:51	36:21	29:27	26:04
Total Response Time – All Incidents	25:39	24:16	27:20	25:55

DISTRICT 10 – KAHULUI Response Times at the 90 th Percentile							
	2013	2014	2015	Total			
	4:16	5:17	4:55	4:52			
Turnout Time – EMS	4:04	4:00	3:57	4:00			
Turnout Time – Fire/Other	4:11	4:31	4:30	4:24			
Travel Time	6:40	6:37	7:09	6:54			
Total Response Time – EMS	12:17	12:34	13:22	12:38			
Total Response Time – Fire/Other	13:36	13:14	13:58	13:25			
Total Response Time – All Incidents	12:37	12:55	13:41	13:05			



DISTRICT 11 – NAPILI Response Times at the 90 th Percentile								
2013 2014 2015								
	4:31	4:43	4:40	4:38				
Turnout Time - EMS	4:27	3:39	3:45	4:00				
Turnout Time - Fire/Other	4:50	4:08	3:47	4:17				
Travel Time	8:43	9:43	9:51	9:51				
Total Response Time – EMS	17:12	15:35	14:09	15:16				
Total Response Time – Fire/Other	15:55	15:42	19:07	16:59				
Total Response Time – All Incidents	16:54	15:39	15:59	15:59				

DISTRICT 12 – PUKOʻO Response Times at the 90 th Percentile								
	Total							
	4:43	5:22	6:22	5:22				
	3:05	3:52	4:22	3:48				
Turnout Time – Fire/Other	8:33	3:37	7:35	5:26				
Travel Time	14:06	12:55	12:50	13:07				
Total Response Time – EMS	28:35	19:41	27:12	23:03				
Total Response Time – Fire/Other	21:23	23:29	16:29	18:00				
Total Response Time – All Incidents	21:36	18:22	21:51	18:48				

2016



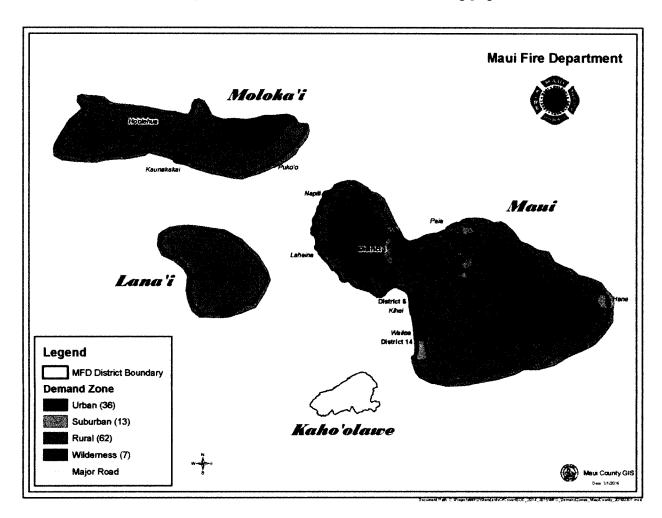
DISTRICT 13 – KULA Response Times at the 90 th Percentile					
	2013	2014	2015	Total	
Call Processing Time	3:46	4:18	4:37	4:19	
Turnout Time – EMS	3:50	4:11	3:57	3:55	
Turnout Time – Fire/Other	4:13	3:31	4:08	3:51	
Travel Time	16:18	18:06	16:19	16:41	
Total Response Time – EMS	18:35	20:43	21:02	20:15	
Total Response Time – Fire/Other	24:27	27:26	24:13	24:52	
Total Response Time – All Incidents	21:52	23:32	22:28	22:41	

DISTRICT 14 – WAILEA Response Times at the 90 th Percentile						
	2013	2014	2015	Total		
	4:38	5:17	5:00	4:54		
Turnout Time – EMS	3:57	3:51	4:11	3:58		
Turnout Time – Fire/Other	4:38	4:29	4:55	4:40		
	10:19	10:14	10:20	10:16		
Total Response Time – EMS	15:06	15:17	16:00	15:22		
Total Response Time – Fire/Other	17:17	17:05	17:31	17:14		
Total Response Time – All Incidents	15:58	16:29	16:31	16:16		



Fire Management Zone Performance

The map below shows the Fire Management Zones designated by the Department, broken up into zone type (urban, suburban, rural, and wilderness). The zone classifications here are not the same definitions used by the U.S. Census Bureau and should not be interpreted as such. The Department has an interactive version of this map (http://arcg.is/1QKGhhL), with zooming and layering options, and the ability to get more information about each zone by clicking on it. Performance by Fire Management Zone is evaluated on the following pages.





Ur	ban Fire Management 2	Zones – To	tal Response	Times at t	he 90 th Perce	ntile
FMZ Number	FMZ Name	2013	2014	2015	Aggregate 2013-2015	Number of Calls
003	Puamana	15:00	17:19	17:20	16:39	246
004	Lahaina	14:54	13:51	14:25	14:17	954
005	Lahainaluna	15:58	15:11	15:48	15:31	484
006	Wahikuli	13:18	14:13	11:57	12:53	621
007	Kaanapali	13:21	13:55	13:35	13:29	1044
008	Honokowai	15:03	14:39	14:35	14:51	581
009	Kahana	14:07	12:43	12:36	12:56	369
010	Napili	13:43	14:09	13:01	13:36	375
011	Kapalua	16:36	14:25	14:35	14:46	319
017	Waihee	14:40	13:59	13:25	14:00	532
018	Happy Valley	13:17	11:49	15:45	13:18	337
019	Lower Main	11:39	11:22	13:23	11:43	468
024	Wailuku Town	12:04	8:29	11:49	10:51	231
025	Kehalani	9:46	10:57	11:35	10:49	128
026	Keopuolani Park	12:56	12:45	12:16	12:20	233
027	Waiale	11:28	12:10	10:48	11:17	260
028	Maui Lani / Kahului	12:23	13:55	14:54	13:48	390
031	Kaahumanu	11:24	12:14	15:06	12:35	246
032	Kahului 1	12:09	12:12	12:38	12:18	855
033	Kahului 2	11:43	12:09	9:54	11:42	205
035	Kahului Harbor	14:04	12:31	13:49	13:37	132
036	Walmart	9:22	10:33	10:20	10:01	390
037	Kahului Airport	11:07	13:33	18:38	14:04	54
039	Paia	12:24	12:20	11:57	12:12	519
051	Maalaea	21:10	28:04	23:15	23:22	47
055	Puunene	17:57	9:24	13:41	13:23	20
056	Sugar Beach	15:30	17:29	14:27	15:51	385
057	North Kihei	13:43	13:34	14:58	14:05	373
058	Lipoa	11:53	12:08	11:52	12:04	692
059	Auhana	11:08	10:34	10:42	10:42	571
060	Maui Meadows	12:25	13:18	12:03	12:33	1193
061	Kaukahi	16:09	14:25	13:43	14:10	552
076	Pukalani	12:32	13:15	12:48	12:47	1112
097	Lana'i City	11:33	11:11	11:15	11:22	360
099	Manele	23:14	22:07	29:28	23:24	86
112	Kaunakakai	10:40	9:29	11:09	10:02	381
	AGGREGATE	13:41	13:31	13:32	13:35	15745



Sub	urban Fire Managemen	t Zones – T	otal Respon	se Times at	the 90 th Per	centile
FMZ Number	FMZ Name	2013	2014	2015	Aggregate 2013-2015	Number of Calls
TO NO.	Waiehu Golf Course	14:06	14:29	14:57	14:36	219
0.070	Kamaile St	26:32	13:29	16:15	16:15	62
023	Wailuku Heights	13:17	14:36	13:34	13:40	205
029	Waikapu	13:52	16:36	14:05	14:29	140
038	Spreekelsville	13:56	15:40	17:07	14:44	97
040	Paia Mill	11:20	13:57	12:31	12:42	146
	Kuau	10:28	11:40	11:57	10:57	131
0.44	Haiku	19:16	20:43	19:59	19:47	337
.062	Makena	18:32	19:06	20:13	19:07	275
17.5	Halimaile	18:52	17:29	17:06	17:25	124
177.	Makawao	12:12	12:55	12:47	12:37	837
080	Aulii Dr	18:16	11:56	13:13	12:23	43
090	Hana Town	13:53	12:00	13:19	12:59	135
	AGGREGATE	15:28	16:10	16:18	16:00	2751

Rural Fire Management Zones – Total Response Times at the 90th Percentile						
		2013	2014	2015	Aggregate 2013-2015	Number of Calls
001	Olowalu	23:18	21:31	22:49	22:30	185
002	Launiupoko	26:02	21:20	23:40	23:59	110
012	Kapalua Plantation	17:28	20:44	18:45	18:05	51
013	Honokohau	30:45	32:02	31:52	32:02	84
014	West Maui Mauka	9:54	11:03	18:04	18:04	8
015	Kahakuloa	29:19	26:40	30:46	27:16	99
021	Mac Nut Farms	32:23	19:47	33:56	33:10	15
022	Iao Valley	14:05	17:17	16:27	15:18	51
030	Waiko	26:15	12:31	11:14	19:34	10
034	Kanaha	18:19	14:12	17:17	15;21	57
042	Baldwin	17:33	21:49	22:23	21:27	24
043	Holomua Rd	18:28	11:33	15:00	15:07	68
045	Pauwela	25:00	25:37	26:11	25:51	149
046	Kokomo Rd	20:18	21:51	- 21:33	20:55	44
047	W Kuiaha Rd	17:30	24:41	25:41	23:32	28
048	Ulumalu Rd	23:14	24:59	25:33	24:35	127
049	Ukumehame	27:35	26:22	35:36	27:35	23
050	McGregor Point	26:46	26:03	23:28	23:53	62
052	Windmills	N/A	N/A	N/A	N/A	0
053	Waikapu Golf Course	18:50	17:47	14:47	15:59	50
054	Kealia Pond / Mokulele	16:08	15:35	16:41	16:30	178
063	La Perouse	23:48	28:27	41:35	29:59	42



R	ural Fire Management 2	Zones – Tota	l Response	Times at t		
		2013	2014	2015	Aggregate 2013-2015	Number of Calls
064	Ulupalakua	55:20	38:30	31:45	38:30	35
065	Keokea	15:10	17:41	21:12	18:11	183
066	Pulehu 1	13:11	13:31	14:53	14:16	59
067	Kula Forest	1:11	45:26	34:30	58:41	21
068	Kahikinui	43:25	35:40	50:02	50:02	3
070	Kaupo	43:27	59:03	1:29	0:16	- 11
071	Kihei - Kula	N/A	N/A	N/A	N/A	0
072	Omaopio	18:55	17:58	15:42	17:41	138
073	Pulehu 2	21:54	17:23	20:32	19:45	59
075	Haleakala Hwy	13:24	12:49	14:09	13:33	192
078	Piiholo Rd	26:37	25:01	25:12	25:15	174
079	Lower Kimo Dr	12:23	15:30	13:59	13:22	150
081	Upper Kimo Dr	20:24	20:37	19:38	20:18	136
082	Haleakala Hwy	26:21	31:50	31:43	30:57	27
083	Haleakala Crater	6:37	56:32	23:03	4:18	32
084	Haiku	40:12	36:24	41.30	38:10	169
086	Honomanu	19:13	50:02	17:30	7:06	12
087	Keanae	49:52	47:28	3:33	49:36	34
088	Nahiku	33:35	38:37	32:05	34:39	48
089	Hana Airport	55:56	19:27	15:31	19:27	59
091	Hamoa	32:01	23:06	21:16	27:13	81
094	Kipahulu	46:51	52:04	48:38	47:44	53
098	Keomoku	25:58	50:25	33:49	50:25	7
100	Manele Rd	N/A	11:16	N/A	11:16	2
101	Kaumalapau Harbor	11:15	22:20	34:04	28:12	10
102	Kaena Point	N/A	N/A	42:53	42:53	3
103	Kaluakoi	33:33	34:59	34:30	33:45	40
104	Hale O Lono	N/A	48:29	N/A	48:29	2
105	Maunaloa	26:08	30:11	28:30	27:29	79
106	Moomomi	N/A	N/A	20:17	20:17	1
107	Palaau Rd	N/A	N/A	N/A	N/A	0
108	Hoʻolehua	13:31	14:45	14:21	14:00	357
109	Kalamaula	11:53	14:17	14:18	12:40	67
110	Mokomoko Gulch	N/A	N/A	N/A	N/A	0
111	Kalaupapa	N/A	N/A	N/A	N/A	0
113	Kawela	13:47	14:41	14:47	13:46	90
114	Kamalo	18:01	17:57	13:17	17:59	11
116	Puko'o	13:20	11:38	21:52	13:30	72
117	Pauwalu	18:46	20:18	17:51	18:24	80
118	Halawa	35:01	28:10	6:12	35:01	3
	AGGREGATE	25:09	25:15	26:15	25:26	4144



COMMUNITY EXPECTATIONS AND PERFORMANCE GOALS

Community Expectations

According to the Maui County Charter, the Department's responsibilities to the community include (County of Maui, 2015):

- Providing and performing "fire fighting, rescue, shoreline and ocean rescue and safety,
 and first-responder emergency services in order to save lives and property from fires and
 other emergencies arising on land, sea, and hazardous terrain, including the mitigation
 and stabilization of hazardous materials and incidents relating to the same"
- Providing "public education programs related to fire prevention, shoreline and ocean rescue and safety, and public safety"
- Investigating "the cause, origin and circumstances of fires"
- Adopting "rules relating to the protection of persons and property against fires"
- Monitoring "the standards for construction and occupancy of buildings for the purposes of fire prevention and life safety and approve building plans as provided by law"

Community Survey Results

A public survey requesting feedback on Department services was held from August 7-31, 2015. The survey was advertised and survey takers had options for both online and hard copy. In total, 258 people completed the survey. Of those, 29% were from Central Maui, 18% from Upcountry, 16% from South Maui, 14% from East Maui, 2% from Moloka'i, and 1% from Lana'i, with 17% not providing a location. Respondents tended to be older and long-time residents of Maui County.

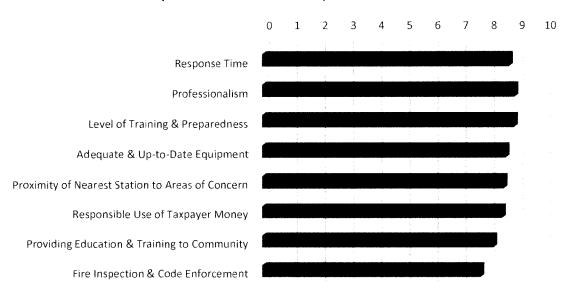
When asked to rank in order of importance the services provided by the Department, the results were as follows:



Rank	Program	Score
1	Fire Suppression	1823
2	Emergency Medical Services	1557
3	Rescue	1469
4	Fire Prevention	1085
5	Disaster Preparedness Planning and Response	984
6	Hazardous Materials Mitigation	924
7	Fire Investigation	749
8	Public Education	717

When asked to rate the Department's current performance in specific areas on a scale of 1-10 (with 10 being excellent and 1 needing improvement), the results were as follows:

Community Satisfaction with Department Performance



Note: The numbers on this chart represent an average all ratings given for each performance area.

For more details on community survey results, see the Department's Master Strategic Plan for 2016-2020.



COMMUNITY RISK ASSESSMENT AND RISK LEVELS

Overall Geospacial Characteristics

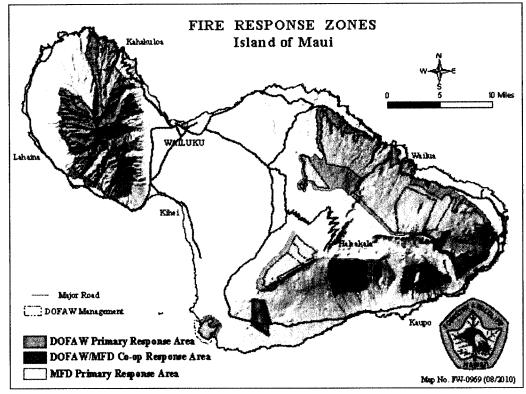
Political Boundaries

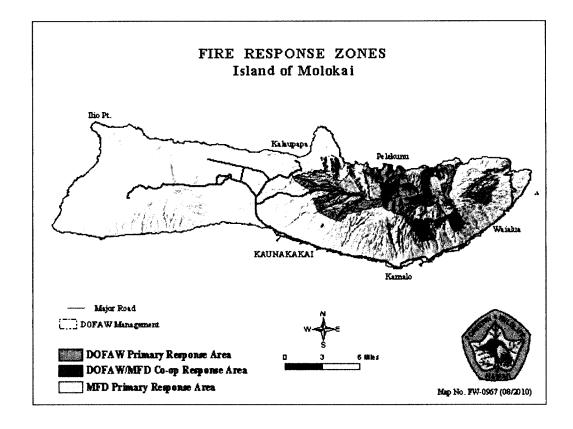
The Department provides emergency services throughout the County and areas of the ocean up to three miles offshore. Other government agencies that provide services within the county include the State of Hawaii Department of Transportation (DOT) and Department of Land and Natural Resources (DLNR). DOT Aircraft Rescue and Fire Fighting (ARFF) firefighters protect all airports in the County except the small Hana Airport. DLNR Division of Forestry and Wildlife (DOFAW) firefighters provide wildland fire suppression for State owned wilderness areas across the County. The Maui Fire Department provides mutual aid as needed.

Contained within Maui County is Kalawao County, which has only 90 residents and is the second smallest county by population in the United States. (U.S. Census Bureau, 2015) Located in the area known as Kalaupapa on Moloka'i, it is isolated by high cliffs from the rest of Moloka'i and is home to residents that were once quarantined there due to leprosy. The Department has limited access to the area but has a written agreement in place to respond as needed.

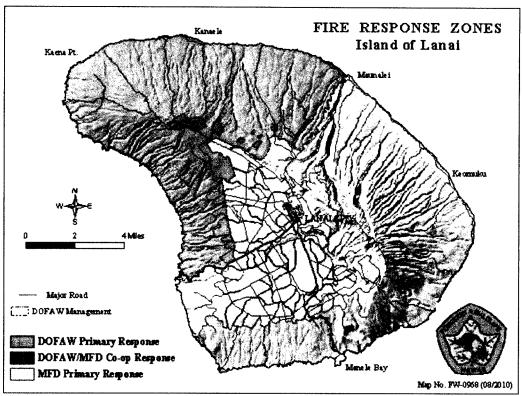
The following maps produced by primary response areas for DOFAW and the Maui Fire Department:









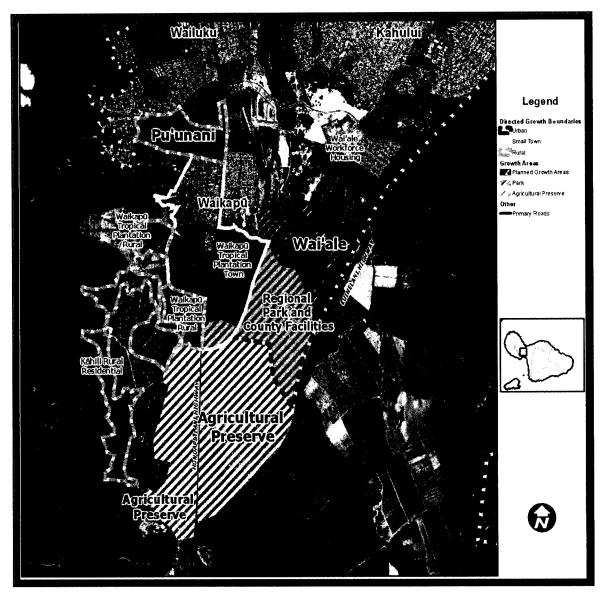


Growth Boundaries

The Maui Island Plan designates a number of planned growth areas in different regions on Maui (County of Maui, 2012). There is no specific time-frame for the development of these areas, but the Department will need to monitor future construction to anticipate increased demand for service. Maps of planned growth areas on the following pages are all from the Maui Island Plan.



Wailuku-Kahului Planned Growth Areas

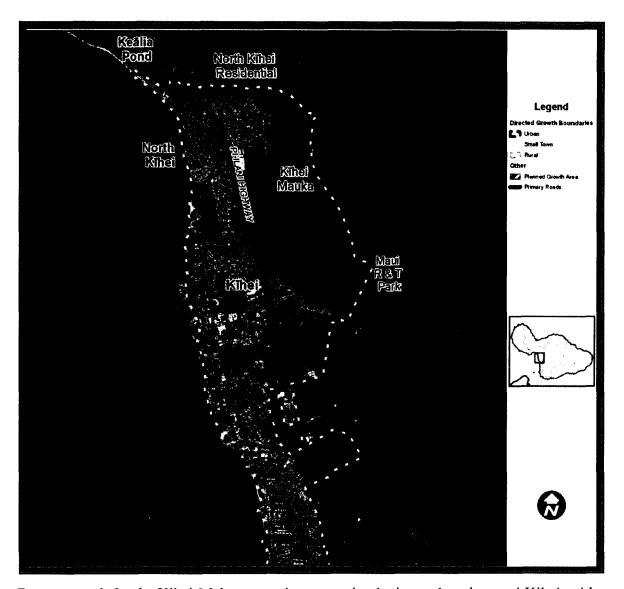


Future growth in the Wailuku-Kahului area is expected to be to the south of current development. A total of 4,437 housing units are planned.

Waiale Workforce Housing – 300 Units Waiale Planned Growth Area – 2,254 Units Puunani (Urban) – 450 Units Puunani (Rural) – TBD Kahili Rural Residential – TBD Tropical Plantation Town – 1,433 Units



Kihei-Makena Planned Growth Areas

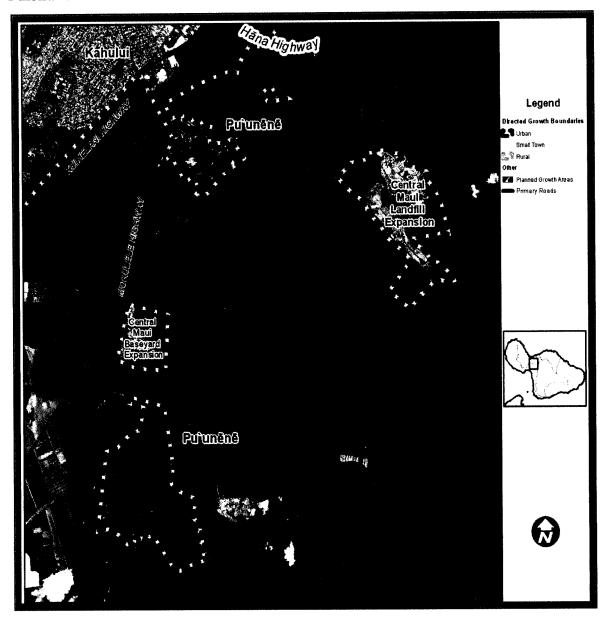


Future growth for the Kihei-Makena area is expected to be in north and central Kihei, with no planned growth areas currently established for Wailea or Makena. A total of 3,350 housing units are planned.

North Kihei Residential – 600 Units Kihei Mauka – 1,500 Units Maui Research and Technology Park – 1,250 Units



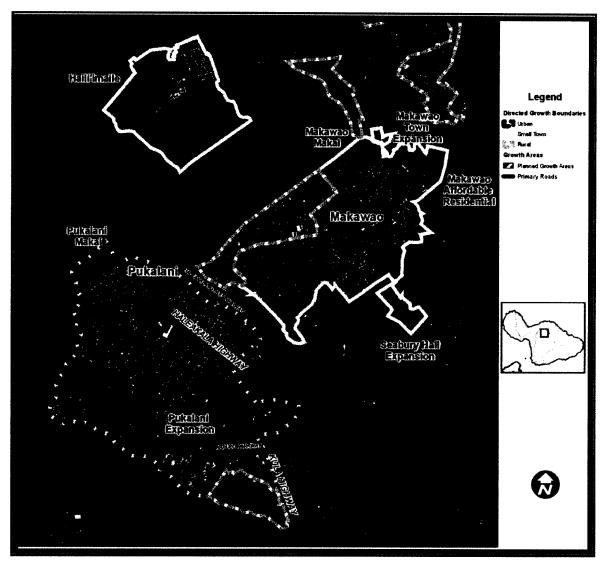
Pulehunui Planned Growth Area



The Pulehunui planned growth area is located between Kihei and Kahului near the Central Maui Baseyard. Pulehunui will be an industrial area and no housing units are planned.



Makawao-Pukalani-Kula Planned Growth Areas

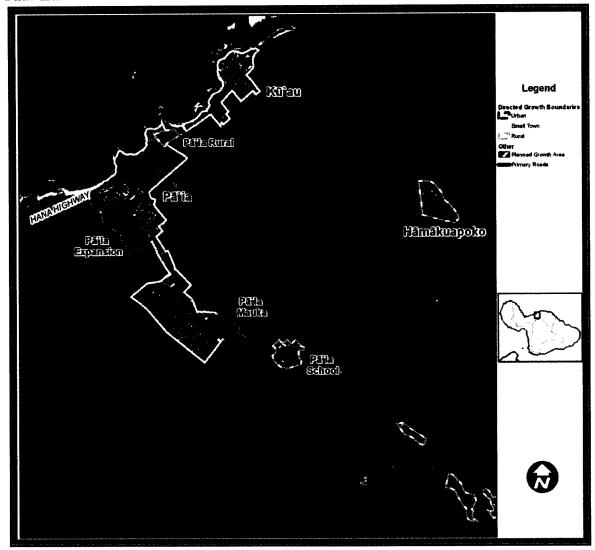


Future growth in the Makawao-Pukalani-Kula area is expected to be in a variety of locations around current development in Makawao, Pukalani, and Haliimaile. There are no designated planned development areas in Kula. A total of 1,476 housing units are planned.

Makawao Makai – 90 Units Makawao Affordable Residential – Unknown Seabury Hall Planned Growth Area – N/A Pukalani Expansion – 311 Units Pukalani Makai – 250 Unis Haliimaile Expansion – 825 Units



Paia-Haiku Planned Growth Areas

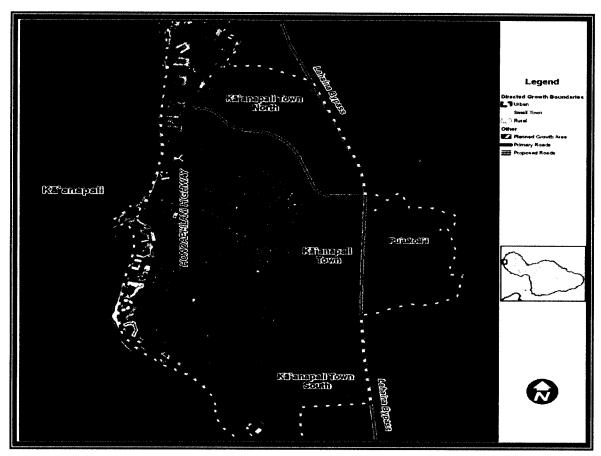


Future growth for the Paia-Haiku area is expected to be neighboring existing development in Paia. There are no designated planned development areas in Haiku. A total of 275 housing units are planned.

Paia Expansion – 207 Units Paia Mauka – 68 Units



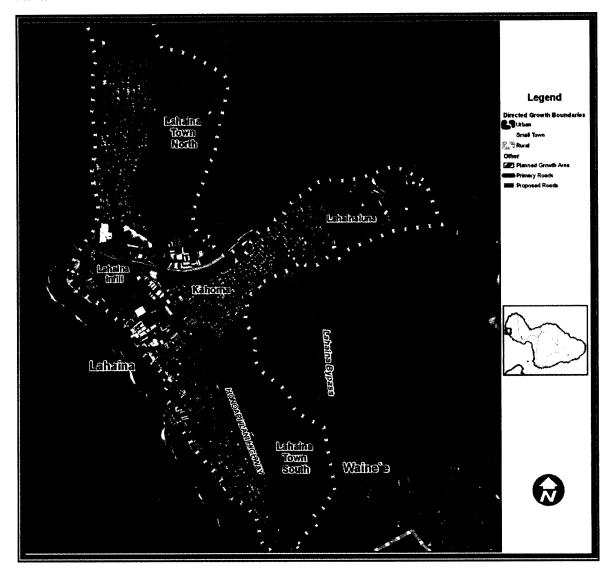
Kaanapali Town Planned Growth Area



Future growth for the Kaanapali Town area is expected to be mauka of existing development. **A total of 1,800 housing units are planned.** Development of this area will also include an extension of the current Lahaina Bypass.



Lahaina Town Planned Growth Area

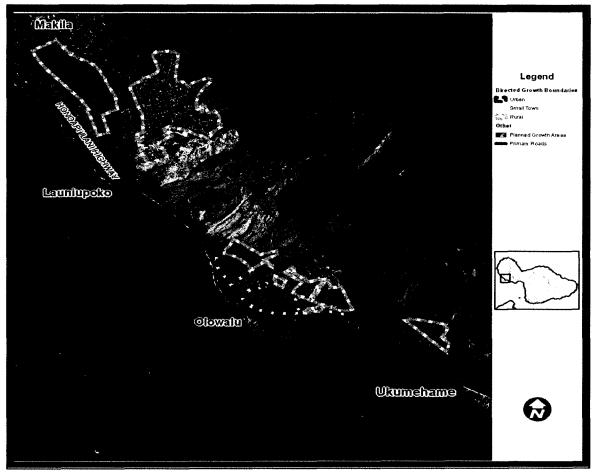


Future growth for the Lahaina Town area is expected to be in various locations. A total of 2,582 housing units are planned. Development of this area will also include an extension of the current Lahaina Bypass.

Lahaina Town North – 1,200 Units Lahaina Infill – 214 Units Lahaina Town South – 1,100 Units Kahoma Infill – 68 Units



South Lahaina to Olowalu Town Planned Growth Areas



Future growth for the South Lahaina to Olowalu Town areas is expected to be in an open area between Launiupoko and Lahaina Town and around the existing Olowalu Town. A total of 1,700 housing units are planned.

Makila – 200 Units Olowalu Town – 1,500 Units



Construction Limitations

The Maui Island Plan designated growth areas will include single-family and multi-family housing dwelling units, commercial uses, industrial uses, parks and opens spaces, schools, and other public facilities. While there are no specific construction limitations stated, construction is expected to be consistent with the character of existing development in each area. All construction will go through the permitting process and comply with the building code and fire code.

Infrastructure Limitations

The most significant water infrastructure limitations are found in rural areas, some of which have substandard piping or absence of hydrants, limiting the amount of water available for fire suppression. Water infrastructure is not an issue with new developments because developers are made responsible for upgrading piping and installing adequate hydrants.

Looking into the future, new development will put an increasing strain on street infrastructure. While developers are responsible for installing street infrastructure, the combination of multiple developments will have an impact on existing highways. West Maui is of particular concern. Significant development is expected and the existing single-lane highway servicing the area is already heavily used. Completion of the Lahaina Bypass should relieve some of the traffic congestion in Lahaina Town but will not address traffic coming to and from the west side.



Topography

Response Barriers

The Department's most significant response barriers are the substantial ocean channels that separate the four major islands. Without roadways to connect the jurisdiction, all transportation of equipment and personnel between islands is limited air or sea travel, which may be unavailable depending on time-of-day and environmental conditions.

Another major response barrier is the mountainous topography and sheer size of the jurisdiction. Maui alone is over 727 square miles and is divided by two significant mountains that can significantly delay response to emergencies. Moloka'i and Lana'i are smaller but have similar challenges.

Elevation Changes

The County's mountains create extreme elevation changes in many locations. Depending on the area, roads can be steep and/or narrow and winding as they navigate ridgelines and valleys. Houses are sometimes built into hillsides and multi-tiered.

Open Space/Interface

All islands in the County have large undeveloped areas. This creates separation between towns that can hinder response to emergencies. Drive time to remote areas can be as long as two hours and some wilderness areas are completely inaccessible by vehicle. Large undeveloped areas also create the potential for significant wildland fires that can threaten existing development and infrastructure.

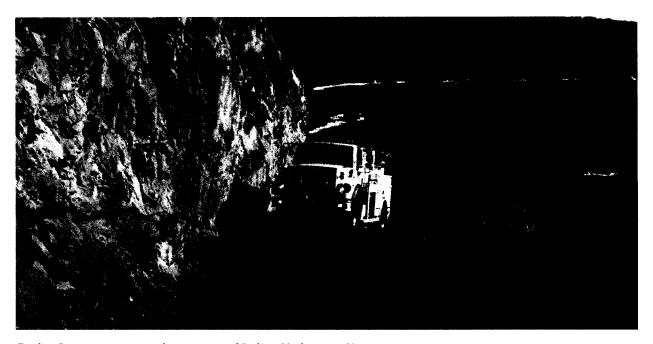


Transportation Network

Roads

The major towns on Maui are interconnected by highways, most of which are one or two lanes in each direction. There are no freeways. Roadways to smaller towns range from single-lane highways to windy backcountry dirt roads. As a result of Maui's topography, towns around the east-side of Haleakala and the west-side of the West Maui Mountains are serviced by a single road that encircles each mountain. This leaves the possibility of an area being cut off by landslides or falling trees during a storm. The same is true for the east end of Moloka'i.

There are no bridges connecting the islands, so the lack of continuous roadways throughout the jurisdiction is a significant response barrier.



Tanker 7 on a narrow, winding section of Piilani Highway in Kaupo.

Rail Lines

Rail is not a concern at this time. The County does not have any active rail lines.



Airports

The County has one major regional airport located in Kahului. In addition, smaller airports are located in Kapalua, Hoʻolehua, Lanaʻi City, Hana, and Kalaupapa. All airports are under the jurisdiction of the State of Hawaii Department of Transportation. Normal operations at the airports do not affect the Department, but mutual aid for a major incident would demand significant resources.

Waterways

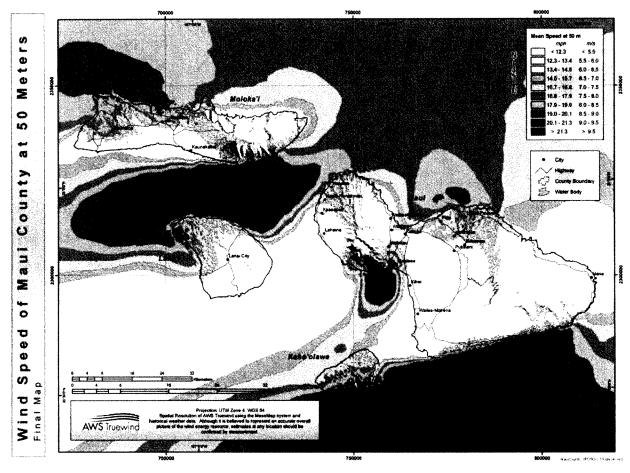
The ocean channels separating the islands from each other and Hawaii from the U.S. Mainland create significant transportation challenges. Most imported goods arrive by ship, so any major incident at Kahului Harbor could have a major impact on the County. Interisland ferries transport commuters between Maui and Lana'i. Cruise ships visit the County on a regular basis, bringing over 275,000 visitors annually (County of Maui, 2014). Numerous charter boats also operate in County waters on a daily basis.

In addition to commercial activities, County waters are also used year-round by both locals and visitors for a variety of activities both in the water and on recreational watercraft. The heavy use of ocean waters creates a significant service demand for the Department.



Climatic Impact

Maui experiences regular, strong trade winds coming from the northeast. While these winds do not typically cause damage, they do have the potential to complicate other incidents. Wind driven wildfires spread much faster and become more dangerous when driven by high winds. The potential for ocean rescues increases when strong winds blow offshore, preventing non-motorized recreational watercraft from making it back to shore. The chart below shows mean wind speed for the County.



Snow and ice do not typically have an impact on the County. The only location that occasionally sees snow is the summit of Haleakala. When conditions are hazardous, Haleakala National Park closes access to the area. The impact of rain and flooding is discussed in the next section.



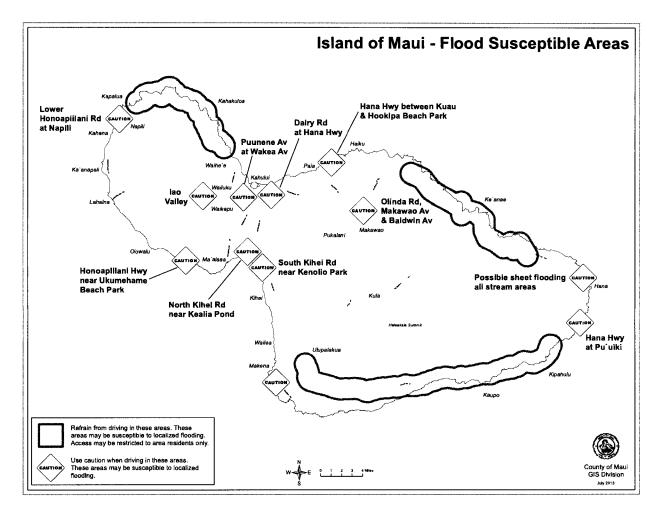
Disaster Exposure

Earthquakes / Landslides

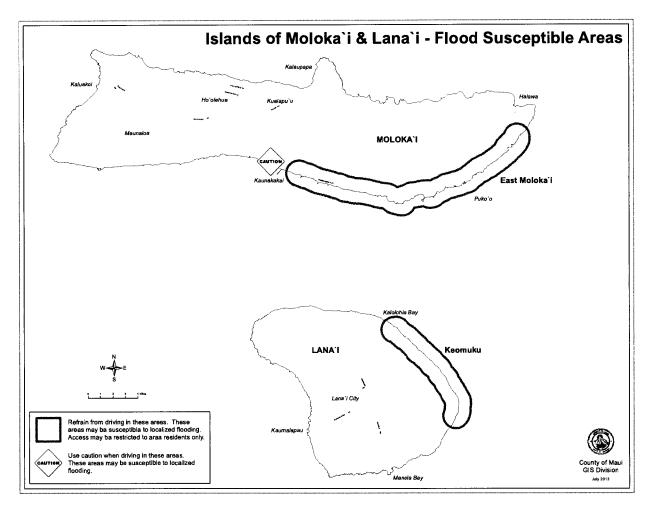
Significant earthquakes are not common but have occurred in the past, causing small landslides and structural damage to buildings and infrastructure.

Floods

Streams and dry streambeds are susceptible to flash floods when heavy rains occur. Flash floods have resulted in deaths and numerous rescues in the past. Low-lying areas may also experience localized flooding with heavy rainfall.







Wildland Urban Interface

The County has significant risk of wildland fires affecting developed areas. Communities that interface with dry undeveloped areas are becoming more common, particularly in South, West, and Central Maui. The risk may become more pronounced now that HC&S has shut down sugar growing operations at the end of 2016. Wildland Fire Risk is further evaluated later in this section.

Wind Events

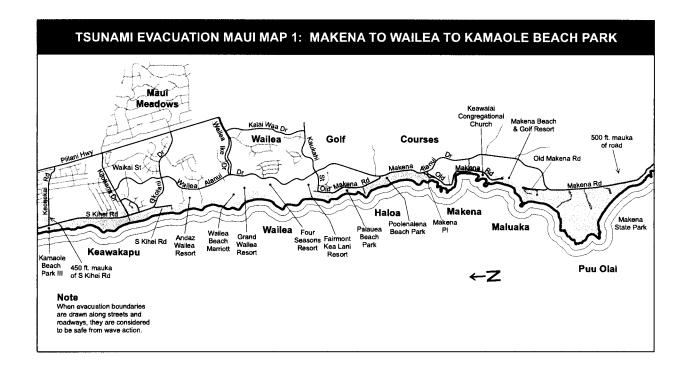
Maui County has not sustained a direct hit from a hurricane in recorded history, but other islands



in Hawaii have been devastated by hurricanes in the past. The region of the Pacific Ocean that includes Hawaii experiences an average of five tropical cyclones each year. A direct hit from a hurricane would likely impact the entire County and overwhelm Department resources, requiring aid from outside agencies.

Tsunamis

Significant portions of the County are within Tsunami Evacuation Zones. Significant tsunamis hit Hawaii in 1946, 1952, 1957, 1960, and 1975 and caused a combined 222 deaths and \$60 million in damage. Tsunami events in recent years have been smaller and less damaging, but the potential for a significant tsunami will always be present. Tsunami evacuation zones are identified and emergency notification systems (sirens, television, and radio) are tested monthly. An example of a tsunami evacuation map is located below, with the full set available on the County website (http://www.co.maui.hi.us/261/Tsunami-Evacuation-Maps).





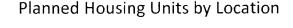
Development and Population Growth

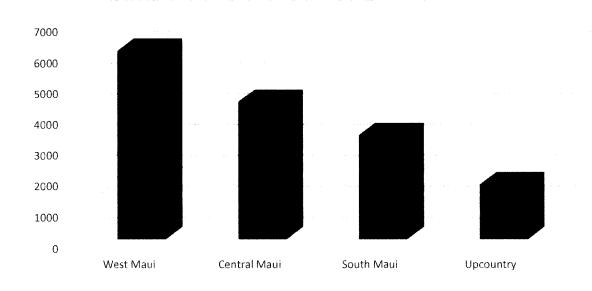
Current Population

The County's current population of 163,019 residents is widely dispersed across large rural areas and in small urban pockets. The vast majority (93%) reside on Maui, while 5% reside on Moloka'i and 2% reside on Lana'i. For more details on current population, see the <u>Population</u> subsection earlier in this document.

Future Population Growth

There are a total of 15,620 housing units projected for planned growth areas on Maui. At today's current average of 2.28 persons per household, that would mean a population increase of 35,614. The greatest population growth is expected to take place in West, Central, and South Maui.





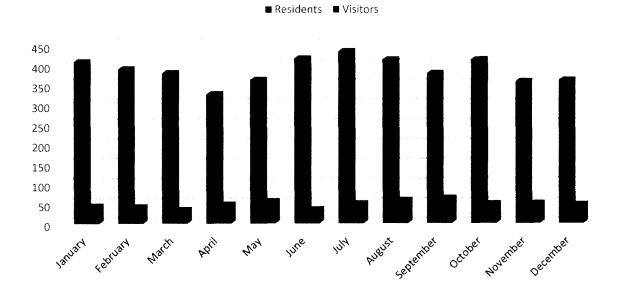
For more information on planned growth areas, see the subsection on Growth Boundaries.



Impact of Transient Populations

The County's transient visitor population does have a measurable impact on demand for fire services, but that impact is relatively constant year-round.

2015 Total Patients & Victims per Month, by Residency



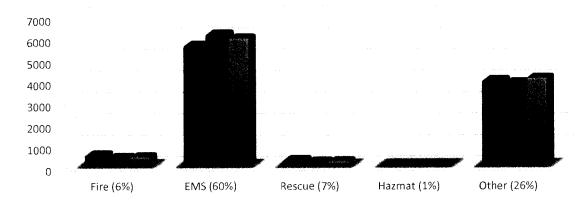


Calls for Service

Types of Calls

Incident Count by Call Type Entire Juristiction 2013-2015

■2013 **■**2014 **■**2015

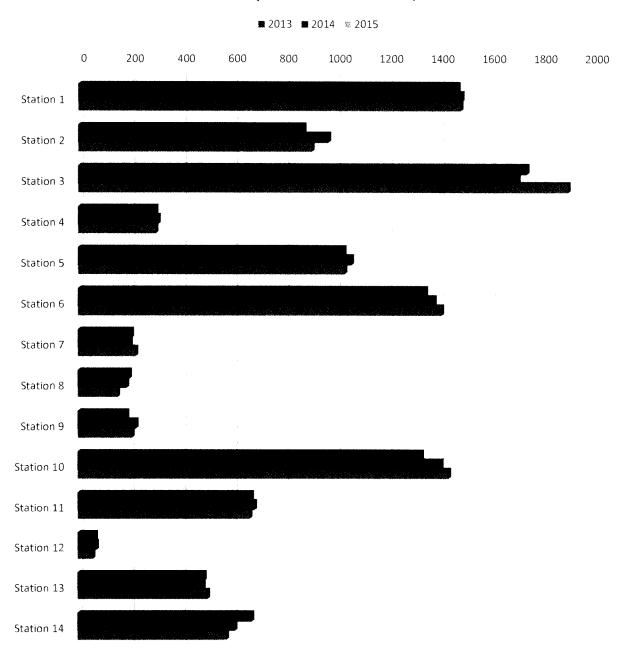


Updated 12/7/16 using "count by Year.rpt"



Location of Calls

Incident Count by Fire Station District, 2013-2015



Updated 12/7/16 using "count by Year.rpt"

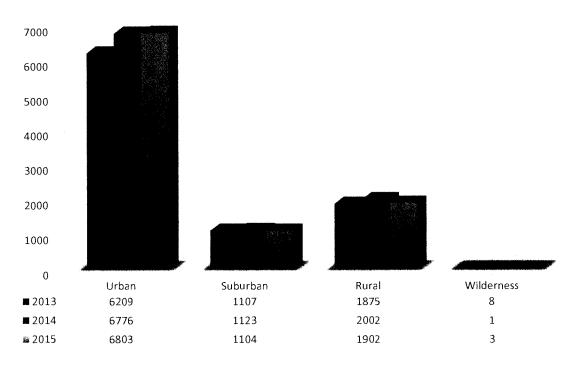


Incident Location by Fire Management Zone

The chart below represents a summary of incident counts by fire management zone type from 2013 through 2015. Detailed tables showing incident counts for each individual fire management zone are available on the following pages.

Incident Count by FMZ Type, 2013-2015





Updated 12/7/16 using "count by Year.rpt"



		E MANAGEM ount by Year,)	
FMZ Number	FMZ Name	2013	2014	2015	Aggregate
3	Puamana	9 9	96	105	300
4	Lahaina	367	392	378	1,137
5	Lahainaluna	193	176	211	580
6	Wahikuli	193	271	280	744
7	Kaanapali	370	401	492	1,263
8	Honokowai	. 227	219	248	694
9	Kahana	153	137	125	415
10	Napili	147	167	114	428
11	Kapalua	108	117	143	368
17	Waihee	217	221	200	638
18	Happy Valley	138	141	122	401
19	Lower Main	157	195	199	551
24	Wailuku Town	88	95	96	279
25	Kehalani	32	64	50	146
26	Keopuolani Park	103	129	95	327
27	Waiale	80	111	126	317
28	Maui Lani / Kahului	232	246	276	754
31	Kaahumanu	140	128	152	420
32	Kahului	322	357	335	1,014
33	Kahului	85	95	69	249
35	Kahului Harbor	81	93	94	268
36	Walmart	133	172	153	458
37	Kahului Airport	12	25	30	67
39	Paia	183	209	209	601
51	Maalaea	31	24	26	81
55	Puunene	8	5	15	28
56	Sugar Beach	144	150	158	452
57	North Kihei	182	166	107	455
58	Lipoa	272	318	260	850
59	Auhana	187	241	232	660
60	Maui Meadows	490	545	573	1,608
61	Kaukahi	198	188	241	627
76	Pukalani	396	430	442	1,268
97	Lanaʻi City	134	127	115	376
99	Manele	40	35	17	92
112	Kaunakakai	196	198	199	593
	AGGREGATE	6138	6684	6687	19509



	SUBURBAN FI Incident C	RE MANAGE ount by Year.		C,S	
FMZ Number	FMZ Name	2013	2014	2015	Aggregate
16	Waiehu Golf Course	97	85	82	264
20 =	Kamaile St	28	15	34	
2.5	Wailuku Heights	80	89	71	240
29	Waikapu	54	59	59	172
	Spreckelsville	31	51	34	116
40	Paia Mill	54	54	55	163
41	Kuau	44	51	54	149
44	Haiku	130	126	130	386
62	Makena	104	114	99	317
74	Haliimaile	40	51	51	142
77	Makawao	341	319	313	973
10	Aulii Dr	44	45	37	126
90.5	Hana Town	51	50	65	166
11114E 1117	AGGREGATE	1098	1109	1084	3291

	SUBURBAN FIRE MANAGEMENT ZONES Incident Count by Year, 2013-2015					
FMZ Number	FMZ Name	2013	2014	2015	Aggregate	
1	Olowalu	94	83	75	252	
2	Launiupoko	43	50	38	131	
12	Kapalua Plantation	17	23	27	67	
13	Honokohau	35	38	25	98	
14	West Maui Mauka	2	1	10	13	
15	Kahakuloa	45	54	50	149	
21	Mac Nut Farms	5	8		19	
22	Iao Valley	18	19	26	63	
30	Waiko	4	6	*7	17	
34	Kanaha	21	32	18	71	
42	Baldwin	23	26	23	72	
43	Holomua Rd	36	30	16	82	
45	Pauwela	47	68	60	175	
46	Kokomo Rd	65	79	57	201	
47	W Kuiaha Rd	30	33	33	96	
48	Ulumalu Rd	56	82	61	199	
49	Ukumehame	11	. 10	12	33	
50	McGregor Point	25	18	27	70	
53	Waikapu Golf Course	15	30	17	62	
54	Kealia Pond/Mokulele	101	76	82	259	



	SUBURBAN FIRE MANAGEMENT ZONES Incident Count by Year, 2013-2015					
FMZ						
Number	FMZ Name	2013	2014	2015	Aggregate	
63	La Perouse	14	17	20	51	
64	Ulupalakua	11	12	18	41	
65	Keokea	77	81	70	228	
66	Pulehu	85	101	102	288	
67	Kula Forest	7	9	9	25	
68	Kahikinui		1	2	6	
70	Kaupo	3 6	5	6	17	
72	Omaopio	57	61	69	187	
73	Pulehu	36	14	37	87	
75	Haleakala Hwy	91	76	79	246	
78	Piiholo Rd	73	77	63	213	
79	Lower Kimo Dr	65	60	59	184	
81	Upper Kimo Dr	51	61	59	171	
82	Haleakala Hwy	15	12	21	48	
83	Haleakala Crater	12	16	10	38	
84	Haiku	70	62	73	205	
86	Honomanu	7	5	2	14	
87	Keanae	22	17	18	57	
88	Nahiku	22	24	12	58	
89	Hana Airport	18	28	31	77	
91	Hamoa	33	37	41	111	
94	Kipahulu	23	33	36	92	
98	Keomoku	4	4	2	10	
100	Manele Rd	0	2	0	2	
101	Kaumalapau Harbor	1	5	5	11	
102	Kaena Point	0	1	4	5	
103	Kaluakoi	15	16	20	51	
104	Hale O Lono	2	2	0	4	
105	Maunaloa	25	25	44	94	
106	Moomomi	0	0	1	1	
108	Hoʻolehua	138	171	136	445	
109	Kalamaula	41	32	32	105	
110	Mokomoko Gulch	0	1 7	1	2	
113	Kawela	33	47	34	114	
114	Kamalo	8	8	. 6	22	
116	Puko'o	31	42	43	116	
117	Pauwalu	47	39	34	120	
118	Halawa	3	3	1	7	
	AGGREGATE	1839	1973	1870	5682	

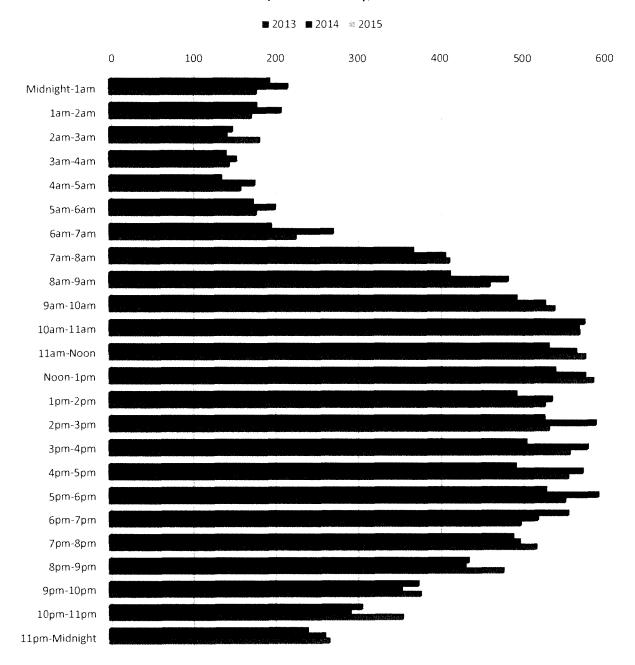


		FIRE MANAGEN Count by Year, 20		X.	
FMZ Number	FMZ Name		2014	2015	Aggregate
69.4	Kahikinui Forest Res	1	1	0	2
86)	Haiku Mauka	1	0	2	3
32	Haleakala N.P. West West Mani Forest Res	2	0	1	2 5
	GGREGATE	8	1	3	12



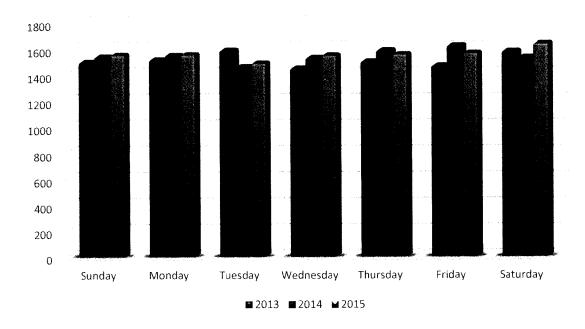
Frequency of Calls

Incidents by Time of Day, 2013-2015



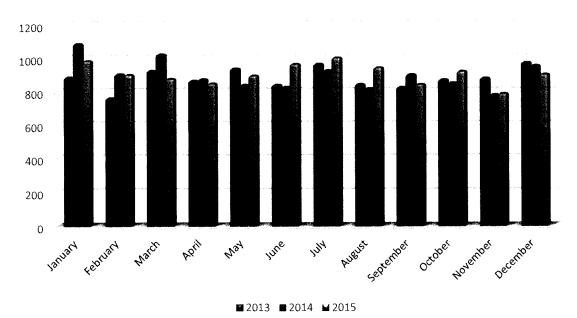


Incident Count by Day of Week, 2013-2015



Updated 12/7/16 using "count by DOW.rpt"

Incident Count by Month of Year, 2013-2015



Updated 12/7/16 using "count by Year.rpt"



Structure Fire Risk

Fire Flow

Fire flow is an important component in the analysis of fire risk. Minimum fire flow requirements, set by the Department of Water Supply, are as follows:

Occupancy Type	Flow	Duration	Spacing
Agricultural	250 GPM	2 hours	500 feet
Rural	400 GPM	2 hours	500 feet
Residential	1000 GPM	2 hours	350 feet
Duplex	1250 GPM	2 hours	
A-1 Apartment	1500 GPM	2 hours	250 feet
A-2 Apartment	2000 GPM	2 hours	250 feet
Business/Commercial	2000 GPM	2 hours	250 feet
Light Industrial	2000 GPM	2 hours	250 feet
Heavy Industrial	2500 GPM	2 hours	250 feet
Hotel	2500 GPM	2 hours	250 feet



Standard Fire Attack Flows

The Department has established standard fire attack flows, as follows:

Attack Line Size / Type	Flow – 1 Line	Flow – 2 Lines
1 3/4"	150 GPM	300 GPM
2 ½"	250 GPM	500 GPM
Blitzfire	500 GPM	1000 GPM
Master Stream	1000 GPM	2000 GPM

Needed Fire Flow for Square Footage

Using (LENGTH x WIDTH) ÷ 3, needed fire flow for various building sizes are as follows:

LxW	10	20	30	40	50	60	70	80	90	100
10	33	67	100	133	167	200	233	267	300	333
20	67	133	200	267	333	400	467	533	600	667
30	100	200	300	400	500	600	700	800	900	1000
40	133	267	400	533	667	800	933	1067	1200	1333
50	167	333	500	667	833	1000	1167	1333	1500	1667
60	200	400	600	800	1000	1200	1400	1600	1800	2000
70	233	467	700	933	1167	1400	1633	1867	2100	2333
80	267	533	800	1067	1333	1600	1867	2133	2400	2667
90	300	600	900	1200	1500	1800	2100	2400	2700	3000
100	333	667	1000	1333	1667	2000	2333	2667	3000	3333
110	367	733	1100	1467	1833	2200	2567	2933	3300	3667
120	400	800	1200	1600	2000	2400	2800	3200	3600	4000



Occupancy Vulnerability Assessment Profile (OVAP)

The Department is using Vision software (www.emergencyreporting.com) to evaluate occupancy risk throughout the County. Efforts have been made to catalog higher risk occupancies first, and additional entries are being made on a regular basis to ensure an accurate risk assessment. When all required fields are entered, the software calculates an OVAP score, placing each occupancy in one of the following categories:

Risk Group	OVAP Score
Maximum	60+
Significant	45-59
Moderate	15-39



Occupancy Risk Assessment by District

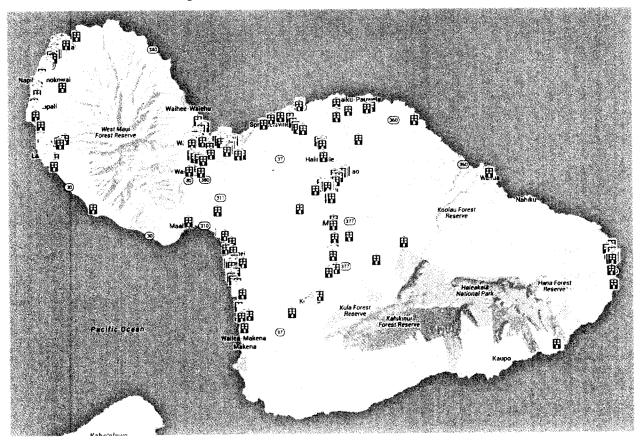
To date the Department has completed risk assessments for 886 occupancies, which are broken down by risk category and District location in the table below.

Station District	Maximum	Significant	Moderate	PALMA	Total
1	0	3	59		62
2	0	2	78	4	80
3	0	26	136		162
4	0	4	26	a Carrier	30
5	0	3	63	1	66
6	0	7	76		83
7	0	0	19		19
8	0	10	85		96
9	0	3	49		52
10	1	4	69		74
11	0	13	58		71
12	0	0	$1 \sim 1$		1
13	0	1	34		35
14	0	8	44		52
Total	1	84	797		886

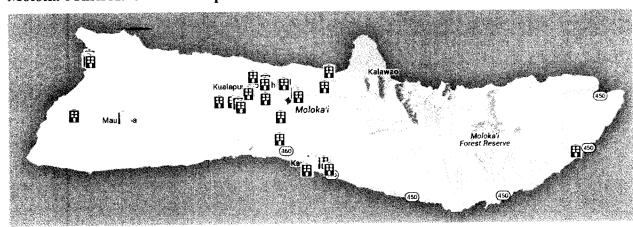
All high-rise buildings in the County are sprinklered and relatively modern, resulting in lower risk levels. The majority of older occupancies without fire protection are smaller 1-2 story buildings.



Maui Risk Assessment Map

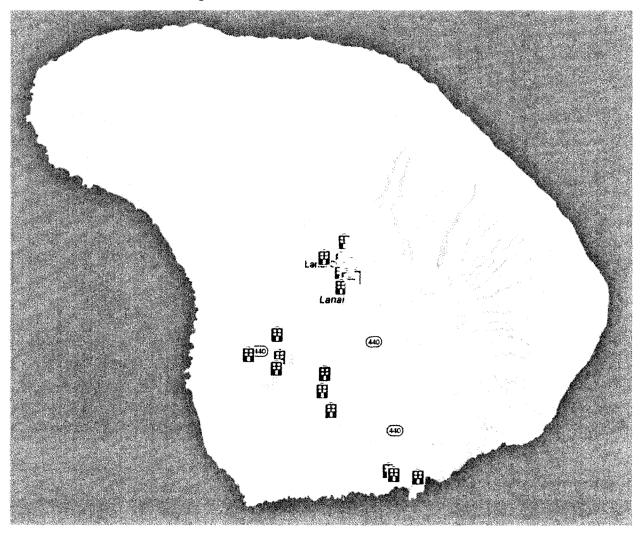


Moloka'i Risk Assessment Map





Lana'i Risk Assessment Map



Note: These maps represent only an overview of existing data. Interactive versions of these maps are available in the VISION software, allowing much more detailed analysis.



Critical Task Analysis

Residential Structure Fires

A first alarm for a residential structure fire on Maui Island is 3 companies (typically 2 engines and 1 FGS company) and 1 Battalion Chief for a total of 13 personnel.

Task	Number of Personnel
IC	1
Pump Operator	1
Fire Attack	3
Search & Rescue	2
Ventilation	2
Backup Line	2
RIT / On Deck	2
TOTAL	. 13



Major Occupancy Fires

A first alarm for a major occupancy fire on Maui Island is 4 companies (typically 3 engines and 1 FGS company) and 1 Battalion Chief for a total of 17 personnel.

Task		Number of Personnel
IC		1
Pump Operator		1
Fire Attack		3
Search & Rescue		3
Ventilation	4 T C C C C C C C C C C C C C C C C C C	2
Backup Line		3
Safety Officer	and the second s	The second second department of the delates and specified the second sec
RIT / On Deck	and all and the second	3
TOTAL		17

High Rise Fires

A first alarm for a high rise fire on Maui Island is 5 companies (typically 3 engines and 2 ladder companies) and 2 Battalion Chiefs for a total of 22 personnel.

Task	Number of Personnel
IC and Safety Officer	2
Pump Operator	1
Fire Attack	3
Backup Line	3
Search, Rescue and Evacuation	4
Ventilation	2
RIT	4
Lobby Control	3
TOTAL	22



Moloka'i Island Structure Fires

Minimum daily staffing for the entire island of Moloka'i is 11 personnel. A first alarm for all structure fires on Moloka'i Island is 3 engines and 1 tanker for a total of 11 personnel.

Task	Number of Personnel
IC	1
Pump Operator	1
Fire Attack	2
Search & Rescue	2
Backup Line	2
Horizontal Ventilation	1
RIT / On Deck	2
TOTAL	: 11

If more personnel are needed, the Department has informal procedures in place for emergency callback of off-duty personnel and/or transportation of on-duty companies from Maui via helicopter or boat.



Lana'i Island Structure Fires

Minimum daily staffing for the entire island of Lana'i is 5 personnel. A first alarm for all structure fires on Lana'i Island is 1 engine and 1 tanker for a total of 5 personnel.

Task	Number of Personnel
IC	1
Pump Operator / RIT	1
Fire Attack / Search & Rescue	2
RIT	1
TOTAL	5

The Department recognizes that 5 personnel are not enough to perform all the critical functions necessary for a structure fire. If personnel cannot quickly and safely control a structure fire, the expectation is to switch to a defensive strategy and confine the fire to the building of origin. If more personnel are needed, the Department has informal procedures in place for emergency callback of off-duty personnel and/or transportation of on-duty companies from Maui via helicopter or boat.



Hana District Structure Fires

Minimum daily staffing for Hana District is 4 personnel. A first alarm for all structure fires in Hana District is 1 engine company for a total of 4 personnel.

Task	Number of Personnel
IC / Fire Attack	1
Pump Operator / RIT	1
Fire Attack / Search & Rescue	1
RIT	1
TOTAL	4

The Department recognizes that 4 personnel are not enough to perform all the critical functions necessary for a structure fire. If personnel cannot quickly and safely control a structure fire, the expectation is to switch to a defensive strategy and confine the fire to the building of origin. If more personnel are needed, the Department will callback off-duty personnel and/or send on-duty companies by road or by helicopter.

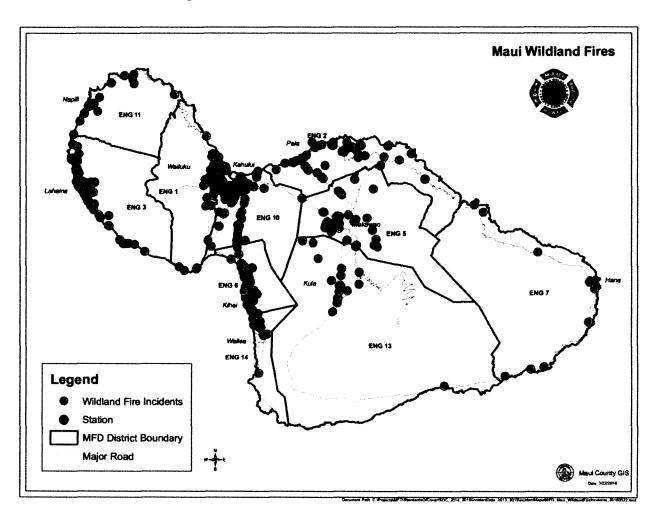


Wildland Fire Risk

Wildland Fire Risk Map

The following maps illustrate locations of wildland fire calls from 2013 through 2015.

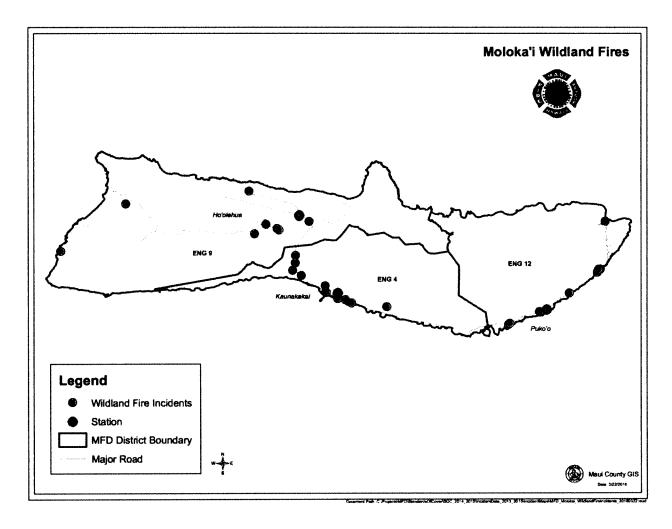
Maui Wildland Fires Map



On Maui, the highest risk for wildland fires is in Central Maui, South Maui, and West Maui. In addition to engine companies, a tanker is located in each of those three areas to provide a mobile water supply for wildfire response.



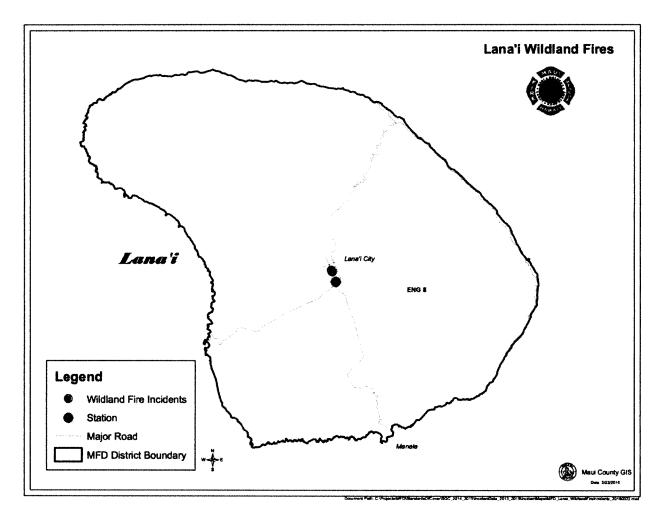
Moloka'i Wildland Fires Map



Moloka'i does not experience the same quantity of wildland fires as Maui, but does have a history of significant fires in the drier areas of central to west Moloka'i. In addition to Moloka'i's engine companies, Station 4 houses a tanker to provide a mobile water supply for wildfire response.



Lana'i Wildland Fires Map



Lana'i does not experience a high call volume for wildland fires, and all wildland fires the last three years have occurred in close proximity to Station 8. In addition to an engine company, Station 8 houses a tanker to provide mobile water supply for wildfire response.



Critical Task Analysis

Wildland Fires

The initial assignment for a reported wildland fire is 1 engine company and 1 tanker for a total of 5 personnel.

Task	Number of Personnel
IC	. 1
Pump Operator	1
Fire Attack	2
Water Supply	1
TOTAL	5

Note: Hana District is currently staffed with a minimum of 4 personnel, without a permanent driver assigned to Tanker 8. When Tanker 8 is needed, a fire fighter from Engine 8 is assigned to operate that apparatus.



Rescue Risk

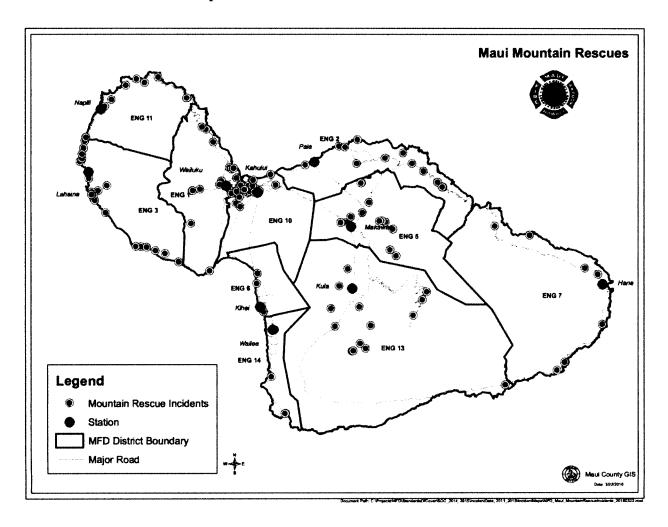
- 1. <u>Maximum Risk</u> Areas with both a high potential for injury or death and a high frequency of occurrence. Challenging yet popular hiking trails and coastal areas with dangerous surf qualify as maximum risk.
- 2. <u>High Risk</u> Areas with a high potential for injury or death but a low frequency of occurrence. Remote hiking trails on challenging terrain are an example of high risk.
- 3. <u>Moderate Risk</u> Areas with low associated consequence but a high frequency of occurrence. Popular leisurely hiking trails and beaches with small surf are examples of moderate risk.
- 4. Low Risk Areas with low associated consequence and low frequency of occurrence.
- 5. <u>Special Risk</u> Catastrophic events, such as tsunamis and hurricanes, which rarely occur but have high potential for injury and death throughout the County.



Rescue Risk Maps

The following maps illustrate locations of mountain rescue calls from 2013 through 2015.

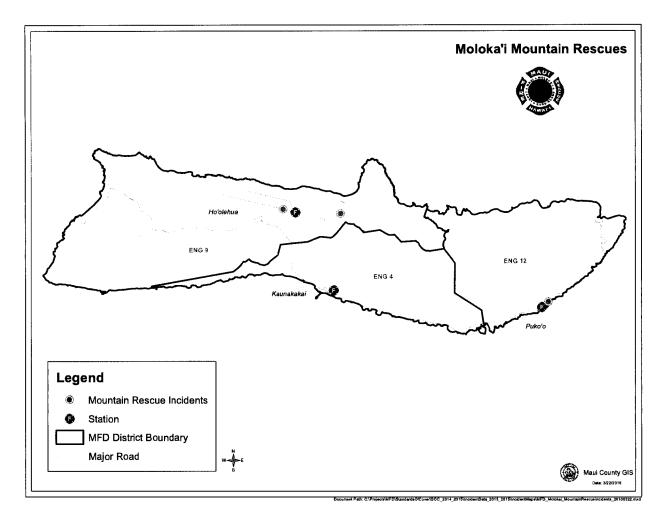
Maui Mountain Rescue Map



The bulk of the Department's mountain rescue calls happen on Maui. Rescue 10 is centrally located and equipped and trained to the technician level for rope rescue. Rescue 10 also has access to Air-1 to assist with aerial searches, help extract victims from remote areas, and travel to other islands when their technical expertise is required. Ladder 3, Engine 7, Engine 13, and Ladder 14 are also operations level for rope rescue, providing additional capability in the areas located furthest from Rescue 10.



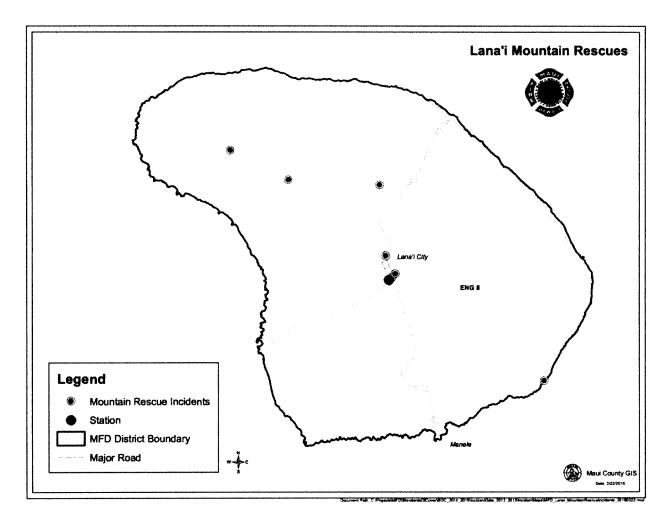
Moloka'i Mountain Rescue Map



Moloka'i does not experience a significant number of mountain rescue incidents. Personnel at Station 4 and Station 9 are equipped and qualified at the operations level for rope rescue. Rescue 10 is also available to fly to Moloka'i on Air-1 and assist with technical rescue as needed.



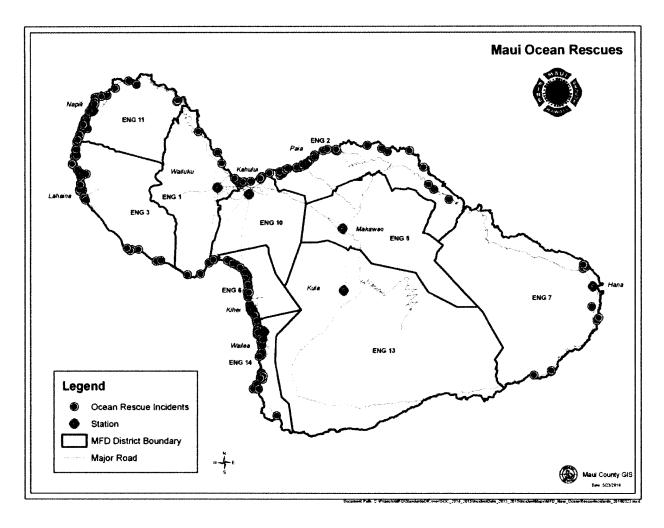
Lana'i Mountain Rescue Map



Lana'i does not experience a significant number of mountain rescue incidents. Personnel at Station 8 are equipped and qualified at the operations level for rope rescue. Rescue 10 is also available to fly to Lana'i on Air-1 and assist with technical rescue as needed.



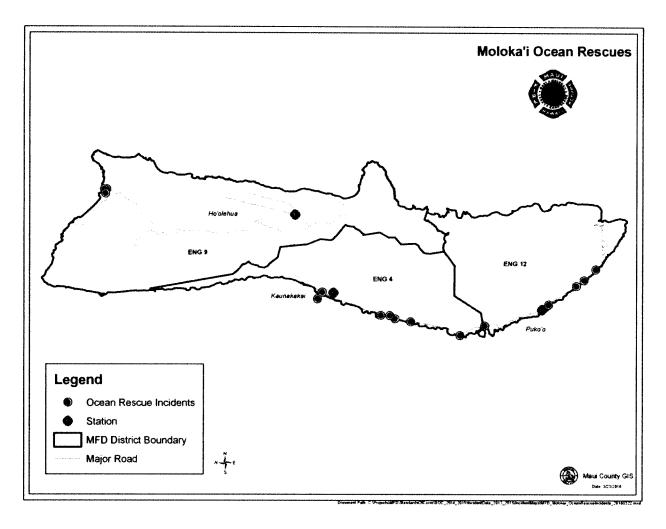
Maui Ocean Rescue Map



The bulk of the Department's ocean rescue calls happen on Maui. Rescue 10 is centrally located and equipped with a rescue boat and a RWC. Rescue 10 also has access to Air-1 to assist with aerial searches, help extract victims when water-based rescue is not feasible, and travel to other islands when required. Ladder 3, Engine7, and Ladder 14 also have rescue boats and/or RWC providing quicker response in the areas located furthest from Rescue 10. Other companies carry rescue boards and rescue tubes for near-shore rescues. All personnel receive ocean rescue training and are equipped with masks, snorkels, and fins.



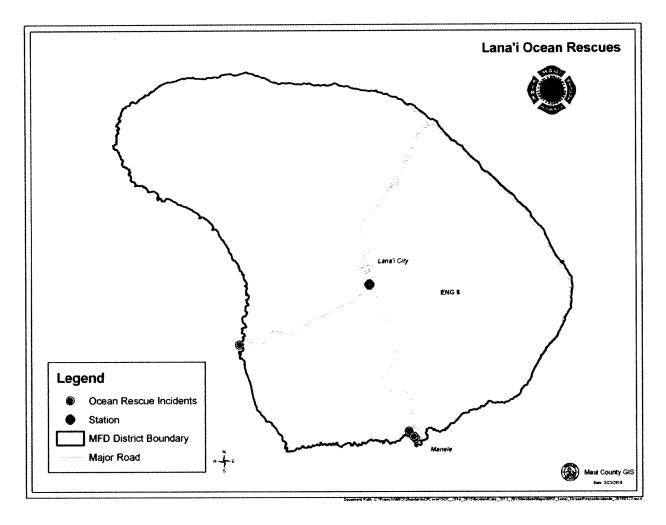
Moloka'i Ocean Rescue Map



Moloka'i does not experience a significant number of ocean rescue incidents. However, Engine 9 has a RWC and Engine 4 has both a rescue boat and a RWC. With these resources Moloka'i personnel are able to handle most ocean rescue incidents without assistance from Rescue 10. All personnel receive ocean rescue training and are equipped with masks, snorkels, and fins.



Lana'i Ocean Rescue Map



Lana'i does not experience a significant number of ocean rescue incidents. Engine 8 is equipped with a rescue board and rescue tube for near-shore rescues. All personnel receive ocean rescue training and are equipped with masks, snorkels, and fins. If additional resources are needed, a rescue boat or Air-1 can respond from Maui.



Critical Task Analysis

Mountain Rescues

A first alarm for a mountain rescue is 1 engine/ladder/hazmat company and Rescue 10 for a total of 8 personnel.

Task	Number of Personnel
IC	1
Investigation & Support	3
Technical Rescue	4
TOTAL	8

Note: If a helicopter is required, the total number of personnel may increase to 9 including the pilot.

Ocean Rescues

A first alarm for an ocean rescue is 1 engine/ladder/hazmat company and Rescue 10 or a company with a rescue boat or RWC for a total of 8 personnel.

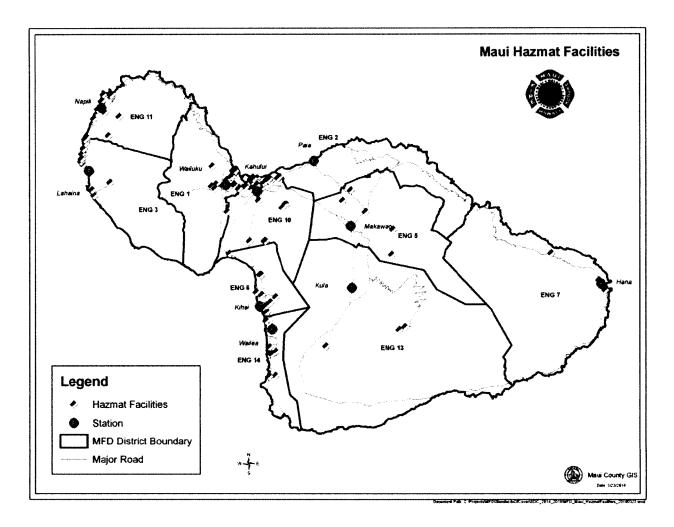
Task		Number of Personnel						
IC			1					
Investigation & Su			3					
Technical Rescue			4					
TOTAL	and the second s		8					

Note: If a helicopter is required, the total number of personnel may increase to 9 including the pilot.



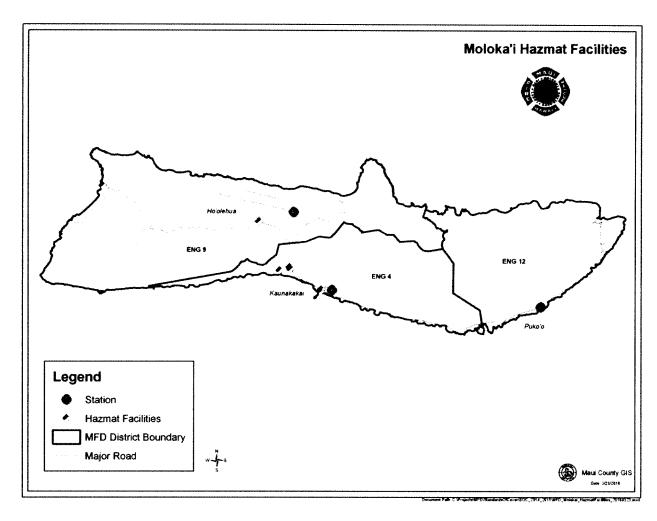
Hazardous Materials Risk

Hazmat Tier II Maps



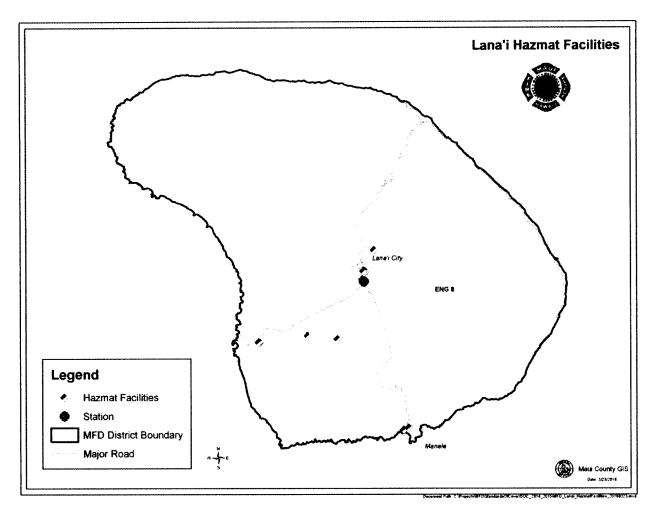
The bulk of the Department's hazardous materials risk is located on Maui, with the highest concentrations located in Central, South, and West Maui. Hazmat 10 is centrally located and equipped for a technician level response to hazmat incidents. All other personnel are trained to the operations level and can perform initial defensive operations.





Moloka'i does not have a significant number of hazmat facilities. All Moloka'i personnel are trained to the operations-level and can perform initial defensive operations. For major hazmat incidents, technician-level equipment and personnel will come from Maui via boat and/or helicopter.





Lana'i does not have a significant number of hazmat facilities. All Lana'i personnel are trained to the operations-level and can perform initial defensive operations. For major hazmat incidents, technician-level equipment and personnel will come from Maui via boat and/or helicopter.



Critical Task Analysis

Hazardous Materials Incidents

A first alarm for a hazmat incident on Maui Island is 1 engine/ladder/rescue company and Hazmat 10 for a total of 8 personnel.

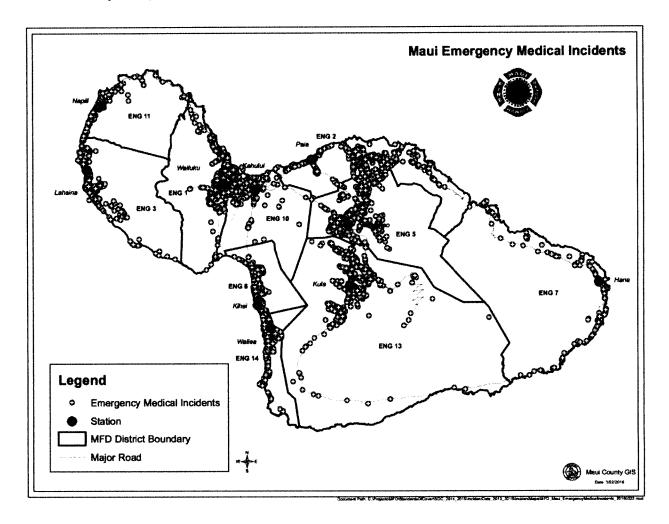
Task	Number of Personnel
IC	1
Safety Officer	. 1
Initial Isolation/Containment	2
Technician Level Functions	4
TOTAL	8

For Moloka'i Island, Lana'i Island, and Hana District, a first alarm for a hazmat incident is a single engine company and the technician level functions are eliminated. If technician level functions are required, transportation is arranged for Hazmat 10 personnel.



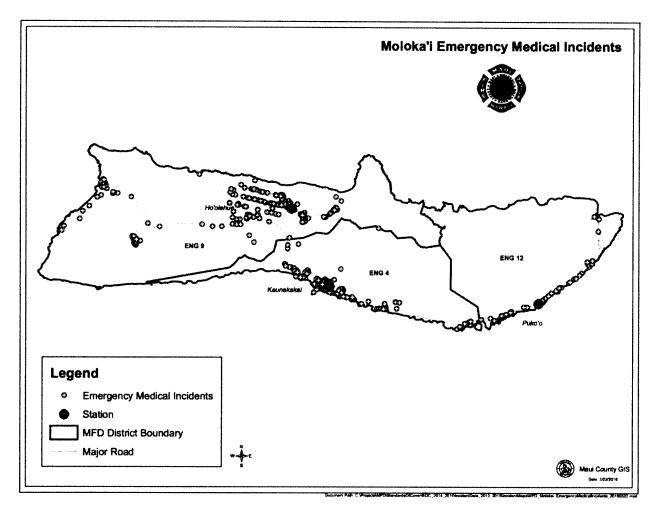
EMS Risk

The following maps provide a geographical analysis of the Department's medical responses over the last three years (2013-2015):



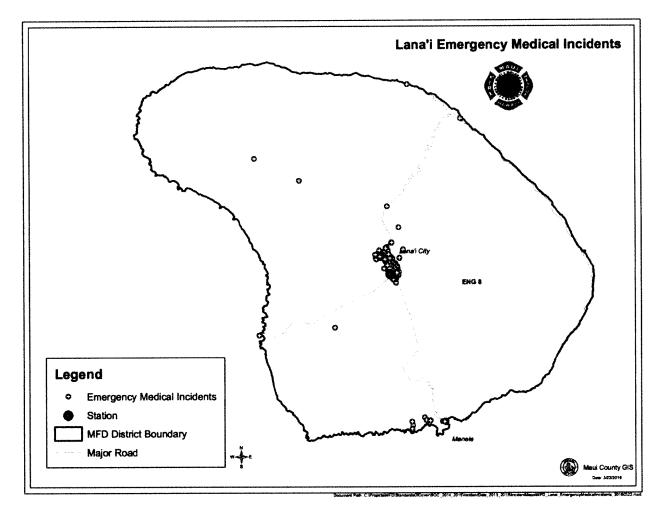
For the island of Maui, fire stations are strategically located near most of the areas with significant EMS call volume. The biggest gap in coverage for EMS risk is in the Haiku area.





On the island of Moloka'i, fire stations are strategically located near most the areas with significant EMS call volume. The biggest gap in coverage for EMS risk is in the Maunaloa / Kalua Koi area on the west end.





On the island of Lana'i, the fire station is strategically located in Lana'I City where the most significant EMS call volume exists. The biggest gap in coverage for EMS risk is the Manele area.



Critical Task Analysis

Emergency Medical Incidents

A first alarm for an EMS incident is 1 company for a total of 4 personnel.

Task	Number of Personnel
IC	1
BLS Treatment	<u> </u>
TOTAL	4

Note: American Medical Response (AMR) is contracted by the State of Hawaii to provide ALS ambulance service for Maui County. The Department does not provide ALS care or transport.



HISTORICAL PERSPECTIVE AND SYSTEM PERFORMANCE

Distribution

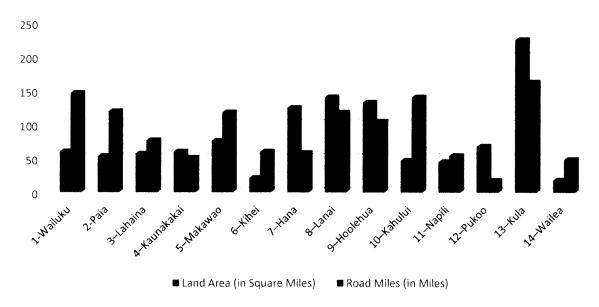
The Department has challenges with unequal geographic distribution of resources. Rural districts such as Kula, Lana'i, Ho'olehua, and Hana encompass large land areas but have relatively small and dispersed populations. Other districts such as Wailuku, Kihei, and Kahului have much larger, more concentrated populations while encompassing a much smaller land area.

60	5%	146.61	11%	34519	22%	12188	17%
53	5%	119.48	9%	10254	7%	4321	6%
57	5%	76.50	6%	13431	9%	6186	9%
60	5%	50.69	4%	3608	2%	1629	2%
76	7%	118.04	9%	20472	13%	7969	11%
21	2%	60.02	5%	19326	12%	10083	14%
125	11%	58.05	5%	2236	1%	1088	2%
141	12%	117.88	9%	3135	2%	1545	2%
133	12%	104.64	8%	2837	2%	1552	2%
47	4%	140.93	11%	19806	13%	6002	9%
45	4%	54.13	4%	8768	6%	5755	8%
68	6%	17.23	1%	900	1%	534	1%
226	20%	163.38	13%	8040	5%	3646	5%
18	2%	48.62	4%	7592	5%	7994	11%
1130		1276		154924		70492	es personal de la companya de la com

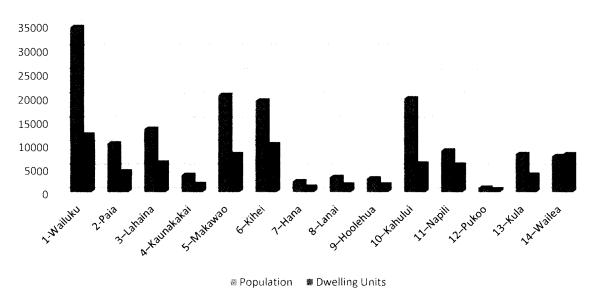
Calculated by Maui County GIS on October 1, 2015 based on 2010 census data.



Distribution of Land Area and Road Miles by First-Due Area



Distribution of Population and Dwelling Units by First-Due Area





Concentration

See the section on <u>Location of Calls</u> in the Community Risk Assessment section for a breakdown of calls by district and fire management zone.

Reliability

District 1 – Wailuku	20)13	20)14	20)15	2013-2015		
Total Calls	1277		1355	 -	1328		3960		
Handled by First-Due	1162	90.99%	1228	90.63%	1195	89.98%	3585	90.53%	
Handled by Other	115	9.01%	127	9.37%	133	10.02%	375	9.47%	

District 2 – Paia	2013	20	14	20	015	2013-2015		
Total Calls	774	853		796	na en par	2423	- - -	
Handled by First-Due	670 86.56%	696	81.59%	687	86.31%	2053	84.73%	
Handled by Other	104 13.44%	157	18.41%	109	13.69%	370	15.27%	

District 3 – Lahaina	2013		20	2014)15	2013-2015		
Total Calls	1447		1520		1677		4644		
Handled by First-Due	1416	97.86%	1495	98.36%	1630	97.20%	4541	97.78%	
Handled by Other	31	2.14%	25	1.64%	47	2.80%	103	2.22%	

District 4 – Kaunakakai	2013		2	014	20	015	2013-2015		
Total Calls	292		295		293		880		
Handled by First-Due	271	92.81%	285	96.61%	283	96.59%	839	95.34%	
Handled by Other	21	7.19%	10	3.39%	10	3.41%	41	4.66%	



District 5 – Makawao	20	013	2014		2015		2013-2015	
Total Calls	925		979		969		2873	
Handled by First-Due	867	93.73%	920	93.79%	904	93.29%	2691	93.67%
Handled by Other	58	6.27%	59	6.03%	65	6.71%	182	6.33%
District 6 – Kīhei	20	013	20	014	20	015	2013	3-2015
Total Calls	1062		1216		1218		3496	
Handled by First-Due	891	83.90%	971	79.85%	918	75.37%	2780	79.52%
Handled by Other	171	16.10%	245	20.15%	300	24.63%	716	20.48%
District 7 – Hana	2013		2014		2015		2013-2015	
Total Calls	161		161		186	2002	508	
Handled by First-Due	149	92.55%	145	90.06%	179	96.24%	473	93.11%
Handled by Other	12	7.45%	16	9.94%	7	3.76%	35	6.89%
District 8 – Lana'i	20	013	20	014	20	015	2013-2015	
Total Calls	179	 -	175		142		496	
Handled by First-Due	178	99.44%	174	99.43%	141	99.30%	493	99.40%
Handled by Other	1	0.56%	1	0.57%	1	0.70%	3	0.60%
District 9 – Hoʻolehua	20	013	20	014	20	015	2013	3-2015
Total Calls	179		214		204		597	
Handled by First-Due	177	98.88%	210	98.13%	198	97.06%	585	97.99%
Handled by Other	2	1.12%	4	1.87%	6	2.94%	12	2.01%



District 10 – Kahului	2013		20	2014		2015		2013-2015	
Total Calls	1090		1240		1247		3577		
Handled by First-Due	957	87.80%	1003	80.89%	1000	80.19%	2960	82.75%	
Handled by Other	133	12.20%	237	19.11%	247	19.81%	617	17.25%	

District 11 – Napili	2013		2014		20	015	2013-2015		
Total Calls	607		650		621		1878		
Handled by First-Due	575	94.73%	595	91.54%	553	89.05%	1723	91.75%	
Handled by Other	32	5.27%	55	8.46%	68	10.95%	155	8.25%	

District 12 – Pukoʻo	2013		2	014	20	015	2013-2015		
Total Calls	64	erene er fra	65		57		186	 -	
Handled by First-Due	59	92.19%	64	98.46%	56	98.25%	179	96.24%	
Handled by Other	5	7.81%	1	1.54%	1	1.75%	7	3.76%	

District 13 – Kula	3 – Kula 2013		20	014	20	015	2013-2015		
Total Calls	436	-	443		457	11 <u>8 1-</u>	1336		
Handled by First-Due	357	81.88%	399	90.07%	398	87.09%	1154	86.38%	
Handled by Other	79	18.12%	44	9.93%	59	12.91%	182	13.62%	

District 14 – Wailea	2013		20	014	2	015	2013-2015	
Total Calls	568		559		518		1645	
Handled by First-Due	563	99.12%	550	98.39%	509	98.26%	1622	98.60%
Handled by Other	5	0.88%	9	1.61%	9	1.74%	23	1.40%



PERFORMANCE OBJECTIVES AND PERFORMANCE MEASURES

Performance Goal

The Department's performance goal, as is declared in the mission statement, is "to protect and preserve life, environment, and property."

Basis for Response Goals

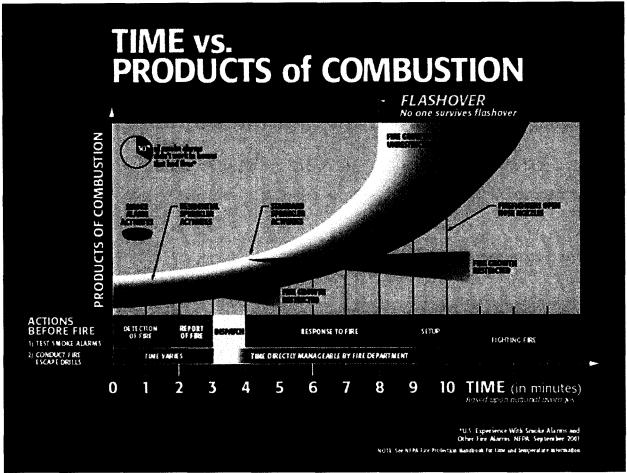
Fire Suppression Response Goal

To protect and preserve life and property at structure fires, resources need to arrive quickly enough for life and property to be saved. While the development of all fires vary, all dangerous fires go through the same stages of growth. The flashover stage is the most significant because it marks a critical change in conditions.

When flashover occurs, everything in the room simultaneously ignites. This generates a tremendous amount of heat, smoke and pressure with enough force to push beyond the room of origin. Flashover is critical for two reasons. First, the survivability within the room of origin drops to almost zero, so the chance of saving lives decreases dramatically. Second, flashover greatly intensifies the rate of combustion, increasing the amount of water, time, and manpower needed to control and extinguish the fire. Once flashover occurs, the opportunity to save life and property is much smaller and more difficult to achieve.

Pre-Flashover	Post-Flashover
Limited to one room	May spread beyond one room
Requires smaller attack line	Requires more or larger attack lines
Search and rescue is easier	Search and rescue is more difficult
Initial assignment can handle	Requires additional companies





Flashover most often occurs between three to seven minutes after free burning begins. The Department cannot directly control how quickly a fire is detected and reported, but can positively influence these factors through public education and related programs (e.g. the Smoke Alarm Maui Program). The early suppression of fires by installed fire protection systems can also have a significant impact on the outcome. If these mitigation sources are not present, the Department still must arrive quickly enough to apply water to the fire before flashover occurs. The benchmark times defined later in this section reflect that goal.

Emergency Medical Response Goals

Emergency medical response goals are based on the time to irreversible tissue death in the cardiac arrest patient. The American Heart Association (AHA) has established that without



oxygen, the brain begins to die within four to six minutes, and that after ten minutes the damage is irreversible. The initiation of early high quality CPR and defibrillation are the two most important factors contributing to cardiac arrest survival.



Performance Objectives

As a result of the unique geography of the response area, four different sets of performance objectives have been developed: one each for Maui Island, Moloka'i Island, Lana'i Island, and Hana District. The isolation of these four response areas from each other (and the inability to effectively move resources between the areas) necessitates evaluating them individually. Performance objectives are different in each response area because of differing resource availability.



Maui Island Performance Measures

Distribution Performance Measure - Structure Fires

Benchmark – For 90% of all residential structure fires on Maui Island, the first engine company, staffed with a minimum of 4 personnel, shall arrive within 12 minutes and 34 seconds for urban areas; 19 minutes and 25 seconds for suburban areas; and 29 minutes and 39 seconds for rural areas. The first due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all residential structure fires on Maui Island, the first engine company, staffed with a minimum of 4 personnel, shall arrive within 12 minutes and 54 seconds for urban areas; 19 minutes and 45 seconds for suburban areas; and 29 minutes and 59 seconds for rural areas. The first due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Maui Island Structure Fires 90 th Percentile Times											
		20	13	20	14	2015		2013	-2015		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls		
Call		3:17	64	3:06	46	2:37	63	3:00	173		
Processing		3:26	47	3:23	35	2:26	45	3:00	127		
Time Pick-up to	Suburban	3:12	8	2:13	6	4:38	9	2:42	23		
Dispatch		03:23	9	3:15	5	3:31	9	3:19	23		
		4:03	64	3:56	46	4:05	63	4:01	173		
Turnout Time		4:24	47	4:12	35	4:45	45	4:22	127		
1st Unit on Scene		4:00	8	3:36	6	4:04	9	3:59	23		
		3:51	9	3:32	5	3:23	9	3:38	23		
D: 4 :14:		12:53	64	14:29	46	10:46	63	12:10	173		
Distribution Travel Time		8:40	47	7:16	35	7:42	45	7:42	127		
1 st Unit on	Suburban	13:58	8	7:17	6	13:50	9	12:08	23		
Scene		22:08	9	38:01	5	29:06	9	25:37	23		
Distribution	Overall	17:50	64	18:59	46	14:48	63	17:36	173		
Total Response	Urban	14:28	47	12:54	35	11:57	45	12:54	127		
Time 1 st Unit on	Suburban	20:10	8	11:23	6	19:45	9	19:45	23		
Scene	Rural	27:55	9	41:53	5	32:03	9	29:59	23		

NOTE: Distribution performance measures are provided on the following pages and are split into two categories: moderate risk RESIDENTIAL and moderate risk COMMERCIAL. The Department dispatches three companies (typically 2 engines and 1 FGS company) to residential structure fires and four companies (typically 3 engines and 1 FGS company) to commercial structure fires. The additional personnel assigned to commercial fires is necessary to allow the advancement of a larger hoseline flowing greater GPM. Because the ERF differs depending on the occupancy type, the performance measures are provided separately for moderate risk residential and commercial.



Concentration Performance Measure – Structure Fires – Moderate Risk Residential

Benchmark – For 90% of all residential structure fires on Maui Island, the effective response force (ERF), staffed with a minimum of 13 personnel, shall arrive within 18 minutes for urban areas; 21 minutes and 5 seconds for suburban areas; and 35 minutes for rural areas. The ERF shall be capable of providing a minimum 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 150 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all residential structure fires on Maui Island, the effective response force (ERF), staffed with a minimum of 13 personnel, shall arrive within 47 minutes and 8 seconds for urban areas; 17 minutes and 7 seconds for suburban areas; and 5 hours and 18 minutes for rural areas. The ERF shall be capable of providing a combined 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 150 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



				_								
Maui Island Structure Fires – Moderate Risk Residential 90th Percentile Times												
_		20	13	20	14	2015		2013-2015				
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls			
Concentration		30:18	4	1:45:09	4	5:13:23	9	1:45:09	17			
Travel Time		30:18	3	35:50	3	50:27	7	37:14	13			
Effective Response Force		12:12	1	00:00	0	15:22	1	15:22	2			
(ERF)		00:00	0	1:45:09	1 1	5:13:23	.1	5:13:23	2			
Concentration		35:55	4	1:49:50	4	5:18:00	9	3:33:55	17			
Total Response Time		35:55	3	36:53	3	54:15	7	47:08	13			
Effective		16:21	1	00:00	0	17:07	1	17:07	2			
Response Force	Rural	00:00	0	1:49:50	1	5:18:00	1	5:18:00	2			



Concentration Performance Measure - Structure Fires - Moderate Risk Commercial

Benchmark – For 90% of all moderate risk commercial structure fires on Maui Island, the effective response force (ERF), staffed with a minimum of 17 personnel, shall arrive within 35 minutes for urban areas; 1 hour and 17 minutes for suburban areas; and 1 hour and 25 minutes for rural areas. The ERF shall be capable of providing a combined 1,500 gallons of water and 2,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 250 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all moderate risk commercial structure fires on Maui Island, the effective response force (ERF), staffed with a minimum of 59 minutes and 44 seconds for urban areas; 1 hour, 17 minutes and 59 seconds for suburban areas; and 3 hours, 5 minutes and 35 seconds for rural areas. The ERF shall be capable of providing a combined 1,500 gallons of water and 2,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 250 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



	Maui Island Structure Fires – Moderate Risk Commercial 90 th Percentile Times													
		20	13	20	2014		2015		-2015					
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls					
Concentration		3:01:17	5	50:45	2	1:15:00	1	2:08:08	8					
Travel Time		57:05	4	50:45	2	- Controller States	0	57:05	6					
Effective Response Force			0		0	1:15:00	1	1:15:00	1					
(ERF)		3:01:17	1		0		0	3:01:17	1					
Concentration		3:05:35	5	53:12	2	1:17:59	1	2:11:47	8					
Total Response Time	Urban	59:44	4	53:12	2		0	59:44	6					
Effective			0		0	1:17:59	1	1:17:59	1					
Response Force (ERF)	Rural	3:05:35	1		0		0	3:05:35	1					



Distribution Performance Measure - Wildland Fires

Benchmark – For 90% of all wildland fires on Maui Island, the first-due engine company, staffed with a minimum of 4 personnel, shall arrive within 12 minutes and 30 seconds for urban areas; 15 minutes and 30 seconds for suburban areas; and 21 minutes and 30 seconds for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all wildland fires on Maui Island, the first-due engine company, staffed with a minimum of 4 personnel, shall arrive within 12 minutes and 37 seconds for urban areas; 15 minutes and 36 seconds for suburban areas; and 22 minutes and 58 seconds for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure – Wildland Fires

Benchmark – For 90% of all wildland fires on Maui Island, the effective response force (ERF), staffed with a minimum of 5 personnel, shall arrive within 37 minutes and 30 seconds for urban areas; 28 minutes and 30 seconds for suburban areas; and 1 hour and 8 minutes for rural areas. The ERF shall be capable of providing a combined 2,750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all wildland fires on Maui Island, the effective response force (ERF), staffed with a minimum of 5 personnel, shall arrive within 37 minutes and 2 seconds for urban areas; 29 minutes and 2 seconds for suburban areas; and 1 hour, 8 minutes and 14 seconds for rural areas. The ERF shall be capable of providing a combined 2,750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



				ii Island and Fire entile T	es				
		20	13	20)14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call		3:09	161	2:37	101	3:51	97	3:10	359
Processing Time		2:48	87	2:31	63	3:10	57	2:46	207
Pick-up to	Suburban	3:16	18	3:32	11	5:06	8	3:39	37
Dispatch		3:39	56	2:58	27	6:55	32	3:39	115
		4:02	161	3:54	101	4:00	97	3:59	359
Turnout Time	Urban	4:04	87	3:54	63	3:44	57	3:55	207
1st Unit on Scene		3:54	18	3:38	11	4:05	8	3:52	37
		4:18	56	5:04	27	4:42	32	4:22	115
Distribution	Overall	13:06	161	10:59	101	12:13	97	12:12	359
Travel Time	Urban	7:29	87	8:31	63	11:14	57	8:15	207
1 st Unit on		10:52	18	11:45	11	10:45	8	11:11	37
Scene	Rural	26:23	56	16:36	27	19:22	32	17:43	115
Concentration	Overall	34:54	102	22:46	58	1:01:08	64	38:53	224
Travel Time	Urban	24:32	44	17:11	33	1:17:29	34	31:34	111
Effective Response Force	Suburban	20:20	7	21:44	7	44:36	4	23:53	18
(ERF)	Rural	50:58	51	30:36	18	1:00:54	25	1:00:54	94
Distribution	Overall	17:28	161	14:58	101	17:33	97	16:45	359
Total Response Time	Urban	11:48	87	12:50	63	16:23	57	12:37	207
1 st Unit on	Suburban	16:46	18	16:14	11	14:57	8	15:36	37
Scene	Rural	28:12	56	21:45	27	22:25	32	22:58	115
Concentration	Overall	39:17	102	28:38	58	1:19:34	64	43:12	224
Total Response Time		25:37	44	20:37	33	1:19:34	34	37:02	111
Effective	Suburban	26:25	7	26:57	7	49:10	4	29:02	18
Response Force (ERF)	Rural	55:42	51	35:54	18	1:21:29	25	1:08:14	94



Distribution Performance Measure - EMS Calls

Benchmark – For 90% of all EMS calls on Maui Island, the first-due company, staffed with a minimum of four personnel, shall arrive within 12 minutes and 56 seconds for urban areas; 15 minutes and 20 seconds for suburban areas; and 23 minutes for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all EMS calls on Maui Island, the first company, staffed with a minimum of 4 personnel, shall arrive within 13 minutes and 14 seconds for urban areas; 15 minutes and 35 seconds for suburban areas; and 23 minutes and 25 seconds for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for EMS calls because the first arriving company is considered to be the entire effective response force (ERF). The Department relies on American Medical Response (AMR) to provide advanced life support (ALS) treatment and transport to the hospital.



Maui Island EMS Calls 90 th Percentile Times												
		20	13	20	14	20	15	2013	-2015			
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls			
Call		4:07	3838	4:24	4140	4:23	4101	4:19	12079			
Processing		4:12	2839	4:33	3084	4:22	3111	4:20	9034			
Time Pick-up to	Suburban	3:35	538	3:50	534	4:11	559	3:52	1631			
Dispatch		4:15	461	4:18	521	4:57	429	4:27	1411			
		3:53	3838	3:49	4140	3:53	4101	3:51	12079			
Turnout Time	Urban	3:54	2839	3:47	3084	3:51	3111	3:50	9034			
1st Unit on Scene		3:46	538	3:46	534	3:49	559	3:48	1631			
	Rural	3:55	461	4:11	521	4:11	429	4:05	1411			
Distribution Travel Time	Overall	9:25	3838	9:23	4140	9:17	4101	9:23	12079			
	Urban	8:06	2839	7:23	3084	7:24	3111	7:38	9034			
1 st Unit on	Suburban	9:49	538	9:50	534	10:55	559	10:09	1631			
Scene	Rural	16:43	461	17:43	521	17:41	429	17:39	1411			
Concentration	Overall											
Travel Time	Urban											
Effective Response Force	Suburban											
(ERF)	Rural											
Distribution	Overall	14:50	3838	14:48	4140	15:10	4101	14:56	12079			
Total Response	Urban	13:25	2839	13:02	3084	13:09	3111	13:14	9034			
Time 1 st Unit on	Suburban	14:45	538	15:01	534	16:12	559	15:35	1631			
Scene	Rural	21:46	461	24:05	521	23:54	429	23:25	1411			
Concentration	Overall											
Total Response Time	Urban											
Effective	Suburban											
Response Force (ERF)	Rural											



Distribution Performance Measure - Technical Rescues

Benchmark – For 90% of all technical rescue calls on Maui Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 15 minutes and 5 seconds for urban areas; 18 minutes for suburban areas; and 30 minutes and 38 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all technical rescue calls on Maui Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 15 minutes and 35 seconds for urban areas; 18 minutes and 17 seconds for suburban areas; and 30 minutes and 58 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure - Technical Rescues

Benchmark – For 90% of all technical rescue calls on Maui Island, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 52 minutes for urban areas; 58 minutes and 30 seconds for suburban areas; and 1 hour and 4 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all technical rescue calls on Maui Island, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 52 minutes and 28 seconds for urban areas; 11 hours, 38 minutes, and 20 seconds for suburban areas; and 1 hour, 4 minutes, and 39 seconds for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



	Maui Island Technical Rescues 90 th Percentile Times											
		20	13	20	14	2015		2013-2015				
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls			
Call		6:59	252	6:11	190	6:36	215	6:11	657			
Processing		7:31	165	6:11	133	5:36	138	6:11	436			
Time Pick-up to		4:54	21	4:04	13	7:18	10	5:05	44			
Dispatch		7:02	65	6:05	44	8:30	65	7:05	174			
		4:34	252	4:16	190	4:41	215	4:33	657			
Turnout Time		4:17	165	4:05	133	4:31	138	4:14	436			
1st Unit on Scene	Suburban	4:12	21	7:04	13	6:15	10	4:33	44			
Scone		6:12	65	5:22	44	6:41	65	5:40	174			
		13:54	252	14:19	190	15:29	215	14:40	657			
Distribution Travel Time	Urban	9:11	165	7:47	133	9:13	138	8:37	436			
1st Unit on		12:15	21	10:14	13	11:59	10	11:19	44			
Scene		21:27	65	26:08	4 4	27:08	65	24:56	174			
Concentration		49:54	57	1:05:54	41	46:29	45	48:07	143			
Travel Time		5:54:06	14	5:38:09	10	46:22	13	46:20	37			
Effective Response Force		56:46	3	1:41:00	5	14:45	1	1:41:00	9			
(ERF)	Rural	49:54	39	1:05:54	26	46:29	30	47:52	95			
Distribution		23:58	252	19:13	190	23:05	215	22:16	657			
Total Response	Urban	20:53	165	13:36	133	15:32	138	15:35	436			
Time 1 st Unit on	Suburban	16:50	21	15:51	13	19:15	10	18:17	44			
Scene	Rural	29:28	65	31:38	44	33:24	65	30:58	174			
Concentration	Overall	1:06:16	57	1:30:47	41	57:49	45	1:06:16	143			
Total Response Time	Urban	5:59:57	14	5:36:58	10	55:38	13	52:28	37			
Effective		1:05:37	3	11:38:20	5	26:25	1	11:38:20	9			
Response Force (ERF)	Rural	1:07:11	39	1:14:15	26	57:49	30	1:04:39	95			



Distribution Performance Measure - Hazardous Materials Calls

Benchmark – For 90% of all hazardous materials calls on Maui Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 13 minutes and 50 seconds for urban areas; 16 minutes and 55 seconds for suburban areas; and 23 minutes and 22 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all hazardous materials calls on Maui Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 14 minutes and 10 seconds for urban areas; 17 minutes and 18 seconds for suburban areas; and 23 minutes and 42 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure - Hazardous Materials Calls

Benchmark – For 90% of all hazardous materials calls on Maui Island, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 36 minutes and 30 seconds for urban areas; 53 minutes and 30 seconds for suburban areas; and 2 hours and 10 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; appointing a safety officer; determining the need for additional resources; establishing hot, warm, and cold zones; and providing the equipment, knowledge, and skills to rescue victims and mitigate a hazardous materials incident. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all hazardous materials calls on Maui Island, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 37 minutes and 2 seconds for urban areas; 54 minutes and 8 seconds for suburban areas; and 2 hours, 15 minutes, and 56 seconds for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; appointing a safety officer; determining the need for additional resources; establishing hot, warm, and cold zones; and providing the equipment, knowledge, and skills to rescue victims and mitigate a hazardous materials incident. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



			Mau zardous 90 th Perc								
		20	13	20	14	20	15	2013	-2015		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls		
Call		5:06	36	5:15	36	4:34	41	4:34	113		
Processing		5:06	26	5:29	29	4:13	30	4:39	85		
Time Pick-up to		3:56	2	0:42	2	3:56	4	3:56	8		
Dispatch		17:48	8	3:09	5	15:21	7	9:57	20		
	Overall	4:24	36	4:33	36	4:27	41	4:27	113		
Turnout Time	Urban	5:09	26	4:31	29	4:27	30	4:33	85		
1st Unit on Scene		2:55	2	2:43	2	2:44	4	2:55	8		
		3:47	8	4:35	5	20:40	7	4:11	20		
D: 4 :1. 4:		9:39	36	10:05	36	11:50	41	10:15	113		
Distribution Travel Time		7:49	26	8:45	29	7:33	30	8:04	85		
1 st Unit on		13:30	2	5:36	2	13:40	4	13:40	8		
Scene		16:33	8	11:41	5	12:40	7	12:30	20		
Concentration		24:39	14	36:03	17	1:19:03	14	29:44	45		
Travel Time		29:34	9	36:03	14	28:26	8	29:44	31		
Effective Response Force		19:44	1	14:03	1	16:12	3	19:44	5		
(ERF)	Rural	19:05	4	13:39	2	2:09:40	3	2:09:40	9		
Distribution		16:20	36	15:38	36	17:12	41	15:52	113		
Total Response	Urban	14:10	26	15:42	29	13:24	30	14:10	85		
Time 1 st Unit on	Suburban	17:14	2	8:42	2	17:18	4	17:18	8		
Scene	Rural	26:15	8	14:22	5	26:23	7	23:42	20		
Concentration	Overall	35:48	14	52:00	17	1:35:02	14	48:03	45		
Total Response Time	Urban	35:49	9	45:54	14	46:39	8	37:02	31		
Effective	Suburban	29:32	1	49:27	1	54:08	3	54:08	5		
Response Force (ERF)	Rural	28:54	4	21:15	2	2:15:56	3	2:15:56	3		



Moloka'i Island Performance Measures

Distribution Performance Measure – Structure Fires

Benchmark – For 90% of all structure fires on Moloka'i Island, the first engine company, staffed with a minimum of 2 personnel, shall arrive within 24 minutes and 28 seconds for urban areas and 28 minutes and 15 seconds for rural areas. The first due engine company shall be capable of providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all structure fires on Moloka'i Island, the first engine company, staffed with a minimum of 2 personnel, shall arrive within 24 minutes and 48 seconds for urban areas and 28 minutes and 35 seconds for rural areas. The first due engine company shall be capable of providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: For Moloka'i Island, there are no areas designated as suburban, so times are only given for urban and rural.



Concentration Performance Measure

Benchmark – For 90% of all structure fires on Moloka'i Island, the effective response force (ERF), staffed with a minimum of 11 personnel, shall arrive within 30 minutes and 10 seconds for urban areas and 36 minutes and 15 seconds for rural areas. The ERF shall be capable of providing a combined 4500 gallons of water and 3500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 150 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all structure fires on Moloka'i Island, the effective response force (ERF), staffed with a minimum of 11 personnel, shall arrive within 25 minutes and 50 seconds for urban areas and [no times available] for rural areas. The ERF shall be capable of providing a combined 4500 gallons of water and 3500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 150 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



				aʻi Islar ture Fir entile T	es				
		20	13	20)14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	8:55	4	8:16	5	3:30	6	8:35	15
Time	Urban	8:55	1		0		0	8:55	1
Pick-up to Dispatch	Rural	1:23	3	8:16	5	3:30	6	7:01	14
T T'	Overall	4:29	4	3:00	5	6:47	6	5:38	15
Turnout Time 1st Unit on	Urban	0:31	1		0		0	0:31	1
Scene	Rural	4:29	3	3:00	5	6:47	6	5:38	14
Distribution	Overall	21:42	4	20:41	5	26:53	6	24:17	15
Travel Time 1st Unit on	Urban	21:42	1		0	· · · · · · · · · · · · · · · · · · ·	0	21:42	1
Scene	Rural	10:00	3	20:41	5	26:53	6	23:47	14
Concentration Travel Time	Overall		0	21:21	1	21:03	1	21:21	2
Effective	Urban		0	21:21	1	21:03	1	21:21	2
Response Force (ERF)	Rural		0		0		0		0
Distribution	Overall	24:48	4	25:48	5.	31:23	6	28:35	15
Total Response Time	Urban	24:48	1		0		0	24:48	1
1 st Unit on Scene	Rural	15:29	3	25:48	5	31:23	6	28:35	14
Concentration Total Response	Overall		0	25:50	1.	22:26	1	25;50	2
Time Effective	Urban		0	25:50	1	22:26	1	25:50	2
Response Force (ERF)	Rural		0		0		0		0

Note: Moloka'i Island does not have any areas designated as suburban.



Distribution Performance Measure - Wildland Fires

Benchmark – For 90% of all wildland fires on Moloka'i Island, the first-due engine company, staffed with a minimum of 2 personnel, shall arrive within 8 minutes and 30 seconds for urban areas and 26 minutes for rural areas. The first-due engine company shall be capable of providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating atrisk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all wildland fires on Moloka'i Island, the first-due engine company, staffed with a minimum of 2 personnel, shall arrive within 4 minutes and 44 seconds for urban areas and 28 minutes and 36 seconds for rural areas. The first-due engine company shall be capable of providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

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Concentration Performance Measure – Wildland Fires

Benchmark – For 90% of all wildland fires on Moloka'i Island, the effective response force (ERF), staffed with a minimum of 3 personnel, shall arrive within 9 minutes and 40 seconds for urban areas and 36 minutes and 50 seconds for rural areas. The ERF shall be capable of providing a combined 3,000 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating atrisk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all wildland fires on Moloka'i Island, the effective response force (ERF), staffed with a minimum of 3 personnel, shall arrive within 9 minutes and 44 seconds for urban areas and 36 minutes and 55 seconds for rural areas. The ERF shall be capable of providing a combined 3,000 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating atrisk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



				ca'i Islar and Fire centile T	es				
		20	13	20	14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	3:01	6	1:25	5	4:20	6	4:09	17
Time Pick-up to	Urban	·	0		0	1:59	2	1:59	2
Dispatch	Rural	3:01	6	1:25	5	4:20	4	4:09	15
Turnout Time	Overall	2:01	6	0:31	5	4:16	6	3:58	17
1st Unit on	Urban		0		0	1:27	2	1:27	2
Scene	Rural	2:01	6	0:31	5	4:16	4	3:58	15
Distribution	Overall	6:01	6	42:22	5	9:38	6	26:06	17
Travel Time 1 st Unit on	Urban		0		0	2:33	2	2:33	2
Scene	Rural	6:01	6	42:22	5	9:38	4	26:06	15
Concentration	Overall	38:32	5	35:29	5	33:11	6	36:55	16
Travel Time Effective	Urban		0	4:51	1	4:35	2	4:51	3
Response Force (ERF)	Rural	38:32	5	35:29	4	33:11	4	35:29	13
Distribution	Overall	8:39	6	42:22	5	14:51	6	38:36	17
Total Response Time	Urban		0		0	4:44	2	4:44	2
1 st Unit on Scene	Rural	8:39	6	42:22	5	14:51	4	28:36	15
Concentration Total Response	Overall	38:34	5	36:55	5	33:37	6	36:55	16
Time Effective	Urban		0	9:44	1	8:01	2	9:44	3
Response Force (ERF)	Rural	38:34	5	36:55	4	33:37	4	36:55	13

Note: Moloka'i Island does not have any areas designated as suburban.



Distribution Performance Measure - EMS Calls

Benchmark – For 90% of all EMS calls on Moloka'i Island, the first-due company, staffed with a minimum of 2 personnel, shall arrive within 9 minutes and 30 seconds for urban areas and 23 minutes for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all EMS calls on Moloka'i Island, the first company, staffed with a minimum of 2 personnel, shall arrive within 9 minutes and 32 seconds for urban areas and 23 minutes and 18 seconds for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for EMS calls because the first arriving company is considered to be the entire effective response force (ERF). The Department relies on American Medical Response (AMR) to provide advanced life support (ALS) treatment and transport to the hospital.



Molokaʻi Island EMS Calls ———————————————————————————————————											
		20	13	20	14	20	15	2013-	-2015		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls		
Call Processing	Overall	4:25	288	4:23	304	4:49	324	4:30	916		
Time Pick-up to	Urban	4:17	108	4:01	107	3:57	115	4:03	330		
Dispatch	Rural	4:32	179	4:50	197	5:13	209	4:54	585		
Turnout Time	Overall	3:05	288	3:15	304	3:26	324	3:13	916		
1st Unit on Scene	Urban	2:50	108	3:05	107	3:23	115	3:05	330		
	Rural	3:09	179	3:25	197	3:28	209	3:21	585		
Distribution	Overall	15:52	-288	13:27	304	17:41	324	15:48	916		
Travel Time 1 st Unit on	Urban	4:32	108	5:10	107	3:45	115	4:27	330		
Scene	Rural	17:32	179	15:38	197	20:39	209	17:52	585		
Concentration Travel Time	Overall										
Effective Response Force	Urban										
(ERF)	Rural										
Distribution Total Response	Overall	20:32	288	19:50	304	22:52	324	20:52	916		
Time 1st Unit on	Urban	10:07	108	9:23	107	9:34	115	9:32	330		
Scene	Rural	22:58	179	21:16	197	25:19	209	23:18	585		
Concentration Total Response	Overall										
Time Effective	Urban										
Response Force (ERF)	Rural										
Note: Molokaʻi Island	does not have	e any areas	designate	d as subur	rban.				ann a sa iorrainn 1966.		



Distribution Performance Measure - Technical Rescues

Benchmark – For 90% of all technical rescue calls on Moloka'i Island, the first-due company, staffed with a minimum of 2 personnel, shall arrive within 24 minutes and 30 seconds for urban areas and 28 minutes and 30 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all technical rescue calls on Moloka'i Island, the first-due company, staffed with a minimum of 2 personnel, shall arrive within 24 minutes and 48 seconds for urban areas and 28 minutes and 35 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure – Technical Rescues

Benchmark – For 90% of all technical rescue calls on Moloka'i Island, the effective response force (ERF), staffed with a minimum of 6 personnel, shall arrive within 56 minutes for urban areas and 1 hour and 37 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all technical rescue calls on Moloka'i Island, the effective response force (ERF), staffed with a minimum of 6 personnel, shall arrive within 56 minutes and 26 seconds for urban areas and 1 hour, 37 minutes and 15 seconds for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Molokaʻi Island Technical Rescues 90 th Percentile Times											
		20	13	20	14	20	15	2013	-2015		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls		
Call Processing	Overall	8:55	4	8:16	5	3:30	6	8:35	15		
Time Pick-up to	Urban	8:55	1		0		0	8:55	1		
Dispatch	Rural	1:23	3	8:16	5	3:30	6	7:01	14		
Turnout Time	Overall	4:29	4	3:00	5	6:47	6	5:38	.15		
1st Unit on Scene	Urban	0:31	1		0		0	0:31	1		
Scene	Rural	4:29	3	3:00	5	6:47	6	5:38	14		
Distribution	Overall	21:42	4	20:41	5	26:53	6	24:17	15		
Travel Time 1 st Unit on	Urban	21:42	1		0		0	21:42	1		
Scene	Rural	10:00	3	20:41	5	26:53	6	23:47	14		
Concentration Travel Time	Overall	47:00	1	53:53	3	53:50	3	53:53	7		
Effective	Urban	47:00	1	20:48	1		0	47:00	2		
Response Force (ERF)	Rural		0	53:53	2	53:50	3	53:53	5		
Distribution Total Response	Overall	28:48	4	25:48	5	31:23	6	28:35	15		
Time 1st Unit on	Urban	24:48	1		0		0	24:48	1		
Scene	Rural	15:29	3	25:48	5	31:23	6	28:35	14		
Concentration Total Response	Overall	56:26	1	59:00	2	1:37:15	3	1:37:15	7		
Time Effective	Urban	56:26	1	27:43	1		0	56:26	2		
Response Force (ERF)	Rural		0	59:00	2	1:37:15	3	1:37:15	5		

Note: Moloka'i Island does not have any areas designated as suburban.



Distribution Performance Measure - Hazardous Materials Calls

Benchmark – For 90% of all hazardous materials calls on Moloka'i Island, the first-due company, staffed with a minimum of 2 personnel, shall arrive within 24 minutes and 30 seconds for urban areas and 28 minutes and 30 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all hazardous materials calls on Moloka'i Island, the first-due company, staffed with a minimum of 2 personnel, shall arrive within [no times available] minutes for urban areas and 9 minutes and 2 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for hazardous materials calls on Moloka'i Island because the first arriving company is considered to be the entire effective response force (ERF). Technician level resources can be brought in by boat if necessary, but will take at least 2 hours to arrive.



			Molok zardous 90 th Perc		ls Calls				
		20			14	20	15	2013-	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	55 E	0	1:15	1		0	1:15	1
Time Pick-up to	Urban		0		0		0		0
Dispatch	Rural	a no o Maria de Propinsione de la Ministra		1:15	1	on one she solven a	0	1:15	1
Turnout Time	Overall		0	0:01	1		0	0:01	1
1st Unit on Scene	Urban		0		0		0		0
Seene	Rural		0	0:01	1	1507 9 750 VARAN 1509	0	0:01	1
Distribution Travel Time 1 st Unit on	Overall		0	7:46	1		. 0	7:46	1
	Urban		0		0		0		0
Scene	Rural		0	7:46	1	t vinns species papage	0	7:46	1
Concentration Travel Time	Overall						A second		
Effective Response Force	Urban								
(ERF)	Rural								
Distribution Total Response	Overall		0	9:02	1		0.	9:02	. 1
Time 1 st Unit on	Urban		0		0		0		0
Scene	Rural	an consense e e su announce	0	9:02	1	o water with the state	0	9:02	1
Concentration Total Response	Overall								
Time Effective	Urban								
Response Force (ERF) Note: Moloka'i Island	Rural		an docine	tod as see	amb are		k alasah arabah	i dinina ka	



Lana'i Island Performance Measures

Distribution Performance Measure – Structure Fires

Benchmark – For 90% of all structure fires on Lana'i Island, the first engine company, staffed with a minimum of 4 personnel, shall arrive within 16 minutes and 30 seconds for urban areas and 21 minutes for rural areas. The first due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all structure fires on Lana'i Island, the first engine company, staffed with a minimum of 4 personnel, shall arrive within 16 minutes and 41 seconds for urban areas and [no times available] for rural areas. The first due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: For Lana'i Island, there are no areas designated as suburban, so times are only given for urban and rural.



Concentration Performance Measure

Benchmark – For 90% of all structure fires on Lana'i Island, the effective response force (ERF), staffed with a minimum of 5 personnel, shall arrive within 18 minutes and 30 seconds for urban areas and 22 minutes for rural areas. The ERF shall be capable of providing a minimum 2750 gallons of water and 1500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 150 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all structure fires on Lana'i Island, the effective response force (ERF), staffed with a minimum of 5 personnel, shall arrive within 21 minutes and 1 second for urban areas and [no times available] for rural areas. The ERF shall be capable of providing a combined 2750 gallons of water and 1500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line and a backup line flowing a minimum of 150 gpm each; securing an uninterrupted water supply; controlling the fire; complying with OSHA two-in, two-out requirements; completing forcible entry; searching for and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



				ʻi Island ture Fire entile Ti	es				
		20	13	20	14	20)15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	2:03	5	1:16	1	3:01	4	2:46	10
Time Pick-up to	Urban	2:03	5	1:16	1	3:01	4	2:46	10
Dispatch	Rural		0		0		0		0
Turnout Time	Overall	2:46	5	1:04	1	3:10	4	2:58	10
1st Unit on	Urban	2:46	5	1:04	1	3:10	4	2:58	10
Scene	Rural		0		0		0		0
Distribution	Overall	6:10	5	0:45	1	16:13	4	12:46	10
Travel Time 1st Unit on	Urban	6:10	5	0:45	1	16:13	4	12:46	10
Scene	Rural		0		0		0		0
Concentration	Overall	6:28	3		0	16:13	4	16:13	7
Travel Time Effective	Urban	6:28	3		0	16:13	4	16:13	7
Response Force (ERF)	Rural		0		0		0		0
Distribution	Overall	9:44	5	1:17	1	21:01	4	16:41	10
Total Response Time	Urban	9:44	5	1:17	1	21:01	4	16:41	10
1 st Unit on Scene	Rural		0		0		0		0
Concentration Total Response	Overall	10:02	3		Ō	21:01	4	21:01	7
Time Effective	Urban	10:02	3		0	21:01	4	21:01	7
Response Force (ERF)	Rural		0		0		0		0

Note: Lana'i Island does not have any areas designated as suburban.



Distribution Performance Measure - Wildland Fires

Benchmark – For 90% of all wildland fires on Lana'i Island, the first-due engine company, staffed with a minimum of 4 personnel, shall arrive within 10 minutes and 30 seconds for urban areas and 24 minutes for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all wildland fires on Lana'i Island, the first-due engine company, staffed with a minimum of 4 personnel, shall arrive within 10 minutes and 54 seconds for urban areas and [no times available] for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating atrisk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure - Wildland Fires

Benchmark – For 90% of all wildland fires on Lana'i Island, the effective response force (ERF), staffed with a minimum of 5 personnel, shall arrive within 11 minutes and 30 seconds for urban areas and 26 minutes for rural areas. The ERF shall be capable of providing a combined 2750 gallons of water and 1500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all wildland fires on Lana'i Island, the effective response force (ERF), staffed with a minimum of 5 personnel, shall arrive within 11 minutes and 31 seconds for urban areas and [no times available] for rural areas. The ERF shall be capable of providing a combined 2750 gallons of water and 1500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



			Wildl	i'i Island and Fire entile Ti	es				
		20			14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall		0		0	2:44	2	2:44	2
Time	Urban		0		0	2:44	2	2:44	2
Pick-up to Dispatch	Rural		0		0		0		0
Turnout Time	Overall	12-16-16 13-16-16-16-16-16-16-16-16-16-16-16-16-16-	0 .		0	2:48	2	2:48	.2
1st Unit on	Urban	-	0		0	2:48	2	2:48	2
Scene	Rural		0		0		0		0
Distribution	Overall		0		0	6:03	2	6:03	2
Travel Time 1 st Unit on	Urban		0		0	6:03	2	6:03	2
Scene	Rural		0, ,		0		0		0
Concentration Travel Time	Overall		0	i aja	0	6:40	2	6:40	2
Effective	Urban		0		0	6:40	2	6:40	2
Response Force (ERF)	Rural		0		0		0		0
Distribution Total Response	Overall		0.			10:54	2	10:54	2
Time	Urban		0		0	10:54	2	10:54	2
1 st Unit on Scene	Rural		0		0		0		0
Concentration Total Response	Overall		0		0	11:31	2	11:31	2
Time Effective	Urban		0	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	11:31	2	11:31	2
Response Force (ERF)	Rural		0		0		0		0

Note: Lana'i Island does not have any areas designated as suburban.



Distribution Performance Measure - EMS Calls

Benchmark - For 90% of all EMS calls on Lana'i Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 19 minutes for urban areas and 48 minutes and 43 seconds for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all EMS calls on Lana'i Island, the first company, staffed with a minimum of 4 personnel, shall arrive within 19 minutes and 18 seconds for urban areas and 50 minutes and 25 seconds for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for EMS calls because the first arriving company is considered to be the entire effective response force (ERF). The Department relies on American Medical Response (AMR) to provide advanced life support (ALS) treatment and transport to the hospital.



		(EM	'i Island S Calls entile Ti					
		20			14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	3:57	132	3:41	120	3:17	108	3:31	360
Time	Urban	3:44	130	3:41	117	3:17	105	3:30	352
Pick-up to Dispatch	Rural	5:19	2	3:49	3	3:12	3	5:19	8
Turnout Time	Overall	3:45	132	3:48	120	3:30	108	3:41	360
1st Unit on	Urban	3:42	130	3:48	117	3:20	105	3:38	352
Scene	Rural	5:55	2	5:53	3	6:09	3	6:09	8
Distribution	Overall	14:30	132	15:00	120	15:46	108	14:52	360
Travel Time 1 st Unit on	Urban	14:23	130	15:00	117	15:35	105	14:43	352
Scene	Rural	14:44	2	40:43	3	39:52	3	40:43	8
Concentration Travel Time	Overall								
Effective	Urban								
Response Force (ERF)	Rural						i je		
Distribution Total Response	Overall	19:03	132	19:42	120	20:05	108	19:30	360
Time 1st Unit on	Urban	18:56	130	19:42	117	19:35	105	19:18	352
Scene	Rural	25:58	2	50:25	3	49:13	3	50:25	8
Concentration Total Response	Overall								
Time Effective	Urban								
Response Force (ERF)	Rural								

Note: Lana'i Island does not have any areas designated as suburban.



Distribution Performance Measure – Technical Rescues

Benchmark – For 90% of all technical rescue calls on Lana'i Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 36 minutes for urban areas and 48 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all technical rescue calls on Lana'i Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 57 minutes and 36 seconds for urban areas and 3 hours, 42 minutes and 53 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure – Technical Rescues

Benchmark – For 90% of all technical rescue calls on Lana'i Island, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 55 minutes and 50 seconds for urban areas and 1 hour and 35 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all technical rescue calls on Lana'i Island, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 55 minutes and 59 seconds for urban areas and 8 hours, 2 minutes, and 54 seconds for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



				i'i Island cal Resc centile Ti	ues				
		20	13	20	14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	16:23	4	8:05	4	3:28	2	12:14	10
Time Pick-up to	Urban	16:23	4	5:00	2		0	16:23	6
Dispatch	Rural		0	8:05	2	3:28	2	8:05	4
Turnout Time	Overall	6:51	4	17:52	4	37:11	2	27:31	10
1st Unit on Scene	Urban	6:51	4	9:27	2		0	9:27	6
Secre	Rural		0	17:52	2	37:11	2	37:11	4
Distribution	Overall	38:09	4	8:39	4	2:14	2	50:11	10
Travel Time 1 st Unit on	Urban	38:09	4	7:14	2		0	38:09	6
Scene	Rural		0	8:39	2	3:02:14	2	3:02:14	4
Concentration Travel Time	Overall		0	34:13	3	7:53:51	2	7:53:51	5
Effective Response Force	Urban		0	34:13	1	41:00	1	41:00	2
(ERF)	Rural		0	26:22	2	7:53:51	1	7:53:51	3
Distribution Total Response	Overall	57:36	4	28:14	4	3:42:53	2	20:14	10
Time 1st Unit on	Urban	57:36	4	17:18	2		0	57:36	6
Scene	Rural		0	28:14	2	3:42:53	2	3:42:53	4
Concentration Total Response	Overall		0	43:17	3	8:02:54	2	8:02:54	5
Time Effective	Urban	·	0	43:17	1	55:59	1	55:59	2
Response Force (ERF)	Rural		0	37:53	2	8:02:54	1	8:02:54	3

Note: Lana'i Island does not have any areas designated as suburban.



Distribution Performance Measure - Hazardous Materials Calls

Benchmark – For 90% of all hazardous materials calls on Lana'i Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 36 minutes for urban areas and 48 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all hazardous materials calls on Lana'i Island, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 9 minutes and 35 seconds for urban areas and [no times available] minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for hazardous materials calls on Lana'i Island because the first arriving company is considered to be the entire effective response force (ERF). Technician level resources can be brought in by boat if necessary, but will take at least 2 hours to arrive.



			Lana zardous 90 th Perc		ls Calls				
		20	13	20	14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	2:14	1	1:50	3	2:30	1	2:30	5
Time	Urban	2:14	1	1:50	3	2:30	1	2:30	5
Pick-up to Dispatch	Rural		0		0		0		0
TO 4 TO:	Overall	3:07	1	4:08	3	0:55	1	4:08	5
Turnout Time 1st Unit on	Urban	3:07	1	4:08	3	0:55	1	4:08	5
Scene	Rural		0		0		0		0
Distribution	Overall	4:14	1	3:32	3	5:35	1	5:35	5 5
Travel Time 1 st Unit on	Urban	4:14	1	3:32	3	5:35	1	5:35	5
Scene	Rural		0		0		0		0
Concentration	Overall								
Travel Time Effective	Urban								
Response Force (ERF)	Rural								
Distribution	Overall	9:35	1	6:30	3	9:00	1	9:35	5
Total Response Time	Urban	9:35	1	6:30	3	9:00	1	9:35	5
1 st Unit on Scene	Rural		0		0		0		0
Concentration Total Response	Overall								
Time Effective	Urban								
Response Force (ERF)	Rural								

Note: Lana'i Island does not have any areas designated as suburban.



Hana District Performance Measures

Distribution Performance Measure - Structure Fires

Benchmark – For 90% of all structure fires in Hana District, the first engine company, staffed with a minimum of 4 personnel, shall arrive within 17 minutes for suburban areas and 48 minutes for rural areas. The first due engine company shall be capable of providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire to the building of origin; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all structure fires in Hana District, the first engine company, staffed with a minimum of 4 personnel, shall arrive within [no times available] for suburban areas and 48 minutes and 55 seconds for rural areas. The first due engine company shall be capable of providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire to the building of origin; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for structure fires in Hana District because the first arriving company is considered to be the entire effective response force (ERF). If additional companies are needed they are approximately 2 hours away by road.

Note: For Hana District, there are no areas designated as urban, so times are only given for suburban and rural.



				a Distric ture Fire entile Ti	es				
			13		14	20	15	2013	-2015
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall		0	2:37	3	2:04	2	2:37	5
Time Pick-up to	Suburban	·	0		0		0		0
Dispatch	Rural		0	2:37	3	2:04	2	2:37	5
Turnout Time	Overall		0	3:40	3	4:01	2	4:01	5
1st Unit on Scene	Suburban		0		0		0		0
Scene	Rural		0	3:40	3	4:01	2	4:01	5
Distribution	Overall		0	20:39	3	43:19	2	43:19	5
Travel Time 1 st Unit on	Suburban		0		0		0		0
Scene	Rural		0	20:39	3	43:19	2	43:19	5
Concentration Travel Time	Overall								
Effective Response Force	Suburban								
(ERF)	Rural								
Distribution Total Response	Overall		0	24:31	3	48:55	2	48:55	5
Time 1 st Unit on	Suburban		0		0		0		0
Scene	Rural		0	24:31	3	48:55	2	48:55	5
Concentration Total Response	Overall								
Time Effective	Suburban								
Response Force (ERF)	Rural								

Note: Hana District does not have any areas designated as urban.



Distribution Performance Measure - Wildland Fires

Benchmark – For 90% of all wildland fires in Hana District, the first-due engine company, staffed with a minimum of 4 personnel, shall arrive within 18 minutes for suburban areas and 46 minutes and 15 seconds for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all wildland fires in Hana District, the first-due engine company, staffed with a minimum of 4 personnel, shall arrive within 18 minutes and 5 seconds for suburban areas and 49 minutes and 20 seconds for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for wildland fires in Hana District because the first arriving company is considered to be the entire effective response force (ERF). Hana does also have a 1,800 gallon tanker available, but it is not permanently staffed. If used it is operated by a fire fighter from Engine 7.



Hana District Wildland Fires 90 th Percentile Times										
		2013		2014		2015		2013-2015		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls	
Call Processing Time Pick-up to Dispatch	Overall		0	1:51	2	2:37	2	2:37	4	
	Suburban		0	0:59	1		0	0:59	1	
	Rural		O producer on Albertaines	1:51	1	2:37	2	2:37	3	
Turnout Time 1st Unit on Scene	Overall		0	4:24	2	3:49	2	4:24	4	
	Suburban		0	2:19	1		0	2:19	1	
	Rural	Santan Adalan	0	4:24	1	3:49	2	4:24	3	
Distribution Travel Time 1st Unit on Scene	Overall		0	15:17	2	43:55	2	43:55	4	
	Suburban		0	14:47	1		0	14:47	1	
	Rural		0	15:17	1	43:55	2	43:55	3	
Concentration Travel Time Effective Response Force (ERF)	Overall		pageary /							
	Suburban				Ammerica (
	Rural									
Distribution Total Response Time 1st Unit on Scene	Overall		0	21:32	2	49:20	2	49:20	4	
	Suburban		0	18:05	1		0	18:05	1	
	Rural		0	21:32	1	49:20	2	49:20	3	
Concentration Total Response Time Effective Response Force (ERF)	Overall									
	Suburban									
	Rural									

Note: Hana District does not have any areas designated as urban.



Distribution Performance Measure - EMS Calls

Benchmark – For 90% of all EMS calls in Hana District, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 12 minutes for suburban areas and 41 minutes for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all EMS calls in Hana District, the first company, staffed with a minimum of 4 personnel, shall arrive within 12 minutes and 35 seconds for suburban areas and 41 minutes and 54 seconds for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for EMS calls because the first arriving company is considered to be the entire effective response force (ERF). The Department relies on American Medical Response (AMR) to provide advanced life support (ALS) treatment and transport to the hospital.



Hana District EMS Calls 90 th Percentile Times										
		2013		2014		2015		2013-2015		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls	
Call Processing Time Pick-up to Dispatch	Overall	6:41	67	5:26	65	5:00	112	5:15	244	
	Suburban	3:47	17	6:09	19	5:46	43	4:30	79	
	Rural	7:44	50	5:26	46	4:59	69	5:48	165	
Turnout Time 1st Unit on Scene	Overall	5:04	67	4:37	65	4:44	112	4:48	244	
	Suburban	5:37	17	4:00	19	3:52	43	4:02	79	
	Rural	5:01	50	4:54	46	5:37	69	5:01	165	
Distribution Travel Time 1 st Unit on Scene	Overall	38:39	67	23:46	65	31:07	112	29:58	244	
	Suburban	7:59	17	5:48	19	5:26	43	5:38	79	
	Rural	40:10	50	28:03	46	36:53	69	36:10	165	
Concentration Travel Time Effective Response Force (ERF)	Overall									
	Suburban									
	Rural									
Distribution Total Response Time 1st Unit on Scene	Overall	41:06	67	30:05	65	39:08	112	36:05	244	
	Suburban	14:08	17	10:59	19	13:35	43	12:35	79	
	Rural	43:05	50	36:08	46	43:34	69	41:54	165	
Concentration Total Response Time Effective Response Force (ERF)	Overall								an an an an aire	
	Suburban									
	Rural									

Note: Hana District does not have any areas designated as urban.



Distribution Performance Measure - Technical Rescues

Benchmark – For 90% of all technical rescue calls in Hana District, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 14 minutes and 44 seconds for suburban areas and 42 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

<u>Baseline</u> – For 90% of all technical rescue calls in Hana District, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 13 minutes and 25 seconds for suburban areas and 42 minutes and 56 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Concentration Performance Measure – Technical Rescues

Benchmark – For 90% of all technical rescue calls in Hana District, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within 1 hour and 20 minutes for suburban areas and 1 hour and 30 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all technical rescue calls in Hana District, the effective response force (ERF), staffed with a minimum of 8 personnel, shall arrive within [no times available] for suburban areas and 1 hour, 34 minutes, and 1 second for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.



Hana District Technical Rescues 90 th Percentile Times									
		2013		2014		2015		2013-2015	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing Time Pick-up to Dispatch	Overall	4:28	4	11:49	5	3:01	1	8:08	10
	Suburban	3:46	1		0		0	3:46	1
	Rural	4:28	3	11:49	5	3:01	1	11:49	9
Turnout Time 1st Unit on Scene	Overall	4:15	4	6:19	5	2:13	1	5:54	10
	Suburban	4:15	1		0		0	4:15	1
	Rural	3:47	3	6:19	5	2:13	1	6:19	9
Distribution Travel Time 1st Unit on Scene	Overall	22:30	4	27:14	5	7:07	1	24:52	10
	Suburban	5:24	1		0		0	5:24	1
	Rural	22:30	3	27:14	5	7:07	1	27:14	9
Concentration Travel Time Effective Response Force (ERF)	Overall	1:00:17	2	1:34:29	7	41:41	1	1:26:06	10
	Suburban		0		0		0		0
	Rural	1:00:17	2	1:34:29	7	41:41	. 1	1:26:06	10
Distribution Total Response Time 1st Unit on Scene	Overall	28:04	4	42:56	5	12:21	1	35:30	10
	Suburban	13:25	1		0		0	13:25	1
	Rural	28:04	3	42:56	5	12:21	1	42:56	9
Concentration Total Response Time Effective Response Force (ERF)	Overall	1:05:51	2	1:42:16	7	46:55	1	1:34:01	10
	Suburban		0		0		0		0
	Rural	1:05:51	2	1:42:16	7	46:55	1	1:34:01	10

Note: Hana District does not have any areas designated as urban.



Distribution Performance Measure - Hazardous Materials Calls

Benchmark – For 90% of all hazardous materials calls in Hana District, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 13 minutes and 20 seconds for suburban areas and 42 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Baseline – For 90% of all hazardous materials calls in Hana District, the first-due company, staffed with a minimum of 4 personnel, shall arrive within 13 minutes and 25 seconds for suburban areas and 1 hour, 30 minutes, and 45 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with Department Standard Operating Guidelines while providing for safety of responders and the general public.

Note: Concentration performance measures are not given for hazardous materials calls in Hana District because the first arriving company is considered to be the entire effective response force (ERF). If technician level response is required Hazmat 10 is approximately 2 hours away by road.



Hana District Hazardous Materials Calls 90 th Percentile Times									
		2013		2014		2015		2013-2015	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing Time Pick-up to Dispatch	Overall	1:20:46	2	0:35	3	2:47	2	20:46	7
	Suburban		0	0:00	1		0	0:00	1
	Rural	1:20:46	2	0:35	2	2:47	2	1:20:46	6
Turnout Time 1st Unit on Scene	Overall	3:20	2	2:00	3	7:39	2	7:39	7
	Suburban		0	2:00	1		0	2:00	1
	Rural	3:20	2	0:01	2	7:39	2	7:39	6
Distribution Travel Time 1st Unit on Scene	Overall	6:39	2	12:48	3	10:16	2	12:48	7
	Suburban		0	2:01	1		0	2:01	1
	Rural	6:39	2	12:48	2	10:16	2	12:48	6
Concentration Travel Time Effective Response Force (ERF)	Overall			V					
	Suburban								
	Rural								-cur
Distribution Total Response Time 1st Unit on Scene	Overall	1:30:45	2	13:24	3	20:42	2	30:45	7
	Suburban		0	0:01	1		0	0:01	1
	Rural	1:30:45	2	13:24	2	20:42	2	1:30:45	6
Concentration Total Response Time Effective Response Force (ERF)	Overall								
	Suburban								
	Rural								

Note: Hana District does not have any areas designated as urban.



COMPLIANCE METHODOLOGY

Compliance methodology requires that service level objectives and performance measures are evaluated and efforts are made to reach or maintain the established levels. The compliance model is outlined below.

Phase 1 - Establish/Review Performance Measures

The Department will review the services provided and community risk assessment, and reevaluate performance objectives and measures to ensure that they continue to match current needs.

Phase 2 – Evaluate Performance

The Department will evaluate performance at various levels, including the following:

- System level (entire Department)
- First-due area level (by station district)
- Unit level (by company and watch)
- FMZ level (by Fire Management Zone)
- ERF (Effective Response Force)

Performance will be compared to performance objectives, and shortcomings will be identified for use is Phase 3.

Phase 3 – Develop Compliance Strategies

Using the data from Phase 2, the Department will develop compliance strategies with may



include the following:

- Identify actions/solutions to close the gaps in catchment areas
- Determine whether resources that can/should be reallocated
- Consider alternative methods to provide service at desired level
- Ensure maximization of existing resources
- Develop budget requests to address shortfalls

Phase 4 – Communicate Expectations to Organization

The Department will communicate performance objectives to personnel and provide appropriate training and direction to work towards compliance. Any feedback from personnel will be considered and the Department will keep personnel updated on any improvement in performance (or lack thereof).

Phase 5 – Validate Compliance

The Department will perform an annual review of performance measures for the entire Department. The annual review will include assessment of the entire jurisdiction and by district, company, and fire management zone, including appraisal of any trending changes to incident type and/or frequency.

Phase 6 – Make Adjustments and Repeat Process

The process outlined above will be completed semi-annually. A complete update of the Standards of Cover will be completed every five years as part of the reaccreditation process.



OVERALL EVALUATION

System Strengths and Weaknesses

Strengths

- The Department is staffed entirely by full-time, career firefighters, resulting in a high level of commitment and professionalism.
- Apparatus are modern and well maintained, and adequately equipped to respond to most requests for service.
- The Department has a dedicated administration and support services staff and an overall positive public image.

Weakneses

- Call processing times are well below performance objectives. Improvements will be difficult due to the Department's lack of control over dispatch procedures and personnel.
- Turnout times are well below performance objectives.
- The Department does not meet response time objectives defined in NFPA 1710 and does
 not view them as realistically achievable within the jurisdiction. The wide geographic
 separation of populated areas by ocean channels, mountains, and unpopulated land areas
 makes travel times a huge challenge.
- The geographic isolation and staffing levels for Moloka'i Island, Lana'i Island, and Hana District do not allow for the same resource deployment and on-scene capabilities as compared to Maui Island. Getting additional personnel to those areas requires transportation by helicopter or boat, or an approximate 2 hour drive in the case of Hana.
- The Department does not have a ladder company for Central Maui. Rescue 10 and Hazmat 10 fulfill some of the ladder functions on structure fires, but without an aerial their capability is limited.



System Opportunities and Threats

Opportunities

- The Risk Assessment and Standards of Cover process will help the Department provide substantive data to the Mayor and County Council to support budget requests.
- Areas of weakness have been identified, providing the Department specific direction in working to improve service to the community.

Threats

- The County's population is expected to continue to grow, resulting in an increased strain on infrastructure and a trend toward higher call volume.
- The County has been reluctant to approve funding for new fire stations that would improve distribution of resources and response times.



Conclusions and Recommendations

The Department needs to take steps to improve response performance. Improvements to total response time can be achieved by addressing the following three areas:

Call Processing Time

While improving call processing times may prove difficult because the Department does not have any direct control over Dispatch, efforts should be made to improve dispatch procedures. It is also clear that Dispatch is understaffed. The Department would benefit from increased funding and/or dedicated fire dispatchers with direct accountability to the Department.

Turnout Time

Improvement in turnout times should be achievable through education and training. Other options should also be explored, such as:

- Adding TV monitors with CAD alerts to the office and living areas of each station to allow companies to get early notification and information on incidents before the alarm
- Add running clocks in the apparatus bays to show how much time has elapsed since the alarm sounded
- Install mobile data terminals on apparatus to get personnel on the apparatus faster (versus gathering at the current used printers to view call data)

Travel Time

Improvements in travel times will likely be the most difficult and expensive to achieve. For safety concerns, no effort should be made to encourage or promote personnel to operate emergency vehicles faster. Slight improvements may be possible by reevaluating station district boundaries to ensure that they are located for the most efficient response times. Larger improvements in response times (and perhaps even maintaining current performance into the future) will require large budget items, which may include some of the items listed below.:



Haiku Fire Station – The largest identified gap in service delivery is in the Haiku area. Haiku experiences a large number of incidents and both Engine 2 and Engine 5 are too far away to meet response time performance objectives. Moving those companies would create gaps elsewhere, so the only identified solution is an eventual new station in Haiku.

Other Future Fire Stations – Significant future development is planned for Central and West Maui. If this development becomes a reality, new stations will eventually be needed for Waikapu and South Lahaina. (See <u>Growth Boundary</u> maps in the Community Risk Assessment section.)

Kihei Fire Station Relocation – Response times to North Kīhei already do not meet established performance measures, and significant development is planned for North Kīhei *mauka* of Pi'ilani Highway. A relocation of Kīhei Fire Station to the north and inland (preferably along Pi'ilani Highway) could simultaneously address this issue and get the station out of the Tsunami Evacuation Zone.

Puko'o Fire Station Relocation— Station 12 is currently in too poor of a condition to house 4 firefighters and sits in a tsunami evacuation zone. Relocating the station to another location could solve both these problems.

Engine 12 Staffing – With only two personnel, Engine 12 cannot meet "2-in, 2-out" requirements for interior fire attack, leaving a gap in deployment capability on the east end of Moloka'i. Upgrading to a four-man minimum would solve this problem.

Ladder for Central Maui – With the exception of South and West Maui, which are already covered by ladder companies, the Kahului/Wailuku area has the highest concentration of risk for major occupancy and high-rise fires in the County. Rescue 10 and Hazmat 10 are trained to provide similar functions at structure fires, but without an aerial their capability is limited.



With all the multi-story and large commercial buildings in the Central Maui area, a new ladder company would fill a major gap in the Department's current capability.



BIBLIOGRAPHY

1 U.S. Census Bureau. (2015, December 2). Retrieved from State and County Quickfacts - Kalawao County, Hawaii: http://quickfacts.census.gov/qfd/states/15/15005.html

County of Maui. (2012, December 28). Retrieved from Maui Island Plan: http://www.co.maui.hi.us/index.aspx?nid=1503

County of Maui. (2014). Maui County Data Book.

County of Maui. (2015). Charter.

National Weather Service. (2012). Retrieved from http://www.prh.noaa.gov/hnl/hydro/pages/data_tbl_12.html

- Suburban Stats. (2014-2015). *Population Demographics for Maui County, Hawaii in 2014 and 2015*. Retrieved from Suburban Stats: https://suburbanstats.org/population/hawaii/howmany-people-live-in-maui-county
- U.S. Census Bureau. (2015, December). www.census.gov. Retrieved from U.S. Census Bureau: http://quickfacts.census.gov/qfd/states/15000.html

Department to earnd Public Safety
2015 Annual Report

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County of Maui | Department of Fire and Public Safety | 200 Dairy Road Kahuur, III 96732 | 808.270.7561



JEFFREY MURRAY >

ROBERT SHIMADA
DEPUTY FIRE CHIEF

COUNTY OF MAUI DEPARTMENT OF FIRE & PUBLIC SAFETY

200 DAIRY ROAD KAHULUI, HI 96732 (808) 270-7561 Fax (808) 270-7919

October 10, 2016

Honorable Alan M. Arakawa Mayor, County of Maui Kalana O Maui 200 S. High Street Wailuku, HI 96793

Dear Mayor Arakawa:

In accordance with the provisions of Section 13.7 of the Maui County Charter, we are pleased to submit the annual report of the activities of the Department of Fire and Public Safety for fiscal year ending June 30, 2016.

This report reflects the continuing effort and education by members of our Department, striving ever to provide the best fire protection and the necessary protection of life, environment and property within Maui County.

On behalf of the Department of Fire and Public Safety, may we extend our personal appreciation to you and your Staff, and the members of the County Council for your whole-hearted cooperation and support extended to our Department throughout the year.

Respectfully Submitted,

JEFFREY A. MURRAY

Fire Chief



County of Maui Department of Fire & Public Safety

Mission Statement:

Dedicated to protect and preserve life, environment, and property.

Department Goals:

- 1. Suppress and extinguish all hostile fires.
- 2. Perform search and rescue on land and sea.
- 3. Provide quality emergency medical services.
- 4. Prevent, mitigate and stabilize hazardous materials incidents.
- 5. Participate in the County's localized disaster response network.
- 6. Provide education in fire safety and administer the Fire Code.
- 7. Maintain vehicles and equipment for emergency responses.
- 8. Develop and support an effective organization.

Years One to Five

- Achieve Accreditation.
- Enroll all qualified staff into the Executive Fire Officer Program (EFOP) at the National Fire Academy in Maryland.
- Establish a vehicle replacement and purchase committee that will make recommendations to the Fire Chief.
- Improve our maintenance program for vehicles and apparatus immediately.
- Work towards compliance in all areas of the department's responsibilities and operations, to include OSHA and NFPA guidelines.

- Establish an executive committee charged with taking a proactive approach to represent the department in present and future community developments. This will allow input/feedback in the early planning stages for these projects.
- Provide logistical and clerical assistance for the Battalion Chief's office.
- Establish weekly communications from the administration to all stations/members to keep them updated and "in the loop."
- Establish Rapid Intervention Teams (RIT) to comply with our FEMA grant.
- Increase initial training standards during firefighter recruit class and probationary period.
- Revisit the strategic plan every two to three years.
- Increase staffing in the Fire Prevention Bureau.
- Establish a merit program for Department personnel.
- Implement a newly formatted Rules and Regulations/Manual of Operations to allow timely and efficient updates and revisions.
- Increase our involvement with Department of Homeland Security plans and programs. "911: Never Forget."
- Establish a planning process with a clear set of criteria for the building of new fire stations to accommodate population and visitor growth.
- Explore the development of a Junior Firefighter program.

Years Six to Ten

- Achieve Accreditation. This provides a way to measure the effectiveness and efficiency of our fire department by determining community risk and fire safety needs, accurately evaluating the organization's performance, and providing a method for continuous improvement
- Complete the merger of Ocean Safety Officers into our department.
- Maintain and update the department's strategic plan as a continuously living/working guideline: our "roadmap to success."
- Continue towards updating and modifying laws that affect our department's ability to conduct business, allowing us to streamline services and increase productivity.

- Continue to support advanced training and continuing education for Chief Officers and supervisors to ensure safety and a positive attitude toward our department's mission.
- Maintain an experienced executive committee on community developments. Train new members for the future.
- Engage in aggressive research and development for all aspects of the department's responsibilities.
- Maintain memorandums of agreement for statewide disaster response. Work towards expanding response and training service

Department of Fire and Public Safety Maui County Charter Chapter 7

Section 8-7.1. Organization. There shall be a department of fire and public safety consisting of a fire and public safety commission, a fire chief, and the necessary staff. (Amended 2002, 1986)

Section 8-7.2. Fire and Public Safety Commission. The fire and public safety commission shall consist of nine members appointed by the mayor with the approval of the council.

The fire and public safety commission shall:

- 1. Adopt such rules, as it may consider necessary for the conduct of its business and regulation of the matters committed to its charge by law.
- 2. Review and submit to the mayor the department's request for an annual appropriation for the operation of the department.
- 3. Review the operations of the department of fire and public safety and the civil defense agency and make recommendations for changes that may be desirable to improve the performance of emergency functions and the provision of public safety services.
- 4. Receive, review, and investigate any charges brought forth by the public against the conduct of the department of fire and public safety or any of its members and submit a written report of its findings and recommendations to the fire chief for disposition.
- 5. Evaluate at least annually the performance of the fire chief and submit a report to the mayor and the council.

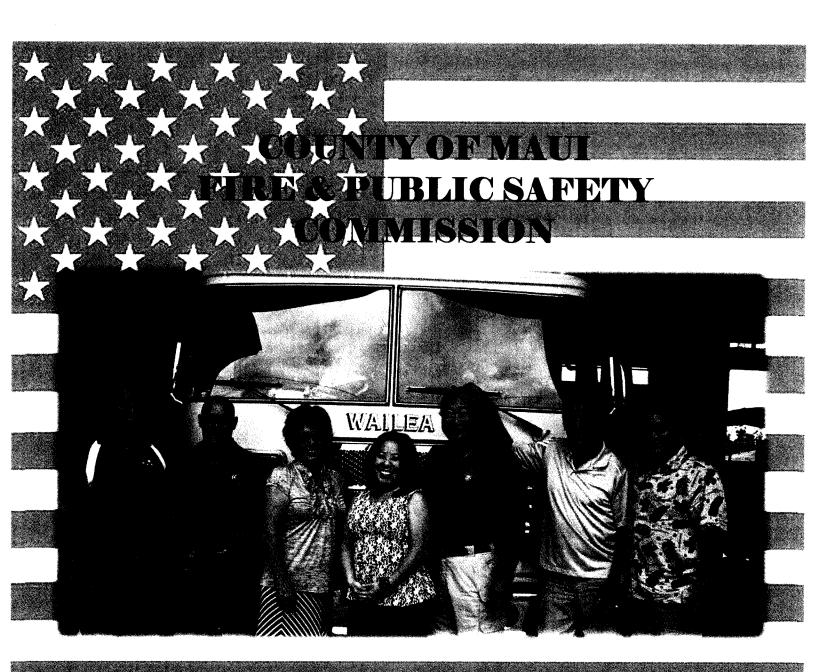
- 6. Submit an annual report to the mayor and the council on its activities.
- 7. Have such other powers and duties as may be provided by law.

Except for purposes of inquiry or as otherwise provided in this charter, neither the commission not its members shall interfere in any way with the administrative affairs of the department. (Amended 2002)

Section 8-7.3. Fire Chief. The fire chief shall be appointed and may be removed by the fire and public safety commission. The fire chief may be removed by the fire and public safety commission only after being informed in writing of the charges that are resulting in the fires chief's dismissal, and after being given a hearing before the commission. The fire chief shall have had a minimum of five years of experience in fire control, at least three years of which shall have been in an administrative capacity. (Amended 2002)

Section 8-7.4. Powers, Duties and Functions. The fire chief shall:

- 1. Be the administrative head of the department.
- 2. Provide and perform fire fighting, rescue, and first-responder emergency services in order to save lives and property from fires and other emergencies arising on land, sea, and hazardous terrain, including the mitigation and stabilization of hazardous materials and incidents relating to the same.
- 3. Provide public education programs related to fire prevention and public safety.
- 4. Train, equip, maintain, and supervise the force of fire fighting and emergency rescue personnel.
- 5. Investigate the cause, origin and circumstances of fires.
- 6. Adopt rules relating to the protection of persons and property against fires.
- 7. Monitor the standards or construction and occupancy of buildings for the purpose of fire prevention and life safety and approve building plans as provided by law.
- 8. Exercise such other powers and duties as may be assigned by the commission or as may be provided by law. (Amended 2002, 1992, 1984)



Commission Members Travis Tuncayo, Archie Kalepa,

Chair Doreen "Pua" Canto, Vice Chair Robyne Nishida Nakao, Charles Hirata, Joaquin "Jack" Freitas, and Edwin Misaki

Not Pictured: Commission Members Patrick Borge and Linda Fernandez

County of Maui Fire & Public Safety Commission July 1, 2015 – June 30, 2016

Commission Members

In March 2016, we bid a sad adieu to our Commission Chair William Soares and Vice Chair Allen Souza. Both Commissioners began their terms on April 1, 2011 and contributed immensely toward the Department's goals and were a huge support for the Maui Fire Department.

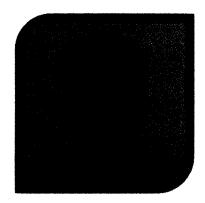
On April 1, 2016, the Commission welcomed two new Commission Members Jack Freitas of Maui and Travis Tancayo of Moloka'i. Commissioner Freitas has been a Maui business owner for many years and has served on the Planning Commission. Commissioner Tancayo is a twenty-five year veteran with the Maui Fire Department. The Commission is delighted to have both Commission Members Freitas and Tancayo on board with their vast knowledge and experience.

At the March 24, 2016 meeting, the Commission selected Commissioner Doreen "Pua" Canto to be the Chair and Commissioner Robyne Nishida Nakao to be the Vice Chair. Chair Canto will be completing her term on March 31, 2017.

Fire Chief's Review

On March 24, 2016, the Fire & Public Safety Commission completed their annual review of Fire Chief Jeffrey A. Murray. The evaluation form rates the Chief on areas such as Customer Service, Planning & Organization, Leadership, Communication, Personnel Management and Goal Achievements. Fire Chief Murray continues to receive high marks in all major evaluation categories and these results were communicated to the County Council and Mayor Arakawa.

Maui Fire Department Honored Retirees Fiscal Year 2015-2016



Fire Lieutenant Scott English



Firefighter Shane Bush



Battalion Chief Ryan Ayakawa



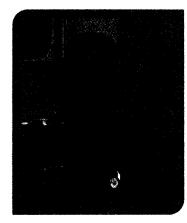
Fire Captian Sheldon Holokai



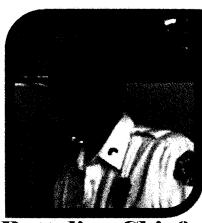
Firefighter Daniel Wallace



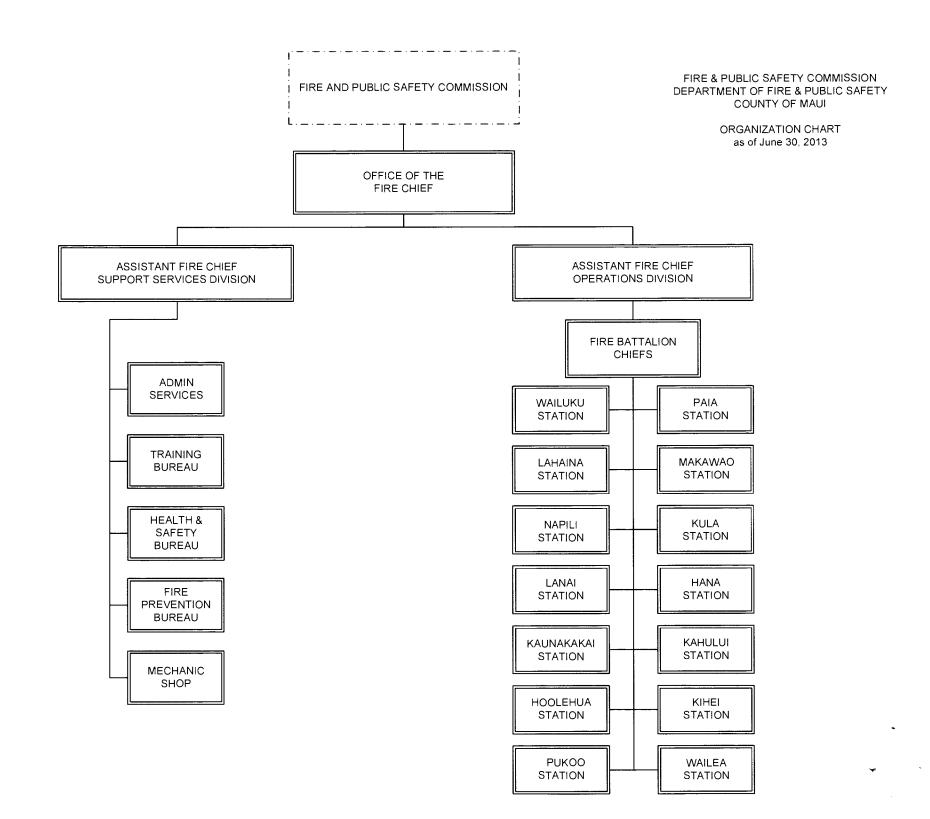
Fire Captain Kelan Puaa



Firefighter III Rockne Matsuda



Battalion Chief Louis Romero



AUTHORIZED PERSONNEL

FISCAL YEAR 2015 - 2016

ADMINISTRATION

ADMINISTRATION					
FIRE CHIEF	1				
DEPUTY FIRE CHIEF	1				
ASSISTANT FIRE CHIEF	2				
FIRE SERVICE OFFICER	1				
BATTALION CHIEF	1				
ADMINISTRATIVE ASSISTANT	1				
PRIVATE SECRETARY	1				
PERSONNEL CLERK	1				
FIRE MECHANIC	3				
LEAD FIRE EQUIPMENT MECHANIC	1				
OFFICE OPERATIONS ASSISTANT					
ACCOUNT CLERK	1				
BUSINESS MANAGER	1				
EQUIPMENT TECHNICIAN	1				
TRAINING/HEALTH & SAFETY					
TRAINING CAPTAIN	1				
HEALTH & SAFETY CAPTAIN	1				
FIRE FIGHTER III	4				
MEDICAL SPECIALIST	1				
OFFICE OPERATIONS ASSISTANT	1				
FIRE PREVENTION BUREAU					
FIRE CAPTAIN	1				
FIRE FIGHTER IV (Plans Reviewer)	2				
FIRE FIGHTER III (Fire Inspector)	6				
OFFICE OPERATIONS ASSISTANT	1				
ACCOUNT CLERK	1				
FIRE SUPPRESSION FORCE					
BATTALION CHIEF	6				
FIRE CAPTAIN	51				
FIRE FIGHTER III	69				
FIRE FIGHTER II	18				
FIRE FIGHTER I	138				
TOTAL PERSONNEL	319				





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GPERATIONS

David Thyne

ASSISTANT CHIEF OF SUPPORT SERVICES

Valeriano Martin

FIRE SERVICES OFFICER
Edward Taomoto

BATTALION CHIEF OF OCEAN SAFETY

Colin Yamameto

SUPPORT SERVICES

MECHANIC SHOP



Deputy Chief Secretary Chasserae Kaawa, Fire Chief Secretary Crystal Sakai

Internal Affairs Officer Dukie Racadio, Business Administrator Cindy Kagoshima, and Administrative Assistant Sutji Gunter. Not Pictured: Account Clerk Shirley Falcon Mechanic Blaine Loque, Mechanic Shawn Kan-Hai, Office Operations Assistant Lynn Vicla,

Mechanic Ray Shimizu, and Lead Mechanic Victor Contanilla

Administrative Services Highlights Annual Report Fiscal Year 2015 – 2016

Fire Station Maintenance

The Integrated Infrastructure Management Program, with funds implemented for county-wide fire facility projects, was appropriated \$300,000.00 in FY '16.

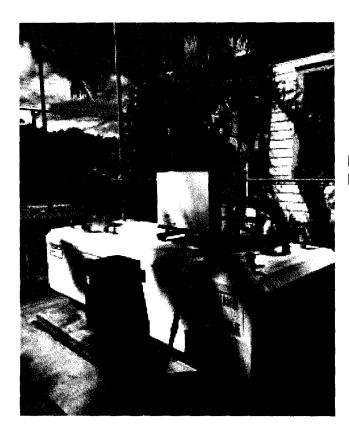
MFD Administration continues to strive to provide a working environment most conducive to the needs of the firefighters so they may perform their vital duties in accomplishing our mission statement. The unique schedule, inherent job hazards, and firehouse environment require the best fire equipment technology and comfortable living conditions that we are able to provide. Repairing items such as plumbing, lighting and appliances are just a few items that are dealt with regularly. The following is a list of major accomplishments completed during the last year.

- Installed new generators for Lana'i and Napili Fire Stations
- Completed covered walkway at Ho'olehua Fire Station linking living area with apparatus and office building.
- Installed new fuel tanks at Wailuku, Ho'olehua and Pa'ia Fire Stations.

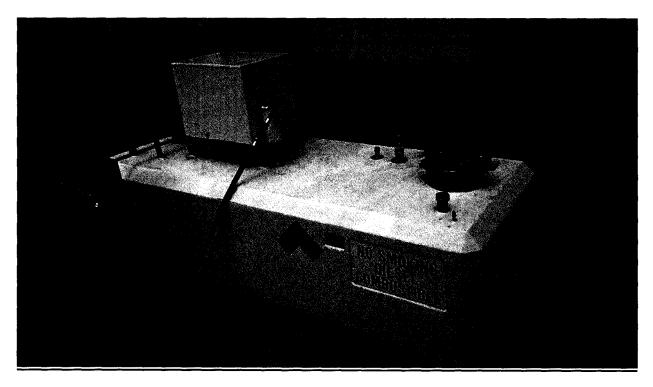


Lana'i Fire Station Generator

Ho'olehua Fire Station Walkway



Paia Fire Station Fuel Tank



Ho'olehua Fire Station Fuel Tank

Modified Special Assignment

The Modified Special Assignment Program (MSA) continues to provide a mechanism for firefighters who are injured or sick, to return to work and be assigned tasks in accordance with their treating physician's estimated functional capacity allowance. This program allows our trained professionals to continue to use their skills for the benefit of the department even when they are unable to perform their duties as emergency responders. It also allows our personnel to rehabilitate at a prescribed pace while remaining active and involved in department functions that need additional resources. During FY '16, there were two (2) firefighters who took advantage of this opportunity. All firefighters have returned to full duty after reducing Worker's Compensation claims, conserving sick leave, and learning administrative functions of the department.

Community Emergency Response Team (CERT)



It has been shown time and time again that communities will come together in the event of an emergency. CERT aims to help mitigate disaster situations by tapping into this community resource in two ways. First, by teaching communities to be better prepared for a disaster, we can greatly reduce the amount of people who will need immediate emergency assistance. By not becoming a victim themselves, they also create a situation in which they can help others. The second goal of CERT is to train volunteers to assist emergency personnel in a SAFE manner. CERT is not in any way meant to be a substitution for professional emergency workers. Volunteers are trained to assist emergency personnel by safely triaging and collecting victims, and moving them to a predetermined area where they can be treated by a higher medical authority.

In the event that trained personnel are either unavailable or delayed, CERT volunteers are trained to administer basic first aid, as well as keep documentation.

In FY '16, classes were held in Kihei, Upcountry, Lahaina, Kahului, and Hana. There are approximately 15 active instructors in MFD, ranging from Chiefs to second year Firefighters. One of the main focuses for FY '17 will be training of our instructors. One of our members was fortunate enough to recently attend a week long FEMA funded train-the-trainer course at the Emergency Management Institute in Maryland. Another member is scheduled to attend that same class in FY '17. By training our members to be better instructors, we not only provide a better product to the public, but we also create an asset to the Department.

Much work is still needed, CERT is still a "catch and release" program. Disasters do not happen often, and keeping people interested without ever getting a chance to assemble and respond continues to be a challenge. That being said, CERT will always have merit as a community preparedness program.

Grants

Maui County, Department of Fire & Public Safety, continues to actively pursue grant opportunities afforded to fire departments through both private and government agencies. The following is a list of grant awards and denials the department received in FY '16.

- Assistance to Firefighters Grant Program (AFG) is administered by FEMA and the Department of Homeland Security and supports projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to reduce injury and prevent death among high-risk populations. The Department was denied a grant request for \$57,300 to purchase and install a fixed cascade system at Kaunakakai Fire Station for the purpose of refilling our own SCBA bottles on Molokai instead of transporting the bottles by the Departments rescue boats.
- Assistance to Firefighters Grant Program (AFG) is administered by FEMA and the Department of Homeland Security and supports projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to reduce injury and prevent death among high-risk populations. The Department has submitted a grant proposal in the amount of \$579,750 to replace 75 obsolete SCBA units (harness, facepiece, and two cylinders). The remainder of SCBA units that are currently in service (82) will be scheduled for replacement as well. A decision on this grant award by FEMA had not been made at the time of this report.
- Wildland Urban Interface Grant (WUI) is administered by the U.S. Forest Service and supports projects that educate and protect urban areas that interface with the wildland environment and are therefore at risk from wildland fire. The

Department wrapped up its Olowalu Firebreak Project, a collaborative project with West Maui Land Company and State of Hawaii Division of Forestry and Wildlife, to install a firebreak around Olowalu Village (\$22,138).

- U.S. Department of Transportation (US DOT) provides grant funding for projects relating to safety on emergency operations on US roadways. The Department was denied a request for \$49,497 needed to outfit MFD staff with high visibility raincoats that would provide emergency medical services and rain protection during response.
- Community Development Block Grant Program (CDBG) provides grant funding for projects serving rural and low-income communities. The Department just received a new Tanker for Kaunanakai Fire Station that will serve the Molokai Island communities for many years to come (\$708,500). The Tanker went in to service in July 2016.
- Community Development Block Grant Program (CDBG) provides grant funding for projects serving rural and low-income communities. The Department received a grant for \$900,000 to replace the Engine at Hoolehua Fire Station on Molokai. The Engine will go in to service in 2017.
- Received \$40,000 from FEMA via the Hawaii State Civil Defense for Maui Fire Department expenses related to Tropical Storm Iselle response in August 2014. An additional \$45,000 is expected when all documents have been reviewed.

Accreditation

After years of compiling critical data, the application for accreditation was submitted to the Center for Public Safety Excellence (CPSE) on March 31, 2016. The CPSE team is currently reviewing the application and will schedule a site visit in the future when the application passes the initial review. Improvements will continue to take place even if accreditation is achieved. An accreditation site visit is preliminarily scheduled for fall of 2016. Although the entire Department is responsible for accreditation, about 50 people in the Department have played an intricate part in preparing the application and creating the processes.

- The Department's 2016-2020 Strategic Plan went in to effect in February 2016.
- Conducted two separate web-based surveys on the direction concerning goals and objectives that the Department should be concentrating on. One survey was given to Department employees and the other was given to the public.
- A new risk assessment software called Vision was implemented to track and record the Departments pre-plans. The information is used to score the risk

assessment of a particular facility and the potential challenges that the Department would face in an emergency. This is an accreditation requirement.

- Updated various memorandum of understanding documents with other agencies.
- Collaborated with Maui County's GIS Department to physically locate and mark locations of fire hydrants in Maui County by global position (GPS) for future use in software.

Fire Fighter Behavior and Health Study Participation

MFD agreed to participate in a study in FY '17 that is run by Dr. Walker S. Carlos Poston, Deputy Director and Senior Principal Investigator for the Institute for Biobehavioral Health Research, National Development and Research Institutes (NDRI), Inc. Fire Fighters in Maui County will be tracked and surveyed to see how behavior and physical fitness are affected by being a fire fighter. The data will be used to publish research study results regarding the fire fighter profession. There is no cost to the County of Maui.

Estimated Cost to Respond to Visitors Research Report

A report was completed by the Assistant Chief of Administrative Services in May 2016 on the estimated annual cost that the MFD spends to respond to visitors in a 12 month period. The report estimated a cost of \$3.77 million or 11.8% of the Departments annual budget.

INTERNAL AFFAIRS DIVISION

The Internal Affairs Division of the Department of Fire & Public Safety is responsible for investigating internal affairs matters such as citizen's complaints, inquiries, Department initiated investigations and conducting background checks for prospective employees. The purpose of the Internal Affairs function is to maintain the integrity of the Department through objective, fair, unbiased and impartial internal investigations and review to ensure public trust in the Department.

This Division is under direct supervision of the Fire Chief. For the 2015-2016 fiscal year, Internal Affairs Dukie Racadio was responsible for the completion of any tasks that was assigned to this Division. The Division continues to evolve using up to date technology and training related to this essential and necessary function.

COMMUNITY SERVICE



Operations Statistics and Annual Highlights July 1, 2015 – June 30, 2016

The Operations Division of the Maui Fire Department is led by an Assistant Chief who is directed by the Fire Chief and Deputy Chief. There are two Battalion Chiefs who are on duty every day to manage each of the two battalions.

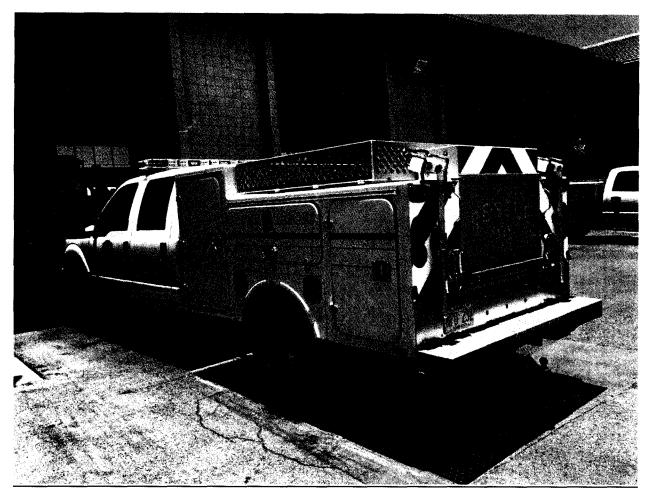
New Fire Apparatus Purchased in Fiscal Year 2016

RESCUE BOAT 10



A new 26' rescue boat was placed in service at the Kahului Fire Station this fiscal year. The rescue boat is built with a "Radon" type, all fiberglass hull and is powered by twin Volvo diesel motors that are capable of generating 440 horsepower. This boat also comes equipped with a Furuno chart plotter, Furuno radar and a Furuno depth finder. This equipment greatly enhances our ability to navigate in extreme weather and to locate lost victims and vessels in distress. The boat is capable of withstanding the extreme ocean conditions that are frequently found around Maui County and is designed to operate for extended periods of time. RB-10 will keep our personnel safe while performing dangerous rescues for many years to come. It was built by D.R. Radon Boat Building Inc. in Santa Barbara, CA.

KAHULUI FIRE STATION RESCUE 10 UTILITY



A new 4x4 utility truck with a rescue body was placed in service at the Kahului Fire Station this fiscal year. The truck is built on a Ford F-350 4x4 crew cab chassis with a fiberglass rescue body and is equipped with a diesel engine that is capable of towing our rescue boat. This truck comes with multiple compartments for storing rescue gear and helicopter operations equipment. It was built by Manning Equipment in Louisville, KY and BrandFX Body Co. in Swea City, IA.

Notable Incidents July 1, 2015 – June 30, 2016

7/14/15: Kihei Brush Fire

7/14/15: Waiehu Structure Fire

8/14/15 - 8/17/15: Ka'anapali Brush Fire



10/26/15: Nakalele blow hole rescue



7/31/16: 31st Recruit class: Consisted of 14 County and 14 State firefighters who endured 28 weeks of rigorous physical training, academic study, and practical skills training in medical, rescue and firefighting tactics.



10/29/15: A residential structure fire at a Naniluna Place home in Wailuku, claimed the life of a 95 year old man.







2/15/16: A brush fire near milepost 25 on Piilani Hwy. in Kahikinui burned 6000 acres. 4/6/16: Mala boat grounding

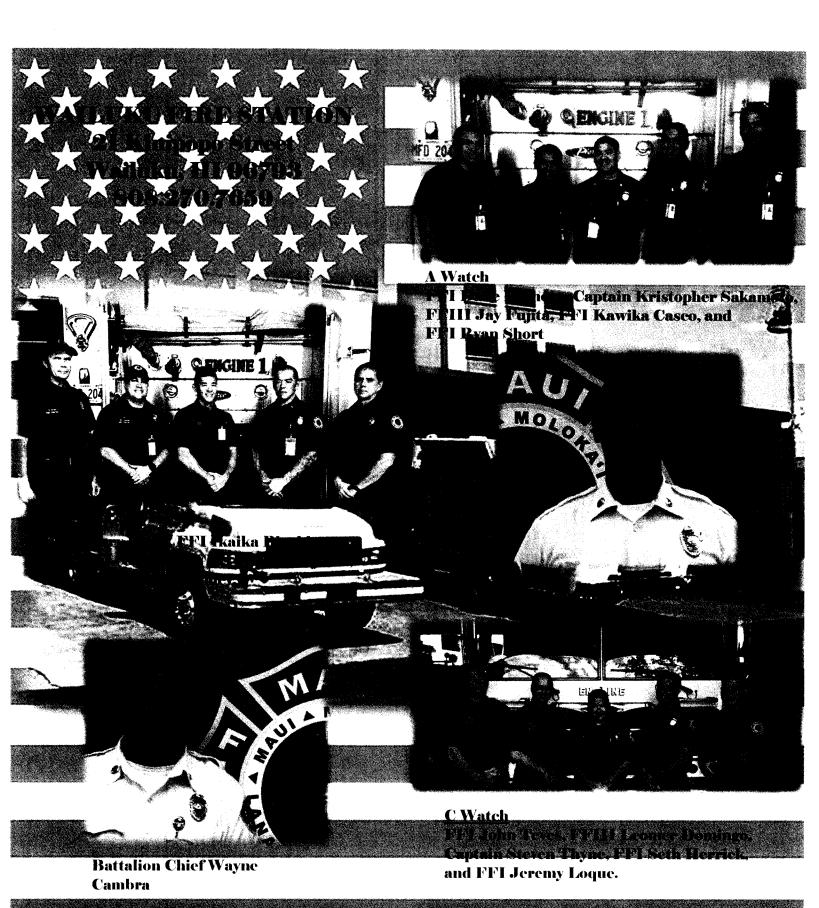


5/7/16: Kapalua Brush Fire

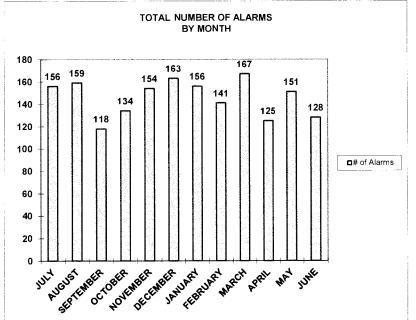


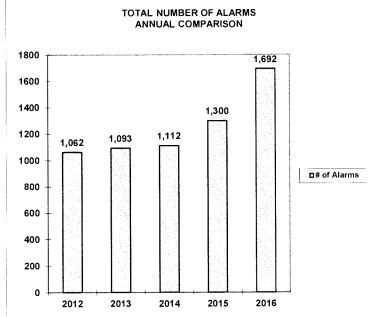
5/16/16: Ho'olehua Brush Fire





WAILUKU FIRE STATION

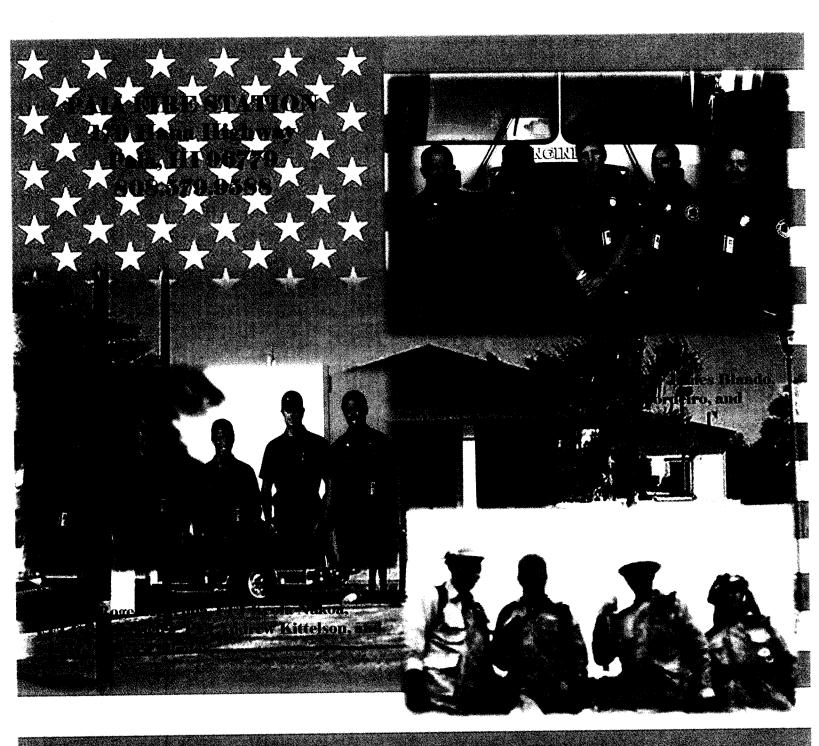




NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY WAILUKU STATION							
MONTH	2012	2013	2014	2015	2016		
JULY	118	87	95	143	156		
AUGUST	100	101	110	137	159		
SEPTEMBER	80	96	87	147	118		
OCTOBER	74	99	106	119	134		
NOVEMBER	96	77	96	122	154		
DECEMBER	96	99	122	158	163		
JANUARY	96	89	122	188	156		
FEBRUARY	86	91	103	140	141		
MARCH	100	114	123	145	167		
APRIL	74	89	98	161	125		
MAY	100	85	136	115	151		
JUNE	73	85	102	117	128		
TOTAL	1093	1,112	1,300	1,692	1,752		

Wailuku Fire Station has a total of fifteen personnel: three Captains, three Firefighter III's, and nine Firefighters I's. Wailuku Station houses one Engine Company. There are five personnel on duty daily.

The Wailuku District sustained a total dollar loss of \$1,647,550.00 during this fiscal year.

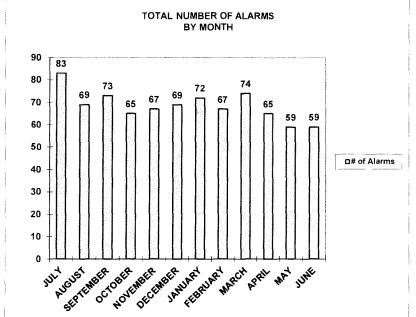


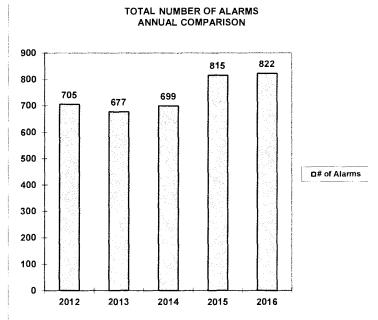
e Wateb

FFIII Vince Steves, FFI Matthew Kinoshita, Captain Benjamin Bland, and FFI Merritt Kaufman.

NEVENTORIA DI ENGLISSE GISTE

PAIA FIRE STATION



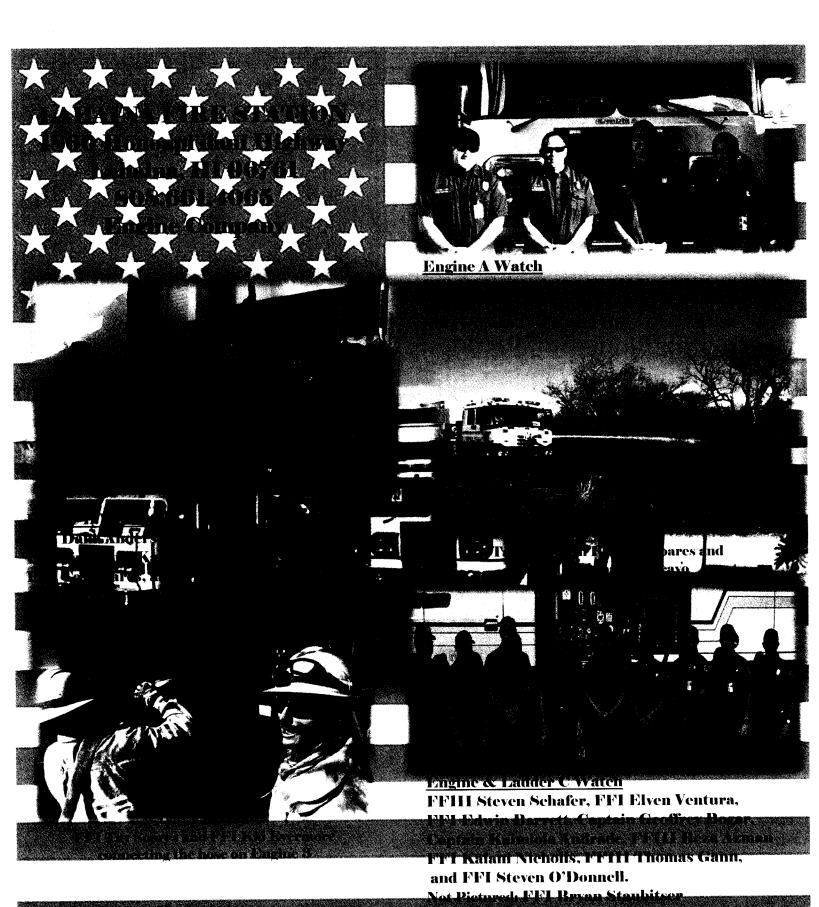


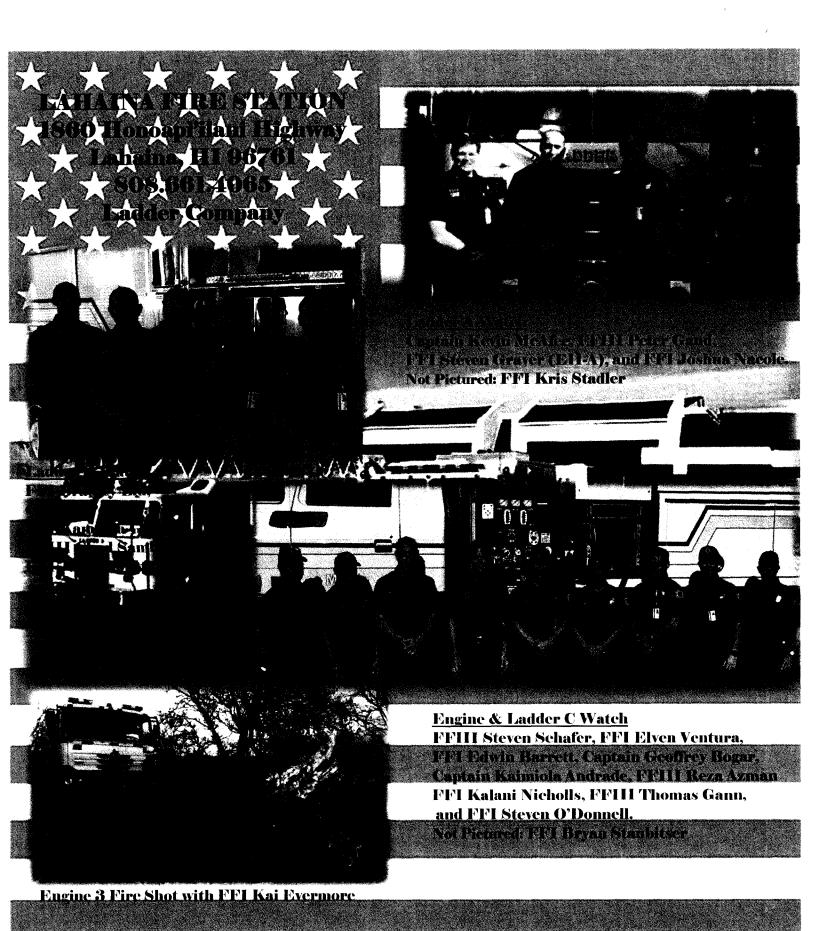
NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY PAIA STATION							
MONTH	2012	2013	2014	2015	2016		
JULY	78	57	34	67	83		
AUGUST	63	43	66	66	69		
SEPTEMBER	47	51	47	65	73		
OCTOBER	42	58	59	66	65		
NOVEMBER	56	48	56	74	67		
DECEMBER	49	58	58	52	69		
JANUARY	64	94	70	79	72		
FEBRUARY	60	53	66	67	67		
MARCH	53	65	63	76	74		
APRIL	47	55	58	59	65		
MAY	79	52	65	70	59		
JUNE	67	43	57	74	59		
TOTAL	705	677	699	815	822		

Paia Fire Station has a total staffing of fifteen personnel. Three Captains, three Firefighter III's, and nine Firefighters I's.

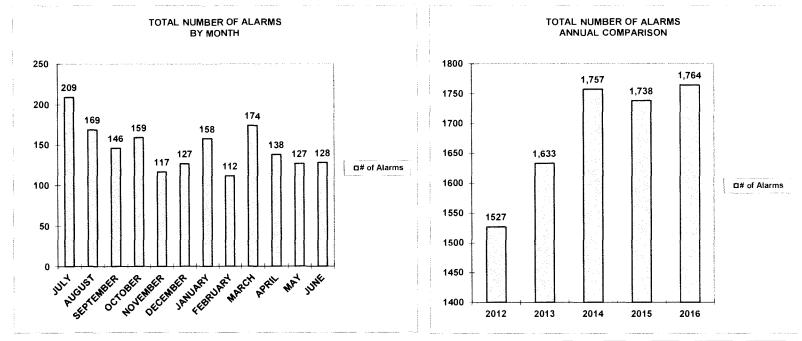
Paia Station houses one Engine Company. There are five personnel on duty daily.

The Paia District sustained a total estimated dollar loss of \$1,445,000.00 during this fiscal year.





LAHAINA FIRE STATION

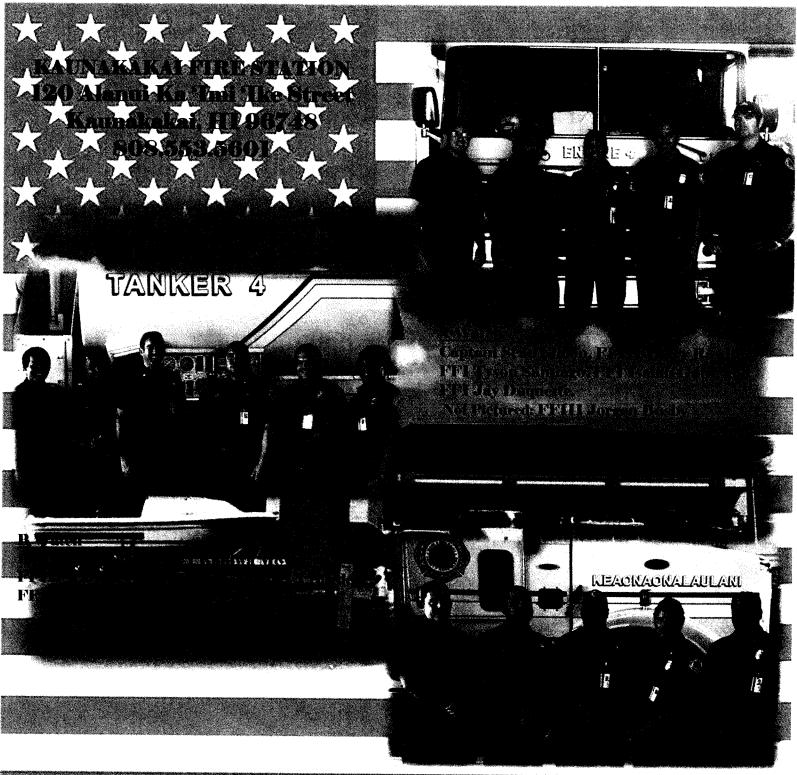


NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR							
		COMPARATIVE LAHAINA S					
MONTH	2012	2013	2014	2015	2016		
JULY	171	177	146	170	209		
AUGUST	133	115	161	129	169		
SEPTEMBER	104	127	116	124	146		
OCTOBER	129	128	115	139	159		
NOVEMBER	123	151	115	111	117		
DECEMBER	93	112	149	178	127		
JANUARY	142	144	153	181	158		
FEBRUARY	104	138	138	155	112		
MARCH	112	163	176	169	174		
APRIL	121	121	146	120	138		
MAY	167	146	192	115	127		
JUNE	128	111	150	147	128		
TOTAL	1527	1,633	1,757	1,738	1,764		

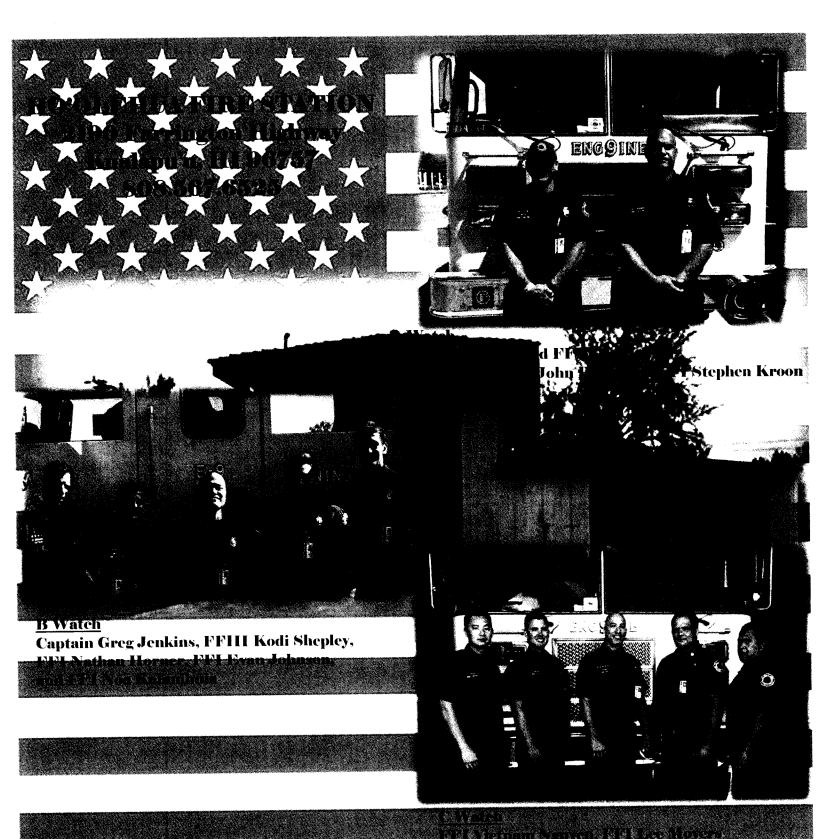
Lahaina Fire Station has a total of 33 personnel: six Captains, nine Firefighter III's, and eighteen Firefighters I's.

Lahaina Station houses one Engine Company, one Ladder Company, and one Tanker. Eleven personnel are on duty daily.

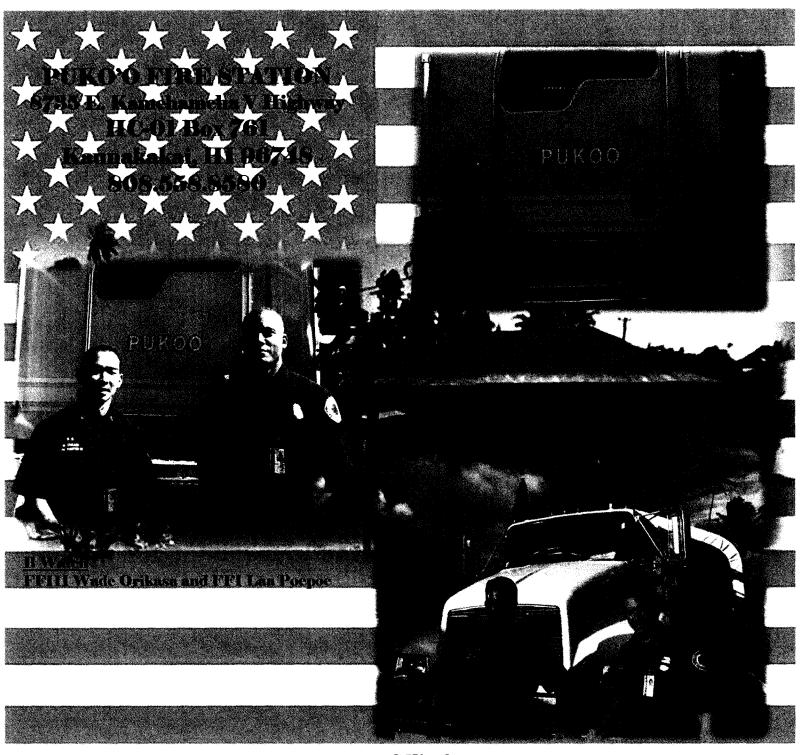
The Lahaina District sustained a total estimated dollar loss of \$240,550.00 during this fiscal year.



Captain Henry Lindo, FFIII Lokahi Herrod, and FFHI Jason Gamiao.

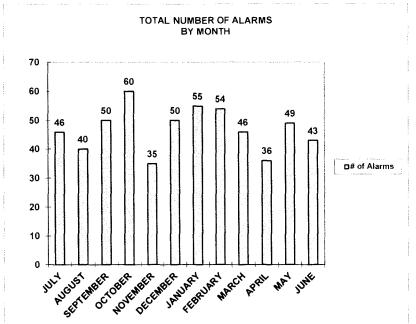


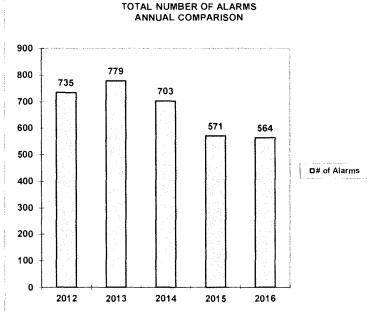
Captain Godfrey Akaka, FFIII Aaron Boswell, and FFI William Castor



C Watch FEL Solomon Maliu and ERIII Nathan Ignacio.

MOLOKA'I FIRE STATIONS



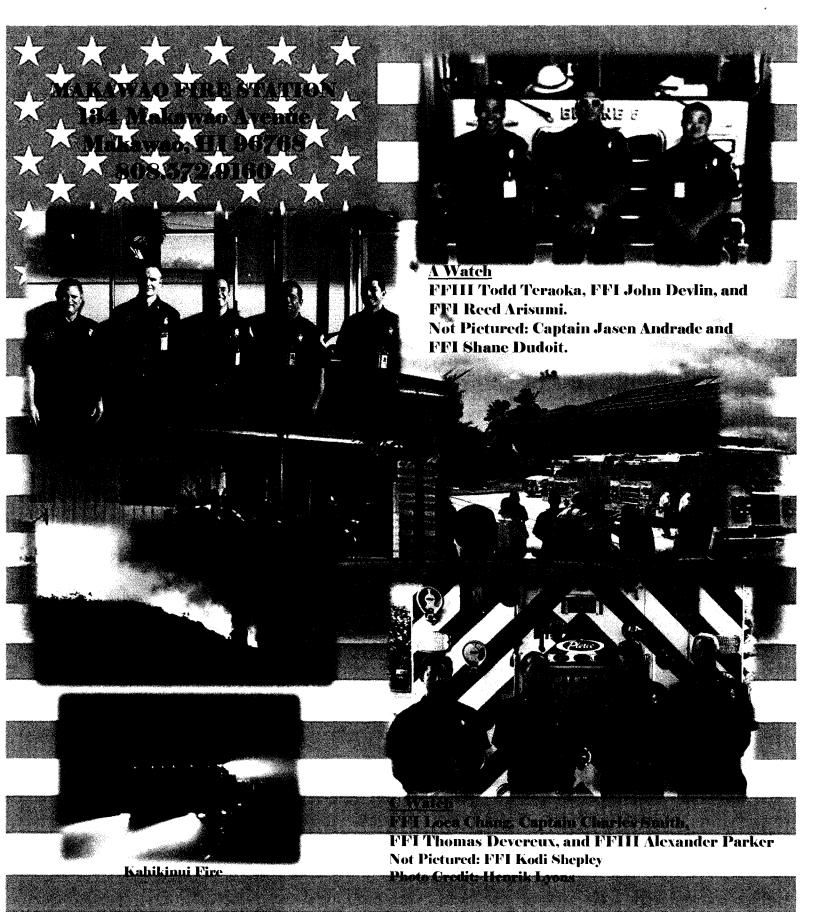


	NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY MOLOKA'I STATION				
MONTH	2012	2013	2014	2015	2016
JULY	52	50	57	45	46
AUGUST	65	68	52	43	40
SEPTEMBER	58	71	79	42	50
OCTOBER	64	75	60	50	60
NOVEMBER	63	80	62	40	35
DECEMBER	64	60	61	57	50
JANUARY	58	81	50	44	55
FEBRUARY	47	56	51	46	54
MARCH	78	54	67	49	46
APRIL	54	55	53	53	36
MAY	76	66	51	52	49
JUNE	56	63	60	50	43
TOTAL	735	779	703	571	564

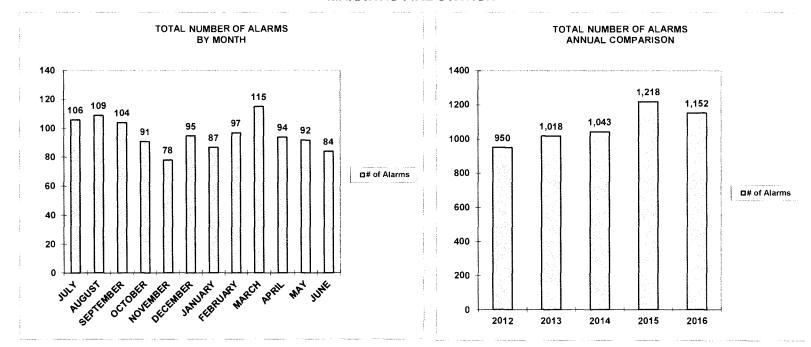
The Island of Moloka'i has three stations, one in Ho'olehua, one in Puko'o, and one in Kaunakakai.

Together, the total staffing is 39 personnel. Thirteen personnel are on duty between all three stations daily.

The Moloka'i District sustained a total estimated dollar loss of \$400,250.00 during this fiscal year.



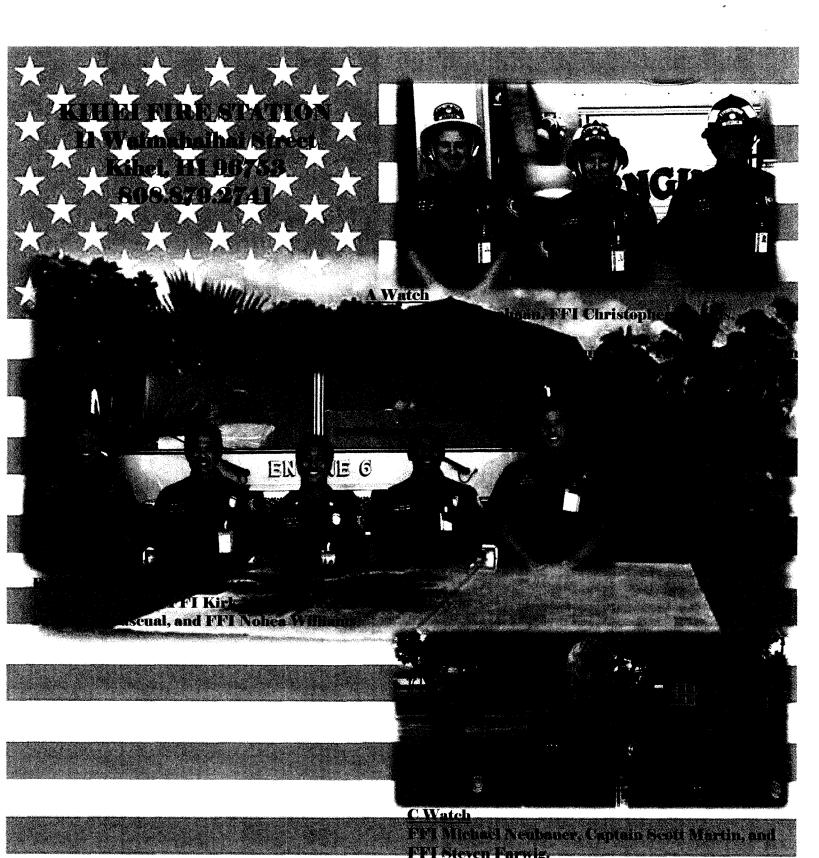
MAKAWAO FIRE STATION



	NUMBER O	F ALARMS DURING	EACH MONTH OF TH	E YEAR	
		COMPARATIVE MAKAWAO			
MONTH	2012	2013	2014	2015	2016
JULY	111	81	79	87	106
AUGUST	76	74	80	111	109
SEPTEMBER	56	85	88	87	104
OCTOBER	62	77	73	128	91
NOVEMBER	85	99	79	115	78
DECEMBER	69	97	104	88	95
JANUARY	71	91	83	108	87
FEBRUARY	85	86	82	103	97
MARCH	94	84	90	105	115
APRIL	59	79	83	88	94
MAY	109	79	101	104	92
JUNE	73	86	101	94	84
TOTAL	950	1,018	1,043	1,218	1,152

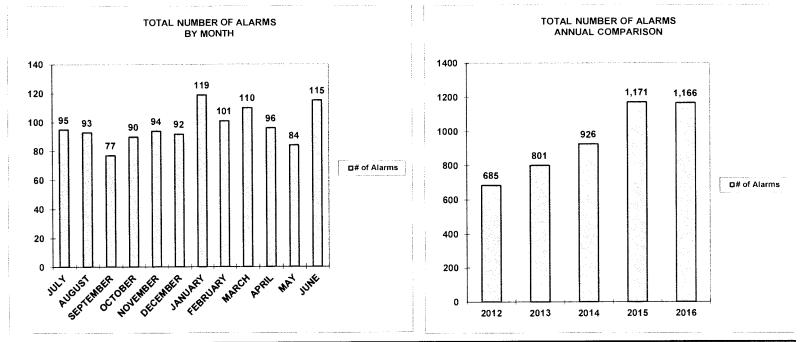
Makawao Fire Station has a total of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter I's. Makawao Station houses one Engine Company. There are five personnel on duty daily.

The Makawao District sustained a total estimated dollar loss of \$21,650.00 during this fiscal year.



Not Pictured: FFIII Erik Arensdorf and FFI Ian Pascua

KIHEI FIRE STATION

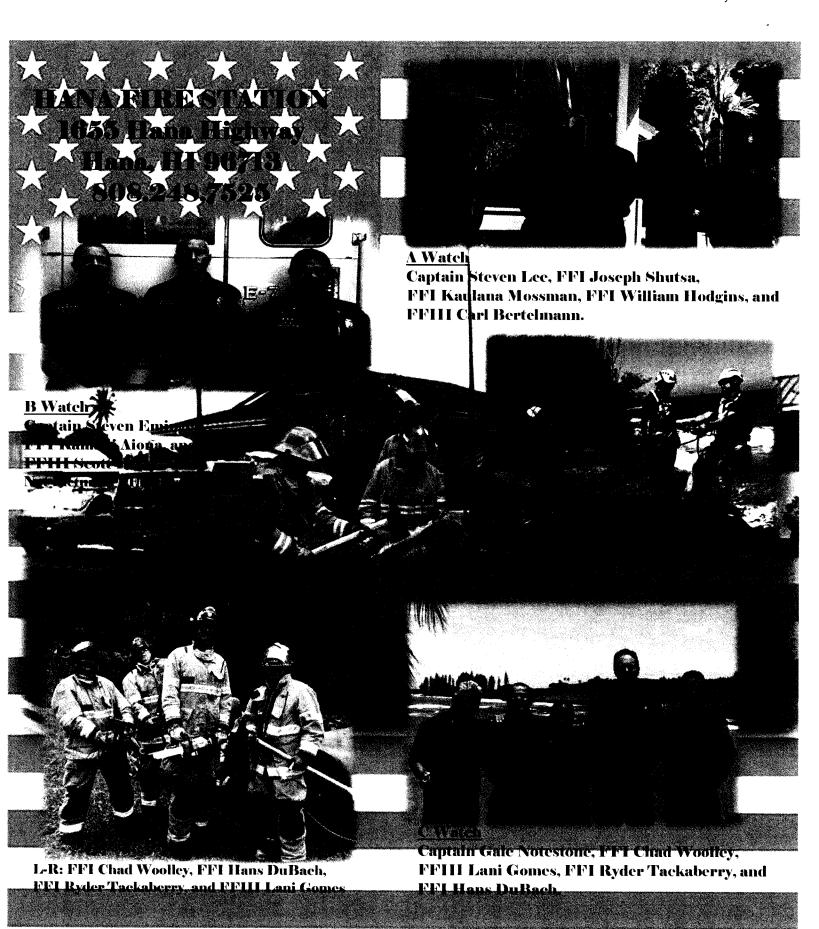


NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY KIHEI STATION							
MONTH	2012	2013	2014	2015	2016		
JULY	63	65	68	105	95		
AUGUST	53	65	59	87	93		
SEPTEMBER	46	72	60	92	77		
OCTOBER	52	69	64	78	90		
NOVEMBER	59	52	100	108	94		
DECEMBER	56	65	77	109	92		
JANUARY	66	75	91	120	119		
FEBRUARY	59	79	58	77	101		
MARCH	58	86	119	123	110		
APRIL	65	55	79	97	96		
MAY	51	53	83	96	84		
JUNE	57	65	68	79	115		
TOTAL	685	801	926	1,171	1,166		

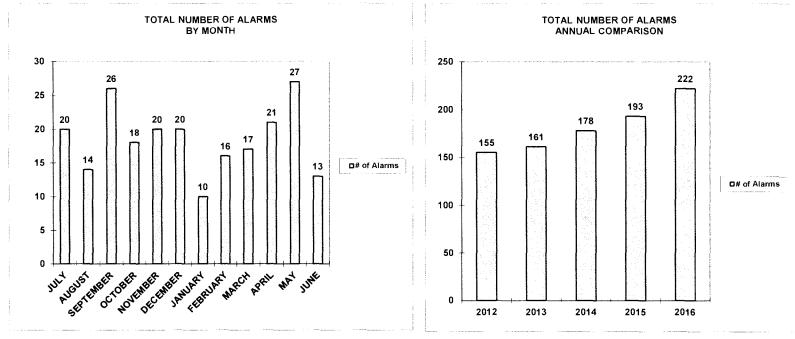
Kihei Fire Station has a total of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter I's.

Kihei Station houses one Engine Company. There are five personnel on duty daily.

The Kihei District sustained a total estimated dollar loss of \$327,005.00 during this fiscal year.



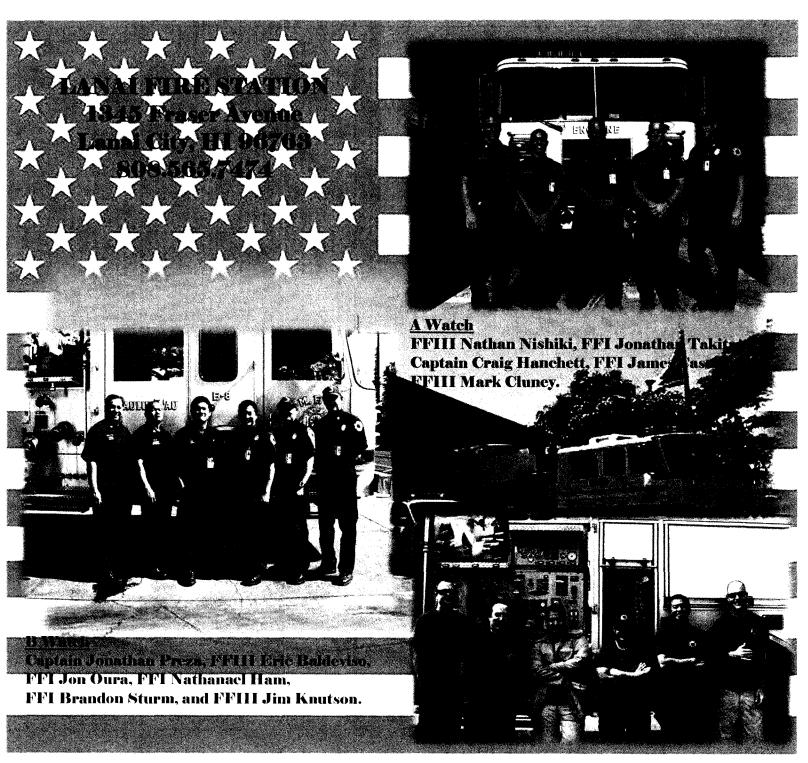
HANA FIRE STATION



NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR							
		COMPARATIVE SUMMARY HANA STATION					
MONTH	2012	2013	2014	2015	2016		
JULY	16	9	16	18	20		
AUGUST	16	13	15	23	14		
SEPTEMBER	10	22	13	19	26		
OCTOBER	13	8	12	11	18		
NOVEMBER	10	10	11	10	20		
DECEMBER	17	3	20	18	20		
JANUARY	16	19	21	20	10		
FEBRUARY	6	16	12	16	16		
MARCH	18	10	13	14	17		
APRIL	8	14	15	8	21		
MAY	15	22	19	21	27		
JUNE	10	15	11	15	13		
TOTAL	155	161	178	193	222		

Hana Fire Station has a total of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter I's. Hana Station houses one Engine Company. There are five personnel on duty daily.

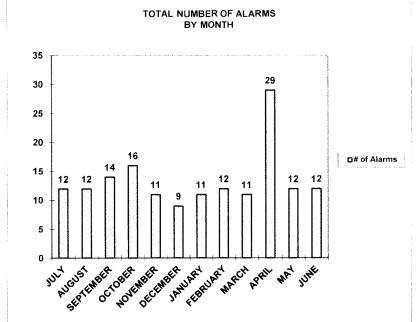
The Hana District sustained a total estimated dollar loss of \$31,000.00 during this fiscal year.

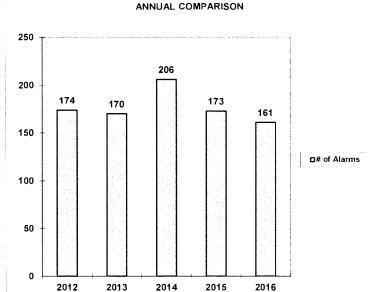


C Watch

Captain Todd McDonald, FFIII Ryan Higa, FFI Scan Richardson, FFI Ryan Watanabe, FFIII Darlan Corpuz, and FFF Perry Guntz.

LANA'I FIRE STATION





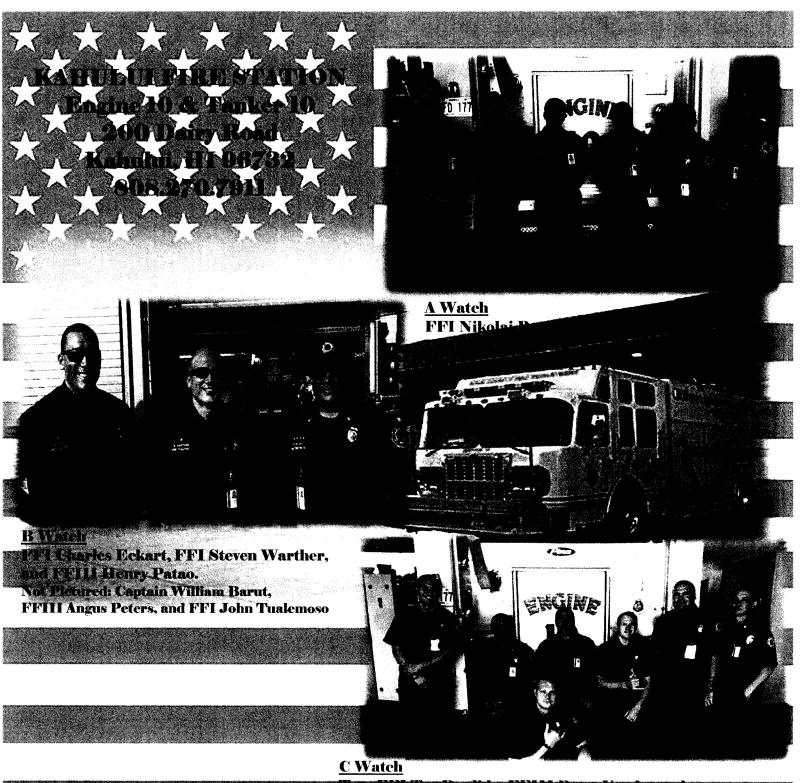
TOTAL NUMBER OF ALARMS

NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY LANAI STATION								
MONTH	2012	2013	2014	2015	2016			
JULY	24	19	18	14	12			
AUGUST	21	9	8	16	12			
SEPTEMBER	12	8	12	16	14			
OCTOBER	14	16	28	19	16			
NOVEMBER	9	14	20	13	11			
DECEMBER	17	11	17	13	9			
JANUARY	18	11	13	17	11			
FEBRUARY	15	12	17	11	12			
MARCH	14	15	23	13	11			
APRIL	10	10	14	16	29			
MAY	11	20	20	13	12			
JUNE	9	25	16	12	12			
TOTAL	174	170	206	173	161			

Lana'i Fire Station has a total staffing of 18 personnel. Three captains, six Firefighter II's, and nine Firefighter I's.

Lana'i Station houses one Engine Company and one Tanker. There are six personnel on duty daily.

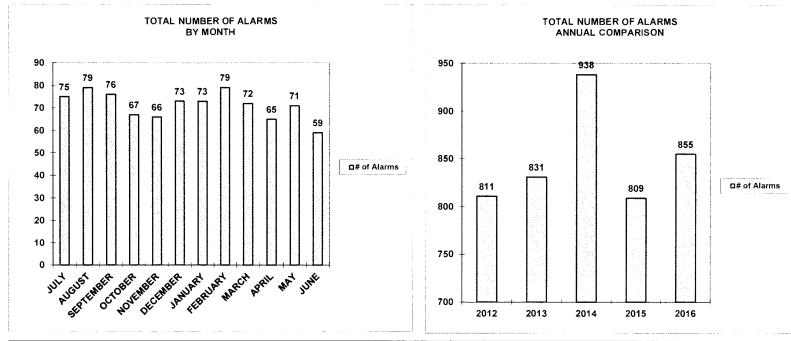
The Lana'i District sustained a total estimated dollar loss of \$20,000.00 during this fiscal year.



Tops FPI TyrePerdido, FREE Perer Vanderpoel, Captain Goy Danley, FFI Jonathan Duncan

FFIII Spencer Rodrigues, Battalion Chief Richard Kawasaki Bottom: FFI Jerime Storey

KAHULUI FIRE STATION



NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY KAHULUI STATION								
MONTH	2012	2013	2014	2015	2016			
JULY	112	78	84	86	75			
AUGUST	96	71	80	60	79			
SEPTEMBER	63	70	60	68	76			
OCTOBER	54	87	74	68	67			
NOVEMBER	55	62	76	60	66			
DECEMBER	61	71	87	85	73			
JANUARY	63	74	93	76	73			
FEBRUARY	55	66	68	44	79			
MARCH	70	64	68	74	72			
APRIL	55	63	60	77	65			
MAY	71	62	80	65	71			
JUNE	56	63	108	46	59			
TOTAL	811	831	938	809	855			

Kahului Fire Station has a total of 18 personnel. Three captains, six Firefighter III's, and nine Firefighter I's. Kahului Station houses one Engine Company and one Tanker. There are six personnel on duty daily.

The Kahului District sustained a total estimated dollar loss of \$25,750.00 during this fiscal year.

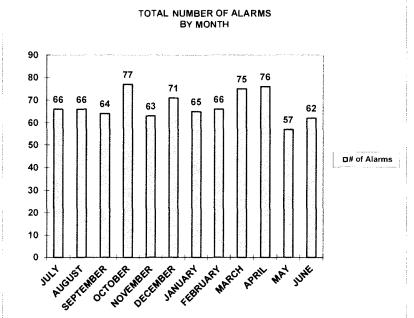


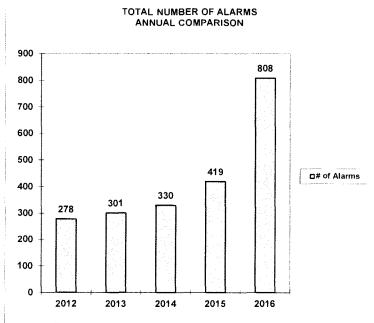
Battalion Chief Richard Kawasaki

FFII Shawn Kiesel, FFII Owen Deatrick, Captain Jeffrey Giesea, FFIII Timothy O'Connor, and

NOTE LEVELER CHANG

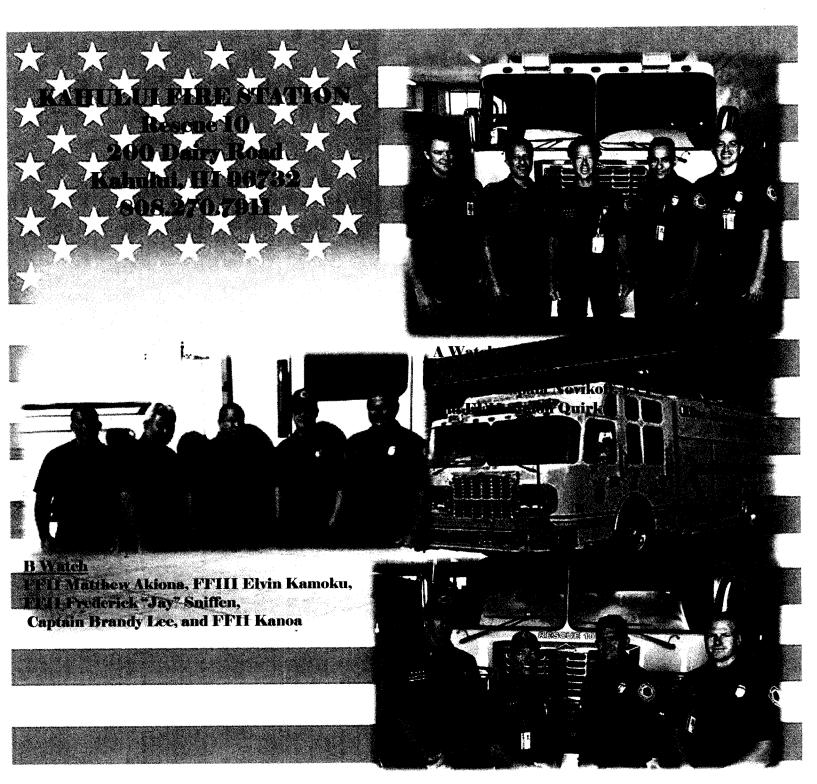
KAHULUI FIRE STATION - HAZMAT





	E YEAR				
MONTH	2012	2013	2014	2015	2016
JULY	27	28	29	25	66
AUGUST	22	24	22	41	66
SEPTEMBER	24	30	32	33	64
OCTOBER	34	18	25	32	77
NOVEMBER	21	29	29	33	63
DECEMBER	16	30	26	35	71
JANUARY	19	21	25	32	65
FEBRUARY	19	23	25	27	66
MARCH	20	27	27	38	75
APRIL	23	17	30	30	76
MAY	22	29	27	45	57
JUNE	31	25	33	48	62
TOTAL	278	301	330	419	808

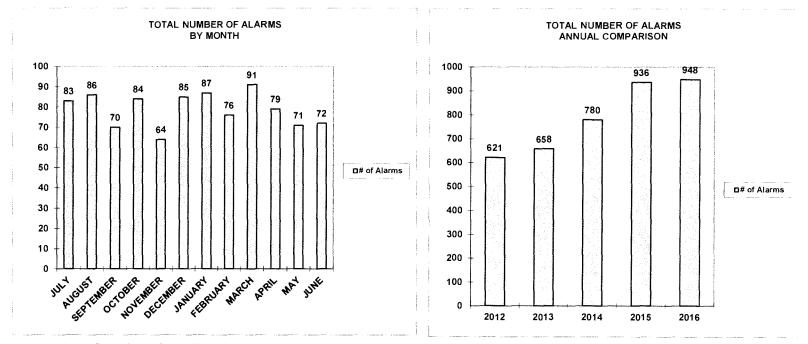
The Hazmat Company at Kahului Station has a total staffing of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter II's. There are five personnel on duty daily.



C Watch

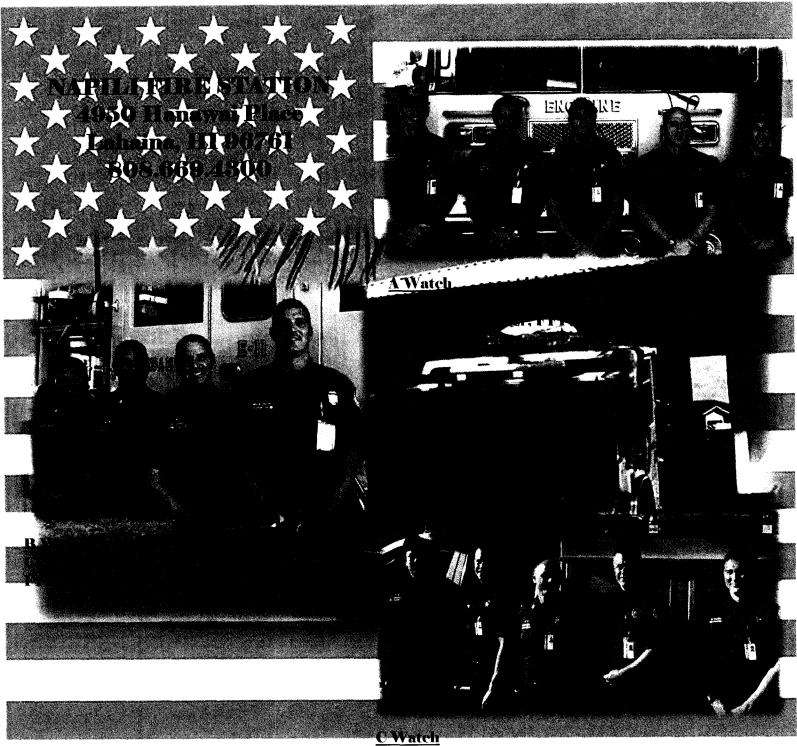
FFIII Peter Napolitago, Captain Lawrence Joyo, FFII Bean Gaddis, and FFI Jonathan Duncan (Engine 10) Not Pictured: FFII Clement Enomoto and FFII Shane Adolpho

KAHULUI FIRE STATION - RESCUE



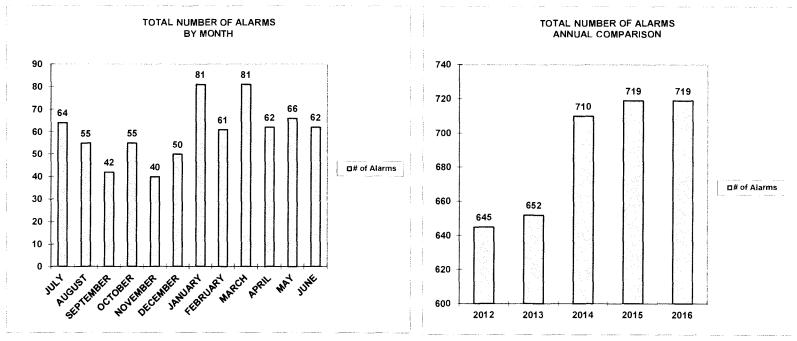
	NUMBER O	F ALARMS DURING	EACH MONTH OF TH	IE YEAR	
		COMPARATIVE KAHULUI STATI			
MONTH	2012	2013	2014	2015	2016
JULY	60	57	64	80	83
AUGUST	41	43	70	82	86
SEPTEMBER	42	59	70	72	70
OCTOBER	46	49	45	62	84
NOVEMBER	50	62	58	70	64
DECEMBER	64	55	72	84	85
JANUARY	57	57	77	91	87
FEBRUARY	37	46	71	63	76
MARCH	62	65	68	88	91
APRIL	40	51	52	78	79
MAY	69	48	73	82	71
JUNE	53	66	60	84	72
TOTAL	621	658	780	936	948

The Rescue Company at Kahului Station has a total staffing of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter II's. There are five personnel on duty daily.



FFI Tony Twarowski, FFI Chase Johnson,
FFFIII Roderick Quintana, Captain Brad Ventura, and
FFI Kapoa Mishiki

NAPILI FIRE STATION

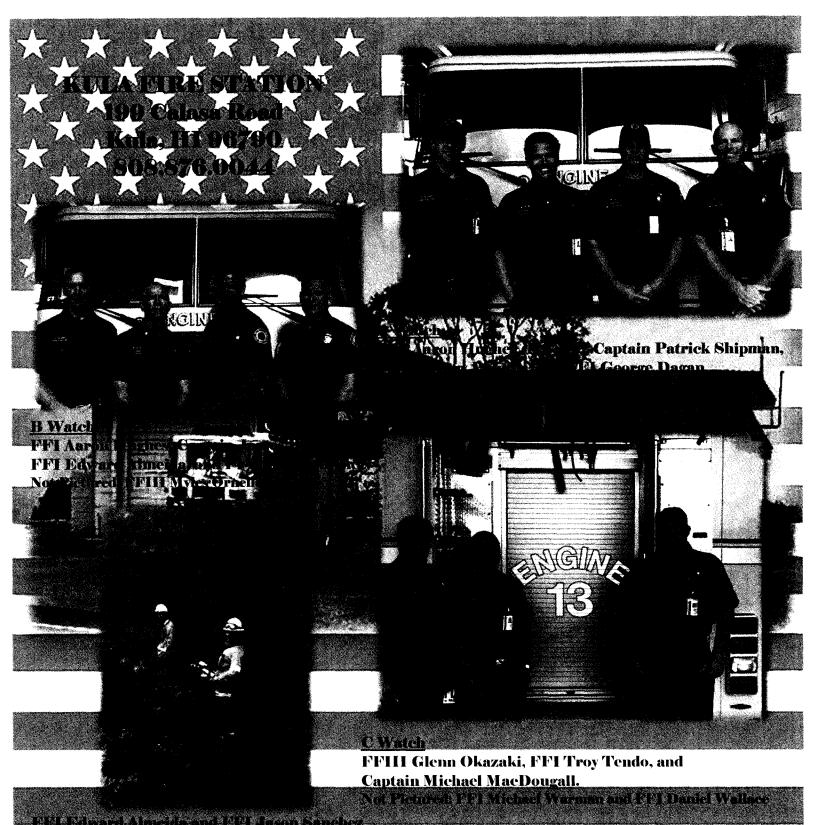


NUMBER OF ALARMS DURING EACH MONTH OF THE YEAR COMPARATIVE SUMMARY NAPILI STATION								
MONTH	2012	2013	2014	2015	2016			
JULY	62	66	50	70	64			
AUGUST	52	57	51	56	55			
SEPTEMBER	47	65	53	47	42			
OCTOBER	42	44	53	53	55			
NOVEMBER	40	42	51	50	40			
DECEMBER	56	42	87	60	50			
JANUARY	54	55	68	87	81			
FEBRUARY	73	65	57	74	61			
MARCH	54	57	67	65	81			
APRIL	48	71	68	56	62			
MAY	66	50	45	54	66			
JUNE	51	38	60	47	62			
TOTAL	645	652	710	719	719			

The Napili Fire Station has a total staffing of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter I's.

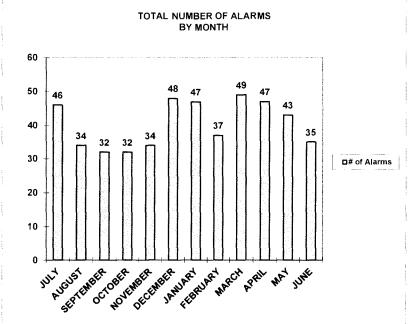
The Napili Station houses one Engine Company. There are five personnel on duty daily.

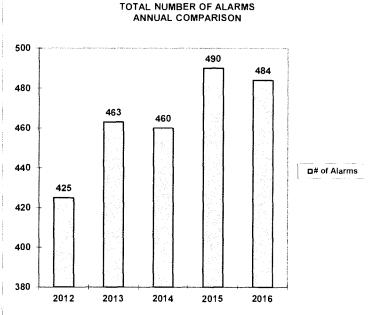
The Napili District sustained a total estimated dollar loss of \$62,800 in this fiscal year.



During a rescue. Photo Credit: Mike MacDougall

KULA FIRE STATION



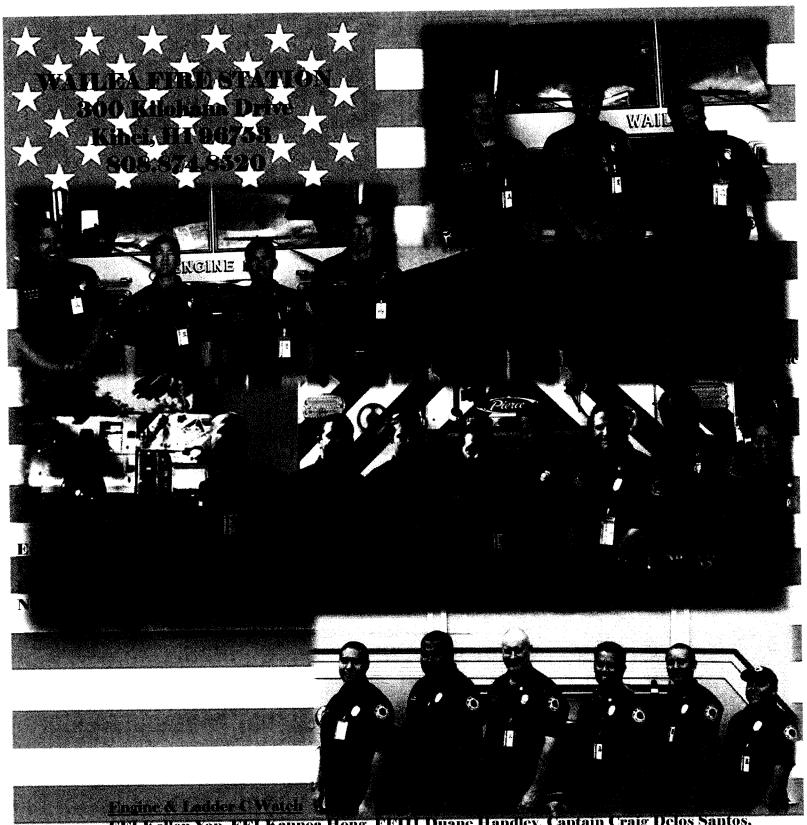


	NUMBER O	E YEAR				
MONTH	2012	2013	2014	2015	2016	
JULY	50	51	39	52	46	
AUGUST	51	40	34	32	34	
SEPTEMBER	27	35	43	39	32	
OCTOBER	23	30	42	29	32	
NOVEMBER	33	33	31	44	34	
DECEMBER	35	38	35	37	48	
JANUARY	39	47	41	48	47	
FEBRUARY	35	24	35	40	37	
MARCH	34	45	37	48	49	
APRIL	25	38	38	38	47	
MAY	36	33	49	37	43	
JUNE	37	49	36	46	35	
TOTAL	425	463	460	490	484	

The Kula Fire Station has a total staffing of 15 personnel. Three captains, three Firefighter III's, and nine Firefighter I's.

The Kula Station houses one Engine Company. There are five personnel on duty daily.

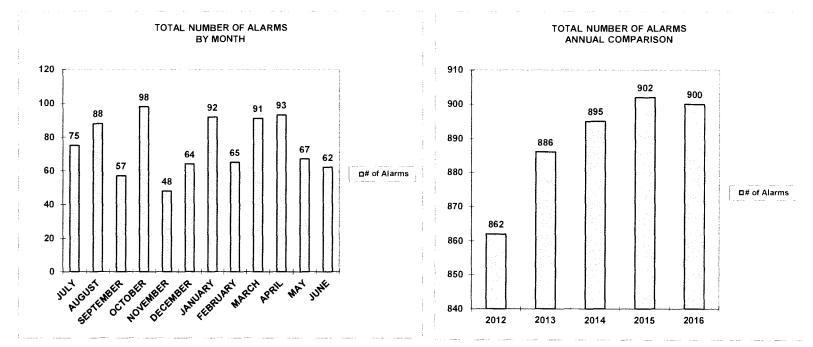
The Kula District sustained a total estimated dollar loss of \$247,400.00 in this fiscal year.



IFI Kellen Yap, FFI Kaunoa Hong, FFIII Duane Handley, Captain Craig Delos Santos, FFIII Jeremy Javier, and FFI Matthew Pact.

Not Dictured: Captain Christopher Platiro, EFI Brett Collett, and FFIII Rose Obigashi

WAILEA FIRE STATION



	NUMBER OF	ALARMS DURING	EACH MONTH OF TH	IE YEAR			
		COMPARATIV WAILEA					
MONTH	2012	2013	2014	2015	2016		
JULY	108	87	71	58	75		
AUGUST	61	66	56	79	88		
SEPTEMBER	58	69	54	80	57		
OCTOBER	68	51	75	98	98		
NOVEMBER	69	58	77	95	48		
DECEMBER	54	83	84	75	64		
JANUARY	79	93	74	81	92		
FEBRUARY	66	69	74	73	65		
MARCH	71	107	95	69	91		
APRIL	93	76	84	52	93		
MAY	67	52	66	54	67		
JUNE	68	75	85	88	62		
TOTAL	862	886	895	902	900		

The Wailea Fire Station has a total staffing of 33 personnel. Six Captains, six Firefighter III's, and eighteen Firefighter I's.

The Wailea Station houses one Engine and one Ladder Company. There are eleven personnel on duty daily.

The Wailea District sustained a total estimated dollar loss of \$978,099.00 in this fiscal year.

ALARM SUMMARY - FISCAL 2016

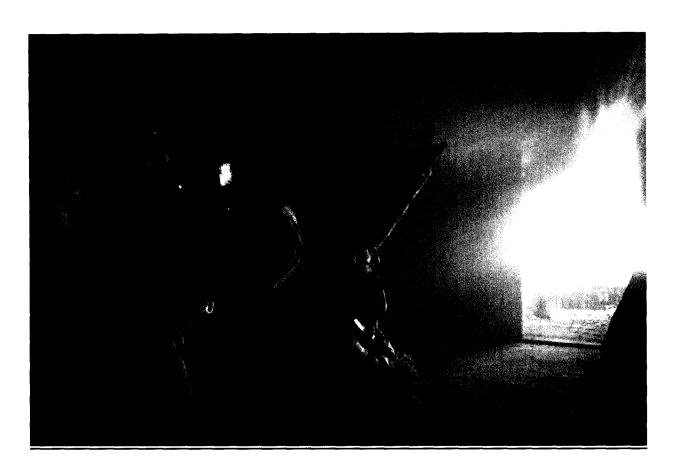
MONTH	WAILUKU	PAIA	LAHAINA	MOLOKAI	MAKAWAO	KIHEI	HANA	LANAI	KAHULUI	RES	CUE	NAPILI	KULA	WAILEA	
	E-1/M1	E-2/M2	E-3/L-3/T3	4/T4/E9/E12	E-5	E-6	E-7/M7	E-8/T8	E10/T10	R10/I	НМ10	E-11/M-11	E-13/M-13	E-14/L-14/T-14	TOTAL
JULY	156	83	209	46	106	95	20	12	75	83	66	64	46	75	1,136
AUGUST	159	69	169	40	109	93	14	12	79	86	66	55	34	88	1,073
SEPTEMBER	118	73	146	50	104	77	26	14	76	70	64	42	32	57	949
OCTOBER	134	65	159	60	91	90	18	16	67	84	77	55	32	98	1,046
NOVEMBER	154	67	117	35	78	94	20	11	66	64	63	40	34	48	891
DECEMBER	163	69	127	50	95	92	20	9	73	85	71	50	48	64	1,016
JANUARY	156	72	158	55	87	119	10	11	73	87	65	81	47	92	1,113
FEBRUARY	141	67	112	54	97	101	16	12	79	76	66	61	37	65	984
MARCH	167	74	174	46	115	110	17	11	72	91	75	81	49	91	1,173
APRIL	125	65	138	36	94	96	21	29	65	79	76	62	47	93	1,026
MAY	151	59	127	49	92	84	27	12	71	71	57	66	43	67	976
JUNE	128	59	128	43	84	115	13	12	59	72	62	62	35	62	934
TOTAL	1,752	822	1,764	564	1,152	1,166	222	161	855	948	808	719	484	900	12,317

DOLLAR LOSSES SUMMARY - FISCAL 2016

MONTH	WAILUKU	PAIA	LAHAINA	MOLOKAI	MAKAWAO	KIHEI	HANA	LANAI	KAHULUI	RES	CUE	NAPILI	KULA	WAILEA	TOTAL
	E-1	E-2	E-3/L-3	E4/E9/E12	E-5	E-6	E-7	E-8	E10/T10	R10/	нм10	E-11	E-13	E-14/L-14/T-14	
JULY	165,000	1,301,300	0	0	9,000	. 0	0	0	2,000	0	0	20,000	1,300	0	1,498,600
AUGUST	800,000	63,200	0	0	0	5,000	0	0	50	0	0	0	1,100	1,349	870,699
SEPTEMBER	0	28,000	105,000	400,000	1,700	0	0	0	10,000	0	0	22,000	20,000	0	586,700
OCTOBER	633,000	29,000	20,000	0	100	5	0	0	0	0	0	0	0	26,750	708,855
NOVEMBER	8,200	500	0	0	0	300,600	0	0	7,000	0	0	0	0	0	316,300
DECEMBER	30,000	0	0	0	3,400	0	31,000	20,000	1,700	0	0	0	0	400,000	486,100
JANUARY	0	18,000	27,200	0	550	20,000	0	0	0	0	0	20,300	0	0	86,050
FEBRUARY	00	0	13,150	0	0	900	0	0	0	0	0	500	0	550,000	564,550
MARCH	10,500	0	70,000	0	3,100	500	0	0	0	0	0	0	0	0	84,100
APRIL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAY	0	5,000	5,200	250	3,800	0	0	0	5,000	0	0	0	225,000	0	244,250
JUNE	850	0	0	0	0	0	0	0	0	0	0	0	0	0	850
TOTAL	\$1,647,550	\$1,445,000	\$240,550	\$400,250	\$21,650	\$327,005	\$31,000	\$20,000	\$25,750			\$62,800	\$247,400	\$978,099	\$5,447,054



138: EPHL Modesto Jacinto, Captain Rylan Yatsushiro,
Office Operations Gail Morton, FFIII Wayne Tashiro, and
FFIII Greg Shinyama.

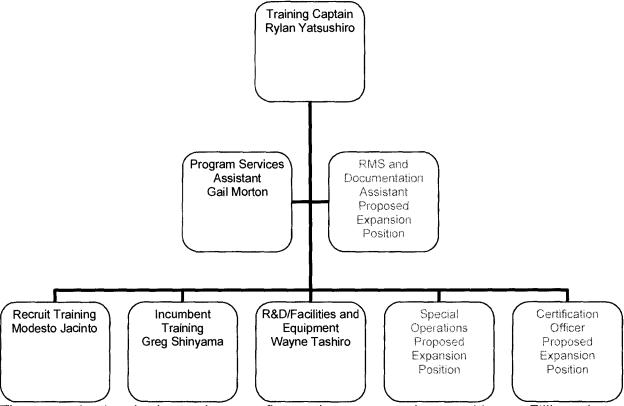


TRAINING BUREAU ANNUAL REPORT July 1, 2015 – June 30, 2016

Introduction

Training for FY '16 was composed of assigned quarterly training, cadre lead drills/training, multi-company operation (MCO) drills, certifications for position requirements, professional development and re-certification training. All curriculum is based on national standards, local, state and federal laws. The Training Bureau schedules drills and training sessions with the intent of maintaining a reoccurring proficiency cycle. Quarterly drills based on national standards provide personnel with ongoing fundamental task level training for their respective positions. These drills give the company officer a structured lesson plan to follow when leading their crews. In FY '16, the Training Bureau made a push to create and index a cache of training video files. These files are linked to scheduled drill lesson plans. The videos provide a way to more clearly illustrate drill technique and objectives. Cadre lead training/drills and multicompany operations give the Training Bureau the ability to evaluate the effectiveness of training issued and identify areas that need to be focused on. The certifications offered and being maintained by the Training Bureau are for professional development and job/position requirements. Due to budgetary restrictions, we had the tough decision to limit the available certification courses. Many of these certifications will prepare our firefighters for future positions. Our special operations companies, Hazmat 10 and Rescue 10, require personnel to be trained and certified in different disciplines to fulfill the operational capabilities of those companies. Personnel who are temporarily assigned are also trained to the levels to satisfy the position requirements. The main goal of the training is to have safe operations on emergency scenes as well as provide the best service we can to the communities we serve.

Training Bureau Organization Chart



The organizational chart above reflects three expansion positions. Filling those positions is necessary to effectively meet the required levels of certification and recertification, align with national consensus standards, document completion of required training, evaluate firefighter performance, and evaluate effectiveness of training.

There is a great need for an Assistant II position, who would be dedicated to manage our report management system. In this litigious society, justification and documentation is paramount. An assistant dedicated to the tasks of justification and documentation would limit litigation against the county. Currently, we are having difficulty keeping up with these important tasks.

A second position is desperately needed for Special Operations which includes the research, management and training of personnel assigned to Rescue and Hazmat. Rescue and Hazmat are highly specialized assignments that require special scrutiny. Training in these areas also includes specialized equipment and training locations. Maintenance of training equipment and training records are critical to the safety of these personnel. Currently, it is a joint effort between rescue and hazmat instructors, on duty rescue and hazmat personnel, and Training Bureau staff to organize and deliver necessary training in these special disciplines. We are moving forward but are disconnected in many ways because we do not have one leader that understands the entire picture and/or has the time to commit to this assignment.

A third and new request for a position is reflected in the organizational chart. This position is dedicated to position certifications. The responsibilities of this position are to organize, manage, and document all certifications and certification criteria that go out from the Training Bureau. This position is new due to the fact that the Maui County Fire Department Training Bureau looks to be an accredited certifying entity. The necessary attention in this position is very important from the perspective that meeting certification criteria is critical to legitimize certifications. Position certification is essential to a professional and proficient organization as well as provides the organization with a layer of defense against litigation. The department's professional development plan is made up of position certifications among other requirements.

Training Programs

Certain types of training require specialized and technical assistance and close supervision, which require a lead instructor. The Department has developed cadres to provide that technical, specialized assistance. Utilizing the "train the trainer" concept, we continue to send our instructors away to train the trainer courses and continued education to further educate and develop our instructors to teach our own. Currently, we are over 95% self sufficient in regards to the ability to teach our own people. The following training programs are organized by a program director with instructors trained to deliver the specific curriculum.

The current cadre system is an extremely efficient and fiscally responsible way of providing training disciplines to our personnel. While there are overtime costs involved with paying instructors and program directors, the majority of the training program management is done by program directors on straight time while they are on duty at their assigned station. In terms of cost, the cadre (train the trainer) system currently in use provides current, standards-based, and locally relevant training at a very small fraction of what it would cost to bring in outside instruction.

Emergency Medical Responder (EMR) / CPR

EMR and CPR refresher training happens annually and is required for all uniformed personnel. This training is composed of lecture and hands-on training. In-house instructors who are certified as CPR instructors and

EMTs/Paramedics deliver this training.

Fire Apparatus Driver Operator Program - FADOP

In FY'16, all of our incumbent and temporarily assigned driver operators went through 4 hours of instructor led pump operator refresher training. In addition to the instructor led training, FADOP drills are assigned as part of the quarterly drill schedule to help meet job performance requirements of the driver operator position.

Fire Ground Survival/Rapid Intervention Team (FGS/RIT)

This course teaches rapid intervention skills in three stages: Firefighter Survival. Firefighter Rescue and Rapid Intervention Team Operations. These techniques include a head-first ladder slide, rope slide bailout, negotiating wire entanglement, escaping through a restricted breach, two person drags, carries. team search-rescue. packaging and rescue of a downed firefighter. This course was held in September and October.



Fire Ground Operations

This program focuses on structure fires and all the tasks and tactics that come with responding to buildings on fire, which include forcible entry, rescue, fire control, ventilation etc. We do most of our training at the Maui Fire Joint Training Center, which houses our very own class A burn structure. Our Department now has a "real" means to train on fire behavior in a compartment, tactical ventilation, fire growth indicators, and appropriate fire control methods.



There is simply no substitution for Live Fire Training to coordinate the tasks and teamwork needed for safe and successful structural firefighting. In FY'16, the FGO program has conducted Department-wide live fire training that included multi-company operations, and thermal imager training.

Vehicle Extrication

Vehicles are manufactured differently with new challenges and risks. Our vehicle extrication cadre is highly trained and has done a great job teaching our department the new techniques, hazards, and considerations with vehicle extrication. All companies attended this course in the months of May and June.

Wildland

Wildland refresher training is delivered through assigned quarterly training to meet certain wildland training objectives, which include entrapment avoidance, current issues, fire shelter and safety issues. All online personnel go through this refresher training.

Rope Rescue

Refresher training incorporating advance skills to meet the National Fire Protection Association NFPA 1006 standards is provided to the Department through the Rope Rescue Instructor Cadre. Select engine companies, who usually are first on scene, receive 8 hours of Rope Rescue Operations level training covering NFPA 1006 standards, which include size-up for rope rescue incidents, anchoring principles, set up and operation of edge, belay and mainlines. It



also covers low angle litter rigging and operations. Rescue 10 personnel go through more extensive Rope Rescue Technician level refreshers. All refresher courses were held in the months of April and May.

Rescue Water Craft (RWC)

Safe successful operation of a rescue watercraft takes arduous training. All personnel working at fire stations with RWC's, complete a 24 hour hands-on operator course that tests the operator's ability to handle a RWC in high seas. One day RWC refresher classes were held in FY'16 for Kahului, Kaunakakai, and Hana personnel in the fall and winter months.



Hana, Kahului, Wailea, and Kaunakakai districts do operate rescue water crafts.

Rescue Boat Operations

Rescue boat operations include maneuvering in high seas, towing, docking, GPS etc... Companies that house a rescue boat and are responsible for rescue boat operations go through a State of Hawaii approved boating safety course. Quarterly drills are also occasionally assigned to review basic boat operations and procedures.

Ocean Rescue Operations

In FY '16, all personnel attended an 8 hour course which provided training on shoreline and water based rescue techniques in the months of September and October. The skills taught in this course were based on U.S. Lifeguarding Association recommendations. Most training days were conducted in districts assigned to attending on duty companies.

Helicopter Operations

In FY '16, all personnel were scheduled to attend a 4 hour course which provided training on safety and procedures with regard to Air 1 operations. Windward Aviation pilots and our trained Heli Ops cadre provided instruction for this very high risk discipline. This course was held in the month of February and some sessions were postponed to May and June due to the large Kahikinui brush fire in February which

occupied both pilots and aircraft.

Special Operations

Hazardous Materials - HAZMAT-10

Hazmat personnel assigned to HAZMAT 10 maintain skills proficiency and consistency by completion of the HAZMAT drill schedule. The HAZMAT drill schedule includes

fundamental skills refreshers on core competencies with

HAZMAT response.

HAZMAT 10 personnel are certified confined space technicians and complete refreshers to maintain technician status.

HAZMAT 10 personnel are also fulfilling the responsibilities of a "support" company at building fires and therefore complete advanced "truck operations" training, which includes tactical ventilation, forcible entry, laddering, and search and rescue.

Technical Rescue - Rescue-10

Rescue personnel assigned to Rescue 10 maintain skills proficiency and consistency by completion of the Rescue drill

schedule. The rescue drill schedule includes fundamental skills refreshers on all technical rescue disciplines.

Rescue personnel complete 16 hours of rope rescue training annually. Focus is on advanced techniques, which included basket tending, edge transitions, anchoring systems etc... In-house instructors deliver this training to rescue personnel.

Each rescue shift is allotted one hour per quarter to train with the helicopter. All training and scheduling are scheduled by the rescue company commanders.

In preparation for surf emergencies, rescue personnel complete an 8 hour refresher training with the rescue water craft and an 8 hour refresher training on the rescue boat. These refresher trainings focus on advanced techniques and are delivered by in-house instructors. On going training for surf rescue emergencies are also coordinated by rescue company commanders.



Rescue personnel are all certified at the Public Safety Diver level and maintain proficiency by completing the required six dives per year. Divers also completed their annual watermanship evaluation and deep dives. The watermanship evaluation is comprised of a timed 500 yard swim, 800 yard fin kick, a 15 minute water tread and a 100 yard inert diver tow. All of these events are conducted with no more than a 15 minute rest between them.

Rescue personnel are certified confined space technicians and complete an annual 8 hour renewal training to maintain technician status.

Rescue 10 personnel are also fulfilling the responsibilities of a "support" company at building fires and therefore complete advanced "truck operations" training, which includes tactical ventilation, forcible entry, laddering, and search and rescue.

Pro Board Certifications

Pro Board certification from an accredited entity is a statement of success. It is an indisputable mark of performance belonging to individual fire service professionals. Each successful candidate for certification knows that he or she has been measured against peers and meets rigorous national standards. Certification affords the individual a uniformity and portability of qualifications. In addition, the credibility of an organization is enhanced by having members certified to national consensus standards. The Maui County Fire Department, under delegated authority from the State of Hawaii DOT-A, offers the following Pro Board certifications.

Firefighter I and II

Certification at the Firefighter I and II levels equate to 14 weeks of firefighter training which equate to approximately 560 hours. This is part of a 28 week firefighting school that firefighter recruits go through. These certifications are the fundamental building blocks for the firefighting profession.

Airport Firefighter

Airport firefighter is a certification aligned with NFPA 1003. In a joint effort with State ARFF, firefighter recruits go through education and training to meet or exceed the job performance requirements for the airport firefighter certification.

Fire Instructor I

Fire Instructor I's are generally responsible for teaching courses from supplied lesson plans, adapting those lesson plans as appropriate, managing the class environment, administering exams and completing training records. Fire Instructor I is a foundational component to building strong fire service officers. This course is offered annually to MFD personnel. MFD has personnel qualified to teach this course.

Fire Inspector I

This course is primarily designed for those entering into fire service inspections and is extremely useful to inspectors and company level officers. Some of the topics covered in this course include: Building Construction, Decorative Materials and Furnishings, Fire Drills, Inspection Procedure, Code Enforcement, and Fire Alarm and Communications. This course is a foundational course for company officers. All of our fire inspectors are certified at this level and above.

Fire Officer I

The Training Bureau offered a Fire Officer I course in October and certified 20 of our personnel. This course introduces basic concepts of management and supervision by concentration on such topics as: organizational structure, communication skills, human resource management, public relations, planning, emergency service delivery and safety. The curriculum identifies the performance requirements necessary to perform the duties of a first line supervisor.

Other Certifications

The following certifications are also offered to department personnel. The various certifications have curriculum from different authorities of that field. Qualified In-house instructors certify personnel in the different disciplines. These certifications are also part of a professional development plan that prepares personnel to operate proficiently at the different ranks and positions.

Rope Rescue Technician

A Rope Rescue Technician 70 hour course has been developed specifically for rescue, hazmat, and temporary assigned rescue personnel. This course fulfilled the operational capability for a Rescue company. The process of restructuring the course to make it a Pro Board Certification was continued in FY'16. This course was delivered in May and certified 12 new personnel to the Technician level.



Public Safety Diver

Five Rescue personnel completed this 40 hour course and were certified at this level by qualified in-house instructors.

Public Safety Diver Survival

Rescue 10 personnel and personnel temporarily assigned to rescue complete this 16 hour course and are certified at this level by qualified in-house instructors.

Dive Rescue Specialist I

Rescue 10 personnel and personnel temporarily assigned to rescue complete this 24 hour course and are certified at this level by qualified in-house instructors.

Confined Space Rescue Technician

This course is a 40-hour IAFF Confined Space Rescue Technician Program. In order to maintain "Active" status as a Confined Space Rescue Technician, OSHA requires an annual eight hour renewal training class. MFD maintains 33 personnel as CSR technicians

ICS 300

ICS 300 is an intermediate ICS course that teaches how the NIMS Command and Management component supports the management of expanding incidents and the process for expanding incidents and supervisors as prescribed by the Incident Command System (ICS). This course was delivered by in-house qualified instructors in the month of August.



ICS 400

ICS focuses on the incident/event management process for large-scale organization development; roles and relationships of the primary staff; the planning, operational, logistical and fiscal considerations related to large and complex incident/event management, and implementation of Area Command and the importance of interagency coordination on complex incidents. This course was delivered by in-house instructors in the month of August.

Wildland S-215 WUI

This course is designed to assist structure and wildland firefighters who will be making tactical decisions when confronting wildland fire that threatens life, property, and improvements, in the wildland/urban interface. This course was held in the month of May.

Hazardous Materials Technician



The Hazardous Materials Technician course is an 80 hour class focusing on the relationship of incident priorities, strategies, and tactics as they relate to implementing safe procedures for alleviating the risk at an accidental or intentional hazardous materials incident. It concentrates on integrating risk-based decision making and knowledge about hazardous materials chemistry, storage, transportation and release scenarios. Personnel are certified at this

level by outside instructors. All Hazmat 10 personnel are certified at the technician level.

Hazardous Materials for First Responder Operations

First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances and are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. All department personnel are certified at the first responder operations level and are required to go through an 8 hr. refresher annually. The Hazmat instructor cadre provides this training.

Other Training

Training Newsletter

The Training Bureau is still using the Maui Fire Magazine as a means of communicating which includes national trends in the fire service, new techniques, training opportunities, and leadership concepts. The newsletter recaps the previous quarter's department training, which in turn keeps everybody informed of all the training that is ongoing and available. The magazine has been ongoing quarterly in FY '16.

Drill schedule

The drill is meant to be officer led, organized, delivered, and evaluated at the company level by the company commander. The drill schedule is aligned with the appropriate NFPA professional qualification standards and therefore is a minimum requirement for the disciplines we are responsible for and represents the foundation of everything we do. The drill schedule aligns with the following NFPA standards:

- 1. **NFPA 1001**, Fire Fighter Professional Qualifications
- 2. NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications
- 3. NFPA 1021, Fire Officer Professional Qualifications
- 4. NFPA 1006, Technical Rescuer Professional Qualifications-Rescue Personnel
- 5. **NFPA 472**, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents.-Hazardou Personnel

There are three drills assigned to each company per month. Method of delivery, extent, and location of those drills are left to the company commander's discretion. The company commander is responsible for RMS completion and by doing so confirms the competency of that company.

Maui Fire Joint Training Center-MFJTC

In a joint relationship with State ARFF, we have secured a property close to the airport to do most of our hands on training. The MFJTC is little over four fenced acres with an approximately 8,000 square foot building on site. The MFJTC houses a 2,000+ square feet burn structure, fabricated with forcible entry doors, a combustible flat roof for vertical ventilation operations, and multiple rooms for search and rescue. The MFJTC also houses various portable forcible entry, ventilation, fire control, rescue and extrication props to provide realistic training to department personnel. The training center is complete with locker room and kitchen facilities as well as a wellness and

fitness gym. Recruit training is conducted primarily at the MFJTC and has been invaluable toward preparing new recruits for firefighting. The MFJTC is also available to all companies, by way of request through their Battalion Chief. The MFJTC has allowed us to conduct realistic hands on training that prepare our firefighters for the high-risk tasks of firefighting.

Blue Card Command

Blue Card Command is a computer based simulation training system that provides consistent and on going command and control training for our officers. All officers and acting officers receive this training. Blue Card training has proven valuable in several structure fires since introduced to the department. This command system provides Officers with opportunities to exercise size up of structures, resource and strategy determination, and communications. The recertification of personnel began in FY '16 and is currently being conducted by all Officers and Acting Officers. Recertification includes a 5 hour online refresher module followed by a 40 question exam. Official recertification of all personnel will be conducted every 3 years.

All-Hazards Incident Management Team (AHIMT)

AHIMT training focuses on managing incidents that extend into multiple operational periods and require a written Incident Action Plan (IAP). These incidents can include weather-related disasters such as a tornado, earthquake, or flood; a joint law enforcement operation; public health emergency; or a planned exercise or event. A county Type 3 team, made up of various government and private organizations, was assembled and has been involved in multiple training opportunities throughout FY'16 to increase proficiency and team cohesion.

Youth Programs

The Training Bureau has worked with many different organizations to provide workforce opportunities for youths. The relationships have been reciprocal, in the sense that, youth programs have offered working hands to help with the many duties that usually get overlooked when there is not enough manpower. MFD has worked with Kamehameha Schools and Maui High School intern programs.

Outside Services Provided by Training Bureau

Besides the various and multiple training programs, drills, exercises and testing that this Bureau provides, there is a significant need for our expertise in areas outside of our department. Although we are not expected to provide the same services as those on the line of duty, we still need to uphold the Maui County Fire Department Mission Statement which is "To Protect and Preserve Life, Environment and Property."

- Blood Pressure Screenings (BPS) Via Department of Personnel Services, quarterly BPS are provided to all County employees at the three main sites: County Building, One Main Plaza and Department of Motor Vehicle and Registration Office.
- ICS 100-200 is an on-going training provided to Lifeguard and Police personnel as needed.
- First Responder Operations (FRO) training was provided to the Maui Police Department.
- An extrication demonstration was also provided for the Maui Police Department and AMR.
- Seats in our certifications courses are always made available for county and

state departments.

NFA Sponsored Off-Campus 2-Day Programs

The National Fire Academy provides courses to City and County fire departments across the nation. These courses are usually taught by retired Fire Chiefs who have a wealth of knowledge to share. These courses vary from terrorist type incidents to bread and butter operations. MFD took advantage of the following course:

NFA 610 Wildland Urban Interface for Structural Officers: Provided valuable information with regard to fighting wildland fires in areas adjacent to urban environments.

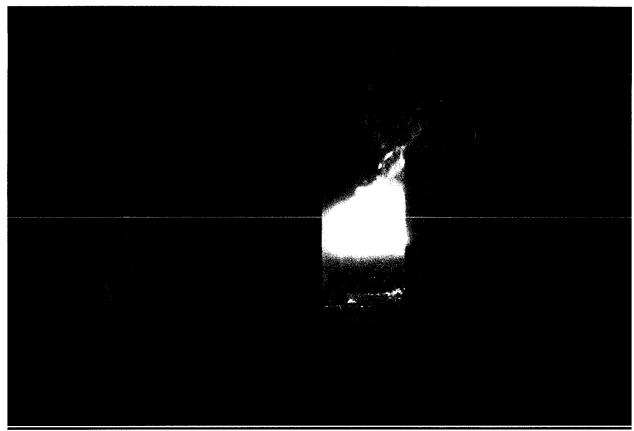
NFA 729 Incident Safety Officer: Provided training on the responsibilities and qualifications for personnel to serve as official Safety Officers in the Incident Command System structure.

Summary

The Training Bureau is an ever evolving entity which supports the safe and effective operations of the Department of Fire and Public Safety. We will continue to progress and provide realistic training opportunities which will allow us to meet the needs of our Maui County community. The system of Training Program Cadres allow us to stay current, efficient, and fiscally responsible by allowing us to train our own. Because all curriculum is based on Certifications and National Standards, we can be assured that those pieces we pass on to our personnel are keeping up with the dynamic demands of the fire service.

In response to budgetary cuts, the Training Bureau has looked at other options for delivery of training and training programs. Bringing outside contracted instruction would cost many times more than what is currently spent. Staffing the Training Bureau with full-time trainers would also cost exponentially more. While the Bureau is always looking at ways to increase efficiency and cut costs, the current system of Training Cadres seems to be, by far, the most cost effective way of delivering training to our personnel.

FY '16 once again has shown the need for increased staffing in the Training Bureau. The Training Bureau continues to be a revolving door for new promotions. Each position is currently handling an ever increasing workload as we move forward with providing a more comprehensive training system. As this progression continues, the amount of time it takes for each new firefighter in the Bureau to get caught up to speed increases exponentially. We will continue to search for a solution to this issue.



(photo credit: Michael Neubauer)





L-R: Captain Paul Haake, Lt. Peter Davis, FFIII Edmund Wong Leong, FFIII Michael Howe, FFIII Parrish Purdy, FFIII Garren Oura, Office Operations Assistant Richelle Wakamatsu, FFIII Ryan Otsubo, Account Clerk Darlene Manzano, and FFIII Lance Yokoyama.

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Fire Prevention Bureau Annual Highlights July 01, 2015 - June 30, 2016

Personnel:

The Fire Prevention Bureau is staffed by 11 personnel that include a Captain, two Lieutenants, six Fire Inspectors, an Account Clerk, and an Office Operations Assistant.

The two Lieutenants handle all plans review assigned to the Bureau through the County's permitting process. During the plan review process, fire and life safety related items are checked for State and County Fire Code compliance. Reviews are done on new construction of, and renovation for commercial and residential projects, large event set-ups, new subdivisions, and installation / renovation / repair of fire and life safety systems.

The six inspectors handle all inspections related to new construction of buildings, renovation projects, requests for services, special permit issuances, and community concerns in regards to fire safety. One of the inspectors is assigned full-time to Molokai and handles all prevention duties for that island. Another inspector, along with doing inspections, is assigned to process and schedule all requests for public education such as fire extinguisher training, safety presentations, and the Firefighter Safety Guide Program.

The Account Clerk handles all money transactions of the Bureau. This person's duties also include auditing of fireworks permits and storage. The Office Operations Assistant handles all record-keeping and filing, parcel research, and important office-related tasks.

- One of the bureau's two plan reviewers, a 16-year veteran of the bureau, retired in December 2015. The position was filled in April 2016 by promotion of an inspector within the bureau. The vacant inspector's position was filled in May 2016.
- Another inspector was assigned to the bureau in June 2016 after a vacant position was incurred due to a lateral transfer of an inspector to operations. All positions within the bureau are currently staffed.

Training and Education:

A. Training allows staff members to stay current with codes, standards, and new technologies. This is very important in the Bureau's effort to provide quality service to the community. The Department's Administration has remained

committed to allowing the Bureau Staff to attend the best training opportunities available, wherever it may be.

- Two staff members attended an 8-day training course at the University of Maryland's Fire Academy to achieve pro-board certification as Inspector I.
 Oct. 2015
- Three staff members attended a 2-day training class provided by the National Fire Protection Association on plan review and inspection of fire sprinklers for 1- & 2-single family dwellings. This class was sponsored by Honolulu Fire Department. Oct. 2015
- One staff member attended a week-long training conference put on by the International Fire Marshal's Association. Topics included: Fire Protection Engineering Basics, Cannabis Facility Design, High-piled storage, and HAZMAT inspections. Sept. 2015
- Two staff members attended a 3-day training seminar sponsored by the Hawaii Chapter of the International Association of Arson Investigators. Topics included: Job Requirements for Investigators (NFPA 1033), Scientific Method for Fire Investigations (NFPA 921), and a live-burn. Sept. 2015
- Two staff members attended a week-long training for new fire investigators and continued education for current personnel assigned to fire investigations. This training covered NFPA 921, the guide for fire and explosion investigations, and NFPA 1033, the standard for professional qualifications for a fire investigator. December 2015
- Bureau personnel attended a two-day class sponsored by Maui County's Building Department. This training covered the following topics from the International Building Code, the county's adopted building code: Means of Egress and Building Code Basics for Commercial Occupancies. January 2016
- Bureau personnel attended a one-day class on significant changes to NFPA 1, the county's adopted fire code. Training for conducting hazardous materials inspections was also provided. **February 2016**
- One staff members attended a week-long class, "EduCode", put on by the International Code Council. This training focused on code sections of the International Building Code (IBC), Maui County's adopted building code. Training on the following topics was provided: IBC Occupancy classifications, commercial kitchen hoods, IBC construction types, Means of Egress components, and flammable & combustible liquids. March 2016

- Two staff members attended a 40-hour training course on fire investigations sponsored by the International Association of Arson Investigators (IAAI). This training course is utilized as continued education for personnel assigned to fire investigations and as an introduction into fire investigations for new bureau personnel. May 2016
- Two staff members attended the National Fire Protection Association's World Safety Conference and Exposition. This was a week-long worth of training on various topics regarding fire prevention and life safety and also included an expo on the latest gadgets and technologies within these fields. June 2016
- **B.** Educating the public on fire prevention and life safety is a priority of the Fire Prevention Bureau. Our Public Education Specialist, with assistance from Bureau members and firefighters, provided the following types of training and education to members of our community:
 - Through the Keiki ID program, which is provided at the request of organizers of various community safety events such as the Kiwanis Keiki Fest, Lihikai School Bazaar, MEO Family Days, Kihei Youth Center, Maui County FCU and Hawaii USA, approximately 1,100+ children were provided with the County's Keiki ID. This interaction allowed Bureau members to share fire and life safety tips and gave families something tangible that captures valuable information that could assist with keeping their children safe. Hawaiian Commercial & Sugar (HC&S) continues to show special interest in this program. HC&S has purchased printer supplies for the program and provided assistance with manpower at certain events; with their partnership, the program continues to be a successful way to interact with the public and share fire safety information.
 - The Fire Fighter Safety Guide (FFSG) Program provides fire safety education to the county's grade school children. A total of 13,200 guides were distributed to students from Kindergarten through the Fifth grade throughout Maui County schools. One student and teacher were selected as t-shirt winners from each class that completed 100% of their safety guides; there were 156 t-shirt awardees. The program culminated with the annual awards luncheon that spotlights one student and teacher from each of the participating schools. There were 34 lucky winners (17 students and 17 teachers) invited to the luncheon which was also attended by representatives from HC&S, FIRE, the Mayor's Office, and other program sponsors. Again this year, the luncheon and t-shirts were funded by a very generous grant received from the A&B Foundation.
 - With the use of the Fire Safety House 480+ 2nd graders from 3 of our schools were taught about fire safety and prevention. Students tour

through the trailer and participate in an interactive learning program that provides education about Fire Hazards, emergencies(911), what to do if their clothes catch on fire, what to do if the house is on fire, and fire escape planning. The tour finishes with an actual evacuation practice drill that utilizes theatrical smoke to simulate a fire in the home. Each presentation takes approximately 25 minutes. Our continued outreach to the schools with the safety trailer is still well received. The teachers and students look forward to our annual visit.

- As part of Fire Prevention Week, the Fire Prevention Bureau and on-line fire crews provided a demonstration to the Maui County community that highlighted fire fighting and life safety skills and fire prevention messages. The demonstration at Keopuolani Park on October 22, 2015 hosted approximately 100+ attendees. The show lasted approximately 2 hours and utilized up to 6 apparatus, Air 1, other department vehicles, and approximately 30 personnel.
- There were approximately 208 safety presentations provided to businesses and community groups. Topics such as kitchen safety, workplace safety, fire extinguisher training, and fire prevention were discussed.
- The Fire Extinguisher Training program provided hands-on training to approximately 670+ persons. This training covered the following: classes of fire, components of a fire extinguisher, emergency procedures when a fire is discovered, and how to properly use a fire extinguisher. Each class takes approximately 45 minutes and ends with a safe, live-fire simulation that allows hands-on training with a fire extinguisher.
- Smokey Bear and/or Sparky made appearances at **15** events during this fiscal year.
- By far the most requested education opportunity is still the Fire Station and School Visits. This past year the department participated in a total of 70+ station and school visits with approximately 27 visits occurring within the month of October Fire Prevention month. Included in this total were visits to day-care and home-care groups, as well as various children programs. Each visit consisted of a safety presentation and/or a tour of the fire station, fire trucks and equipment. The visits usually end with the children shooting water from small fire hoses with the assistance of a firefighter. Each tour or visit lasts approximately one hour.
- The Smoke Alarm Maui (SAM) program stresses the importance of smoke alarms within the home. This program was created to provide and install working smoke alarms in homes without them. Originally implemented in early 2012 with monies provided by the Assistance to Firefighters-Fire

Prevention grant, this program was allowed to continue with a grant through the State Fire Council that acquired 400+, new, 10-year lithium battery smoke alarms. During this fiscal year, a total of **25** smoke alarms were installed in **5** separate residences. As with all installations, home safety surveys were used educate recipients on identifying and reducing common fire risks within the home with a heavy emphasis on emergency evacuation planning. This program continues to be a bright spot for the department.

Office/Equipment:

- 4 new F150s were purchased. Three of the vehicles replaced existing vehicles.
 The fourth vehicle completed our fleet of inspection vehicles so that all assigned personnel to the bureau have a vehicle.
- Acquired 2 smaller sized, Class A extinguishers for use in the hands-on portion of the bureau's fire extinguisher training program.
- Acquired a flammable/combustible liquid cabinet and an exterior LPG storage cabinet for proper storage of hazardous materials at the Fire Prevention Bureau's warehouse.
- Purchased a new ID printer for issuing MFD identification badges.

Working Statistics:

- A. The Fire Prevention Bureau reviewed 2,963 building permit plans during this fiscal year.
- B. Issued 691 fireworks permits to include fire crackers, aerial shows, retails and wholesale licenses.
- C. Issued 45 permits for fuel tanks (propane and flammable/combustible liquids).
- D. Issued 118 Tent and Booth permits.
- E. A total of 30 public and private schools were inspected, and 66 pre-school inspections were conducted.
- F. The Fire Prevention Bureau conducted 36 in-depth fire investigations during this fiscal year. These fire investigations only include those incidents where technical help was needed to document the scene and determine the fire cause. Unfortunately, there were 2 reported deaths that were associated with fire incidents during this fiscal year.

The Fire Prevention Bureau also provided comments through Requests for Information

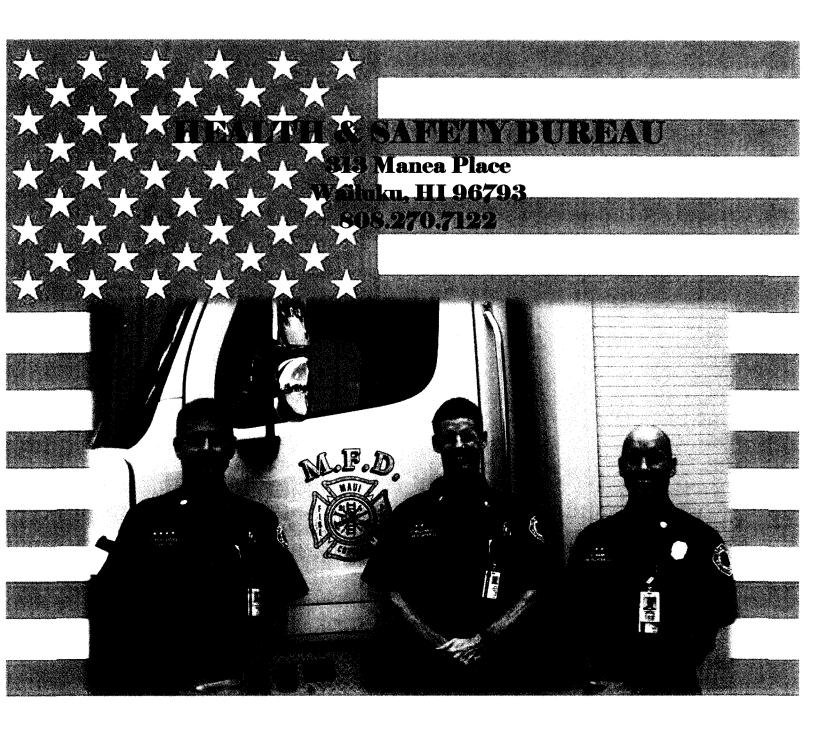
by individuals, companies, and various county departments in regards to applications for subdivisions, changes in zoning, special use permits, variances and appeals, and environmental impact statements. Approximately 65 requests for information were handled during the past fiscal year. This participation also included attending meetings and providing fire prevention, fire code, and life safety comments for projects.

Fire Code:

The State of Hawaii, through the State Fire Council and the Fire Prevention Committee, has begun review of 2015 edition of NFPA 1, the state's next proposed-for-adoption fire code. A consolidation of the proposed state amendments should be completed in July 2016 with work on specific county amendments to follow shortly thereafter. The State's adopted fire code at this time is the 2012 edition of NFPA 1.

On-going Commitments and Goals:

- Protect life, property and the environment by enforcing the laws and codes adopted by the State of Hawaii and Maui County.
- Educate the citizens of Maui County on fire prevention and life safety.
- Assist the Department of Fire and Public Safety in achieving recognized accreditation.
- Ensure that staff members are kept current with codes, standards, and new technologies in an effort to provide quality service to the community.



Captain Contact Fernandez: FFILI Michael McDonald, and FFILI Matthew Mann

Health and Safety Bureau Annual Highlights July 1, 2015 – June 30, 2016

Introduction

Firefighting as an occupation has become increasingly hazardous to our long-term health and immediate safety. The responsibilities of the Maui Fire Department in the realm of public safety has expanded significantly; responding to incidents involving exposure to Cancer causing smoke attributable to contemporary building construction, intimate contact with toxic materials in all forms, blood and body fluids, highway traffic, hi-risk land and ocean-based rescue and compounded by environmental, physical and traumatic psychological extremes. The number and scope of hazards to which our Firefighters are routinely exposed have grown considerably.

In the course of public service, our Firefighters have duties that predispose them to occupational health hazards and adverse medical conditions that can develop virtually unnoticed throughout their careers. Although we may be fitter than the general population, Firefighters are routinely exposed to carbon monoxide, cyanide, and other toxic substances as well as strenuous physical and atypical psychological demands that may lead to premature Heart Disease, the likelihood of contracting a Fire Service Cancer and Post-Traumatic Stress.

Modern firefighting is scientifically recognized by the WHO, NIH and various credible organizations as an occupation at "High Risk" for the distinct development of job-related Cancers, Heart Disease, and Traumatic Occupational Stress.

Premature death, disease, and/or disability are a grim reality that many firefighters now face in the modern fire service. The average length of retirement nationwide in the fire service is a meager 10 years. Unfortunately, the Department and our membership are not immune to this troubling statistic.

To this end, the Health and Safety Bureau is committed to address those modern day health hazards and actively promotes firefighter wellness, safety, performance, and longevity thru compliance with national standards, education, and research. The Health and Safety Bureau is determined to mitigate the occupational hazards that our firefighters encounter daily and is a critical component of the County of Maui Department of Fire and Public Safety.







Organization and Responsibilities

The County of Maui Department of Fire and Public Safety's Health and Safety Bureau (HSB) consist of three (3) personnel: a Health and Safety Officer (HSO), and two Assistant Health and Safety Officers (HS2, Hs3).

The HSB has developed a number of programs to ensure the well-being of our personnel and promote their overall health, safety and fitness. These programs include:

- Fire Ground Medical Assistance and Rehabilitation (Hydration, Medical Monitoring, and Sustenance) for emergency incidents and training exercises; NFPA compliant.
- Respiratory Protection Program for SCBA (Self Contained Breathing Apparatus) and Air Fill Stations; OSHA and DOT compliant.
- Infectious Disease and Exposure Control Program for Blood Borne Pathogens and Personnel Exposures; OSHA compliant.
- Personal Protective Clo9thing Disinfecting, Cleaning and Maintenance Guidelines; NFPA compliant.
- SCBA Ensemble Disinfecting and Cleaning Procedures; exceeds existing standards.
- Regulated Bio-Waste Cleanup and Disposal Procedures; OSHA compliant.
- Emergency scene and training exercise safety monitoring and guidance.
- Essential Emergency Medical/Safety Supplies; requisitions, procurement and delivery.
- Recruit Class Hepatitis A/B Vaccinations and Incumbent Medical supervision.
- Health, Wellness, Physical Fitness and Injury Prevention Education.
- Behavioral Health Monitoring- Critical Incident Stress Management (CISM).

Furthermore, the HSB coordinates various public service activities, including first-aid support at special public events including health fairs, youth and senior sports tournaments, and quarterly blood-pressure screenings at Maui County facilities.

Finally, the HSB utilizes and maintains two passenger vehicles, our specialized Air and Light Apparatus and a mobile rehabilitation trailer for use at emergency scenes and long-term training exercises.

Highlights of Activities For FY 2015-2016

The HSB continues to manage and develop its major programs and services.

Highlights from 2015-2016 fiscal year include the following:

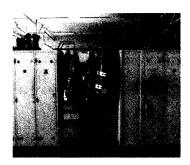
- General compliance with OSHA CFR 1910.134
- Worked with Department Grant Writer to apply for grant to purchase new SCBA to replace aging inventory.
- Obtained MRE (Meals Ready to Eat) and distributed to each station for use in case of an emergency with limited food supply.
- Updated fit test computer software to enable us to improve annual SCBA Testing for personnel.

- Assisted in Accreditation Process for the Department.
- Annual Fit-testing of all MFD personnel, specialized MPD riot control teams SCBA face masks and served as a County-Wide resource for fit-testing and guidance.
- Hydrostatic testing, routine repairs, asset tracking and inventory of all SCBA Scott Bottles Department wide.
- Annual testing, periodic repairs and documentation of all SCBA harnesses and breathing air regulators Department wide.
- Annual service maintenance for our four (4) breathing air compressors used to fill SCBA bottles. There are three (3) fixed facility fill stations located at Paia, Wailea, and Lahaina Fire Stations along with our mobile Air and Light Apparatus.
- Quarterly air sampling and carbon monoxide meter calibration for those compressors.
- Responsible for proper use and maintenance of our Turnout washing machines that extract soot/toxins and disinfect PPC. MFD now has eight (8) industrial extractors available for all-purpose decontamination of firefighting structural turnout ensembles (Hana, Makawao, Kahului, Wailea, Lahaina, Lanai, Molokai, and the Maui Fire Joint Training Center in Kahului).





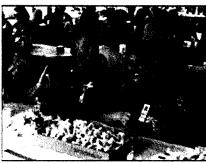




- General Compliance with OSHA CFR 1910.1030.
- Management of personnel exposure records and guidance on procedures involving suspected work exposures to blood borne pathogens.
- Continued coordination with Maui Memorial Medical Center ER and MMMC Disease Control Officer to expedite admittance of MFD personnel in the case of suspected work exposures and ensuring post-exposure procedures.
- Joint Training Bureau and Health and Safety Quarterly Newsletter highlights current life-saving information and procedures specific to mitigating the hazards of firefighting as well as general occupational health, safety, and fitness issues.
- The HSB has conducted station visits educating firefighters on the occupational hazards inherent to firefighting, particularly causality for work-related Heart Disease, Cancer, and Preventative Measures.
- Continuing to provide assistance and guidance for the Critical Incident Stress Management and Peer Support Program.

- Conducted medical monitoring and rehabilitation services (work/rest cycles, energy/fluid replenishment) at various emergency incidents and training exercises, and supplied equipment and training for other departmental entities to do the same.
- HSB assisted the Training Bureau with recruit training including an overview of Fire Service Health and Safety, Vaccinations, Emergency Medical Response, High Performance CPR Instruction, High Pressure Cylinder Fill Station Operations, and served as General Resource.
- HSB Assisted the Training Bureau with establishing safety plans for training exercises.
- Conducted quarterly blood pressure screenings at Maui County Facilities.
- Provided first-aid support at various public events, including County of Maui sponsored events via Kaunoa Senior Center such as the Memorial Day "Blossoms for the Brave", The Kurt Suzuki Baseball Clinic, Various Community Health Fairs, and numerous youth sport events.

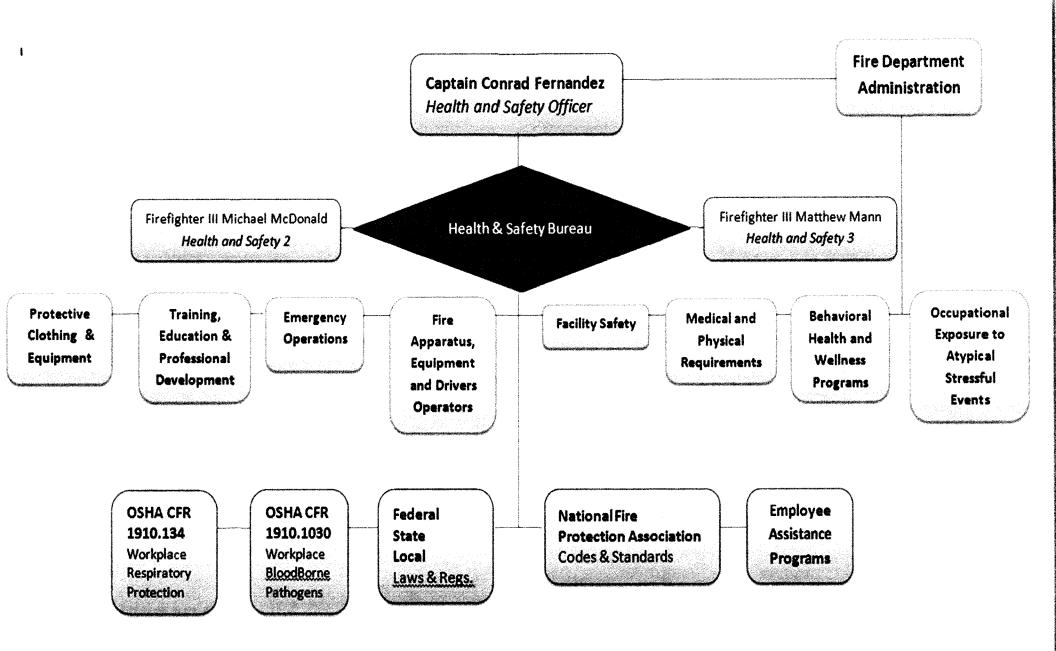


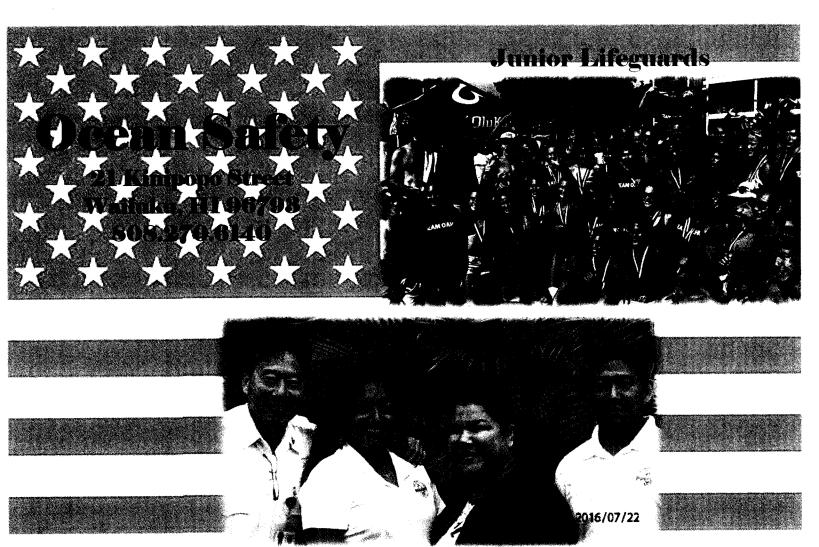




Administrative Activities

- HSB submits weekly reports to the Fire Department Administration.
- The HSO submits monthly expenditure reports.
- The HSO attends quarterly staff meetings.
- HSB personnel complete monthly apparatus reports and update the administration on maintenance and repair needs.
- HSB personnel manage various medical, safety, and essential equipment stock, inventory, maintenance, and procurement needs for emergency medical response Department wide.
- HSB routinely serves as a general subject matter resource for personnel providing guidance and support in occupational safety and health issues.





Battalion Chief Colin Yamamoto, Captain Kekai Brown, Clerk III Emme Cabaénagan, and Operations Manager Cary Kayama



OSO I Darren Quinsaat, OSO I Mitchell Navarro, OSO I Jordan Pu'u Ng, OSO I Jordan Ware, and OSO I Danuon Chu



Ocean Safety Bureau Annual Highlights July 1, 2015 – June 30, 2016

Reorganization

With the reorganization of Ocean Safety under Parks and Recreation completed in June 2015, FY 2016 marked the beginning of implementing the changes needed for a better transition to the Department of Fire and Public Safety. A new personnel interview process was developed which incorporated resumes', written, and practical exams which made selection more objective and based on measureable merits. Nine new lieutenant positions were filled to provide supervision at the nine beaches with lifeguard towers. Performance measures were updated and the minimum qualifications (MQ's) were revised to reflect the training requirements in the new position descriptions (PD's).

Training

Training continued to be emphasized throughout the fiscal year. Training and district captains attended reasonable suspicion and EAP 101 classes sponsored by DPS. Specific training on professionalism was given to all captains to improve customer service, modify perception, and gain support from the community. The end result of this training answered the important question of "What's in it for me?" The nine promoted lieutenants received Performance Evaluation training. Emphasis was made to document exceptional performance and give monthly feedback on both motor and cognitive skills. Reinforce good behavior and modify substandard expectations based on position descriptions.

Hawaii Drowning & Aquatic Injury Prevention Advisory Committee

The Ocean Safety Bureau was requested to be a member of the Hawaii Drowning & Aquatic Injury Prevention Advisory Committee. This statewide advisory committee holds quarterly meetings on Oahu and is responsible for prevention and education initiatives to minimize and raise awareness to drownings in the aquatic environment. Effective messaging backed up by survey data coordinated by Hawaii Tourism Authority is one way this advisory committee is helping to reduce death and injury to visitors and residents of the Aloha State.

HGEA Bargaining Unit 14

HGEA BU 14 and the employer group went into arbitration hearings in November 2015. The arbitration award was finalized in March 2016 and ratified by all counties in May 2016 resulting in a 16% pay raise for Ocean Safety Officers (OSO's), rescue watercraft operator pay, and other benefits. Maui Fire Department (MFD) is committed to work closely with HGEA BU 14 staff and to consult on matters affecting members pay, work schedule, and other policies affecting employee relations. MFD held a Q and A session in June 2016 to address any issues and concerns OSO's had just prior to the July 01, 2016 merger.

Initiatives

Ocean Safety Bureau continued to assist the Rotary Club Kihei-Wailea and the Will Smith Foundation with their project to install rescue tubes along the coastline of Maui. Rescue tubes are a 24 hour a day, 365 days a year life saving floatation device that can be used by good Samaritans to keep distressed victims afloat until OSO's or MFD Fire Fighters arrive. Rescue tubes have been used successfully in Hawaii and other places throughout the world.

Besides ocean related emergencies, MFD responds to mountainous terrain due to hiking injuries and flash flooding. A 35 second video of an actual flash flood in a popular hiking area with safety recommendations is now available for viewing on the home page of the County of Maui website.

Worked with GIS to map County of Maui Parks with lifeguard towers. This will be used to identify areas between Parks and Recreation and MFD specified in an MOU.

Partnered with DLNR's Division of Aquatic Resources (DAR) and Division of Conservation and Resources Enforcement (DOCARE) to revise and update shark bite/sighting protocol.

Coordinated 26th annual Ocean Safety and Drowning Prevention Conference hotel location and conference agenda with guest speakers.

FY-2017 budget was submitted in October 2015 and like every department and division, the approved FY-2017 budget was trimmed back considerably reflecting the FY-2016 budget. Budget hearings were attended to give testimony on justification of expansion positions and vehicle/equipment needs.



MAUI INCIDENT MANAGEMENT TEAM

Program Summary June 2011-August 2016

History

The United States Fire Administration defines a Type 3 Incident Management Team as a multi-agency/multi-jurisdictional team for extended incidents formed and managed at the local, state, or tribal level. It is a designated team of trained personnel from different departments, organizations, agencies, and jurisdictions. Type 3 IMTs are deployed as a team of 10-20 trained personnel, representing multiple disciplines who manage major and/or complex incidents requiring a significant number of local, state, or tribal resources. They manage incidents that extend into multiple operational periods and require a written Incident Action Plan (IAP). These incidents can include weather-related disasters such as a tornado, earthquake, or flood; a joint law enforcement operation; public health emergency; or a planned exercise or event.

It is common knowledge that the State of Hawaii is vulnerable to many natural and manmade disasters. It is also readily apparent that assistance from the continental U.S. will often take 48-72 hours to arrive. With that in mind, the Maui County Department of Fire & Public Safety administrators consulted the USFA Type 3 Incident Management Team Technical Assistance Program to develop a training program for a Maui Incident Management Team. After securing funding through the State Homeland Security Grant Program in 2011, All Hazards Incident Management Team training began in Maui with 33 attendees from 10 different agencies attending the first 0305-United States Fire Administration All Hazards Incident Management Team course at the Pacific Disaster Center. Subsequent USFA AHIMT team courses held in 2013, 2014 and 2015 introduced an additional 100 attendees from 9 additional agencies to all hazards incident management. In an effort to assist other counties and agencies in the region, Maui Incident Management Team instructors also provided USFA AHIMT team course instruction in Hawaii County in May 2015, and to the City & County of Honolulu in April and November 2015.

In accordance with the guidelines set forth by the USFA Type 3 Incident Management Team Technical Assistance Program, the Maui Incident Management Team Program has also offered "position specific" training courses to our responders. The following courses were offered: Incident Commander, Operations Section Chief,

Resources Unit Leader, Planning Section Chief, Logistics Section Chief, Public Information Officer, Safety Officer and Division Group Supervisor.

An important part of the IMT program is team development. This is where the members of an IMT work as a team, and learn the knowledge and skills needed to perform effectively in a learning environment under stressful, dynamic conditions. In an effort to address team development the Maui Incident Management Team has assisted the Maui Fair Alliance with the managing responders and emergencies at the annual Maui County Fair in 2011, 2012, 2013, 2014 and 2015. The team has also participated in the annual 93rd Civil Support Team WMD exercises in 2011, 2012, 2013, 2014, 2015 and 2016, the Maui Prescribed Fire 2013, Molokai Prescribed Fire 2015, Maui Prescribed Fire 2016 and the annual Makani Pahili state-wide hurricane exercises in 2011, 2012, 2013, 2014, 2015 and 2016.

The third category outlined by the USFA Type 3 Incident Management Team Technical Assistance Program is field training. Field training consists of designated USFA Type 3 Incident Management Team (IMT), or single resources from an IMT deployed to an incident where they will be mentored by a qualified/credentialed person from a National IMT. Maui Incident Management Team members have deployed to the following national incidents to shadow Type 1 national team mentors: 2013-Big Windy Complex-Oregon, Rim Fire-California, 2014-Slide Fire-Arizona, Logging Unit Fires-Oregon, Chiwaukum Complex Fires, WA, 2015-Wolverine Fire, WA, and to the 2016-Arizona Wildfire Incident Management Academy.

Team Size

The Maui Incident Management Team currently has members credentialed to Type 3 level in the following positions: Incident Commander (5), Liaison Officer (2), Safety Officer (3), Operations Section Chief (5), Planning Section Chief (4), Resources Unit Leader, Logistics Section Chief (3), Medical Unit Leader, and Finance Administration Section Chief (2). It is our objective to have a roster that includes Type 3 credentialed members as: Public Information Officers, Communications Unit Leaders, and Situation Unit Leaders. To build team depth and resiliency we plan to have members at least three (3) deep in each position.

The incident complexity and duration will typically determine the size of the IMT needed. We plan to deploy with a "short team" and identify what additional resources are needed for the team. This short team will typically consist of the following: Incident Commander, Deputy Incident Commander, Safety Officer, Operations Section Chief (2), Planning Section Chief (2), Logistics Section Chief (2) and a Finance Section Chief. Once the short team identifies the needs of the incident and its responders we will work with the Agency Administrator to fill additional IMT positions as needed.

Agency Participation

To date the Maui Incident Management Team Program has trained responders in Maui County, City and County of Honolulu, Kauai County, Hawaii County, the State of Hawaii, American Samoa, the National Guard, U.S. Coast Guard, Maui Electric Company, Maui Hotel Security Officers Association, and Goodfellow Brothers.

The following departments/agencies have attended: Maui Fire Department, Maui Police Department, Maui Civil Defense Agency, CoM-Public Works, CoM-Ocean Safety, CoM-GIS, Honolulu Fire Department, Kauai Fire Department, Kauai Police Department, Hawaii County Fire Department, State Aircraft Rescue Firefighters, State DLNR-DoFaW, State Department of Health, American Medical Response, Kahului Airport management, Maui Memorial Medical Center, 93rd Civil Support Team, Hawaii National Guard, and the U.S. Coast Guard.

Train the Trainers

When we first developed our proposal to fund this IMT training, we included a "promise" to take the train the trainer courses at EMI so that we could eventually teach others. The following personnel have been qualified to teach the listed courses:

- 1. David Thyne-Incident Commander, Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance/Administration Section Chief, Liaison Officer
- 2. Michael MacDougall-Operations Section Chief
- 3. Steven Thyne-Operations Section Chief
- 4. Ross Ohigashi-Logistics Section Chief
- 5. Jeff Giesea-Operations Section Chief, Safety Officer
- 6. Brad Ventura-Planning Section Chief
- 7. Mike McDonald-Safety Officer
- 8. Patrick Fukuda-Finance/Administration Section Chief
- 9. Kaulana Kino-Incident Commander, Planning Section Chief, Logistics Section Chief, Safety Officer

Community benefits

The County of Maui and State of Hawaii now has a credentialed Type 3 All Hazard Incident Management Team that is prepared to respond as requested.

The purpose of this team is to assist any jurisdiction confronted with an incident beyond its capabilities in either complexity or duration. The team brings a robust management framework to support the jurisdiction in stabilizing or bringing an incident to conclusion. We can assist in planning and documentation to include assistance in development of Incident Action Plans, Site Safety Plans, and resource tracking. We can also provide logistical support, public information & notification, as well as operational support and expertise.

We will continue to increase our involvement in the community to give back to those that have supported us. In December 2013 and March 2016 the Maui Incident Management Team managed a Prescribed Fire conducted by Maui Fire Department resources and State Forestry personnel to remove hazard fuels in the Puunoa area which is mauka of Puamana as you enter Lahaina town. Approximately 80 acres of brush and grass were "controlled burned" over a five day period in an attempt to lessen the risk of fires in the area.

On February 2-7, 2015 the Maui County Fire Department, Maui Incident Management Team, County of Maui Department of Public Works Kalaupapa National Park Service personnel and Hawaii Fire Department personnel, in consult with the Hawaii Department of Health, Maui Police Department, and the Department of Hawaiian Homelands, worked together in a multi-agency effort to conduct the exercise. In total 40 fire service personnel, 6 Law enforcement and 2 Public Works personnel were trained during the exercise. This prescribed, or controlled fire developed skills, knowledge, and abilities required to use fire as a suppression tactic during wildland fire incidents. This tactic will enable our firefighters to mitigate wildland fires more efficiently and effectively. The live fire training was conducted north of the old Kalamaula area and west of the Kalamaula Mauka subdivision on the Island of Molokai. The burn area consisted of 60 acres of wildland urban interface, broken down into separate blocks burned each day of the exercise. It is a goal of the Maui Incident Management Team to conduct future controlled burns in other areas that are typically threatened by large brush fires.

Summary

The Maui Incident Management Team program has now trained over 400 responders in the State of Hawaii. We have also sent our members to the National Emergency Training Center to get their qualifications as position specific instructors. This will allow us to continue to build our program and ensure that we have enough depth to operate for multiple operational periods if needed. As funding allows, we will continue to deploy our trainees to national Type 1 incidents to shadow Type 1 incident management teams.

With the continued support of our administration and grant partners we are prepared to be a regional resource that not only deploys local incidents, but incidents within the region that require an All Hazard Incident Management Team.

4-YEAR EXPENDITURE SUMMARY FISCAL YEAR 2015-2016

DEPARTMENT PROGRAMS

Administration/Maintenance Program

	FY 15/16	FY 14/15	FY 13/14	FY 12/13
Personal Services:	1,403,784	1,440,515	1,169,436	1,038,703
Other Current Expenses:	902,431	1,090,197	820,338	638,510
Equipment:	125,505	211,819	27,616	0
TOTAL	2,431,720	2,742,531	2,017,390	1,677,213

Fire/Rescue Operations Program

	FY 15/16	FY 14/15	FY 13/14	FY 12/13
Personal Services:	24,462,321	24,310,236	20,767,830	20,420,914
Other Current Expenses:	3,074,302	2,511,229	2,538,958	2,520,553
Equipment:	445,751	396,451	56,549	532,399
TOTAL	27,982,374	27,217,916	23,363,337	23,473,866

Training Program

	FY 15/16	FY 14/15	FY 13/14	FY 12/13
Personal Services:	531,466	579,347	499,667	474,802
Other Current Expenses:	379,766	483,926	304,171	330,708
Equipment:	49,514	212,325	75,520	58,655
TOTAL	960,746	1,275,598	879,358	864,165

Fire Prevention Program

	FY 15/16	FY 14/15	FY 13/14	FY 12/13
Personal Services:	640,826	696,550	640,693	610,245
Other Current Expenses:	80,772	160,361	84,308	110,445
Equipment:	1,159	5,455	7,727	0
TOTAL	722,757	862,366	732,728	720,690

4-YEAR EXPENDITURE SUMMARY FY 2015-2016 DEPARTMENT PROGRAMS

Admin./Fire & Public Safety Comm./Maintenance Garage										
	FY 11/12 FY 12/13 FY 13/14 FY 14/15							FY 15/16		
Personal Services:	\$	1,046,601	\$	1,038,703	\$	1,169,436	\$	1,440,515	\$	1,403,784
Other Current Expenses:	\$	945,038	\$	638,510	\$	820,338	\$	1,090,197	\$	902,431
Equipment:	\$	5,438	\$	_	\$	27,616	\$	211,819	\$	125,505
TOTAL	\$	1,997,077	\$	1,677,213	\$	2,017,390	\$	2,742,531	\$	2,431,720
		F:/D	L	- 0		\	<u> </u>		L_,	
				e Operation	SP					
	1	FY 11/12		FY 12/13	_	FY 13/14	Ļ	FY 14/15	_	FY 15/16
Personal Services:	\$	20,758,923		20,420,914		20,767,830	_	24,310,236	\$	24,462,321
Other Current Expenses:	\$	2,596,929	\$	-,		2,538,958		2,511,229	\$	3,074,302
Equipment:	\$	587,651	\$	532,399	\$	56,549	\$	396,451	\$	445,751
TOTAL	\$	23,943,503	\$	23,473,866	\$	23,363,337	\$	27,217,916	\$	27,982,374
			_		<u> </u>					
				alth & Safet	ty F	Program				
		FY 11/12		FY 12/13		FY 13/14	FY 14/15 FY 1			FY 15/16
Personal Services:	\$	560,364	\$	474,802	\$	499,667	\$	579,347	\$	531,466
Other Current Expenses:	\$	391,805	\$	330,708	\$	304,171	\$	483,926	\$	379,766
Equipment:	\$	39,131	\$	58,655	\$	75,520	\$	212,325	\$	49,514
TOTAL	\$	991,300	\$	864,165	\$	879,358	\$	1,275,598	\$	960,746
	L	Fire	Pr	evention Pr		am				
Fire Prevention Program FY 11/12 FY 12/13 FY 13/14 FY 14/15 FY 15/16										
Personal Services:	\$	578,514	\$	610,245	\$	640,693	\$	696,550	\$	640,826
Other Current Expenses:	\$	157,313	\$	110,445	\$	84,308	\$	160,361	\$	80,772
Equipment:	\$	10,761	\$	-	\$	7,727	\$		\$	1,159
TOTAL	\$	746,588	\$	720,690	\$	732,728	\$	862,366	\$	722,757

SUMMARY OF EXPENDITURES FINANCIAL OVERVIEW

	FY BUDGET vs		FY BUDGET vs		FY BUDGET vs	'14 EXPENDED	FY ' BUDGET vs	7.7	FY '16 BUDGET vs EXPENDED		
Personal Services:	\$ 23,012,054	\$ 22,944,402	\$ 22,894,630	\$ 22,544,664	\$ 23,368,572	\$ 23,077,626	\$ 26,858,396	\$27,026,648	\$ 27,390,572	\$ 27,038,398	
Other Current Expense:	\$ 4,431,533	\$ 4,091,085	\$ 3,660,463	\$ 3,600,216	\$ 4,254,879	\$ 3,747,775	\$ 4,531,864	\$ 4,245,713	\$ 4,727,208	\$ 4,437,270	
Equipment:	\$ 770,000	\$ 642,981	\$ 473,000	\$ 591,054	\$ 2,000	\$ 167,412	\$ 715,600	\$ 826,050	\$ 696,913	\$ 621,928	
Total Dept. Summary:	\$ 28,213,587	\$ 27,678,468	\$ 27,028,093	\$ 26,735,934	\$ 27,625,451	\$ 26,992,813	\$ 32,105,860	\$ 32,098,411	\$ 32,814,693	\$ 32,097,596	

SUMMARY OF EXPENDITURES FINANCIAL OVERVIEW

DEPARTMENT OF FIRE & PUBLIC SAFETY

	FY	'12	FY	'13	FY	'14	FY	'15	FY	'16
	BUDGET vs	EXPENDED	BUDGET vs EXPENDE		BUDGET vs EXPENDED		BUDGET vs EXPENDED		BUDGET vs	EXPENDED
Personal Services:	23,012,054	22,944,402	22,894,630	22,544,664	23,368,572	23,077,626	26,858,396	27,026,648	27,390,572	27,038,398
Other Current Expenses:	4,431,533	4,091,085	3,660,463	3,600,216	4,254,879	3,747,775	4,531,864	4,245,713	4,727,208	4,437,270
Equipment:	770,000	642,981	473,000	591,054	2,000	167,412	715,600	826,050	696,913	621,928
Total Department Summary:	28,213,587	27,678,468	27,028,093	26,735,934	27,625,451	26,992,813	32,105,860	32,098,411	32,814,693	32,097,596

FORMANCE MEASURES COUNTY OF MAUI FIRE AND PUBLIC SAFE FISCAL YEAR 2016 BUDGET IMPLEMENTATION REPORT FOR THE QUARTER ENDING JUNE 30, 2016

Parameter F Wester 55												1 2 2
To protect and preserve life, environment, and property	Administration/ Maintenance Program	needed all rules, regulations, standard operating procedures and standard	Review and update Rules and Regulations Manual adopted by the Fire Administration governing department personnel by June 30, 2015	% of updated Rules and Regulations Manual completed	20%	100%	100%	N/A	100%	100%	100%	100%
		operating guidelines.	Develop a best practice guideline to be used as a Policies & Procedures Manual for the department's emergency operations by June 30, 2015	% of standardized guideline for emergency operations completed	60%	100%	100%	N/A	100%	100%	100%	100%
	department with sal operational vehicles equipment. Goal #3: Be a leader sustainable energy the County of Maui. Training Program - Goal #1: Provide training Bureau increase competence task, tactical and stresses within all	Goal #2: Provide the department with safe and operational vehicles and equipment.	Increase the # of preventive maintenance services to avoid costly repairs	# of preventive maintenance services completed	70	150	110	150	23	38	58	64
			Increase the # of repair services to ensure vehicles are operating safely		525	650	779	700	207	352	551	663
			3. Conduct 45 mandatory vehicle re-certifications annually	# of required annual re- certifications conducted	79	45	59	80	35	43	53	61
		sustainable energy within	Implement projects using alternative energy sources to reduce department's reliance on fossil fuels	# of projects completed relating to alternative energy	3	5	0	5	0	0	0	0
			2. Implement projects to reduce impact on natural resources	# of projects completed relating to energy use reduction	2	5	1	5	0	0	0	0
		positions within all	Complete quaterly task level (drill schedule) training for all emergency response disciplines for a total of 9,800 units	# of units completed of drill schedule	9,800	9,800	9,500	9,800	2,953	5,226	7,985	10,900
		capabilities.	2. Conduct three multi-company drills annually for suppression, hazardous materials and technical rescue	# of drills conducted annually	1	3	2	3	0	1	2	3
			3. Increase realistic training opportunities by providing access to facilities and props for 250 training sessions conducted annually	# of training sessions utilizing training facility and props	230	250	536	250	254	434	519	543

FIRE AND PUBLIC SAFE FORMANCE MEASURES COUNTY OF MAUI

FISCAL YEAR 2016 BUDGET IMPLEMENTATION REPORT FOR THE QUARTER ENDING JUNE 30, 2016

Degar treent's Afficien	Program Name	Program Good	de la companya de la		an e			and the second				
To protect and preserve life, environment, and property	Training Program - Training Bureau	Goal #2: Standardize training levels department-wide for	skills training units annually	# of fire suppression skills training completed	8,800	8,800	9,744	8,800	2,969	5,918	8,978	12,371
		suppression, hazardous materials and technical rescue.	2. Conduct 3,000 technical rescue skills training units annually	# of completed technical rescue skills training	2,750	3,000	4,043	3,000	1,308	2,127	2,854	3,674
			3. Conduct 750 hazardous materials skills training units annually	# of completed hazardous materials skills training	460	750	857	750	136	421	526	897
		Goal #3: Provide appropriate position specific certification	1. Conduct 250 new certification trainings annually	# of new certification trainings completed	186	250	194	250	111	183	207	270
		for suppression, hazardous materials and technical rescue response. Goal #4: Ensure that employees provide an appropriate standard of care (within their defined scope of practice) to ill and/or injured members of our	2. Conduct 990 re-certification trainings annually	# of re-certification trainings completed	728	990	743	990	318	441	785	822
			1. Complete certification of the Emergency Medical Responder (EMR) level through the National Registry of Emergency Medical Technicians (NREMT), including a valid Basic Life Support (BLS level for healthcare providers including Cardiopulmonary Resuscitation (CPR) certificate from the American Heart Association (AHA) for all uniformed personnel by June 30, 2019	% of uniformed personnel achieving or maintaining NREMT certification at the EMR level or above	100%	35%	35%	40%	35%	35%	35%	35%
	Health and Safety Bureau with Heal	aining Program - alth and Safety Bureau With Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard, in part by ensuring all members are issued properly fitting, properly functioning, and safe respiratory protection equipment adequate to the demands of their jobs and potential occupational exposures.	Complete annual fit testing of respirator masks for all personnel	% of uniformed personnel undergoing fit testing and being issued appropriately fitting respirator masks, per year	100%	100%	98%	100%	27%	35%	65%	90%
			2. Complete annual flow testing of all Self Contained Breathing Apparatus (SCBA) units in service by June 30, 2015	% of SCBA units in service for which flow testing was performed, per year	90%	100%	85%	100%	20%	45%	70%	100%
			3. Increase the rate of personnel performing proper inspection and end-user testing of SCBA ensembles with appropriate frequency	% of weeks per year all stations have documented proper inspection and testing	90%	100%	100%	100%	25%	50%	75%	100%

COUNTY OF MAUI FISCAL YEAR 2016 BUDGET IMPLEMENTATION REPORT FOR THE QUARTER ENDING JUNE 30, 2016

September 1994			Video (1996)									A
		with Occupational Safety and Health Administration	4. Complete air sample testing on four SCBA cascade systems, on a quarterly basis, as required by OSHA	# of air sample tests conducted annually	N/A	N/A	N/A	4	1	2	3	4
			Complete annual physical exam to all 309 uniformed employees and mechanics	# of personnel receiving physical exams annually	267	309	250	309	9	18	185	253
				# of modules made available to personnel	4	4	4	4	1	2	3	4
		deaths due to poor fitness, while enhancing the	Maintain the rate of uniformed personnel receiving a position- appropriate medical exam and fitness assessment at 100% per year	% of uniformed personnel receiving a position-appropriate medical exam and fitness assessment per year	38%	100%	69%	100%	0%	0%	14%	29%
		the performance of	2. Provide personnel with a fitness regimen, along with equipment and instruction necessary to follow it safely and effectively while on duty	% of personnel per year prescribed and instructed in an individualized fitness regimen that can be performed on duty	100%	100%	100%	100%	10%	10%	75%	100%
	Fire/Rescue Operations Program	Goal #1: Manage the tracking system effectively and efficiently to provide accurate data on department calls for services and responses to emergencies.	Provide accurate statistical data to be used for National Fire Incident Reporting System (NFIRS) reporting, and data analysis for budget and reporting purposes	responses to emergencies	100%	100%	100%	100%	100%	100%	100%	100%
			Provide accurate statistical data for arriving units travel time to incidents in urban, suburban, and rural areas	% of accurate data for arriving units travel time to incidents in urban, suburban, and rural areas	N/A	N/A	N/A	100%	100%	100%	80%	91%

FORMANCE MEASURES COUNTY OF MAUI FISCAL YEAR 2016 BUDGET IMPLEMENTATION REPORT FOR THE QUARTER ENDING JUNE 30, 2016

To protect and preserve life, Fire/Rescue Operations Goal #2: Improve the 1. Improve the rate of initial % of initial response turnout times environment, and property Program department's response times response turnout times that meet within 60 seconds for EMS calls 35% 27% in rural, suburban and urban the NFPA 1710 standard for and 80 seconds for fire N/A N/A N/A 75% 28% 18% areas to meet deployment staffed fire stations (per CFAI) suppression calls benchmarks. Goal #3: Improve the Maintain the # of pre-incident # of pre-incident plans conducted department's pre-fire plans conducted by crews to 504 annually is 504 or more planning to effectively and or more 230 612 543 504 46 287 385 443 safely deal with all fire and rescue incidents. Fire Prevention Program Goal #1: Reduce the threat of 1. Complete inspection of 700 # of establishments or facilities (General Fund) fire, injury and property loss establishments or facilities inspected/re-inspected 847 700 901 273 427 557 700 160 by conducting fire annually inspections at intervals 2. Complete 100 brush and weed # of brush and weed abatement 203 100 194 72 100 114 162 178 consistent with applicable abatement inspections annually inspections completed annually laws and department 3. Complete inspection of all 33 # of public schools, K-12, policies. 32 33 33 33 0 5 21 22 public schools annually inspected/re-inspected Goal #2: Provide quality fire 1. Conduct at least a minimum of # of fire safety presentations education programs for the 150 fire safety presentations conducted annually 265 150 229 150 25 62 122 159 citizens of Maui County and annually promote fire prevention and 2. Increase the # of portable fire # of persons provided portable fire public safety education extinguisher trainings conducted extinguisher training 750 1,000 676 257 360 645 1,000 144 programs. annually 3. Increase the # of Fire Fighter # of Fire Fighter Safety guides Safety guides distributed to distributed to elementary students 13,200 13,200 13,200 13,200 13,200 13,200 13,200 13,200 elementary students annually Goal #3: Conduct thorough 1. Conduct thorough fire # of in-depth fire investigations fire investigations. investigations conducted 62 40 57 40 10 20 30 36 2. Identify the % of fire % of fire investigations deemed 23% 0% 19% 0% 10% 15% 17% 14% investigations classified as arson caused by arson Fire Prevention Goal #1: Provide timely and 1. Maintain the rate of plans # of plans reviewed 2,973 2,000 2,735 2,000 772 1,492 2,214 2,963 (Revolving Fund) quality customer service to reviewed within 14 days from permit applicants during the application at 100% % of plans reviewed within 14 100% 100% 100% 100% 100% 99% 98% 95% plans review process. days from application date Goal #2: Reduce the threat of 1. Increase the # of lots of which # of lots cleared fire and property loss brush, debris and other potential through enforcement by fire hazards from designated 0 5 2 5 0 0 0 0 removing brush, debris and properties have been removed other potential fire hazards from designated properties. Some performance measures were revised to reflect corrected totals for the respective quarter.



Accreditation Report

Maui Fire Department 200 Dairy Road Kahului, Hawaii 96732 United States of America

This report was prepared on February 27, 2017
by the
Commission on Fire Accreditation International
for the
Maui Fire Department

This report represents the findings of the peer assessment team that visited the Maui Fire Department on January 22-26, 2017

> Peer Assessment Team Jerry Nulliner, Team Leader Danielle Bryan, Peer Assessor Robert Parker, Peer Assessor Anastasia Turner, Peer Assessor

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EXHIBITS

Maui Fire Department Organizational Chart

Maui County Organization Chart

Summary Rating Sheet (For Commission Use Only)

EXECUTIVE REVIEW

PREFACE

The Maui Fire Department recently received candidate status. On March 31, 2016, the department asked the Commission on Fire Accreditation International (CFAI) for a site visit to determine if it could be recommended for accreditation. On April 1, 2016, the CFAI appointed a peer assessment team. During the peer team review of the initial documents many deficiencies were found and ultimately the documents were not approved for a site visit on April 28, 2016. A letter was sent to the department by the CFAI program manager on May 12, 2016 outlining improvements required for the documents to be acceptable. The peer team leader following Center for Public Safety Excellence (CPSE) policy set a site visit on October 12, 2016. The peer assessment team conducted an on-site visit of the department on January 22-26, 2017.

SUMMARY

The CFAI peer assessment team has completed a comprehensive review and appraisal of the Maui Fire Department based upon the eighth edition of the *Fire & Emergency Service Self-Assessment Manual (FESSAM)*. The commission's goals are to promote organizational self-improvement and to award accreditation status in recognition of good performance. The peer assessment team's objectives were to validate the department's self-assessment study, identify and make recommendations for improvement, issue a report of findings, and conclude if the department is eligible for an award of accreditation.

The peer assessment team followed CFAI processes and the Maui Fire Department did not demonstrate that its self-study accreditation manual, community risk analysis, standards of cover (SOC), and strategic plan met all core competencies and criteria. The peer assessment team recommends deferred agency status for the Maui Fire Department from the Commission on Fire Accreditation International until the department has an opportunity to fully address all of the identified core competencies that were rated as unsatisfactory and a supplemental review and approval is made by the peer team leader.

The peer assessment team confirmed through an examination of available data, station visits, and interviews that it is not currently possible for the department to meet the established expectations for the following core competencies:

• Core competencies 2B.1¹ and 2C.1² are not being met. The department has begun a risk assessment of structures on the three occupied islands, however they cannot demonstrate all structures as being evaluated and placed in their Vision software, thus not being able to complete their fire and non-fire risk assessment.

¹ 2B.1 Each planning zone and population area is analyzed and risk factors are evaluated in order to establish a standards of cover.

² 2C.1 Each planning zone and population area is analyzed and non-fire risk factors are evaluated in order to establish a standards of cover.

- Core competencies 2B.5³ and 2C.5⁴ are not being met. The department has facilities located throughout the response areas; however, there is a need to do a complete assessment relying on the community risk assessment/standards of cover to evaluate the number and location of current and future stations.
- Core Competency 5A.1⁵ is not being met. The department needs to evaluate FireRMS data on a frequent basis to determine areas of concern and make informed decisions on improvement of response capabilities for the citizens and visitors. The department should develop a process to make informed decisions when establishing benchmarks for response areas not having an effective response force baseline
- Core Competency 5F.7⁶ is not being met. The department needs to develop a formal and measurable assessment process to determine the effectiveness of the hazardous materials program. This process should be supported by standard operating guidelines to substantiate the methodology and completion requirements.
- Core Competency 7F.5² is not being met. The department should establish the role of incident safety officer within the critical task analysis of the Community Risk Assessment/Standards of Cover for all program areas. This position should be filled at all incidents and the department should ensure that all individuals performing this function be properly trained and certified.
- Core Competency 10A.1⁸ is not being met. The department is being dispatched by a combined system coordinate by the Maui County Police Department. Even though this is a county system there needs to be a formal agreement between the department and the dispatch center to establish dispatch expectations.

The department's success in meeting expectations is strongly tied to integrated processes for its standards of cover, strategic plan, and SOC. The SOC was and still is listed as a draft document with updates being completed while peer assessment team was on site. The SOC appropriately identifies the county as being urban, suburban, and rural, along with areas inaccessible by vehicular traffic. There are appropriate benchmark goals and actual baseline performance statements in place that identify and measure all components of the total response time continuum. All times were developed straight out of computer aided dispatch (CAD) data, and the department was aware times had some areas of concern.

³ 2B.5 Agency baseline and benchmark total response time objectives for fire response conform to industry best practices as prescribed on pages 70-71 for first due and effective response force (ERF).

⁴ 2C.5 Agency baseline and benchmark total response time objectives for non-fire incident response conform to industry best practices as prescribed on pages 70-71 for first due and effective response force (ERF).

⁵ 5A.1 Given the agency's standards of cover and emergency deployment objectives, the agency meets its staffing, response time, pumping capacity, apparatus and equipment deployment objectives for each type and magnitude of fire suppression emergency incidents.

⁶ 5F.7 An appraisal is conducted, at least annually, to determine the effectiveness of the hazardous materials program.

⁷ 7F.5 An occupational health and safety training program is established and designed to instruct the workforce in general safe work practices, from point of initial employment through each job assignment and/or whenever new substances, new processes, procedures, or equipment are introduced. It provides specific instructions on operations and hazards specific to the agency.

⁸ 10A.1 The agency develops and maintains outside relationships that support its mission, operations or cost effectiveness.

Following a detailed assessment and analysis, the peer assessment team believes by consensus that the alarm handling time, turnout time, and travel time for the first-due and effective response force components of the total response time continuum, as contained in the SOC, are not in line with the industry best practices identified in the eighth edition of the *FESSAM* and constitute a gross deviation. It is clear the department is committed to taking steps to meet the expectations as demonstrated by their change in data entry into the FireRMS system and review of data entry. These steps will allow the department to make informed decisions as to changes in response methodology. This also allows the department to review recordings to verify times are appropriate on response data that is in question.

The peer assessment team identified opportunities for improvement that are captured in the recommendations and observations sections of the report. These recommendations flowed from discussions, interviews, and a review of department-supplied documentation to support its self-assessment conclusions. The department demonstrated its keen desire to immediately implement plans to address opportunities for improvement as was evident in the changes to their FireRMS system input and review of data.

The peer assessment team observed a commitment by the department to the CFAI accreditation process. The current accreditation manager has a support team, and one of its members will be selected as his replacement. The department during their delay had another peer assessor visit their department and talk with the mayor to gain support for the process, thus renewing the department's commitment to the accreditation process.

Composition

Hawaii became the 50th state in the United States in 1959. Firefighting goes back to the late 1800's as a volunteer organization. At that time most of the fire protection was the result of plantation camps being accomplished by way of bucket brigades. Then in 1924 there were several significant fires that motivated the board of supervisors, predecessor to the county council, to begin upgrading fire protection for the island. The first chief and firefighters were hired July and August 1924.

According to the United States Census Bureau, the estimated population of Maui was 163,019 as of 2014. This number includes approximately 7,500 residents on Moloka'i and 3,500 on Lana'i islands and 1,000 in Hana district. In addition to the residents the county has an average visitor population of 55,822 per day, with spikes as high as 66,347 during peak travel time in December.

Maui County is unique as it is the only county in the State of Hawaii to have multiple islands. There are five islands that make up the county, of which only three are occupied. The total protected area for the department is 1,162 square miles of land and 1,237 square miles of ocean considered part of the jurisdiction.

The department responded to a total of 9,814 emergencies in 2015 including: 183 fire calls (1.9 percent); 4,645 emergency medical service (EMS) calls (47.3 percent); 224 technical rescue calls (2.3 percent); 44 hazardous material calls (0.4 percent); and 4,718 other responses (48.1 percent).

The fire department has managed to evolve with the growth of building stock and related population; it is a career service staffed by a minimum of 77 uniformed fire personnel on a daily basis working out of 14 fire stations.

Government

Mayor and 9 County Councilors 9 Fire and Public Safety Commissioners Fire Chief

Fire Department

14 fire stations 302 uniformed, 61 ocean safety personnel, and 18 civilian personnel 3 shift system

Staffed Resources

- 14 engine companies
- 2 ladder companies
- 1 hazardous materials unit
- 1 heavy rescue
- 6 tankers
- 1 helicopter

Cross-staffed Resources

- 1 tanker
- 5 wildland units (mini pumpers)
- 3 rescue boats
- 5 rescue skis
- 9 utility trucks

Non-staffed Units

1 mobile command vehicle 1 rehabilitation unit Multiple ready reserve apparatus

Daily Minimum Staffing (All Stations): 77 personnel

CONCLUSIONS

The self-study manual produced by the Maui Fire Department was of medium quality.

- The Maui Fire Department did not demonstrate that all core competencies were met and did not receive a credible rating. Core competencies not met include the following: 2B.1, 2C.1, 2B.5, 2C.5, 5A.1, 5F.7, 7F.5, and 10A.1.
- The Maui Fire Department did not demonstrate that all applicable criteria were met and did not receive a credible rating. Criteria not receiving a credible rating include the following: 2B, 2C, 5A, 5F, 7F, and 10A.
- The peer assessment team recommends deferred agency status for the Maui Fire Department from the Commission on Fire Accreditation International until March 2018.
- The peer assessment team recommends that if the deferred agency status timeframe is not met by the Maui Fire Department, the department should be denied accreditation.

RECOMMENDATIONS

The peer assessment team conducted an exit interview with the agency consisting of the fire chief, deputy chief, and accreditation manager. The purpose of the meeting was to review the team's findings and recommendations. The department was given an opportunity to respond to any errors of findings of fact.

Strategic Recommendations

Strategic recommendations were developed from information gathered from the onsite assessment visit and the evaluation of the criteria and core competencies.

Category II – Assessment and Planning

Criterion 2B: Fire Risk Assessment and Response Strategies

Criterion 2C: Non-Fire Risk Assessment and Response Strategies

Core Competencies

- 2B.1 Each planning zone and population area is analyzed and risk factors are evaluated in order to establish a standards of cover.
- 2C.1 Each planning zone and population area is analyzed and non-fire risk factors evaluated in order to establish a standards of cover.

It is recommended the department determine what structures have not been captured in the Vision software and complete the risk analysis process.

- 2B.5 Agency baseline and benchmark travel time objectives for fire response conform to industry best practices as prescribed on pages 70-71 for first due and effective response force (ERF).
- 2C.5 Agency baseline and benchmark travel time objectives for non-fire incident response conform to industry best practices as prescribed on pages 70-71 for first due and effective response force (ERF).
- It is recommended the department conduct a fire station location study to determine the number and location of stations to provide the appropriate distribution of resources to bring travel times for the ERF in line with industry best practice. It is noted that this recommendation also applies to other program areas.
- It is recommended the department work with the dispatch center to ensure that when the one dispatcher is on an emergency call, another dispatcher ensures additional calls for fire department services are handled appropriately.

Criterion 2C: Non-Fire Risk Assessment and Response Strategies

Core Competency

2C.6 Given the importance and magnitude of service demands, a standards of cover strategy is established for each type of non-fire risk(s) and service demand.

It is recommended the department utilize the same process used for the other non-fire risks to complete the development of the ocean rescue program standards of cover strategy.

Category III – Goals and Objectives Criterion 3A: Goals and Objectives

Core Competency

- 3A.1 The agency publishes general organizational goals directed toward achieving the agency's long range plans. Corresponding specific objectives are published to implement these goals and incorporate the measurable elements of time, quantity, quality.
- 3B.1 Some form of organizational management process is identified and used to implement and track the agency's goals and objectives.
- It is recommended all goal statements have a more defined measurement consideration for quantity and quality.
- It is recommended the department ensure that each program area is addressed in future goal and objective development.

Criterion 3C: Measurement of Organization Progress

Core Competency

3C.1 The agency's goals and objectives are examined and modified at least annually for quality and to ensure they remain current and consistent with the agency's mission, vision, and long range plan(s).

It is recommended the department formalize the approach to assure each goal and objective is examined and modified on at least an annual basis.

Category IV – Financial Resources

Criterion 4C: Resource Allocation

Core Competency

- 4C.1 Programs and activities based on current and anticipated revenues are adequate to maintain adopted levels of service.
- It is recommended the department identify and address all program and position needs (risks, hazards, and tasks) to maintain expected levels of service.

- It is recommended the department look for other possible revenue sources.
- It is recommended the department develop a plan to prioritize the training program budget requirements.

Category V – Programs Criterion 5A: Fire Suppression

Core Competencies

- 5A.1 Given the agency's standards of cover and emergency deployment objectives, the agency meets its staffing, response time, pumping capacity, apparatus and equipment deployment objectives for each type and magnitude of fire suppression emergency incidents.
- It is recommended the department work with the budget department and mayor to seek approval from the county commission to fill the two vacant battalion chief positions.
- It is recommended the department develop a plan to address staffing at Puko'o station to bring it in line with 4 person staffing.
- It is recommended the department establish frequent intervals for the analysis of data in its FireRMS related to baseline performance to more immediately identify changes in levels of service and identify opportunities for improvement. It is noted that this recommendation also applies to several other program areas.
- It is recommended the department validate benchmark statements in program areas that have no response data to support statements.
- 5A.4 Current standard operating procedures or general guidelines are in place to direct fire suppression activities.

It is recommended the department formalize the process for reviewing and updating the standard operating guidelines and ensure there are appropriate standard operating guidelines for all program areas within the department. With this process the department should build for the distribution and training of personnel as needed on changes, beginning with the March 2016 edition of the standard operating guidelines.

5A.7 An appraisal is conducted, at least annually, to determine the effectiveness of the fire suppression program.

It is recommended the department formalize the annual appraisal process for the suppression program.

Criterion 5B: Fire Prevention/Life Safety Program

Core Competency

5B.2 The code enforcement program is designed to ensure compliance with applicable fire protection law and agency objectives.

It is recommended the department institute a formal inspection tracking and enforcement policy that is based on actual inspection activities and supported by the agency legal counsel.

5B.3 The program has adequate staff with specific expertise to meet the fire prevention/life safety program goals and objectives.

It is recommended the department develop and implement a risk-based inspection frequency schedule that is correlated with the risk assessment found in the standards of cover and provide appropriate staffing to meet departmental goals and objectives.

5B.8 An appraisal is conducted, at least annually, to determine the effectiveness of the fire prevention program and its efforts in risk reduction.

It is recommended the department formalize the appraisal of the fire prevention program including prevention data related to inspection violations/corrections, plan review data, and code enforcement activities to align resources with emergent community needs and risks.

Criterion 5C: Public Education Program

Core Competency

5C.4 The public education program targets specific risks and risk audiences as identified through incident, demographic, and program data analysis.

It is recommended the department utilize response, risk analysis, and demographic data to expand the public education program to include other non-fire related topics (e.g.: tourist populations, stroke, heart attack, drowning, etc.).

Criterion 5D: Fire Investigation Program

Core Competency

5D.3 The program has adequate staff with specific expertise, training, and credentials to accomplish the program goals and objectives

It is recommended the department enhance its existing training program by creating a continuing education component for fire investigation.

5D.8 An appraisal is conducted, at least annually, to determine the effectiveness of the fire investigation program.

It is recommended the department develop a formal process to determine the effectiveness of the fire investigation program against defined program goals and objectives.

Criterion 5F: Hazardous Materials

Core Competency

5F.7 An appraisal is conducted, at least annually, to determine the effectiveness of the hazardous materials program.

It is recommended the department develop a formal and measureable assessment process to determine the effectiveness of the hazardous materials program. The process should be supported by operating guidelines that substantiate the process methodology and completion requirements.

Category VI – Physical Resources

Criterion 6B: Fixed Facilities

Core Competency

6B.4 Facilities comply with federal, state/provincial and local codes and regulations.

It is recommended the department develop and implement a facilities inspection program to ensure all facilities meet applicable codes and regulations.

Criterion 6C: Apparatus and Vehicles

Core Competency

6C.1 Apparatus are located strategically to accomplish the stated standards of cover and service level objectives.

It is recommended the department assess and plan its apparatus locations to align with the community risk assessment in the standards of cover (SOC).

Criterion 6F: Safety Equipment

Core Competency

6F.1 Safety equipment is identified and distributed to appropriate personnel.

It is recommended the department evaluate hearing protection on response apparatus and develop a plan to implement a complete hearing protection program for all apparatus.

Category VII – Human Resources

Criterion 7F: Occupational Health and Safety and Risk Management

Core Competency

7F.5 An occupational health and safety training program is established and designed to instruct the workforce in general safe work practices, from point of initial employment through each job assignment and/or whenever new substances, new processes,

procedures, or equipment are introduced. It provides specific instructions on operations and hazards specific to the agency.

It is recommended the department establish the "incident safety officer" role within the critical task analysis and standards of cover for all hazardous incidents, including structure fires, hazard materials incidents, technical rescues, and ocean rescue incidents. The department should ensure that this position is filled during incidents and that the individuals are properly trained and certified.

Criterion 7G: Wellness/Fitness Programs

Core Competency

7G.1 The agency provides for initial, regular, and rehabilitative medical and physical fitness evaluations.

It is recommended the department acquire an occupational health physician to ensure effective evaluations of annual physicals, workers' compensation processes, drill medical logs, and provide fit for duty determination.

Category VIII – Training and Competency Criterion 8B: Training and Education Program Performance

Core Competency

8B.4 The agency provides for evaluation of individual, company, or crew, and multicompany or crew performance through performance-based measurements.

It is recommended the department develop performance based measurement processes for all training program areas as related to multi-company drills and training processes.

Criterion 8C: Training and Education Resources

Core Competency

8C.1 Available training facilities and apparatus are provided to support the training needs of the agency.

It is recommended the department develop a plan and begin implementation to update and expand the current training facility to improve facilitation of all training programs.

Category IX – Essential Resources Criterion 9A: Water Supply

Core Competency

9A.2 An adequate and reliable fixed or portable water supply is available for fire fighting purposes. The identified water supply sources are sufficient in volume and pressure to control and extinguish fires.

It is recommended the department develop and implement a plan for a water shuttle delivery test to determine current water capability as measured by an appropriate methodology (i.e., gpm) and if adequacy for firefighting demand issues are discovered, develop an expanded method for the delivery of larger volumes of water for extended periods of time.

Criterion 9C: Administrative Support Services and Office Systems

Core Competency

9C.1 The administrative support services are appropriate for the agency's size, function, complexity, and mission, and are adequately staffed and managed.

It is recommended the department work with human resources and finance department to pursue dedicated administrative support staff to assist chief fire officers in meeting administrative requirements while allowing them to focus more on core responsibilities.

Category X – External Systems Relationships Criterion 10A: External Agency Relationships

Core Competencies

10A.1 The agency develops and maintains outside relationships that support its mission, operations or cost effectiveness.

It is recommended the department pursue a formal agreement with the dispatch center to include expectations for dispatching and tracking of units.

Criterion 10B: External Agency Agreements

10B.1 External agency agreements are current and support organizational objectives.

It is recommended the department develop a plan to ensure all agreements are reviewed on an annual basis and update as needed.

Specific Recommendations

Specific recommendations were developed from the appraisal of performance indicators in each of the ten categories.

Category III – Goals and Objectives Criterion 3A: Goals and Objectives

Performance Indicator

3A.2 The agency establishes goals for each operational program with corresponding specific objectives that incorporate the measureable elements of time, quantity, and quality.

It is recommended the departments planning process be expanded to include the establishment of appropriate goals and objectives for all programs.

Category IV - Financial Resources

Criterion 4C: Resource Allocation

Performance Indicator

4C.3 Future asset maintenance costs are projected with related funding plans.

It is recommended the department assess the long term maintenance and life cycle costs associated with the current resources and ensure these costs are included in the annual budget.

Category V – Programs

Criterion 5F: Hazardous Materials

Performance Indicator

5F.3 Supplies and materials allocation is based on established objectives, is appropriate to meet the hazardous materials response operational needs, and is compliant with local, state/provincial and national standards.

It is recommended the department expand its risk analysis process to assist in the evaluation of equipment needs and determination processes.

Criterion 5H: Domestic Preparedness Planning and Response

Performance Indicator

5H.8 The agency conducts and documents a vulnerability assessment and has operational plans to protect and secure the agency's specific critical infrastructure, including but not limited to materials and supplies, apparatus and facilities security, fuel, and information systems.

It is recommended the department establish a formal vulnerability assessment process that establishes priorities for defining fire station exposure potential, create a plan to limit the extent of vulnerability, and achieve a more secure environment at those locations.

Category VI – Physical Resources Criterion 6B: Fixed Facilities

Performance Indicator

6B.2 Buildings and outbuildings are clean and in good repair and the surrounding grounds are well kept. Maintenance is conducted in a systematic and planned manner.

It is recommended the department develop a plan to inspect fire stations and make needed repairs as deemed appropriate for routine maintenance issues to reduce potential problems with significant costs in the future.

Criterion 6D: Apparatus Maintenance

Performance Indicator

6D.2 The maintenance and repair facility is provided with sufficient space and equipped with appropriate tools.

It is recommended the department assess and develop a plan of its maintenance and repair facility to ensure space appropriate based on the expansion of services.

Category VIII – Training and Competency Criterion 8B: Training and Education Program Performance

Performance Indicator

8B.5 The agency maintains individual/member training records.

It is recommended the department develop and implement a plan to ensure each individual's training record is updated to include: all training areas attained during practical skill drills, including multi-company drills and all other trainings attended.

Category IX – Essential Resources Criterion 9A: Water Supply

Performance Indicators

9A.4 The agency maintains regular contact with the managers of public and private water systems to stay informed about all sources of water availability for fighting fires.

It is recommended the department expand contact opportunities with current water system owners/managers to stay informed about water availability for fighting fires.

9A.8 Fire hydrants are inspected, tested and maintained and the agency's related processes are evaluated periodically to ensure adequate and readily available public or private water for fire protection.

It is recommended the department work to improve working relationships with the smaller water system owners/managers to assure proper testing and maintenance of water supply systems.

Category X – External Systems Relationships Criterion 10A: External Agency Relationships

Performance Indicators

10A.3 A process is in place for developing, implementing and revising interagency policies and agreements.

It is recommended the department establish a process to review, assess, and update and/or create memorandums of understanding (MOUs) and/or memorandums of agreement (MOAs) as appropriate.

10A.4 A conflict resolution process exists between the organization and external agencies with whom it has a defined relationship.

It is recommended that a conflict resolution process be added into all existing and future MOUs and MOAs.

OBSERVATIONS

Category I — Governance and Administration

The Maui Fire Department operates within a mayor/county council form of municipal government. The fire chief reports to the Department of Fire and Public Safety Commission (commission). The mayor meets on a monthly basis with the fire chief, managing director, and commission. The fire chief meets as requested by the county council through the mayor.

The governing body and/or agency manager is legally established to provide general policies to guide the agency, approved programs and services, and appropriated financial resources. The department is legally established by the Constitution of Hawaii, Article VIII – Local Government, Local Self-Government; Section 2, which authorizes each political subdivision the power to frame and adopt a charter for self-government, which is then further defined by the Charter for County of Maui (2015 edition).

The established administrative structure provides an environment for achievement of the agency's mission, purposes, goals, strategies, and objectives. The city/county has several checks and balances to ensure there is compliance with legal requirements. There are policies and procedures that have been published and distributed to all city/county facilities. Fire department employees are required to read and acknowledge these policies, which include: workplace violence, sexual harassment, and illegal drugs in the workplace. The department has a departmental personnel officer, who works in conjunction with the county's Equal Employment Opportunity (EEO) Officer.

Category II — Assessment and Planning

The Maui Fire Department has embraced the use of the CFAI self-assessment process to logically and rationally define and align its self-assessment manual, community risk hazard analysis, standards of cover (SOC), and strategic plan. The department assigned staff to provide support to the overall accreditation process.

Two criterion statements and four core competencies were not met: criterion statements 2B and 2C and core competencies 2B.1, 2C.1, 2B.5, and 2C.5. Additional detail related to the team's findings is located below in the observations about the ability of the department to meet the criterion statement and core competency expectations.

The agency collects and analyzes data specific to the distinct characteristics of the community served and applies the findings to organizational planning. An analysis in the SOC appropriately identifies that the city's population densities have been evaluated and determined to be urban, suburban, and rural. The County of Maui is extremely diverse in its population densities with the population distributed among three islands and one district. The department has an analysis of the risk within the various population density areas. The results of the analysis and the associated identified needs are integrated into the SOC.

The department assesses the nature and magnitude of the hazards within its jurisdiction and develops appropriate response coverage strategies. Each significant fire and non-fire risk is categorized and listed to permit future analysis and study in determining standards of cover and related services.

Special attention is paid to identify, analyze and develop strategies for non-fire or limited fire risks that gain importance due to cultural, economic, environmental, or historical value.

Criterion statements 2B and 2C were not met. While the department has a risk assessment process established, they have no accounting as to how many commercial structures they have on the three occupied islands and the complete number of occupancies already entered into the Visions software that is being utilized to perform a complete hazard/risk analysis for fire and non-fire risks.

The department has 14 fire stations with personnel and apparatus strategically located on the three occupied islands; however, with the response times, there is a significant variation for arrival of apparatus to the various emergency incidents.

The benchmark service level objectives incorporated into the SOC are based on local needs and circumstances along with industry standards and best practices adopted from the: Commission on Fire Accreditation International (CFAI) Fire & Emergency Service Self-Assessment Manual (FESSAM), eighth edition and the CFAI Standards of Cover, fifth edition.

The department has developed an analysis process utilizing Vision software, which is not complete, to identify the fire and non-fire risks that are appropriate, acceptable, and affordable in relation to the identified needs of the community. The department's comprehensive evaluation and planning process provides very detailed information related to both the fire and non-fire risks in each of its 119 fire management zones (FMZs). This information was used by the SOC committee to identify appropriate responses capable of efficiently, effectively, and safely addressing the risks within the current capabilities of the department's delivery system.

Core competencies $2B.1^{\frac{9}{2}}$ and $2C.1^{\frac{10}{2}}$ are not being met. The department has begun a risk assessment of structures on the three occupied islands, however they cannot demonstrate all structures as being evaluated and placed in their Vision software, thus not being able to complete their fire and non-fire risk assessment.

It is recommended the department determine which structures have not been captured in the Vision software and complete the risk analysis process.

The department's assessment and planning process, used to develop its SOC, has considered the overall risk it protects, its areas of responsibility, the demographics of the county, the economic indicators influencing its ability to deliver services, the historical fire loss data, the available water supply, the use of automatic fire protection systems for certain occupancies, and the transient visitor population. Each fire company is responsible for continually assessing the changing fire risk within its area. This comprehensive approach has ensured the establishment of an SOC strategy for fire risks.

In the development of the SOC, careful consideration was given to the non-fire risks in the community. The non-fire risks include technical rescue, hazardous materials, emergency medical services (EMS), and ocean rescue.

⁹ 2B.1 Each planning zone and population area is analyzed and risk factors are evaluated in order to establish a standards of cover.

¹⁰ 2C.1 Each planning zone and population area is analyzed and non-fire risk factors evaluated in order to establish a standards of cover.

The department has completed an analysis and evaluation of the related service demands for each of these risk types with the exception of ocean rescue, which the ocean rescue program was just transferred to the department July 1, 2016. Appropriate performance objectives are contained in the SOC relative to the response of personnel within an identified time frame.

It is recommended the department utilize the same process used for the other non-fire risks to complete the development of the ocean rescue program standards of cover strategy. The department just took over complete operations of the ocean rescue program as of July 2016 from the parks department and has not been able to fully address all areas of this newly incorporated program.

The department uses data generated by its records management system to create reports that assist in assessing its past performance within the 119 FMZs. The results are used to update and revise the SOC document, as needed.

The department's practice is to document alarm handling as the time interval from when the alarm is acknowledged at the communication center/public safety answering point (PSAP) until the dispatcher hits the enter key to acknowledge the response apparatus is appropriate for the emergency response and at that time the station paging systems are activated.

Core competency 2B.5¹¹ and 2C.5¹² are not being met. Following a detailed assessment and analysis, the peer assessment team believes by consensus that the alarm handling time, turnout time, and travel time for the first-due and effective response force components of the total response time continuum, as identified in the standards of cover, are not in line with the industry best practices identified in the eighth edition of the *Fire & Emergency Service Self-Assessment Manual (FESSAM)*. The department's travel time for first-due units of 38 minutes and 1 second substantially exceeds the *FESSAM* benchmark expectations of 10 minutes and baseline expectations of 13 minutes in rural density areas. It is recommended the department conduct a fire station location study to determine the number and location of stations to provide the appropriate distribution of resources to bring travel times for the ERF in line with industry best practice. It is noted that this recommendation also applies to other program areas.

The one PSAP fire dispatcher has times when on an emergency call may have another call come in and that call will have to wait till the dispatcher is off that phone call prior to dispatching the next call or answer units on the first call when other dispatchers are in the center and available to assist the fire dispatcher. It is recommended the department work with the dispatch center to ensure that when the one dispatcher is on an emergency call, another dispatcher ensures additional calls for fire department services are handled appropriately.

A master strategic plan for 2016-2020 is in place and, along with the budget, is guiding the activities of the department. The plan is submitted to the Mayor and County Council. The Master Strategic Plan 2016-2020 for Maui Fire Department was developed utilizing internal and external input. The plan was distributed to the Department of Fire and Public Safety Commission, mayor, and county council, along with posting on the department's internal network. The plan has goals and objectives

¹¹ 2B.5 Agency baseline and benchmark total response time objectives for fire response conform to industry best practices as prescribed on pages 70-71 for first due and effective response force (ERF).

¹² 2C.5 Agency baseline and benchmark total response time objectives for non-fire incident response conform to industry best practices as prescribed on pages 70-71 for first due and effective response force (ERF).

that are formatted to the CFAI category model format, with short/medium/long term and ongoing projects.

Category III — Goals and Objectives

The Maui Fire Department has established a long range planning process that is guided by a mission statement, vision considerations, and core values. The strategic plan stipulates goals and objectives that were established during the planning process. The strategic plan was recently updated for the period of 2016 through 2020.

The agency has established general goals and specific objectives that direct the agency's priorities in a manner consistent with its mission and appropriate for the community it serves. The department utilized a strength, weakness, opportunity, and threat approach in the establishment of the goals and objectives which are appropriate to its planning efforts. The process included input from internal and external stakeholders. The planning process adopted by the department was carefully tuned to the identified needs of the department for today and in the future with specific considerations of the service provision and standards of coverage.

Many of the goals and objectives pertain specifically to the major divisions of the department. As well, goals were established for ongoing organizational situations and needs. Assuring that specific goals were established for each program area was not a focus for this particular planning period; however, the department has indicated that those efforts will be a future planning objective. Additionally, though some goals contained considerations of quantity and quality, others did not include specific considerations for these measurement characteristics. A more formal effort to include measurement capabilities for quantity and quality is needed.

It is recommended all goal statements have a more defined measurement consideration for quantity and quality.

In many cases goals were established that focused on some program areas, however the current planning process was not developed to drive the establishment and inclusion of goals for each program area. It is recommended the department's planning process be expanded to include the establishment of appropriate goals and objectives for all programs.

A management process is utilized for implementation of goals and objectives. The department just recently adopted a process to track the implementation and completion of its goals and objectives. It is planned to expand this tracking process to assure a more frequent notification to all members of the status of each goal. It has been an objective for each staff meeting to discuss the current status of each goal and its progress; however, in some meetings the magnitude of the agenda prevents a sufficient consideration of the current status of all goals or objectives.

Processes are in place to measure and evaluate progress towards completion of specific objectives and overall system performance. The goals and objectives are re-examined and modified periodically.

The assistant chief reviews and maintains records of the status of each goal on a periodic basis for status and accomplishments. It is estimated this review occurs on a somewhat monthly basis; however, there is no formal process in place to assure the timely review. A formal process for the review of the goals and objectives is in the planning and development stages.

It is recommended the department formalize the approach to assure each goal and objective is examined and modified on at least an annual basis.

<u>Category IV — Financial Resources</u>

The processes to be followed during the development and approval stages of the operating and capital budgets are clearly articulated in various city and county policies and procedures. The Maui Fire Department uses internal staff to develop the budgets.

Financial planning and resource allocation is based on agency planning involving broad staff participation. The department follows and complies with all policies, guidelines, and processes for budget preparation, provided to all city/county departments by the finance department in March of each year. The county budget director from the mayor's office works with the chief officers, uniformed firefighters, and administrative civilian staff to gather input on program budgets that make up the overall budget. The proposed budget is presented to the fire chief by the deputy and assistant chiefs and amended based upon identified and required performance measures. The final budget is submitted to the Department of Fire and Public Safety Commission for review before it is submitted to the mayor for inclusion in the overall budget for adoption.

Financial management of the agency exhibits sound budgeting and control, proper recording, reporting and auditing. The peer assessment team confirmed that Maui County is in receipt of the most currently available Certificate of Achievement for Excellence in Financial Reporting (certificate) from the Government Finance Officers Association of the United States and Canada (GFOA) for its Comprehensive Annual Financial Report (CAFR). The department has submitted its most recent GFOA certificate and CAFR as prima facie compliance with this criterion.

Financial resources are appropriately allocated to support the established organizational mission, the stated long-term plan, goals and objectives, and maintain the quality of programs and services. Historically, the council is generally supportive of the department's mission and provides close to the projected fiscal resources that are identified in the budget as being necessary to adequately fund the programs required to continue delivering quality services. However, in recent years, budget allocations do not meet the increase of compensation figures in the collective bargaining agreement. The denial to fill two battalion chief positions, which are identified as crucial in response activities, may decrease expected levels of service.

It is recommended the department identify and address all program and position needs (risks, hazards, and tasks) to maintain expected levels of service.

It is recommended the department look for other possible revenue sources.

It is recommended the department develop a plan to prioritize the training program budget requirements.

The department does not currently project maintenance costs associated with all assets. Many assets are in need of repairs due to the fact the maintenance of these assets was not accounted for.

It is recommended the department assess the long-term maintenance and life cycle costs associated with the current resources and ensure these costs are included in the annual budget.

Category V — Programs

<u>Criterion 5A – Fire Suppression</u>

The Maui Fire Department is a full-service fire and rescue organization designed to provide essential public safety and emergency services to a growing population base. To meet the needs of its residents, the department currently staffs 14 engines, 4 fire ground support companies (Ladder 3, Rescue 10, Hazmat 10, and Ladder 14), 6 tankers/tenders, and 6 mini-pumpers (wildland firefighting apparatus) from 14 fire stations. The pump capacity of all engines and ladders is a minimum of 1,250 and most having 1,500 gallons per minute.

The department operates a three-shift system and has established a minimum staffing benchmark of 77 firefighters per shift, per day. The department maintains a minimum of four firefighters per company on all front-line companies. The only exception to this is the two firefighters assigned to the Puko'o fire station located on Moloka'i.

One criterion statement and one core competency were not met: criterion statement 5A and core competency 5A.1. Additional detail related to the team's findings is located below in its observations about the ability of the department to meet the criterion statement and core competency expectations.

The agency currently cannot demonstrate that it operates an adequate, effective, and efficient fire suppression program directed toward controlling and/or extinguishing fires for the purposes of protecting people from injury or death, and reducing property loss.

The department has a FireRMS system that tracks data and information related to the fire suppression program. The department should review the data for response times on a frequent basis to determine effectiveness of the response to emergency incidents are continuing to remain in line with previous baseline times and if there is progress towards established benchmarks. The areas where there are no baselines times the department needs to develop a system to ensure benchmarks that have been established are appropriate.

The department completed a comprehensive review of all standard operating guidelines related to all programs in August 2016. However, during the peer team on-site visit, it was determined that even though there were several departmental members involved in the review process, the complete cycle of distribution and training had not been completed.

It is recommended the department formalize the process for reviewing and updating the standard operating guidelines and ensure there are appropriate standard operating guidelines for all program areas within the department. With this process the department should build for the distribution and training of personnel as needed on changes, beginning with the March 2016 edition of the standard operating guidelines.

The department has adopted an incident management system and routinely uses it during all emergency responses, regardless of the size or complexity of the incident to manage personnel and resources. The department has adopted and follows the expectations of the National Incident Management System (NIMS). All personnel have been trained to the NIMS 100/200 levels. All officers and apparatus drivers have been trained and certified in Blue Card operations.

The department frequently appraises the effectiveness of its fire suppression program through monthly reporting, annual reports, officer meetings, post-incident analysis, and single/multi-company drills. This process has appeared to work for the department; however it has not been formalized within the department.

It is recommended the department formalize the annual appraisal process for the suppression program.

Core competency 5A.1¹³ was not met. The department needs to evaluate FireRMS data on a frequent basis to determine areas of concern and make informed decisions on improvement of response capabilities for the citizens and visitors. The department should develop a process to make informed decisions when establishing benchmarks for response areas not having an effective response force baseline. It is recommended the department establish frequent intervals for the analysis of data in its FireRMS related to baseline performance to more immediately identify changes in levels of service and identify opportunities for improvement.

The department has two battalion chief positions that have been allowed to remain unfilled at the present time by the county council; with these two positions going unfilled the department has had to rely on staff officers to fill these positions leaving those staff functions to be handled by the remainder of the staff. It is recommended the department work with the budget department and mayor to seek approval from the county commission to fill the two vacant battalion chief positions.

The department staffing at the Puko'o station is currently at two personnel. The personnel at this station were questioned by the peer assessment team and explained that, when they arrive on scene of a structure fire, they conduct defensive operations and, once an additional engine arrives, then and only then do they begin offensive operations. The station is a 90+ year old structure that will not support additional staffing. The department is aware of this and is seeking approval to move this station out of the tsunami area; this is a plan that is already in place. It is recommended the department develop a plan to address staffing at Puko'o station to bring it in line with four-person staffing.

The department has noted the times for baseline performance from the computer aided dispatch (CAD) are not consistent with those in the FireRMS system and has taken steps to validate the times in the FireRMS system. The department has only started reviewing response data in the last year and has found it to be deficient and needing to be completed and reviewed on a more frequent basis. It is recommended the department establish frequent intervals for the analysis of data in its FireRMS related to baseline performance to more immediately identify changes in levels of service and identify opportunities for improvement. It is noted that this recommendation also applies to several other program areas.

The department's response and deployment standards are based upon the urban, suburban, and rural population densities, and the fire demand of the community. Fourteen fire stations provide county-wide coverage; department staffing is based on station design and layout and consistently staffed at four on all apparatus, with the exception of the Puko'o station which is staffed with two. The targeted service level objectives in the standards of cover benchmark statements are based on industry

^{13 5}A.1 Given the agency's standards of cover and emergency deployment objectives, the agency meets its staffing, response time, pumping capacity, apparatus and equipment deployment objectives for each type and magnitude of fire suppression emergency incidents.

standards and best practices, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management and presented to the mayor, fire and public safety commission, and county council. The department's benchmark service level objectives are as follows:

For 90 percent of all moderate risk structure fires on Maui Island, the total response time for the arrival of the first-due engine, staffed with 4 personnel, shall be: 12 minutes and 34 seconds in urban areas; 19 minutes and 25 seconds in suburban areas; and 29 minutes and 39 seconds in rural areas. The first-due engine company for moderate risk level shall be capable of: providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public.

For 90 percent of all moderate risk residential structure fires on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 13 personnel, shall be: 11 minutes and 37 seconds in urban areas; 19 minutes and 45 seconds in suburban areas; and 31 minutes and 53 seconds in rural areas. For 90 percent of all moderate risk commercial structure fires on Maui Island, the total response time for the arrival of the ERF, staffed with 17 personnel, shall be: 35 minutes in urban areas; 1 hour and 17 minutes in suburban areas; and 1 hour and 25 minutes in rural areas. The ERF for moderate risk structure fires shall be capable of: providing a minimum of 750 gallons of water and a minimum of 1,000 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

For 90 percent of all moderate risk structure fires on Moloka'i Island, the total response time for the arrival of the first-due engine, staffed with 2 personnel, shall be: 24 minutes and 28 seconds in urban areas; and 28 minutes and 15 seconds in rural areas. The first-due engine company for moderate risk level shall be capable of: providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public. NOTE: For Moloka'i, there are no areas designated as suburban, so times are only given for urban and rural.

For 90 percent of all moderate risk structure fires on Moloka'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 11 personnel, shall be: 30 minutes and 10 seconds in urban areas; and 36 minutes and 15 seconds in rural areas. The ERF for moderate risk structure fires shall be capable of: providing a minimum of

4,500 gallons of water and a minimum of 3,500 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

For 90 percent of all moderate risk structure fires on Lana'i Island, the total response time for the arrival of the first-due engine, staffed with 4 personnel, shall be: 16 minutes and 41 seconds in urban areas; and no times available in rural areas. The first-due engine company for moderate risk level shall be capable of: providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public. Note: For Lana'i, there are no areas designated as suburban, so times are only given for urban and rural.

For 90 percent of all moderate risk structure fires on Lana'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 5 personnel, shall be: 18 minutes and 30 seconds in urban areas; and 2 minutes in rural areas. The ERF for moderate risk structure fires shall be capable of: providing a minimum of 2,750 gallons of water and a minimum of 1,500 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

For 90 percent of all moderate risk structure fires on Hana District, the total response time for the arrival of the first-due engine, staffed with 4 personnel, shall be: 17 minutes in urban areas; and 48 minutes in rural areas. The first-due engine company for moderate risk level shall be capable of: providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations shall be done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public. Note: Concentration performance measures are not given for structure fires in Hana District because the first arriving company is considered to be the entire ERF. If additional resources are needed they are approximately 2 hours away by road. For Hana District, there are no areas designated as urban, so times are only given for suburban and rural.

For 90 percent of all moderate risk structure fires on Hana District, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 4 personnel, shall be: 17 minutes in urban areas; and 48 minutes in rural areas. The ERF for moderate risk structure fires shall be capable of: providing a minimum of 2,750 gallons of water and a minimum of 1,500 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public. Note: Concentration performance measures are not given for structure fires in Hana District because the first arriving company is considered to be the entire ERF. If additional resources are needed they are approximately 2 hours away by road.

The department's baseline statements reflect actual performance during 2013 to 2015. The department does not rely on the use of automatic or mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance is as follows:

Maui Island Performance Measures

For 90 percent of all moderate risk structure fires on Maui Island, the total response time for the arrival of the first-due engine, staffed with 4 personnel, is: 12 minutes and 54 seconds in urban areas; 19 minutes and 45 seconds in suburban areas; and 29 minutes and 59 seconds in rural areas. The first-due engine company for moderate risk level is capable of: providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations are done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public.

For 90 percent of all moderate risk residential structure fires on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 13 personnel, is: 47 minutes and 8 seconds in urban areas; 17 minutes and 7 seconds in suburban areas; and 5 hours, 18 minutes and 0 seconds in rural areas. For 90 percent of all moderate risk commercial structure fires on Maui Island, the total response time for the arrival of the ERF, staffed with 17 personnel, is: 59 minutes and 44 seconds in urban areas; 1 hour, 17 minutes, and 59 seconds in suburban areas; and 3 hour, 5 minutes, and 35 seconds in rural areas. The ERF for moderate risk structure fires is capable of: providing a minimum of 750 gallons of water and a minimum of 1,000 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and twoout; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

	Maui Island Structure Fires 90th Percentile Times													
	2013-2015 2015 2014 2013													
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls					
Call	Overall	3:00	173	2:37	63	3:06	46	3:17	64					
Processing	Urban	3:00	127	2:26	45	3:23	35	3:26	47					
Time Pick-up to	Suburban	2:42	23	4:38	9	2:13	6	3:12	8					
Dispatch	Rural	3:19	23	3:31	9	3:15	5	3:23	9					
	Overall	4:01	173	4:05	63	3:56	46	4:03	64					
Turnout Time	Urban	4:22	127	4:45	45	4:12	35	4:24	47					
1st Unit on Scene	Suburban	3:59	23	4:04	9	3:36	6	4:00	8					
20000	Rural	3:38	23	3:23	9	3:32	5	3:51	9					
D: 4 11 4	Overall	12:10	173	10:46	63	14:29	46	12:53	64					
Distribution Travel Time	Urban	7:42	127	7:42	45	7:16	35	8:40	47					
1 st Unit on	Suburban	12:08	23	13:50	9	7:17	6	13:58	8					
Scene	Rural	25:37	23	29:06	9	38:01	5	22:08	9					
Distribution	Overall	17:36	173	14:48	63	18:59	46	17:50	64					
Total Response	Urban	12:54	127	11:57	45	12:54	35	14:28	47					
Time 1 st Unit on Scene	Suburban	19:45	23	19:45	9	11:23	6	20:10	8					
	Rural	29:59	23	32:03	9	41:53	5	27:55	9					

NOTE: Distribution performance measures are provided on the following pages and are split into two categories: moderate risk RESIDENTIAL and moderate risk COMMERCIAL. The department dispatches three companies (typically 2 engines and 1 FGS company) to residential structure fires and four companies (typically 3 engines and 1 FGS company) to commercial structure fires. The additional personnel assigned to commercial fires are necessary to allow the advancement of a larger hoseline flowing greater gpm. Because the ERF differs depending on the occupancy type, the performance measures are provided separately for moderate risk residential and commercial.

	Maui Island Structure Fires – Moderate Risk Residential 90th Percentile Times														
		2013-	2015	201	15	20	14	2013							
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls						
Concentration	Overall	1:45:09	17	5:13:23	9	1:45:09	4	30:18	4						
Travel Time	Urban	37:14	13	50:27	7	35:50	3	30:18	3						
Effective Response Force	Suburban	15:22	2	15:22	1	00:00	0	12:12	1						
(ERF)	Rural	5:13:23	2	5:13:23	1	1:45:09	1	00:00	0						
Concentration	Overall	3:33:55	17	5:18:00	9	1:49:50	4	35:55	4						
Total Response Time Effective Response Force (ERF)	Urban	47:08	13	54:15	7	36:53	3	35:55	3						
	Suburban	17:07	2	17:07	1	00:00	0	16:21	1						
	Rural	5:18:00	2	5:18:00	1	1:49:50	1	00:00	0						

	Maui Island Structure Fires – Moderate Risk Commercial 90th Percentile Times														
		2013-	2015	2015		20	14	2013							
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls						
Concentration	Overall	2:08:08	8	1:15:00	1	50:45	2	3:01:17	5						
Travel Time	Urban	57:05	6		0	50:45	2	57:05	4						
Effective Response Force	Suburban	1:15:00	1	1:15:00	1		0		0						
(ERF)	Rural	3:01:17	1		0		0	3:01:17	1						
Concentration	Overall	2:11:47	8	1:17:59	1	53:12	2	3:05:35	5						
Total Response Time	Urban	59:44	6		0	53:12	2	59:44	4						
Effective Response Force (ERF)	Suburban	1:17:59	1	1:17:59	1		0		0						
	Rural	3:05:35	1		0		0	3:05:35	1						

Moloka'i Island Performance Measures

For 90 percent of all moderate risk structure fires on Moloka'i Island, the total response time for the arrival of the first-due engine, staffed with 2 personnel, is: 24 minutes and 48 seconds in urban areas, and 28 minutes and 35 seconds in rural areas. The first-due engine company for moderate risk level is capable of: providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations are done in accordance with departmental standard operating

guidelines while providing for the safety of responders and the general public. NOTE: For Moloka'i, there are no areas designated as suburban, so times are only given for urban and rural.

For 90 percent of all moderate risk structure fires on Moloka'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 11 personnel, is 25 minutes and 50 seconds in urban areas; there were no times available in rural areas. The ERF for moderate risk structure fires is capable of: providing a minimum of 4,500 gallons of water and a minimum of 3,500 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

		Ç		kaʻi Islan ture Fire centile T	es				
		2013	-2015	20	15	20	14	2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	8:35	15	3:30	6	8:16	5	8:55	4
Processing Time	Urban	8:55	1		0		0	8:55	1
Pick-up to	Suburban		0		0		0		0
Dispatch	Rural	7:01	14	3:30	6	8:16	5	1:23	3
	Overall	5:38	15	6:47	6	3:00	5	4:29	4
Turnout Time	Urban	0:31	1		0		0	0:31	1
1st Unit on Scene	Suburban		0		0		0		0
	Rural	5:38	14	6:47	6	3:00	5	4:29	3
Distribution Travel Time 1st Unit on	Overall	24:17	15	26:53	6	20:41	5	21:42	4
	Urban	21:42	1		0		0	21:42	1
	Suburban		0		0		0		0
Scene	Rural	23:47	14	26:53	6	20:41	5	10:00	3
Concentration	Overall	21:21	2	21:03	1	21:21	1		0
Travel Time	Urban	21:21	2	21:03	1	21:21	1		0
Effective Response Force	Suburban		0		0		0		0
(ERF)	Rural		0		0		0		0
Distribution	Overall	28:35	15	31:23	6	25:48	5	24:48	4
Total Response	Urban	24:48	1		0		0	24:48	1
Time 1 st Unit on	Suburban		0		0		0		0
Scene	Rural	28:35	14	31:23	6	25:48	5	15:29	3
Concentration	Overall	25:50	2	22:26	1	25:50	1		0
Total Response Time	Urban	25:50	2	22:26	1	25:50	1		0
Effective	Suburban		0		0		0		0
Response Force (ERF)	Rural		0		0		0		0

Lana'i Island Performance Measures

For 90 percent of all moderate risk structure fires on Lana'i Island, the total response time for the arrival of the first-due engine, staffed with 4 personnel, is 16 minutes and 41 seconds in urban areas; no times were available in rural areas. The first-due engine company for

moderate risk level shall capable of: providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations are done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public. NOTE: For Lana'i, there are no areas designated as suburban, so times are only given for urban and rural.

For 90 percent of all moderate risk structure fires on Lana'i Island, the total response time for the arrival of the effective response force (ERF), staffed Lana'i with a minimum of 5 personnel, is 21 minutes and 1 second in urban areas; there were no times available in rural areas. The ERF for moderate risk structure fires is capable of: providing a minimum of 2,750 gallons of water and a minimum of 1,500 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

		Ģ		i'i Island ture Fire centile T	es				
		2013	-2015	20	15	20	14	20	13
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	2:46	10	3:01	4	1:16	1	2:03	5
Processing	Urban	2:46	10	3:01	4	1:16	1	2:03	5
Time Pick-up to	Suburban		0		0		0		0
Dispatch	Rural		0		0		0		0
	Overall	2:58	10	3:10	4	1:04	1	2:46	5
Turnout Time	Urban	2:58	10	3:10	4	1:04	1	2:46	5
1st Unit on Scene	Suburban		0		0		0		0
Seene	Rural		0		0		0		0
D:-4 :L-4:	Overall	12:46	10	16:13	4	0:45	1	6:10	5
Distribution Travel Time	Urban	12:46	10	16:13	4	0:45	1	6:10	5
1 st Unit on	Suburban		0		0		0		0
Scene	Rural		0		0		0		0
Concentration	Overall	16:13	7	16:13	4		0	6:28	3
Travel Time	Urban	16:13	7	16:13	4		0	6:28	3
Effective Response Force	Suburban		0		0		0		0
(ERF)	Rural		0		0		0		0
Distribution	Overall	16:41	10	21:01	4	1:17	1	9:44	5
Total Response	Urban	16:41	10	21:01	4	1:17	1	9:44	5
Time 1 st Unit on	Suburban		0	1	0		0		0
Scene	Rural		0		0		0		0
Concentration	Overall	21:01	7	21:01	4		0	10:02	3
Total Response Time	Urban	21:01	7	21:01	4		0	10:02	3
Effective	Suburban		0		0		0		0
Response Force (ERF)	Rural		0		0		0		0

Hana District Performance Measures

For 90 percent of all moderate risk structure fires on Hana District, the total response time for the arrival of the first-due engine, staffed with 4 personnel, is no responses for urban areas and 48 minutes 55 seconds in rural areas. The first-due engine company for moderate risk

level shall be capable of: providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 150 gpm; securing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing overhaul and salvage operations. These operations are done in accordance with departmental standard operating guidelines while providing for the safety of responders and the general public. Note: Concentration performance measures are not given for structure fires in Hana District because the first arriving company is considered to be the entire ERF. If additional resources are needed they are approximately 2 hours away by road. For Hana District, there are no areas designated as urban, so times are only given for suburban and rural.

For 90 percent of all moderate risk structure fires on Hana District, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 4 personnel, is no times available in urban areas, and 48 minutes and 55 seconds in rural areas. The ERF for moderate risk structure fires is capable of: providing a minimum of 2,750 gallons of water and a minimum of 1,500 gpm pumping capacity; establishing command; requesting additional resources; securing an uninterrupted water supply; advancing an attack line and a backup line each flowing a minimum of 150 gpm for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two-in and two-out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public. Note: Concentration performance measures are not given for structure fires in Hana District because the first arriving company is considered to be the entire ERF. If additional resources are needed they are approximately 2 hours away by road.

		Ģ	Struc	a Distric ture Fire centile T	es				
		2013	-2015	2015		2014		2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	2:37	5	2:04	2	2:37	3		0
Processing Time	Urban		0		0		0		0
Pick-up to	Suburban		0		0		0		0
Dispatch	Rural	2:37	5	2:04	2	2:37	3		0
	Overall	4:01	5	4:01	2	3:40	3		0
Turnout Time 1st Unit on	Urban		0		0		0		0
Scene	Suburban		0		0		0		0
	Rural	4:01	5	4:01	2	3:40	3		0
Distribution	Overall	43:19	5	43:19	2	20:39	3		0
Travel Time	Urban		0		0		0		0
1 st Unit on	Suburban		0		0		0		0
Scene	Rural	43:19	5	43:19	2	20:39	3		0
Distribution	Overall	48:55	5	48:55	2	24:31	3		0
Total Response	Urban		0		0		0		0
Time 1 st Unit on	Suburban		0		0		0		0
Scene	Rural	48:55	5	48:55	2	24:31	3		0

Benchmark Performance measures – Wildland fires

Maui Island Performance Measures

For 90 percent of all wildland fires on Maui Island, the total response time for the arrival of the first-due engine company, staffed with a minimum of 4 personnel, shall be within 12 minutes and 30 seconds for urban areas; 15 minutes and 30 seconds for suburban areas; and 21 minutes and 30 seconds for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all wildland fires on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 5 personnel, shall be within 37 minutes and 30 seconds for urban areas; 28 minutes and 30 seconds for suburban areas; and 1

hour and 8 minutes for rural areas. The ERF shall be capable of providing a combined 2,750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Moloka'i Island Performance Measures

For 90 percent of all wildland fires on Moloka'i Island, the total response time for the arrival of the first-due engine company, staffed with a minimum of 2 personnel, shall be within 8 minutes and 30 seconds for urban areas and 26 minutes for rural areas. The first-due engine company shall be capable of providing 500 gallons of water and 500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all wildland fires on Moloka'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 3 personnel, shall arrive within 9 minutes and 40 seconds for urban areas and 36 minutes and 50 seconds for rural areas. The ERF shall be capable of providing a combined 3,000 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Lana'i Island Performance Measures

For 90 percent of all wildland fires on Lana'i Island, the total response time for the arrival of the first-due engine company, staffed with a minimum of 4 personnel, shall be within 10 minutes and 30 seconds for urban areas and 24 minutes for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all wildland fires on Lana'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 5 personnel, shall be within 11 minutes and 30 seconds for urban areas and 26 minutes for rural areas. The ERF shall be capable of providing a combined 2750 gallons of water and 1500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Hana District Performance Measures

For 90 percent of all wildland fires in Hana District, the total response time for the arrival of the first-due engine company, staffed with a minimum of 4 personnel, shall be within 18 minutes for suburban areas and 46 minutes and 15 seconds for rural areas. The first-due engine company shall be capable of providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public. Note: Concentration performance measures are not given for wildland fires in Hana District because the first arriving company is considered to be the entire effective response force (ERF). Hana does also have a 1,800 gallon tanker available, but it is not permanently staffed. If used it is operated by a firefighter from Engine 7.

Baseline Performance measures - Wildland fires

Maui Island Performance Measures

For 90 percent of all wildland fires on Maui Island, the total response time for the arrival of the first-due engine company, staffed with a minimum of 4 personnel, is within 12 minutes and 37 seconds for urban areas; 15 minutes and 36 seconds for suburban areas; and 22 minutes and 58 seconds for rural areas. The first-due engine company is capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all wildland fires on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 5 personnel, is within 37 minutes and 2 seconds for urban areas; 29 minutes and 2 seconds for suburban areas; and 1 hour, 8 minutes and 14 seconds for rural areas. The ERF shall be capable of providing a combined 2,750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

			Wil	aui Island dland Fir ercentile T	es				
		2013-	2015	201	13	201	4	2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
	Overall	3:10	359	3:51	97	2:37	97	3:09	161
Call Processing Time	Urban	2:46	207	3:10	57	3:10	57	2:48	87
Pick-up to	Suburban	3:39	37	5:06	8	5:06	8	3:16	18
Dispatch	Rural	3:39	115	6:55	32	6:55	32	3:39	56
	Overall	3:59	359	4:00	97	4:00	97	4:02	161
Turnout Time	Urban	3:55	207	3:44	57	3:44	57	4:04	87
1st Unit on Scene	Suburban	3:52	37	4:05	8	4:05	8	3:54	18
	Rural	4:22	115	4:42	32	4:42	32	4:18	56
	Overall	12:12	359	12:13	97	12:13	97	13:06	161
Distribution	Urban	8:15	207	11:14	57	11:14	57	7:29	87
Travel Time 1 st Unit on Scene	Suburban	11:11	37	10:45	8	10:45	8	10:52	18
	Rural	17:43	115	19:22	32	19:22	32	26:23	56
Concentration	Overall	38:53	224	1:01:08	64	1:01:08	64	34:54	102
Travel Time	Urban	31:34	111	1:17:29	34	1:17:29	34	24:32	44
Effective Response Force	Suburban	23:53	18	44:36	4	44:36	4	20:20	7
(ERF)	Rural	1:00:54	94	1:00:54	25	1:00:54	25	50:58	51
	Overall	16:45	359	17:33	97	17:33	97	17:28	161
Distribution Total Response	Urban	12:37	207	16:23	57	16:23	57	11:48	87
Time	Suburban	15:36	37	14:57	8	14:57	8	16:46	18
1 st Unit on Scene	Rural	22:58	115	22:25	32	22:25	32	28:12	56
Concentration	Overall	43:12	224	1:19:34	64	1:19:34	64	39:17	102
Total Response Time	Urban	37:02	111	1:19:34	34	1:19:34	34	25:37	44
Effective	Suburban	29:02	18	49:10	4	49:10	4	26:25	7
Response Force (ERF)	Rural	1:08:14	94	1:21:29	25	1:21:29	25	55:42	51

Moloka'i Island Performance Measures

For 90 percent of all wildland fires on Moloka'i Island, the total response time for the arrival of the first-due engine company, staffed with a minimum of 2 personnel, is within 4 minutes and 44 seconds for urban areas and 28 minutes and 36 seconds for rural areas. The first-due engine company is capable of providing 500 gallons of water and 500 gallons per minute

(gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all wildland fires on Moloka'i Island, the total response for the arrival of the effective response force (ERF), staffed with a minimum of 3 personnel, is within 9 minutes and 44 seconds for urban areas and 36 minutes and 55 seconds for rural areas. The ERF is capable of providing a combined 3,000 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at risk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

		9	Wildl	xaʻi Islan and Fire centile T	es				!
		2013	-2015	20	2015		14	2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	4:09	17	4:20	6	1:25	5	3:01	6
Processing	Urban	1:59	2	1:59	2		0		0
Time Pick-up to	Suburban		0		0		0		0
Dispatch	Rural	4:09	15	4:20	4	1:25	5	3:01	6
	Overall	3:58	17	4:16	6	0:31	5	2:01	6
Turnout Time	Urban	1:27	2	1:27	2		0		0
1st Unit on Scene	Suburban		0		0		0		0
Seeme	Rural	3:58	15	4:16	4	0:31	5	2:01	6
Distribution Travel Time 1 st Unit on	Overall	26:06	17	9:38	6	42:22	5	6:01	6
	Urban	2:33	2	2:33	2		0		0
	Suburban		0		0		0		0
Scene	Rural	26:06	15	9:38	4	42:22	5	6:01	6
Concentration	Overall	36:55	16	33:11	6	35:29	5	38:32	5
Travel Time	Urban	4:51	3	4:35	2	4:51	1		0
Effective Response Force	Suburban		0		0		0		0
(ERF)	Rural	35:29	13	33:11	4	35:29	4	38:32	5
Distribution	Overall	38:36	17	14:51	6	42:22	5	8:39	6
Total Response	Urban	4:44	2	4:44	2		0		0
Time 1 st Unit on	Suburban		0		0		0		0
Scene	Rural	28:36	15	14:51	4	42:22	5	8:39	6
Concentration	Overall	36:55	16	33:37	6	36:55	5	38:34	5
Total Response Time	Urban	9:44	3	8:01	2	9:44	1		0
Effective	Suburban	1	0		0		0		0
Response Force (ERF)	Rural	36:55	13	33:37	4	36:55	4	38:34	5

Lana'i Island Performance Measures

For 90 percent of all wildland fires on Lana'i Island, the total response time for the arrival of the first-due engine company, staffed with a minimum of 4 personnel, is within 10 minutes and 54 seconds for urban areas; there were no responses for rural areas. The first-due engine

company is capable of providing 750 gallons of water and 1,000 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at risk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all wildland fires on Lana'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 5 personnel, is 11 minutes and 31 seconds for urban areas; there were no responses for rural areas. The ERF is capable of providing a combined 2,750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating atrisk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

There were no wildland fire incidents reported on Lana'i Island in 2013 and 2014. Therefore the baseline performance statements and table include only the year 2015.

Lanaʻi Island Wildland Fires 90th Percentile Times									
	2015								
		Times	#Calls						
Call Processing Time	Overall	2:44	2						
Pick-up to Dispatch	Urban	2:44	2						
Turnout Time	Overall	2:48	2						
1st Unit on Scene	Urban	2:48	2						
Distribution	Overall	6:03	2						
Travel Time 1 st Unit on Scene	Urban	6:03	2						
Concentration	Overall	6:40	2						
Travel Time Effective Response Force (ERF)	Urban	6:40	2						
Distribution	Overall	10:54	2						
Total Response Time 1 st Unit on Scene	Urban	10:54	2						
Concentration	Overall	11:31	2						
Total Response Time Effective Response Force (ERF)	Urban	11:31	2						

Hana District Performance Measures

For 90 percent of all wildland fires in Hana District, the total response time for the arrival of the first-due engine company, staffed with a minimum of 4 personnel, is within 18 minutes and 5 seconds for suburban areas, and 49 minutes and 20 seconds for rural areas. The first-due engine company is capable of providing 750 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; establishing command; requesting additional resources; advancing an attack line flowing a minimum of 70 gpm; protecting exposures; containing the fire; and evacuating at-risk persons. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public. Note: Concentration performance measures are not given for wildland fires in Hana District because the first arriving company is considered to be the entire effective response force (ERF). Hana does also have a 1,800 gallon tanker available, but it is not permanently staffed. If used it is operated by a firefighter from Engine 7.

No wildland fire incidents were reported in Hana District in 2013.

Hana District Wildland Fires 90th Percentile Times									
		2014	-2015	20	15	20	14		
		Times	#Calls	Times	#Calls	Times	#Calls		
Call	Overall	2:37	4	2:37	2	1:51	2		
Processing Time	Suburban	0:59	1		0	0:59	1		
Pick-up to Dispatch	Rural	2:37	3	2:37	2	1:51	1		
Turnout Time	Overall	4:24	4	3:49	2	4:24	2		
1st Unit on	Suburban	2:19	1		0	2:19	1		
Scene	Rural	4:24	3	3:49	2	4:24	1		
Distribution	Overall	43:55	4	43:55	2	15:17	2		
Travel Time 1 st Unit on	Suburban	14:47	1		0	14:47	1		
Scene	Rural	43:55	3	43:55	2	15:17	1		
Distribution	Overall	49:20	4	49:20	2	21:32	2		
Total Response Time	Suburban	18:05	1		0	18:05	1		
1 st Unit on Scene	Rural	49:20	3	49:20	2	21:32	1		

The team was not able to review 2016 response time data, and, since it was being evaluated and compiled by the person hired to assist with data management, it was not going to be available for another 30 days after the site visit.

Criterion 5B - Fire Prevention / Life Safety Program

Maui Fire Department (MFD), Fire Prevention Bureau's (FPB) goals are supported by the department strategic plan. The fire prevention/life safety program is in the FPB. A plan review process is in place that is coordinated with the building permit process. A fire inspection program is in place to comply with the inspection requirements of the Hawaii State Fire Code and the Hawaii Revised Statutes 132.

The agency operates an adequate, effective, and efficient program directed toward fire prevention, life safety, hazard risk reduction, the detection, reporting, and control of fires and other emergencies, the provision of occupant safety and exiting, and the provisions for first aid fire fighting equipment.

MFD has adopted the 2012 Edition of National Fire Protection Association (NFPA) Fire Code as adopted by the State of Hawaii and County of Maui and found in the Hawaii Revised Statutes, Chapter 132 Fire Protection, Section 132-3. The County of Maui has amended and codified the state fire code by ordinance, and it is published in the Codification of the General Ordinances of the County of Maui, Hawaii section 16.04C.010 - The State Fire Code incorporated. Chapter 12-45.3, Hawaii Administrative Rules, entitled "State Fire Code" as adopted by the State of Hawaii on 15 August 2014 as required by Section 132-3, Hawaii Revised Statutes, which adopts, with modifications, the NFPA 1, Fire Code, 2012 Edition, (NFPA 1) as published and copyrighted by NFPA, and is made a part of this chapter, subject to the amendments set forth in this chapter. (Ord. No. 4232, § 3, 2015)

The FPB utilizes plans review, permits, and a progressive correction program when it comes to ensuring compliance with applicable fire protection and life safety laws that have been adopted. Education, inspection reports, warning notices, notices of violation, and fines are components to a progressive path to correction.

The enforcement program regarding compliance with fire protection law has been effective. In addition, MFD issued permits for hazardous processes such as flammable/combustible liquids, liquid propane gas, and hazardous materials. MFD inspects all public schools on an annual basis. A "request for services" process has been used by the department to handle public concerns on fire and life safety and ultimately gain compliance. MFD conducted maintenance inspections on several new and existing occupancies to include all associated fire and life safety systems.

MFD will seek out ways to increase the number of inspections completed by the department. MFD will work with Corporation Counsel to shore up/tighten up/strengthen the progressive correction program to eventually include a summons process.

It is recommended the department institute a formal inspection tracking and enforcement policy that is based on actual inspection activities and supported by the agency legal counsel.

The program is staffed with the following personnel: one captain, two lieutenants, six inspectors, one account clerk, and one operation assistant. The lieutenants handle all activities regarding plans review. The inspectors handle all activities regarding inspections. All uniformed personnel with more than two years in the bureau are certified as Fire Inspector 1. Six out of the nine fire inspectors have obtained Pro Board Fire Inspector 1 certification. The County of Maui has established a maximum time limit of 30 days for plan reviewers to conduct initial review of submitted plans.

Two of the eleven personnel in the FPB are assigned to review plans and have been adequate to meet the workload. The duties regarding inspections and public education are shared amongst all staff members. FPB has been able to meet most community requests in a timely manner; this approach has been more reactive.

FPB will continue to meet the current workloads generated by community requests. A better organization of the bureau will be sought to address the issue with span of control. FPB will look to increase staffing so that the following responsibilities could be improved: keeping track of new construction projects, completing timely maintenance inspections for existing occupancies, and taking a more proactive approach to public education.

It is recommended the department develop and implement a risk-based inspection frequency schedule that is correlated with the risk assessment found in the standards of cover and provide appropriate staffing to meet departmental goals and objectives.

Statistics on the activities of the FPB are provided quarterly as part of the Fiscal Year Budget Implementation Report. This report contains statistics on the following activities: plans reviewed, maintenance inspections, brush abatement inspections, public school inspections, fire safety presentations, fire investigations, and number of people trained in the use of fire extinguishers. These numbers are derived from the FPB's activities report.

The Fiscal Year Budget Implementation Report was implemented in 2011. This report has allowed the department to compare activities throughout the year with previous years. Prior to the start of each fiscal year numbers are projected for each activity based upon statistics from previous years and goals of the department. By having this report, the amount of work being done by the bureau can be tracked and identified; however, it does not provide a true appraisal of the risk reduction efforts effectiveness within the community.

It is recommended the department formalize the appraisal of the fire prevention program including prevention data related to inspection violations/corrections, plan review data, and code enforcement activities to align resources with emergent community needs and risks.

Criterion 5C - Public Education Program

Public education is a core component to fulfill the Maui Fire Department's (MFD) mission statement of protecting lives, the environment, and property. In 2007, the fire prevention bureau (FPB) dedicated a specific position to plan, create, and implement public education programs throughout the County of Maui (COM). The programs entailed a firefighter safety guide, a fire safety house, fire extinguisher training, and a free smoke alarm giveaway program. In addition, public displays, school visits, and participation in safety fairs have become the norm for the MFD. Although a particular person does the planning and tracking of these events, the entire department assists to accomplish the public education goals.

A public education program is in place and directed toward identifying and reducing specific risks in a manner consistent with the agency's mission. The department's public education programs target school aged children, senior citizens, service and civic organizations, homeowners, disabled individuals, low income families, and members of the community. The department uses nationwide data and current events to develop public education programs. The education programs main

priorities are school aged children and senior citizens. MFD's public education programs are based upon community needs as identified through requests to the department.

The department's public education programs are meeting the needs of the public as identified through requests. These programs are based upon nationally recognized programs. At this time, the programs are not based upon incident analysis because no incident analysis process is in place and the bureau lacks sufficient staffing to accomplish this task.

It is recommended the department utilize response, risk analysis, and demographic data to expand the public education program to include other non-fire related topics (e.g.: tourist populations, stroke, heart attack, drowning, etc.).

Paragraph 691.03 of the department's rules and regulations provides general guidelines for the public education program. The guidelines provided in Par. 691.03 are very general. The department is currently working on standard operating guidelines (SOGs). The department will continue to follow Par. 691.03 of the MFD's rules and regulations. The department recognizes that SOGs for the public education program are a priority, and will work on completing these guidelines. SOGs were updated department-wide in March 2016.

Statistics on the educational activities of the FPB are provided quarterly as part of the Fiscal Year Performance Measures Report. This report contains statistics on the following activities: fire safety presentations and number of people trained in the use of fire extinguishers. These numbers are derived from the department's public education Excel spreadsheets.

The Fiscal Year Performance Measures Report was implemented in 2003. This report has allowed the FPB to compare activities throughout the year with previous years. Prior to the start of each fiscal year, numbers are projected for each activity based upon statistics from previous years and goals of the department. By having this report, the amount of work being done by the bureau can be tracked and identified; however, it does not provide a true analysis of risk reduction.

The FPB will continue to meet or exceed the goals identified in the Fiscal Year Performance Measures Report. Because the amount of work done is not a complete analysis of risk reduction, the bureau will look for additional ways to better analyze risk reduction, and work effectiveness in the community.

Criterion 5D - Fire Investigation Program

The fire chief is responsible to determine the origin and cause of unwanted fires as directed by Hawaii Revised Statutes 132. As a result, company officers are tasked with determining the origin and cause of fires they respond to. When a company officer cannot determine a cause, or the fire meets predetermined call-out requirements, a fire investigator from the fire prevention bureau (FPB) is called to assist the incident commander at a fire scene in determining a cause. A fire investigator is on call 24 hours a day, 365 days a year.

The agency operates an adequate, effective and efficient program directed toward origin and cause investigation and determination for fires, explosions, and other emergency situations that endanger life or property. Hawaii Revised Statutes, 132, requires that the fire chief of each county be responsible to determine the origin and cause of all fires. As a result, the department has a fire investigation program to determine the origin and cause of fires.

The department follows the National Fire Protection Association (NFPA) 921: *Guide for Fire and Explosion Investigations* standard as stated within its fire investigation policy. Within this standard, the scientific method is recognized as being imperative when conducting fire investigations.

Fire investigators within the FPB are well aware of NFPA 921 and the importance of the scientific method as stated within the fire investigation policy manual and attending fire investigation classes. The topic of scientific method has come up in local judicial proceedings regarding fire investigations. It has been recognized as an acceptable process when conducting fire investigations.

Each company officer in the field is responsible to determine the origin and cause of fires that they respond to. Company officers are promoted to the rank of captain through a competitive testing process that includes an International Fire Service Training Association (IFSTA) Essentials of Firefighting, 6th edition chapter referencing fire investigations. Company officers have a minimum requirement of eight years of fire service experience before being eligible for promotion. Company officers and FPB personnel are not required to be certified fire investigators. In addition, the FPB has three trained fire investigators that have attended training classes and take turns being on call to assist company officers in the investigation of fires that result in injury or death, determined to be arson, are of a high dollar value, remain undetermined, or are of notoriety. Annual fire investigation training for FPB personnel has included the National Fire Academy (NFA), the International Association of Arson Investigators (IAAI) annual conference, or the Public Agency Training Council classes regarding fire investigations. On occasion, an NFA instructor in the off-campus program teaches a fire investigation course for company officers.

Some fire investigation training has been provided to all members of the department when going through recruit school. New members receive training on the importance of conducting an investigation and preserving evidence at a fire scene. FPB fire investigators receive more in-depth fire investigation training at conferences and seminars.

It is recommended the department enhance its existing training program by creating a continuing education component for fire investigation.

The department's standard operating guidelines for fire investigations are included in MFD's rules and regulations, Paragraph 331.01-331.09. There are detailed internal policies and procedures in the FPB, with the last revision in 2001. MFD's SOG 201.15 addresses fire investigator call-out. All of the department's SOGs were updated in March 2016.

The department fire investigators share information amongst one another as incidents and circumstances arise. These discussions occur during training and review of procedures and equipment. There is no provision for an appropriate appraisal with these undocumented discussions.

It is recommended the department develop a formal process to determine the effectiveness of the fire investigation program against defined program goals and objectives.

<u>Criterion 5E – Technical Rescue</u>

The Maui Fire Department provides a wide range of technical rescue programs to its residents including, but not limited to: vehicle entrapment, urban search and rescue, high angle, ocean rescue, dive, trench rescue, and confined space. Technical rescue trained personnel staff one company with a minimum of four personnel. All first-due companies have a minimum of awareness level training.

The agency operates an adequate, effective, and efficient program directed toward rescuing trapped or endangered persons from any life-endangering cause, e.g., structural collapse, vehicle accidents, swift water or submersion, confined space, cave-in, trench collapse, fire, etc. The department describes what is expected of its members during technical rescue incidents through the use of standard operating guidelines (SOGs). The department's SOGs are appropriate for the level of service they provide and were updated in August 2016.

The department appraises the effectiveness of its technical rescue program through monthly reporting, annual reports, officer meetings, post-incident analysis, and full scale training exercises. The effectiveness is further evaluated during an annual review by the operations chief, battalion chiefs, and training captain.

The department's response and deployment standards are based upon the urban, suburban, and rural population densities, and the technical rescue demands of the community. Fourteen fire stations provide county wide coverage; department staffing is based on station location, incident type, and frequency. The targeted service level objectives in the standards of cover benchmark statements are based on industry standards and best practices, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management and presented to the mayor, fire and public safety commission, and county council. The department's benchmark service level objectives are as follows:

For 90 percent of all technical rescue calls on Maui Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 15 minutes and 5 seconds for urban areas, 18 minutes for suburban areas, and 30 minutes and 38 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, shall be 52 minutes for urban areas, 58 minutes and 30 seconds for suburban areas, and 1 hour and 4 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Moloka'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 2 personnel, shall be 24 minutes and 30 seconds for urban areas and 28 minutes and 30 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Moloka'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 6 personnel, shall be 56 minutes for urban areas and 1 hour and 37 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Lana'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 36 minutes for urban areas and 48 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Lana'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, shall be 55 minutes and 50 seconds for urban areas and 1 hour and 35 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls in Hana District, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 14 minutes and 44 seconds for suburban areas and 42 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls in Hana District, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, shall be 1 hour and 20 minutes for suburban areas and 1 hour and 30 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

The department's baseline statements reflect actual performance during 2013 to 2015. The department does not rely on the use of automatic aid or mutual aid from neighboring fire departments. The department's actual baseline service level performance is as follows:

For 90 percent of all technical rescue calls on Maui Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, is 15 minutes and 35

seconds for urban areas; 18 minutes and 17 seconds for suburban areas; and 30 minutes and 58 seconds for rural areas. The first-due company is capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, is 52 minutes and 28 seconds for urban areas; 11 hours, 38 minutes, and 20 seconds for suburban areas; and 1 hour, 4 minutes, and 39 seconds for rural areas. The ERF is capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

			Tech	Iaui Isla nnical Re ercentile	escues				
		2013-2		20		201	4	201	13
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
	Overall	6:11	657	6:36	215	6:11	190	6:59	252
Call Processing Time	Urban	6:11	436	5:36	138	6:11	133	7:31	165
Pick-up to	Suburban	5:05	44	7:18	10	4:04	13	4:54	21
Dispatch	Rural	7:05	174	8:30	65	6:05	44	7:02	65
	Overall	4:33	657	4:41	215	4:16	190	4:34	252
Turnout Time	Urban	4:14	436	4:31	138	4:05	133	4:17	165
1st Unit on Scene	Suburban	4:33	44	6:15	10	7:04	13	4:12	21
	Rural	5:40	174	6:41	65	5:22	44	6:12	65
Distribution	Overall	14:40	657	15:29	215	14:19	190	13:54	252
	Urban	8:37	436	9:13	138	7:47	133	9:11	165
Travel Time 1 st Unit on Scene	Suburban	11:19	44	11:59	10	10:14	13	12:15	21
	Rural	24:56	174	27:08	65	26:08	44	21:27	65
Concentration	Overall	48:07	143	46:29	45	1:05:54	41	49:54	57
Travel Time	Urban	46:20	37	46:22	13	5:38:09	10	5:54:06	14
Effective Response Force	Suburban	1:41:00	9	14:45	1	1:41:00	5	56:46	3
(ERF)	Rural	47:52	95	46:29	30	1:05:54	26	49:54	39
	Overall	22:16	657	23:05	215	19:13	190	23:58	252
Distribution Total Response	Urban	15:35	436	15:32	138	13:36	133	20:53	165
Time	Suburban	18:17	44	19:15	10	15:51	13	16:50	21
1 st Unit on Scene	Rural	30:58	174	33:24	65	31:38	44	29:28	65
Concentration	Overall	1:06:16	143	57:49	45	1:30:47	41	1:06:16	57
Total Response Time	Urban	52:28	37	55:38	13	5:36:58	10	5:59:57	14
Effective	Suburban	11:38:20	9	26:25	1	11:38:20	5	1:05:37	3
Response Force (ERF)	Rural	1:04:39	95	57:49	30	1:14:15	26	1:07:11	39

For 90 percent of all technical rescue calls on Moloka'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 2 personnel, is 24 minutes and 48 seconds for urban areas and 28 minutes and 35 seconds for rural areas. The first-due company is capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These

operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Moloka'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 6 personnel, is 56 minutes and 26 seconds for urban areas and 1 hour, 37 minutes, and 15 seconds for rural areas. The ERF is capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Molokaʻi Island Technical Rescues 90th Percentile Times									
		2013	-2015	20	15	2014		2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	8:35	15	3:30	6	8:16	5	8:55	4
Processing Time	Urban	8:55	1		0		0	8:55	1
Pick-up to Dispatch	Rural	7:01	14	3:30	6	8:16	5	1:23	3
Turnout Time	Overall	5:38	15	6:47	6	3:00	5	4:29	4
1st Unit on	Urban	0:31	1		0		0	0:31	1
Scene	Rural	5:38	14	6:47	6	3:00	5	4:29	3
Distribution	Overall	24:17	15	26:53	6	20:41	5	21:42	4
Travel Time 1 st Unit on	Urban	21:42	1		0		0	21:42	1
Scene	Rural	23:47	14	26:53	6	20:41	5	10:00	3
Concentration	Overall	53:53	7	53:50	3	53:53	3	47:00	1
Travel Time Effective	Urban	47:00	2		0	20:48	1	47:00	1
Response Force (ERF)	Rural	53:53	5	53:50	3	53:53	2		0
Distribution	Overall	28:35	15	31:23	6	25:48	5	28:48	4
Total Response Time	Urban	24:48	1		0		0	24:48	1
1 st Unit on Scene	Rural	28:35	14	31:23	6	25:48	5	15:29	3
Concentration	Overall	1:37:15	7	1:37:15	3	59:00	2	56:26	1
Total Response Time	Urban	56:26	2		0	27:43	1	56:26	1
Effective Response Force (ERF)	Rural	1:37:15	5	1:37:15	3	59:00	2		0

For 90 percent of all technical rescue calls on Lana'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, is 57 minutes and 36 seconds for urban areas; and 3 hours, 42 minutes, and 53 seconds for rural areas. The first-due company is capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls on Lana'i Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, is 55 minutes and 59 seconds for urban areas; and 8 hours, 2 minutes, and 54 seconds for rural areas. The ERF is capable of establishing command; performing a scene size-up; requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Lanaʻi Island Technical Rescues									
				ncal Resc rcentile T					
		2013-2		20		20	14	2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call Processing	Overall	12:14	10	3:28	2	8:05	4	16:23	4
Time	Urban	16:23	6		0	5:00	2	16:23	4
Pick-up to Dispatch	Rural	8:05	4	3:28	2	8:05	2		0
Turnout Time	Overall	27:31	10	37:11	2	17:52	4	6:51	4
1st Unit on	Urban	9:27	6		0	9:27	2	6:51	4
Scene	Rural	37:11	4	37:11	2	17:52	2		0
Distribution	Overall	50:11	10	2:14	2	8:39	4	38:09	4
Travel Time 1 st Unit on	Urban	38:09	6		0	7:14	2	38:09	4
Scene	Rural	3:02:14	4	3:02:14	2	8:39	2		0
Concentration Travel Time	Overall	7:53:51	5	7:53:51	2	34:13	3		0
Effective	Urban	41:00	2	41:00	1	34:13	1		0
Response Force _(ERF)	Rural	7:53:51	3	7:53:51	1	26:22	2		0
Distribution Total Response	Overall	20:14	10	3:42:53	2	28:14	4	57:36	4
Time	Urban	57:36	6		0	17:18	2	57:36	4
1 st Unit on Scene	Rural	3:42:53	4	3:42:53	2	28:14	2		0
Concentration Total Response	Overall	8:02:54	5	8:02:54	2	43:17	3		0
Time Effective	Urban	55:59	2	55:59	1	43:17	1		0
Response Force (ERF)	Rural	8:02:54	3	8:02:54	1	37:53	2		0

For 90 percent of all technical rescue calls in Hana District, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, is 13 minutes and 25 seconds for suburban areas and 42 minutes and 56 seconds for rural areas. The first-due company is capable of establishing command; performing a scene size-up to determine if technical rescue is required; requesting additional resources; and providing initial care to victims. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all technical rescue calls in Hana District, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, there were no response times available for suburban areas and 1 hour, 34 minutes, and 1 second for rural areas. The ERF is capable of establishing command; performing a scene size-up;

requesting additional resources; appointing a safety officer; establishing contact with victim(s); providing initial care; and providing the equipment, knowledge, and skills to rescue and extricate victim(s) to safety. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

		9		a Distric cal Resc centile T	ues				
		2013	-2015	20	15	20	14	2013	
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	8:08	10	3:01	1	11:49	5	4:28	4
Processing Time Pick-up to	Urban		0		0		0		0
	Suburban	3:46	1		0		0	3:46	1
Dispatch	Rural	11:49	9	3:01	1	11:49	5	4:28	3
	Overall	5:54	10	2:13	1	6:19	5	4:15	4
Turnout Time	Urban		0		0		0		0
1st Unit on Scene	Suburban	4:15	1		0		0	4:15	1
	Rural	6:19	9	2:13	1	6:19	5	3:47	3
Distribution	Overall	24:52	10	7:07	1	27:14	5	22:30	4
Travel Time	Urban		0		0		0		0
1 st Unit on	Suburban	5:24	1		0		0	5:24	1
Scene	Rural	27:14	9	7:07	1	27:14	5	22:30	3
Concentration	Overall	1:26:06	10	41:41	1	1:34:29	7	1:00:17	2
Travel Time	Urban		0		0		0		0
Effective Response Force	Suburban		0		0		0		0
(ERF)	Rural	1:26:06	10	41:41	1	1:34:29	7	1:00:17	2
Distribution	Overall	35:30	10	12:21	1	42:56	5	28:04	4
Total Response Time	Urban		0		0		0		0
1 st Unit on	Suburban	13:25	1		0		0	13:25	1
Scene	Rural	42:56	9	12:21	1	42:56	5	28:04	3
Concentration	Overall	1:34:01	10	46:55	1	1:42:16	7	1:05:51	2
Total Response Time	Urban		0		0		0		0
Effective	Suburban		0		0		0		0
Response Force (ERF)	Rural	1:34:01	10	46:55	1	1:42:16	7	1:05:51	2

It was verified and validated by the peer assessment team that the Maui Fire Department did not have sufficient technical rescue incidents, which required a first-due response or an effective response force to be assembled in some areas for 2013-2015, to provide reliable data.

The team was not able to review 2016 response time data, since it was being evaluated and compiled by the person hired to assist with data management.

Criterion 5F - Hazardous Materials (Hazmat)

The Maui Fire Department has developed a program to handle hazardous materials emergencies. All first-due companies are trained to the operations level, and one well-equipped, dedicated hazardous materials response unit provides support at the technician level. The department's hazardous materials operations capabilities are the only resource for hazardous materials emergency incidents within the county and the three islands that the county occupies.

The department equips all front-line engines, ladders, and rescues with a small equipment cache to handle incidents at the operations level. Larger hazardous materials responses on the main island are handled by the full-time staffed hazardous materials unit in support of the initial engine company response; if needed on the other islands, personnel and equipment will be transported by helicopter with a small cache of equipment. The hazardous materials response unit is specifically-designed for hazardous materials operations and response. The unit provides command and control level areas, limited pumping capacity, as well as a limited water supply, and fire extinguishment equipment. The unit also transports a small cache of rescue materials and equipment to support those functions as well.

Each hazardous materials technician is responsible for assuring the maintenance of that certification level which is facilitated through the training bureau. The technicians also are the primary resource for training the remainder of the departments response personnel in hazardous materials operations level capabilities.

One criterion statement and one core competency were not met: criterion statement 5F and core competency 5F.7. Additional detail related to the team's findings is located below in its observations about the ability of the department to meet the criterion statement and core competency expectations.

The agency operates an adequate, effective, and efficient hazardous materials program directed toward protecting the community from the hazards associated with fires and uncontrolled releases of hazardous and toxic materials. However, the department could not produce documentation supporting that an annual appraisal of the hazardous materials program is being performed to determine the effectiveness of the program.

The hazardous materials response program has numerous comprehensive standard operating guidelines to guide the hazardous materials response efforts. The department completed a comprehensive review of all standard operating guidelines related to the program in March 2016.

Core competency $5F.7^{14}$ was not met. The hazardous materials captains review after-action reports and host anecdotal sessions with team members on a periodic basis to determine the effectiveness of

^{14 5}F.7 An appraisal is conducted, at least annually, to determine the effectiveness of the hazardous materials program.

the hazardous materials program. Additionally, a program captain meets with the training division to evaluate training needs for the near future. The training needs determinations are generally derived from operational observations and reports from other operational programs as to additional needs for training in hazardous materials operations. The process is an informal effort and specific measurement perspectives are not defined. Hazardous materials representatives readily indicate that a more formal process for program assessment would be a significant aid in determining the effectiveness of all aspects of the program delivery, training, and long range development process considerations.

It is recommended the department develop a formal and measurable assessment process to determine the effectiveness of the hazardous materials program. The process should be supported by operating guidelines that substantiate the process methodology and completion requirements.

First-due companies carry adequate supplies and materials consistent with operations level capabilities and other minor hazardous materials events. The hazardous materials unit is designed to carry a comprehensive inventory of additional equipment, supplies, and materials consistent with larger more technically demanding events. Within the county, the department has established a warehousing facility and a large cache of additional equipment, supplies, and materials which are available for incident utilization or resupply of the response units. It was identified within the overall risk assessment process all hazardous materials risks may not be fully considered. As an example, for one risk present on all three islands, petroleum transport vehicle rollover and spill incidents, control equipment and supplies maybe somewhat lacking in quantity and capability. Considerations should be given to the probability and impacts of these types of incidents and appropriate levels of equipment and supplies inventoried on response units or in storage to handle these situations.

It is recommended the department expand its risk analysis process to assist in the evaluation of equipment needs and determination processes.

Due to the limited hazardous materials risk review within the standards of cover document (SOC) and the lack of deployment objectives noted within the SOC for multiple risks levels that were observed in the response area, it was not possible for the team to adequately verify or validate that the department meets the deployment demands and resulting objectives for those risks. Additionally, the critical task analysis for risks was limited to a single tasking report which was again not related to specific risk levels and demands.

The department's current hazardous materials responses are based upon the locations the department observed threats relative to populated areas and densities of the islands. The more populated areas are on the main island of Maui which is covered by the dedicated continuously staffed hazardous materials response unit. The other hazardous materials response demands exist on the two other island masses of Moloka'i and Lana'i, along with Hana on the island of Maui, are have operations level response capabilities provided by staffed engine companies with operations capabilities.

The targeted service level objectives in the standards of cover benchmark statements do not appear to be based on industry standards and best practices nor the standards defined on the Self-assessment Manual, pages 70 - 71.

The department's benchmark service level objectives are as follows:

Maui Island Performance Measures

For 90 percent of all hazardous materials calls on Maui Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 13 minutes and 50 seconds for urban areas; 16 minutes and 55 seconds for suburban areas; and 23 minutes and 22 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all hazardous materials calls on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, shall be 36 minutes and 30 seconds for urban areas; 53 minutes and 30 seconds for suburban areas; and 2 hours and 10 minutes for rural areas. The ERF shall be capable of establishing command; performing a scene size-up; appointing a safety officer; determining the need for additional resources; establishing hot, warm, and cold zones; and providing the equipment, knowledge, and skills to rescue victims and mitigate a hazardous materials incident. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

It should be noted that these baseline performance objective and time measurements are based on the single critical tasking report and do not reflect a risk analysis report and levels of risks that appear to exist within the populated areas of Maui island.

Moloka'i Island Performance Measures

For 90 percent of all hazardous materials calls on Moloka'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 2 personnel, shall be 24 minutes and 30 seconds for urban areas and 28 minutes and 30 seconds for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Note derived from the SOC document: Concentration performance measures are not given for hazardous materials calls on Moloka'i Island because the first arriving company is considered to be the entire effective response force (ERF). Technician level resources can be brought in by boat if necessary, but will take at least 2 hours to arrive. For Moloka'i Island, there are no areas designated as suburban, so times are only given for urban and rural.

Lana'i Island Performance Measures

For 90 percent of all hazardous materials calls on Lana'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 36 minutes for urban areas and 48 minutes for rural areas. The first-due company shall be capable of

establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Note from the SOC: Concentration performance measures are not given for hazardous materials calls on Lana'i Island because the first arriving company is considered to be the entire effective response force (ERF). Technician level resources can be brought in by boat if necessary, but will take at least 2 hours to arrive.

Hana District Performance Measures

For 90 percent of all hazardous materials calls in Hana District, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 13 minutes and 20 seconds for suburban areas and 42 minutes for rural areas. The first-due company shall be capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Note from the SOC: Concentration performance measures are not given for hazardous materials calls in Hana District because the first arriving company is considered to be the entire effective response force (ERF). If technician level response is required Hazmat 10 is approximately 2 hours away by road.

The department's current baseline statements reflect actual performance during 2013 to 2015. Due to the geographic remoteness of the Maui island, and Moloka'i or Lana'i islands, along with Hana district, from other response resources, the department does not rely on the use of automatic aid to establish its effective response force complement of personnel.

The department's actual baseline service level performance is as follows:

Maui Island Performance Measures

For 90 percent of all hazardous materials calls on Maui Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, is: 14 minutes and 10 seconds for urban areas; 17 minutes and 18 seconds for suburban areas; and 23 minutes and 42 seconds for rural areas. The first-due company is capable of establishing command; performing a scene size-up to determine the presence of a potential hazardous material; determining the need for additional resources; establishing initial hot, warm, and cold zones; taking initial defensive actions; and performing line-of-sight rescues. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all hazardous materials calls on Maui Island, the total response time for the arrival of the effective response force (ERF), staffed with a minimum of 8 personnel, is: 37 minutes and 2 seconds for urban areas; 54 minutes and 8 seconds for suburban areas; and 2

hours, 15 minutes, and 56 seconds for rural areas. The ERF is capable of establishing command; performing a scene size-up; appointing a safety officer; determining the need for additional resources; establishing hot, warm, and cold zones; and providing the equipment, knowledge, and skills to rescue victims and mitigate a hazardous materials incident. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

It was verified and validated by the peer assessment team that the Maui Fire Department did not have sufficient hazardous materials incidents which required a first-due response or an effective response force to be assembled on the islands of Lana'i and Moloka'i, or in the Hana district of the Maui island for 2013-2015, to provide reliable data. There are therefore no baseline service level performance statements provided for the first-due unit or the effective response force in this report. Data charts for those islands and district are provided however.

Maui Island **Hazardous Materials Calls** 90th Percentile Times 2013-2015 2015 2014 2013 #Calls Times Times #Calls #Calls #Calls Times Times 4:34 5:06 Overall 4:34 113 41 5:15 **36 36** Call **Processing** 4:39 85 4:13 30 5:29 29 5:06 26 Urban Time 2 3:56 8 3:56 4 0:422 3:56 Suburban Pick-up to Dispatch 8 7 5 Rural 9:57 20 15:21 3:09 17:48 4:24 Overall 4:27 113 4:27 41 4:33 36 36 **Turnout Time** 5:09 Urban 4:33 85 4:27 30 4:31 29 26 1st Unit on 2 Suburban 2:55 8 2:44 4 2:43 2 2:55 Scene 5 8 4:11 20 7 4:35 3:47 Rural 20:40 9:39 **36 Overall** 10:15 113 11:50 41 10:05 **36** Distribution Urban 8:04 85 7:33 30 8:45 29 7:49 26 **Travel Time** 1st Unit on 2 8 4 5:36 2 13:30 Suburban 13:40 13:40 Scene 5 8 Rural 12:30 20 12:40 7 11:41 16:33 29:44 17 14 **Overall** 45 1:19:03 36:03 24:39 14 Concentration **Travel Time** Urban 29:44 31 36:03 14 29:34 9 28:26 8 Effective 5 Suburban 19:44 16:12 3 14:03 1 19:44 1 Response Force (ERF) 2:09:40 9 3 2 19:05 4 Rural 2:09:40 13:39 15:52 36 **Overall** 113 17:12 41 15:38 **36** 16:20 Distribution **Total Response** 14:10 29 14:10 26 Urban 85 13:24 30 15:42 Time 8 2 2 Suburban 17:18 17:18 4 8:42 17:14 1st Unit on Scene 5 Rural 23:42 20 26:23 7 14:22 26:15 8 Concentration Overall 48:03 45 **17** 35:48 1:35:02 14 52:00 14 **Total Response** Urban 37:02 46:39 8 45:54 14 35:49 9 31 Time Effective 54:08 Suburban 5 54:08 3 49:27 1 29:32 1 Response Force 2:15:56 3 2:15:56 3 21:15 2 28:54 4 Rural (ERF)

Hazardo	lokaʻi Island ous Materials (Percentile Tim		
		2	014
		Times	#Calls
	Overall	1:15	1
Call Processing Time	Urban		0
Pick-up to Dispatch	Suburban		0
	Rural	1:15	1
	Overall	0:01	1
Turnout Time	Urban		0
1st Unit on Scene	Suburban		0
	Rural	0:01	1
	Overall	7:46	1
Distribution To 1.	Urban		0
Travel Time 1 st Unit on Scene	Suburban		0
	Rural	7:46	1
	Overall	9:02	1
Distribution T. 4.1 Decrease Times	Urban		0
Total Response Time 1 st Unit on Scene	Suburban		0
	Rural	9:02	1

Lana'i Island **Hazardous Materials Calls** 90th Percentile Times 2013-2015 2015 2014 2013 Times #Calls Times #Calls #Calls Times Times #Calls Call 5 **Overall** 2:30 2:30 1 1:50 3 2:14 1 **Processing** Time Urban 2:30 5 2:30 1 1:50 3 2:14 1 Pick-up to Dispatch **Turnout Time Overall** 4:08 5 0:55 1 4:08 3 3:07 1 1st Unit on Urban 4:08 5 0:55 1 4:08 3:07 3 1 Scene Distribution **Overall** 5:35 5 5:35 1 3:32 3 4:14 1 **Travel Time** 1st Unit on Urban 5:35 5 5:35 1 3:32 3 4:14 1 Scene Distribution **Overall** 5 9:35 9:00 1 6:30 1 3 9:35 **Total Response** Time 5 Urban 9:35 9:00 1st Unit on 1 6:30 3 9:35 1 Scene

Hana District Hazardous Materials Calls 90th Percentile Times											
		2013-2015		2015		2014		2013			
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls		
Call Processing Time Pick-up to Dispatch	Overall	20:46	7	2:47	2	0:35	3	1:20:46	2		
	Suburban	0:00	1		0	0:00	1		0		
	Rural	1:20:46	6	2:47	2	0:35	2	1:20:46	2		
Turnout Time 1st Unit on Scene	Overall	7:39	7	7:39	2	2:00	3	3:20	2		
	Suburban	2:00	1		0	2:00	1		0		
	Rural	7:39	6	7:39	2	0:01	2	3:20	2		
Distribution Travel Time 1st Unit on Scene	Overall	12:48	7	10:16	2	12:48	3	6:39	2		
	Suburban	2:01	1		0	2:01	1		0		
	Rural	12:48	6	10:16	2	12:48	2	6:39	2		
Distribution Total Response Time 1st Unit on Scene	Overall	30:45	7	20:42	2	13:24	3	1:30:45	2		
	Suburban	0:01	1		0	0:01	1		0		
	Rural	1:30:45	6	20:42	2	13:24	2	1:30:45	2		

Criterion 5G – Emergency Medical Services (EMS)

The Maui Fire Department (MFD) responds to emergency medical services (EMS) situations to provide first responder emergency medical response and to support American Medical Response (AMR), a third-party advanced life support and transport agency. The department deploys one staffed apparatus with a minimum of two personnel to medical events. Department staff is capable of providing first responder emergency medical response support with automatic external defibrillation (AED) until the third-party service arrives. In those cases where the third-party provider arrives first, the department provides the personnel from AMR with support.

MFD uses the National Registry of Emergency Medical Technicians (NREMT) to certify members at the emergency medical responder (EMR) level. Personnel hired before June 2006 are trained to the EMR level, however are not certified NREMTs.

The agency operates an EMS program that provides the community with a designated level of out-of-hospital emergency medical care. The department has developed standard operating guidelines (SOGs) in collaboration with AMR so that responding personnel from both agencies can effectively, efficiently, and safely work together to provide the optimum level of service. The department and AMR follow the protocols established by the medical director.

Patient care records (PCRs) are created by ambulance personnel who respond to the incident with department personnel. A fire report number is generated for all EMS responses when a fire company is dispatched and is captured and completed in the FireRMS system. The company officer completes

a FireRMS report with minimal patient information obtained at the scene. Although similar in some respects, it is not the same as a PCR used by the State of Hawaii. The department often uses a standard Med Stat notebook to record patient information manually on scene. When the Med Stat notebook is used, a carbon copy of the form is provided to the AMR medics as part of the transfer of care. Requests for records must be submitted through the office of the fire chief, which will then approve release of information.

The department has a Health Insurance Portability and Accountability Act (HIPAA) compliance program in place. All personnel have received proper training to this act beginning with new employees and annual refresher training for all members. Members of the department are responsible for maintaining privacy and confidentiality of an individual's personal information in accordance to local, state, and federal protocols. The department has not experienced any violations of the HIPAA regulation since the policies were implemented.

The MFD Fire Training Bureau (FTB) meets with all program directors annually to evaluate the specific training program for that division. Information gathered from the EMS program appraisal combined with input from the medical officer and other stakeholders is used to develop annual training plans for emergency medical responders (EMR). Training plans include information specific to the County of Maui (COM) EMS system along with standard EMR and cardiopulmonary resuscitation (CPR) refresher materials. Through this process, the overall EMS program is evaluated and any issues or innovations in EMS response have been appropriately addressed.

The department's response and deployment standards are based on the urban, suburban, and rural population densities, and the medical support demands of the community. Fourteen fire stations provide county-wide coverage; department staffing is based upon station location, incident type, and frequency. The targeted service level objectives in the standards of cover benchmark statements are based on industry standards and best practices, as identified earlier in this report in Category II — Assessment and Planning. The objectives have been approved and adopted by fire department management and presented to the mayor, fire and public safety commission, and county council. The department's benchmark service level objectives are as follows:

For 90 percent of all EMS calls on Maui Island, the total response time for the arrival of the first-due company, staffed with a minimum of four personnel, shall be 12 minutes and 56 seconds for urban areas; 15 minutes and 20 seconds for suburban areas; and 23 minutes for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all EMS calls on Moloka'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 2 personnel, shall be 9 minutes and 30 seconds for urban areas and 23 minutes for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all EMS calls on Lana'i Island, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 19 minutes for urban areas and 48 minutes and 43 seconds for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

For 90 percent of all EMS calls in Hana District, the total response time for the arrival of the first-due company, staffed with a minimum of 4 personnel, shall be 12 minutes for suburban areas and 41 minutes for rural areas. The first-due company shall be capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations shall be done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

The department relies upon AMR, a third-party provider, to complete the effective response force (ERF) component of its EMS program. The initial arriving fire department company shall have the capabilities of providing first responder medical aid including AED, until the third-party provider arrives on scene. If the third-party provider unit arrives on scene first, its personnel shall initiate care and the staff from the initial fire department company shall provide support as needed.

The department's baseline statements reflect actual performance during 2013 to 2015. The department does not rely on the use of automatic or mutual aid from neighboring fire departments. The department's actual baseline service level performance is as follows:

For 90 percent of all EMS calls on Maui Island, the total response time for the arrival of the first company, staffed with a minimum of 4 personnel, is 13 minutes and 14 seconds for urban areas; 15 minutes and 35 seconds for suburban areas; and 23 minutes and 25 seconds for rural areas. The first-due company is capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Maui Island EMS Calls 90th Percentile Times											
		90th Pero 2013-2015		2015		2014		2013			
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls		
Call Processing Time Pick-up to Dispatch	Overall	4:19	12079	4:23	4101	4:24	4140	4:07	3838		
	Urban	4:20	9034	4:22	3111	4:33	3084	4:12	2839		
	Suburban	3:52	1631	4:11	559	3:50	534	3:35	538		
	Rural	4:27	1411	4:57	429	4:18	521	4:15	461		
Turnout Time 1st Unit on Scene	Overall	3:51	12079	3:53	4101	3:49	4140	3:53	3838		
	Urban	3:50	9034	3:51	3111	3:47	3084	3:54	2839		
	Suburban	3:48	1631	3:49	559	3:46	534	3:46	538		
	Rural	4:05	1411	4:11	429	4:11	521	3:55	461		
Distribution Travel Time 1st Unit on Scene	Overall	9:23	12079	9:17	4101	9:23	4140	9:25	3838		
	Urban	7:38	9034	7:24	3111	7:23	3084	8:06	2839		
	Suburban	10:09	1631	10:55	559	9:50	534	9:49	538		
	Rural	17:39	1411	17:41	429	17:43	521	16:43	461		
Distribution Total Response Time 1st Unit on Scene	Overall	14:56	12079	15:10	4101	14:48	4140	14:50	3838		
	Urban	13:14	9034	13:09	3111	13:02	3084	13:25	2839		
	Suburban	15:35	1631	16:12	559	15:01	534	14:45	538		
	Rural	23:25	1411	23:54	429	24:05	521	21:46	461		

For 90 percent of all EMS calls on Moloka'i Island, the total response time for the arrival of the first company, staffed with a minimum of 2 personnel, is 9 minutes and 32 seconds for urban areas; and 23 minutes and 18 seconds for rural areas. The first-due company is capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Moloka'i Island EMS Calls 90th Percentile Times									
		2013-2015		2015		2014		2013	
		Times #Calls		Times	#Calls	Times	#Calls	Times	#Calls
Call Processing Time Pick-up to Dispatch	Overall	4:30	916	4:49	324	4:23	304	4:25	288
	Urban	4:03	330	3:57	115	4:01	107	4:17	108
	Rural	4:54	585	5:13	209	4:50	197	4:32	179
Turnout Time 1st Unit on	Overall	3:13	916	3:26	324	3:15	304	3:05	288
	Urban	3:05	330	3:23	115	3:05	107	2:50	108
Scene	Rural	3:21	585	3:28	209	3:25	197	3:09	179
Distribution Travel Time 1st Unit on Scene	Overall	15:48	916	17:41	324	13:27	304	15:52	288
	Urban	4:27	330	3:45	115	5:10	107	4:32	108
	Rural	17:52	585	20:39	209	15:38	197	17:32	179
Distribution Total Response Time 1st Unit on Scene	Overall	20:52	916	22:52	324	19:50	304	20:32	288
	Urban	9:32	330	9:34	115	9:23	107	10:07	108
	Rural	23:18	585	25:19	209	21:16	197	22:58	179

For 90 percent of all EMS calls on Lana'i Island, the total response time for the arrival of the first company, staffed with a minimum of 4 personnel, is 19 minutes and 18 seconds for urban areas; and 50 minutes and 25 seconds for rural areas. The first-due company is capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Lanaʻi Island EMS Calls 90th Percentile Times									
		2013-2015		2015		2014		2013	
		Times #Calls		Times	#Calls	Times	#Calls	Times	#Calls
Call	Overall	3:31	360	3:17	108	3:41	120	3:57	132
Processing Time	Urban	3:30	352	3:17	105	3:41	117	3:44	130
Pick-up to Dispatch	Rural	5:19	8	3:12	3	3:49	3	5:19	2
Turnout Time	Overall	3:41	360	3:30	108	3:48	120	3:45	132
1st Unit on	Urban	3:38	352	3:20	105	3:48	117	3:42	130
Scene	Rural	6:09	8	6:09	3	5:53	3	5:55	2
Distribution	Overall	14:52	360	15:46	108	15:00	120	14:30	132
Travel Time 1 st Unit on Scene	Urban	14:43	352	15:35	105	15:00	117	14:23	130
	Rural	40:43	8	39:52	3	40:43	3	14:44	2
Distribution Total Response Time 1st Unit on Scene	Overall	19:30	360	20:05	108	19:42	120	19:03	132
	Urban	19:18	352	19:35	105	19:42	117	18:56	130
	Rural	50:25	8	49:13	3	50:25	3	25:58	2

For 90 percent of all EMS calls in Hana District, the total response time for the arrival of the first company, staffed with a minimum of 4 personnel, is 12 minutes and 35 seconds for suburban areas and 41 minutes and 54 seconds for rural areas. The first-due company is capable of performing a scene size-up; establishing command; conducting a patient assessment; initiating appropriate treatment; and assisting ambulance personnel with packaging the patient for transport. These operations are done in accordance with department standard operating guidelines while providing for safety of responders and the general public.

Hana District EMS Calls 90th Percentile Times										
		2013-2015		2015		2014		2013		
		Times	#Calls	Times	#Calls	Times	#Calls	Times	#Calls	
Call	Overall	5:15	244	5:00	112	5:26	65	6:41	67	
Processing Time	Suburban	4:30	79	5:46	43	6:09	19	3:47	17	
Pick-up to Dispatch	Rural	5:48	165	4:59	69	5:26	46	7:44	50	
Turnout Time	Overall	4:48	244	4:44	112	4:37	65	5:04	67	
1st Unit on	Suburban	4:02	79	3:52	43	4:00	19	5:37	17	
Scene	Rural	5:01	165	5:37	69	4:54	46	5:01	50	
Distribution	Overall	29:58	244	31:07	112	23:46	65	38:39	67	
Travel Time 1 st Unit on Scene	Suburban	5:38	79	5:26	43	5:48	19	7:59	17	
	Rural	36:10	165	36:53	69	28:03	46	40:10	50	
Distribution Total Response Time 1st Unit on Scene	Overall	36:05	244	39:08	112	30:05	65	41:06	67	
	Suburban	12:35	79	13:35	43	10:59	19	14:08	17	
	Rural	41:54	165	43:34	69	36:08	46	43:05	50	

The department relies upon AMR, a third-party provider, to complete the ERF component of its EMS program. The initial arriving fire department company has the capabilities of providing first responder medical aid including AED, until the third-party provider arrives on scene. If the third-party provider unit arrives on scene first, its personnel initiate care and the staff from the initial fire department company provide support as needed.

The team was not able to review 2016 response time data, since it was being evaluated and compiled by the person hired to assist with data management.

Criterion 5H – Domestic Preparedness Planning and Response

The Maui County Emergency Management Office is responsible for the development of the multijurisdictional emergency operations plan (EOP) used by the Maui Fire Department. The EOP serves as an all-hazards plan for the three main islands within the county.

Through its involvement with the county, the agency operates an all-hazards preparedness program that includes a coordinated multi-agency response plan, designed to protect the community from terrorist threats or attacks, major disasters, and other large-scale emergencies occurring at or in the immediate area.

The county emergency operations plan provides for a large number of emergency situations and the necessary functions required to manage the response and recovery phases of those incidents. The plan

provides an appropriate multi-agency organizational structure and prescribes the predetermined functions and duties with connection to participating agencies. The purpose of this planning document is to provide guidance and specific procedures for responding to the identified hazardous conditions and disasters.

The plan is reviewed annually and updated as necessary. The county conducts regular multidiscipline exercises on an annual basis. All participants train and operate under the National Incident Management System (NIMS). Incident leadership roles are defined by the responsibilities to manage the emergency phases as necessary.

The county has overall responsibility for the review and maintenance of the guidelines prescribed within and related to the emergency operations plan. The department participates actively in the county's guideline review process and maintenance or updating of the standard operating guidelines assuring department needs and adaptations are recognized and addressed.

There is a well-equipped emergency operations center (EOC) that has been activated a minimum of two times in the last four years during large-scale emergencies. To facilitate interoperability with the other eight participants, the EOC operates under NIMS during these activations. The center features the capability to cross patch 28 radio frequencies utilized by field units from the eight potential responding agencies. A communication specialist is at the EOC during major events to provide alternate methods for communications among agencies, if necessary.

The department currently has considered some vulnerability issues within some facilities and locations. In many locations, the accessibility to many areas of some facilities have exposures which are yet to be considered. The department has not completed a formal vulnerability review of all facilities or locations.

It is recommended the department establish a formal vulnerability assessment process that establishes priorities for defining fire station exposure potential, create a plan to limit the extent of vulnerability, and achieve a more secure environment at those locations.

Criterion 5K - Ocean Rescue

The Maui Fire Department as of July 2016 absorbed the ocean rescue program from the Parks Department of Maui County. The program had existed under the parks department for many years and through a referendum by the public was transferred to the fire department.

The ocean rescue program provides lifeguard and small water craft rescue capabilities. The program staffs 12 towers on beaches in several locations around the main island of Maui. There are 63 total persons within the program at this time. The program has a limited number of small water craft, motor vehicles, and appropriate supplies and equipment.

Due to the recent transfer of the program, the department has not effectively been able to analyze the program components, analyze appropriate risks or threats, and create an effective coverage objective policy. Though the department attempted to respond to the core competencies and performance indicators appropriate to the program, they were unable to collect the information to make complete responses. Though the department was able to transfer procedures for operation of the program from the parks department in many cases, the department has not had adequate time to make complete and comprehensive reviews of the procedures. Initial efforts have been made to consider the effectiveness

of the program; however, many obstacles exist that limit the breadth that such an analysis might provide. In addition, capturing of data for such items as response time, availability, and reliability considerations, has not been evaluated for quality or consistency, or in some cases how that data would be captured, analyzed, and utilized effectively.

Category VI — Physical Resources

The Maui Fire Department maintains 14 fire stations (10 on Maui, 3 on Moloka'i, and 1 on Lana'i) as well as four support facilities with 40 response and support apparatus which are distributed across the city/county. that do not meet the current service level objectives. The department has identified in their standards of cover the need to relocate stations, add response apparatus, and the potential need for a new station to address the future growth expected for the county.

Development and use of physical resources is consistent with the agency's established plans. A systematic and planned approach to the future development of facilities is in place.

All appropriate parties, including the governing body, administration and staff are involved in the development of the major plans and proposals. The department has also engaged the public nearby to planned station construction projects to solicit feedback and support.

Fixed facility resources are designed, maintained, managed, and adequate to meet the agency's goals and objectives. The department's physical facilities are minimally adequate and distributed in accordance with stated service level objectives and standards of cover. The department's baseline performance data does not clearly demonstrate that it is able to adequately meet its service level objectives for response time. The peer team has addressed this issue through strategic recommendations presented in Category II, to conduct a fire station location study to determine the number and location of stations to provide the appropriate distribution of resources to bring travel times for the effective response force (ERF) in line with industry best practice.

The peer assessment team noted the department does not have a plan to ensure facilities meet applicable codes and regulations. The peer team observed the majority of the department's facilities are poorly maintained and do not follow codes and regulations. There have been two major facility upgrades in the past ten years which demonstrate current practice for new facilities follow and comply with codes and regulations.

It is recommended the department develop and implement a facilities inspection program to ensure all facilities meet applicable codes and regulations.

While touring fire stations it was evident that several stations had repairs needing to be made or ones that had been started and not completed, one of which had been in the works for over three months.

It is recommended the department develop a plan to inspect fire stations and make needed repairs as deemed appropriate for routine maintenance issues to reduce potential problems with significant costs in the future.

Apparatus resources are designed and purchased to be adequate to meet the agency's goals and objectives. The department attempts to pay close attention to maintaining the appropriate distribution and concentration of apparatus to ensure a continuous capability to meet its standards of cover objectives. However, the department's baseline travel time performance data demonstrates that the

current strategic deployment of apparatus does not allow it to meet its existing goals for the delivery of emergency response services. Apparatus locations do not fully account for some areas with a lack of water supply; the department is researching adding tanker coverage to provide for an enhanced water supply capability. There is a lack of aerial support in some areas where commercial properties have the highest counts.

It is recommended the department assess and plan its apparatus locations to align with the community risk assessment in the SOC.

The inspection, testing, preventive maintenance, replacement schedule, and emergency repair of all apparatus is well established and meets the emergency apparatus service and reliability needs. The department has established its own internal apparatus maintenance program with high priority focus being placed on safety. The department utilizes the 'Maintenance Connect' program to assist with the tracking of all equipment. The vehicle maintenance division is well managed with sufficient work areas and a manual records management system and a lead mechanic capable of tracking every vehicle in the fleet. There is an effective and direct communication to and from the lead mechanic to the deputy chief to insure the program is efficient. Service work based upon preventive maintenance schedules is communicated effectively between the operations division and the maintenance division. There is a well-stocked parts supply area that ensures minimum down-time due to delays in obtaining the necessary parts. All manufacturers' recommendations are being followed and all legal requirements are being met.

The shared expectations of both the operations and maintenance divisions are well established with the standard operating guidelines. They will be reviewed on an annual basis to ensure continuity of operations and a consistent approach to keeping the fleet well maintained.

The maintenance facility has had sufficient space until the recent inclusion of the ocean rescue apparatus and equipment. With the inclusion of this program, the facility is being overtaxed and at times having to do maintenance outside.

It is recommended the department assess and develop a plan of its maintenance and repair facility to ensure space appropriate based on the expansion of services.

Equipment resources are adequate and designed and maintained to meet the agency's goals and objectives. The maintenance division tests and inspects tools and small equipment for all stations and divisions in the department. Department personnel perform routine maintenance. Mechanics are certified for the work they perform. There is an adequate records management system for the program.

Safety equipment is adequate and designed to meet the agency goals and objectives. The department has a comprehensive safety program that appropriately identifies and distributes supplies of safety equipment for its employees. Personal protective equipment is provided as personal issue. Other safety equipment is provided for particular tasks on an as needed basis. Company officers are charged with the regular inspection of the safety equipment. It was observed that newer apparatus has hearing/communications devices in them and older apparatus has no hearing/communications devices in them.

It is recommended the department evaluate hearing protection on response apparatus and develop a plan to implement a complete hearing protection program for all apparatus.

Category VII — Human Resources

The Maui Fire Department (MFD) has a dedicated administrative assistant who is responsible for all human resource functions within the department. Policies have been created and acknowledged by employees that address violence in the workplace, sexual harassment, etc. In addition, workers' compensation claims, drug testing as required by the Department of Transportation (DOT), and physical exams are some practices that are in place.

One criterion statement and one core competency were not met: criterion statement 7F and core competency 7F.5. Additional detail related to the team's findings is located below in its observations about the ability of the department to meet the criterion statement and core competency expectations.

General human resources administration practices are in place and are consistent with local, state, and federal statutory and regulatory requirements. Under the direction of the assistant fire chief of support services and a business administrator, a human resource manager is designated within the human resource office. The title of this position is also known as the administrative assistant.

Systems are established to attract, select, retain, and promote qualified personnel in accordance with applicable local, state, and federal statutory requirements. The department's processes and screening devices for recruitment and selection are designed to meet legal tests for civil service positions. These comply with all local, state, and federal requirements, including: equal opportunity and discrimination statutes per the Department of Personnel Services (DPS), Administrative Rules, Chapter 205, Filling Positions in the Civil Service; §11-203-6, Equal Employment Opportunity; Policies and Procedures, Policy No.200.100, Filling a Civil Service Position; and per the Office of the Mayor, Equal Employment Opportunity/Affirmative Action Policy Statement, dated 15 March 2012. DPS utilizes CPS HR Consulting to obtain valid fire service test banks. DPS and MFD administration validate the examination process is job-related and sourced from International Fire Service Training Association (IFSTA) Essentials current text. The County of Maui's DPS is responsible for position announcements, test administration, screening processes, candidate pool selection, and compliance with all Equal Employment Opportunity and Affirmative Action policies in accordance with local, state and federal requirements. The processes for hiring and promotion are job-related, approved by the County of Maui DPS and validated by the MFD Administration. The DPS ensures that the department is compliant with local, state, and federal application, employment processes, anti-discrimination, and affirmative action equal opportunity statutes. Periodic review of the examination process by the MFD and DPS is encouraged to ensure fair and equitable policies and procedures are maintained as the workforce expands to meet community needs.

Uniformed and administrative personnel are subject to supervised probationary periods upon hiring and promotion per the Hawaii Fire Fighters Association (HFFA), Local 1463, Collective Bargaining Agreement (CBA), Section 13, Probationary Periods; the DPS, Administrative Rules, Chapter 214, §11-214-2, Performance Evaluation; Policies and Procedures, Policy No.200.100, Section VIIB, Probationary Appointment, and Policy No.700.100, Performance Evaluation. The Hawaii Government Employees Association (HGEA) and the United Public Workers (UPW) unions also have probationary processes in place with the employer. Recruit training officers conduct regular individual recruit candidate skills test evaluations per the DPS Policies and Procedures, Policy No.700.100, Performance Evaluation, to ascertain competency during the Recruit Program. Performance Evaluation Reports are utilized during the course of the probationary process for new and promoted members.

Personnel policies and procedures are in place, documented, and guiding both administrative and personnel behavior. The department's rules and regulations, standard operating guidelines (SOGs), HFFA, Local 1463 collective bargaining agreement handbook, County of Maui Charter, and County of Maui Administrative Rules and Employee Handbook are accessible to all staff members. Personnel policies, procedures and rules are contained within these documents and guide both uniformed and non-uniformed members. Each member receives a copy of the MFD's rules and regulations and collective bargaining agreement handbook with a review included as part of the orientation process. Policies, procedures, and rules reviews are communicated via regularly scheduled supervisor and staff meetings and through the fire chief's office. There is a formal process for SOG development, final review, and employee distribution.

The County of Maui and the department enforce all local, state and federal laws that prohibit harassment, bias and unlawful discrimination of employees per the Administrative Rules, Chapter 203, §11-203-6, Equal employment opportunity; County of Maui Violence in the Workplace Action Plan and the County of Maui (COM) Policy Against Discrimination. The Office of the Mayor, thru the DPS, issues anti-discrimination and harassment policies and requires mandatory annual training for all county personnel. The Equal Employment Opportunity Officer (EEOO) conducts mandatory new hire and annual refresher training that includes reporting procedures and the disciplinary process. Employee behavior and professionalism on the job is also addressed in the MFD Rules and Regulations and enforced by the fire chief.

Human resources development and utilization is consistent with the agency's established mission, goals, and objectives. The County of Maui DPS is responsible for position classification based on the Administrative Rules of the DPS, Chapter 206, Subchapter 2, Position Classification. The department works with the DPS specialist to review, audit, and modify the class system annually, as needed, and when requested by the fire chief via the MFD's Administrative Services and a Request for Position Action. The department also utilizes the development of the MFD Annual Report and review of annual performance evaluations to enhance current processes by which jobs are audited and modified.

A system and practices for providing employee/member compensation are in place. Rates of pay and compensation are published, distributed, and made available to all members per the CBA between the COM and the labor unions (HFFA, HGEA, and UPW) and the COM Salary Commission in accordance with the Hawaii Revised Statutes, Chapter 89, Collective Bargaining in Public Employment. Pay and compensation for managerial employees, excluded from collective bargaining, are determined by the COM Salary Commission and the Office of the Mayor per the County of Maui Charter, Chapter 17, Salary Commission. The classification system utilizes the HFFA, Local 1463, CBA salary schedule for assignment of compensation.

Occupational health and safety and risk management programs are established and designed to protect the organization and personnel from unnecessary injuries or losses from accidents or liability. The department has an occupational health, safety, and risk management program in place that has proven effective. However, there is an identified need for the department to establish the role of incident safety officer in the critical task analysis of the community risk assessment/standards of cover for all program areas. The department then needs to ensure this position is filled during all emergency incidents and those filling the positions have the qualifications and certifications to support there actions.

The department provides occupational health and safety training during recruit school that includes a comprehensive safety overview of job hazards, rules and regulations, personal protective equipment, fire fighter safety skills, and situational awareness required at incidents and the workplace. The MFD Training, and Health and Safety Bureaus coordinate training and continued education on general safe work practices via quarterly drills, training orders, annual EMS refreshers, and the MFD Newsletter. Department SOG's are incorporated into periodic supervisor meetings and integrated into mandatory quarterly drills and training orders.

The department and County of Maui have established occupational safety and health programs that comply with legal requirements and provide instruction in general safe work practices beginning at the point of initial employment through each job assignment. The department has been dedicated to continued growth and improvement in providing occupational health and safety training, programs, procedures, instruction, and education by learning about new equipment and techniques.

Core competency 7F.5¹⁵ was not met. MFD has three health and safety officers that are not tasked with responding to incidents for safety. On-scene captains assume the responsibility of incident safety officer. It is recommended the department establish the incident safety officer role within the critical task analysis and standards of cover for all hazardous incidents, including structure fires, hazard materials incidents, technical rescues, and ocean rescue incidents. The department should ensure that this position is filled during incidents and that the individuals are properly trained and certified.

The agency has a wellness/fitness program for recruit and incumbent personnel and provisions for non-compliance by employees/members are written and communicated. The department requires all eligible candidate recruits pass a comprehensive pre-employment physical and physical agility test prior to recruit school. Thereafter, annual Department of Transportation/Public Utilities Commission (PUC) mandated physical are required by the department per the MFD Rules and Regulations, Article 5, Job Requirements, Par.503.01-.03 and the HFFA Local 1463 Union CBA, Section 40.Physical Examinations. Members are declared fit for duty per completion of their annual physical and provision of the PUC medical examiners certificate of clearance. Rehabilitative medical evaluations are available through workers compensation via designated health providers approved by the County of Maui. The department also conducts annual multi and single company drills that evaluate members' physical fitness capacities to complete essential firefighting tasks by job assignment. All members complete a medical monitoring log derived from National Fire Protection Association (NFPA) 1584: Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises, prior to and following each training evolution. MFD mandatory quarterly drills supervised by members' immediate supervisor also serve to evaluate physical fitness. Members who are not cleared by the medical examiner or medical monitoring at assigned drills are placed under supervision and guidance of an appointed physician. Light duty/modified special assignment may be indicated as determined by the attending physician's recommendation.

The department's ability to provide for initial, regular, and rehabilitative medical and physical fitness evaluations has been somewhat effective based on it being mandatory, funded, and approved by the county, administration, and union. Medical clearance and full duty status by medical examiner's certificate, completion of the workers' compensation process, and medical monitoring has worked

^{15 7}F.5 An occupational health and safety training program is established and designed to instruct the workforce in general safe work practices, from point of initial employment through each job assignment and/or whenever new substances, new processes, procedures, or equipment are introduced. It provides specific instructions on operations and hazards specific to the agency.

out, but could be improved. Although a process has been in place to evaluate medical and physical fitness of members, the effectiveness of the process needs improvement. The department should acquire an occupational physician instead of a general practitioner tasked with evaluating annual physicals, workers' compensation processes, drill medical logs, and provide fit for duty determination in accordance with county and union approval. Allowing the COM to permit members to seek their private physician for approval to return to duty has proved to be very ineffective at times.

It is recommended the department acquire an occupational health physician to ensure effective evaluations of annual physicals, workers' compensation processes, drill medical logs, and provide fit for duty determination.

The department occupational wellness/fitness program can be found in MFD SOG's, Section 1, Member Health and Assistance Program, 101.03, Occupational Health and Wellness Program. It is the expectation that every member at all levels has a personal responsibility to maintain a working level of occupational fitness and readiness. MFD SOGs regarding member wellness/fitness stipulate that all uniformed personnel must receive medical clearance via mandatory annual medical examinations. Though participation in the exercise component is voluntary, "the department expects higher levels of performance, safety, and injury prevention through the implementation of this program." Participation is strongly encouraged at all levels and time on duty, equipment, and additional resources such as peer support and education are provided to promote members' physical fitness and emergency response readiness.

Category VIII — Training and Competency

The Maui Fire Department (MFD) operates a well formulated training program and has a training facility. The facility contains space for provision of firefighting training, some areas for technical rescue, and hazardous materials training activities. The training staff consists of a captain, several instructors, and program leads for 17 program areas. Program leads are not specifically attached to the training bureau, however are specialists within that particular program/discipline area. Each program area's training is supported by several additional program specialists that are also key to the provision of the training program area.

A training and education program is established to support the agency's needs. Program areas and required training needs are identified, in part, upon national, state and department standards or requirements. New members are required to be certified and maintain the certification at the Firefighter II level. Within each program area, the lead person for that program has been identified and it is the responsibility of those program leads to assist the training bureau in identifying and establishing program area training needs, skill, and knowledge requirements necessary to meet emergency response conditions identified within the county.

Training and education programs are provided to support the agency's needs. The training program is well organized and has been updated to meet the needs of the department and its members. All new members meet the Firefighter Level II requirements of the National Fire Protection Association (NFPA) 1001: Standard for Fire Fighter Professional Qualifications prior to the end of initial recruit training. The 17 training program areas identified have been effective in the overall program development and presentation. For the most part, the training program areas are based upon NFPA standards and procedures that have been approved by the department.

The department utilizes written and skill-based check list approaches for individual performance measurement in many cases. During multi-company drill situations, the program presenter and the company officers are responsible for observing performance and providing feedback to the groups as they perform the drill. At the conclusion of the drill, overall performance is reviewed and reported to the participants. Lessons learned from the evaluations that pertain to the training program are used to update the program. In cases where certifications are part of the review training and evaluation process, Pro-Board testing procedures and documents are utilized.

Currently, the department has not identified performance-based measurement processes for all training program areas. Additionally, the consistency of performance evaluation is based on observations of a multitude of observers and their personal perspectives. Although the department appears to provide a comprehensive training effort, the measurement of performance is subject to variable performance measurement perspectives.

It is recommended the department develop performance-based measurement processes for all training program areas as related to multi-company drills and training processes.

The department's current records process is focused on training conditions where the individual is trained. In situations of multi-company drills, training records for all participants may not be recorded and where drills may involve several training program areas, the record entries for all program areas may not be captured in each participating member's training record.

It is recommended the department develop and implement a plan to ensure each individual's training record is updated to include all training areas attained during practical skill drills, including multicompany drills and all other trainings attended.

Training and education resources, printed and non-printed library materials, media equipment, facilities, and staff are available in sufficient quantity, relevancy, diversity, and are current. The department training facility is owned by the state and is on loan to the department. Resources include training grounds sufficient for firefighter, technical rescue, and some hazardous materials training. There is limited classroom capacity at the center; however, classrooms are available at the headquarters area and in some stations. Occasionally, the department utilizes the State National Guard Armory for additional classroom space. The training center is in need of significant repair, update, and expansion.

It is recommended the department develop a plan and begin implementation to update and expand the current training facility to improve facilitation of all training programs.

Nationally recognized training materials are being used. A committee comprised of training division staff and representatives of each training program area evaluate the existing training materials to make sure they reflect current practices and needs. The program area leads are responsible to evaluate and recommend new training materials, practices, and training equipment for their respective areas. The material is evaluated by the training captain prior to being added to the department's training resources.

Category IX — Essential Resources

<u>Criterion 9A – Water Supply</u>

The Maui Fire Department (MFD) utilizes several water providers to ensure the provision of a well-maintained, reliable, and adequate water system. The predominant water provider is the Maui County system. A solid working relationship exists between the department and the Maui water supplier. The smaller or privately owned systems are relied upon to provide adequate systems, however the capabilities of the systems vary from system to system. These water systems protect the larger populated areas of the county; however there are many rural areas that do not have water supply systems. Geographically, the majority of the county that is potentially inhabitable is not provided with water supply systems.

The water supply resources are reliable and capable of distributing adequate volumes of water and pressures to all areas of agency responsibility. All areas meet fire flow requirements for emergencies. The department establishes minimum fire flow requirements for all new and modified facilities and occupancies. Fire flow requirements are based on National Fire Protection Association (NFPA) 1: Fire Code. The department must approve alternate methods proposed by the developer where the fire flow requirements are not being met.

A large number of the built-up areas of the main island of Maui are served by adequate water systems. The areas protected by county systems meet current code or American Water Works Association (AWWA) recommendations or requirements.

The hydrant locations and alternate water sources are maintained on maps or hardcopy documents by station officers and personnel. The determination of the adequacy of the private or small water systems is the responsibility of the station officers.

Should the domestic water supply become inadequate or inoperable, or in areas without water supply systems, the department has tankers in several stations for support of firefighting operations. Some tankers are outfitted with drop tanks to aid in long-term firefighting operations or helicopter suppression operations. The department has not established a water shuttle type operation for water provision nor has the department tested the delivery capability of its tanker process.

It is recommended the department develop and implement a plan for a water shuttle delivery test to determine current water capability as measured by an appropriate methodology (e.g., gpm flow) and if adequacy for firefighting demand issues are discovered, develop an expanded method for the delivery of larger volumes of water for extended periods of time.

There are numerous water system providers and other private systems within the county. Many of these systems are small or have limited water sources, limiting capacity, or pressure capabilities. In those instances the department has the availability of tankers to supplement the systems. Currently some of the private or smaller systems are not inspected or tested regularly. Additionally, contact with the system operators is not a regular consideration for the fire department.

It is recommended the department expand contact opportunities with current water system owners/managers to stay informed about water availability for fighting fires.

It is recommended the department work to improve working relationships with the smaller water system owners/managers to assure proper testing and maintenance of water supply systems.

Criterion 9B - Communication Systems

The Maui Fire Department (MFD) dispatch services are provided by the Maui Police Department (MPD) 911 communications center. The department uses a shared radio system that is owned by Maui County. All on-duty operations personnel, response fire apparatuses, and fire stations are equipped with portable, mobile, or base radios to enable emergency communications with the 911 dispatch emergency call center.

Maui County's radio system was built to be resilient. Repeater sites have redundant control consoles and data uplinks to support emergency communications if something catastrophic occurs, battery backup and generators provide uninterrupted service during a power outage. Remote site systems are within hardened facilities to protect against storms and for security.

The department utilizes six talk groups for dispatch, command, and operational needs. Radios have the ability to communicate on Ocean Safety, MPD, Public Works, and County Civil defense talk groups. Regional and National Mutual aid 800MHz frequencies are programed into the portable Motorola radios to provide flexibility when working with outside agencies. The department has a cache of ten Motorola APX6000XE portable radios, two I.C.R.I. CAT Gateways, two Transportable Repeater Interoperable Communication package, one Daniels Repeater, and one VIPER I.C.R.I. to support large multi-agency incidents.

The public and the agency have an adequate, effective, and efficient emergency communications system. The system is reliable and able to meet the demands of major operations, including command and control within fire/rescue services during emergency operations, and meets the needs of other public safety agencies having the need for distribution of information.

The department uses an 800 MHZ P25 digital trunking Motorola radio system, a shared system owned by Maui County, to meet its communication needs. Radio repeaters are strategically located throughout Maui County to provide radio coverage for nearly all areas of Maui County. MFD members are able to communicate with each other from separate islands while utilizing portable, mobile, and fixed radio hardware.

The department-developed standard operating guidelines (SOGs) and "run cards" for the dispatching center are used to dispatch the MFD when fire services are needed. The existing SOGs from the MPD are from 2009 and include the two-battalion setup that was implemented in 2009. No new stations, staffing, or resources have been added since 2009. A letter sent to the police chief has confirmed this. MFD SOGs were updated department-wide in March 2016.

Criterion 9C - Administrative Support Services and Office Systems

Administrative personnel are in place to handle and manage administrative functions related to organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing. The fire chief participates in organizational planning with the mayor's office, and the assistant chief of administrative support handles resource coordination regarding administrative functions. The fire services officer handles the records management system along with performing public information

officer (PIO) duties. Data analysis is handled by a variety of personnel, especially personnel related to the accreditation process. The fire chief's secretary and the fire prevention bureau (FPB) clerk handle business communications in a general setting and during the permitting process. Purchasing and finance duties are routed through the business administrator.

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing.

Thirty-eight administrative personnel, in various bureaus and administrative positions, administer the support services required to carry out the functions and mission of the department. Functions include health and safety, training, human resources, finance, payroll, procurement, maintenance and repair, planning, and communications.

The department has been divided into various bureaus and offices to carry out the support functions that achieve the department's goals and objectives. Although position descriptions exist for the different titles in the support services functions, more personnel could be used to support the department in areas of payroll, administering the budget, facility maintenance, and clerical assistance for chief officers. One payroll clerk has been responsible to track and input the work details of over 300 employees. In addition, the payroll clerk tracks the leave balances of all employees. One business administrator is responsible to administer the budget and it becomes problematic when that person is out of the office. There are no building facility maintenance personnel to repair separate facility sites to include fire stations. Everything is contracted out for repair. Assistant chiefs do not have clerical support and spend much of their day conducting clerical tasks.

It is recommended the department work with human resources and finance department to pursue dedicated administrative support staff to assist chief fire officers in meeting administrative requirements while allowing them to focus more on core responsibilities.

Category X — External Systems Relationships

The department has several written memorandums of agreement (MOA) and memorandums of understanding (MOU) in place, including those with the United States Coast Guard and the State of Hawaii Aircraft Firefighting. The department also has several 'hand shake' agreements which need to be written, approved and signed, such as for leased land for several facilities.

The department's technical rescue team operates as an integral part of an urban search and rescue team, ocean rescue, dive, and trench rescue services as needed or required within other boundaries on the islands. The hazardous materials response team provides services within the county, and it is available to deploy upon request from the state or airport through agreements.

The county is geographically located in the center of the Hawaiian Islands in the Pacific Ocean. Accurate and up-to-date agreements with external systems such as the United States Coast Guard and the State of Hawaii are crucial to continuing to provide proper emergency services.

One criterion statement and one core competency were not met: criterion statement 10A and core competency 10A.1. Additional detail related to the team's findings is located below in its

observations about the ability of the department to meet the criterion statement and core competency expectations.

The department does not have a formal process in place for revising interagency agreements making it difficult to clearly define partnerships and to have clear direction for the provision of services. The lack of a formal process leaves policies and agreements in place which are expired or no longer support the agency's business model. It is recommended that the agency develop a formal process for revising policies and agreements.

The agency's operations and planning efforts include relationships with external agencies and operational systems that affect or may influence the agency's mission, operations, or cost effectiveness. However, the lack of current formal agreements is problematic.

Core competency 10A.1¹⁶ was not met. The department is dispatched by a combined communications system which is managed by the Maui County Police Department. This system has been in place for a number of years and there has never been an agreement between the department and the communications center, with an agreement there would be identified expectations for call processing and the accurate tracking of response apparatus during emergency situations. The lack of this agreement has led to response time tracking to be in need of improvements to meet the department's standards of cover (SOC).

It is recommended the department pursue a formal agreement with the dispatch center to include expectations for dispatching and tracking of units.

There is not a clear process in place for developing, implementing, and revising interagency policies and agreements. The chief authorizes agreements, but there is no accountability for developing or implementing new agreements where and when needed. Accountability and timelines are not clearly defined and a full summary of all agreements is needed.

It is recommended the department establish a process to review, assess, and update and/or create memorandums of understanding (MOUs) and/or memorandums of agreement (MOAs) as appropriate.

There is no conflict resolution process identified in the existing MOUs and MOAs. It is recommended that a conflict resolution process be added into all existing and future memorandums of understanding (MOUs) and memorandums of agreement (MOAs).

The fire service agency has well-developed and functioning external agency agreements. The system is synergistic and is taking advantage of all operational and cost effective benefits that may be derived from external agency agreements.

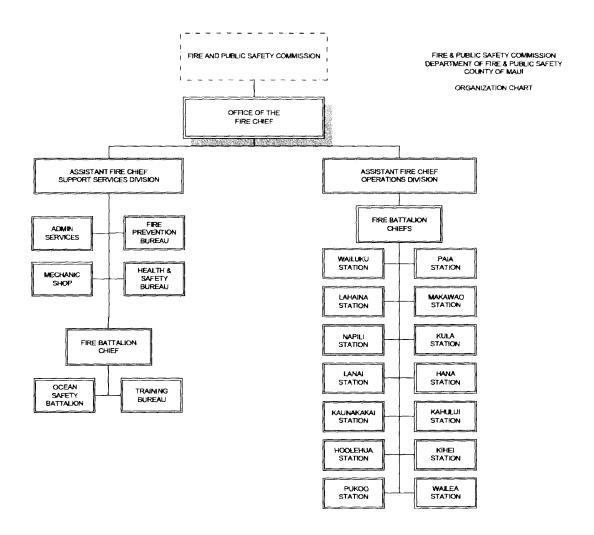
The department does not review all agreements on an annual basis to ensure they continue to identify the current expected practices by all parties during a simultaneous response to a common emergency. Many of the department's agreements are not correctly documented; however, much of the related business and operations continue under verbal mutual agreements. A proper annual review would

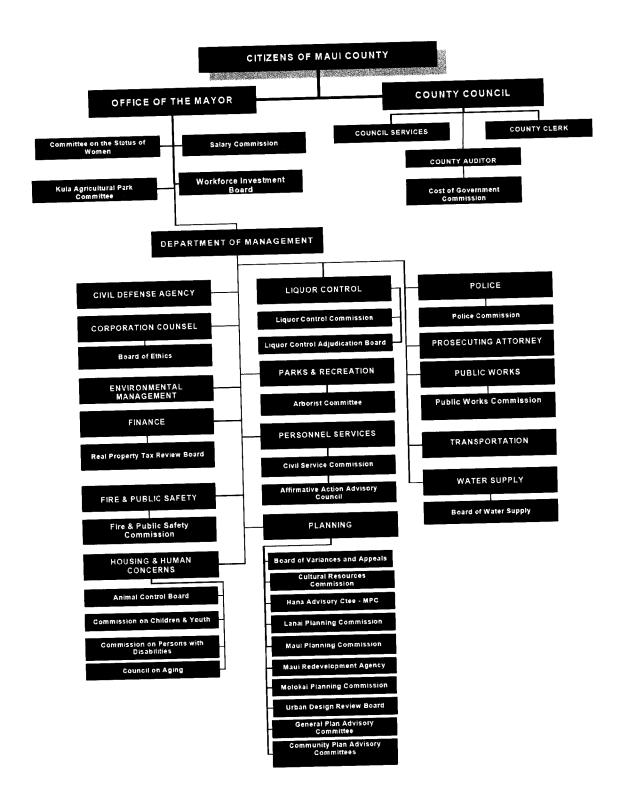
¹⁶ 10A.1 The agency develops and maintains outside relationships that support its mission, operations, or cost effectiveness.

ensure that the agreements support the evolving operational and fiscal objectives of both the department and the concerned party. County policy requires all new agreements or amendments be reviewed and approved by its legal branch. These requirements have slowed the process for revising and updating new agreements with external agencies.

It is recommended the department develop a plan to ensure all agreements are reviewed on an annual basis and updated as needed.

ORGANIZATION CHART





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