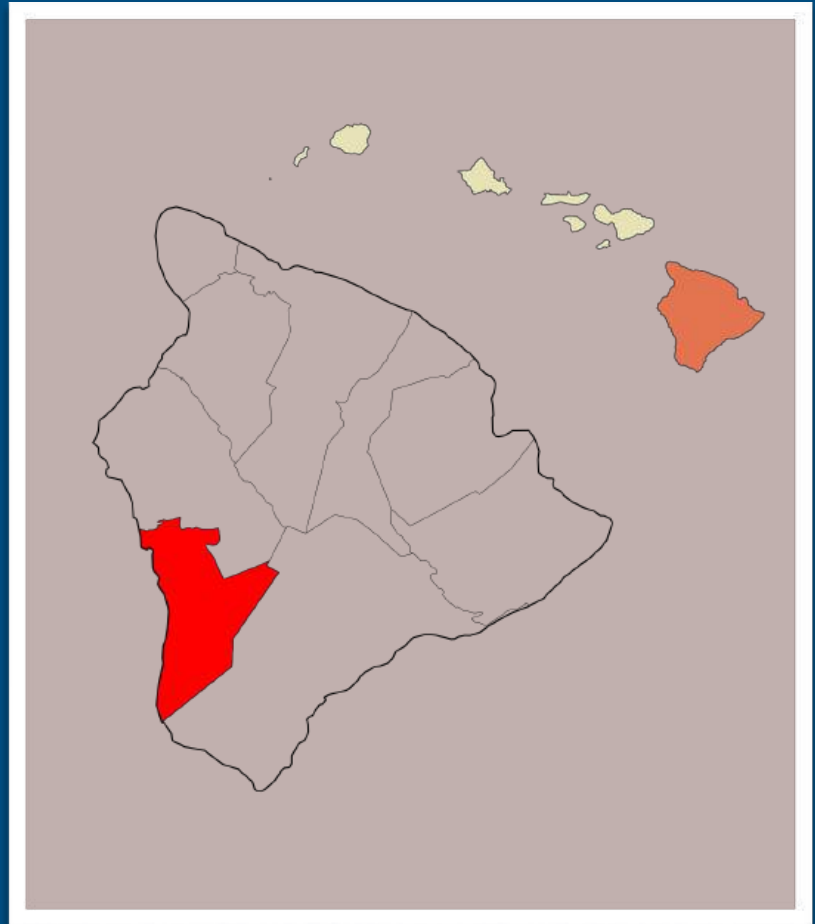

SOUTH KONA COMMUNITY WILDFIRE PROTECTION PLAN

ISLAND OF HAWAI'I, HAWAI'I



ORIGINAL PLAN: 2010 UPDATED: 2015

This document represents the collective efforts of community members, agencies, and stakeholders to reduce wildfire risks and enhance resilience. Originally developed in 2010, the 2015 update included community and agency meetings throughout the region to identify and document an updated set of hazards, concerns, and recommended actions. The CWPP established a comprehensive framework for wildfire hazard assessment, community values, and recommended strategies for risk reduction.

PRIORITY PROJECTS UPDATED: 2024

In 2024, the plan was updated to include a detailed list of priority projects, making it a dynamic, living plan that evolves with the community's needs and priorities. The CWPP remains a cornerstone for wildfire risk mitigation, project planning, and funding, ensuring a collaborative and proactive approach to wildfire resilience.



Coordinated and developed by Hawai'i Wildfire Management Organization, in partnership with Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife. Funded by the USDA Forest Service.

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PLEASE READ BEFORE CONTINUING

Introduction to the Community Wildfire Protection Plan (CWPP) and Updates

The Community Wildfire Protection Plan (CWPP) is a vital tool for guiding communities, agencies, and stakeholders in reducing wildfire risks and enhancing resilience across our landscapes. Since its inception, the CWPP has provided a comprehensive foundation for understanding wildfire hazards, the characteristics of our landscapes, the values at risk, and the community and agency concerns that shape our wildfire mitigation strategies. The CWPP has always been designed to serve as a dynamic, living document that remains relevant and actionable over time.

Foundational Elements of the CWPP

The foundational elements of the CWPP were established during the original completion of the CWPP document. These remain steadfast and include:

- Detailed assessments of wildfire hazards and risks.
- Descriptions of the local and regional landscape.
- Identification of community values at risk, including natural resources, homes, infrastructure, and cultural heritage.
- Documentation of community and agency concerns regarding wildfire impacts.
- General recommended next steps and strategies to address wildfire risk.

When there are significant changes in risk, values, emergency operations, or similar, an entirely new CWPP document will be developed. Until such time, these core components ensure that the CWPP continues to provide a reliable, broad-based framework for understanding and addressing wildfire challenges.

The Evolution of the CWPP: Annual Priority Projects and Actions Updates

To ensure that the CWPP remains an actively utilized tool for project planning and funding, we have adopted a system of annual updates to the appendix. These updates focus specifically on identifying and prioritizing shovel-ready projects that align with the overarching goals of the CWPP. This approach allows us to:

- Keep the CWPP alive and relevant by incorporating evolving community needs and priorities.
- Enhance its utility as a foundational resource for securing funding and implementing wildfire mitigation projects.
- Ensure that project lists remain current, specific, and actionable.

While the foundational elements of the CWPP persist as written, the priority projects and actions list naturally shift and evolve over time. This flexibility ensures that the CWPP remains both a strategic guide and a practical resource for action.

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Mutual Agreement Signature Page

The following three entities mutually agree to the final contents of this Community Wildfire Protection Plan and the subsequent List of Priority Projects and Actions: State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife; Hawaii Fire Department; and Hawaii County Civil Defense Agency.

This plan:

- Was collaboratively developed by agencies, entities, community members, and individuals with interest or jurisdiction within the CWPP area.
- Describes wildfire hazards in the natural and built environment.
- Provides the concerns, recommended actions, and priorities of those who live and work in the area to better reduce wildfire threats, mitigate hazards, improve public safety, and protect natural resources from the impacts of wildfire.
- Is written to appropriately begin and inform wildfire mitigation action planning at the local level, and is not regulatory or binding.
- Includes both foundational information and updated lists of projects.

Pursuant to the 2003 Healthy Forest Restoration Act (HFRA), the following signatures represent mutual agreement of the contents of this CWPP.

Acknowledgment of the 2024 Update

This 2024 update represents the latest step in the CWPP's evolution. It includes a brand-new list of priority projects and actions, each identified with detailed specifications to guide implementation.

By signing this document, we affirm our collective commitment to the CWPP's foundational principles and to the ongoing process of refining and advancing our wildfire mitigation project priorities and implementation efforts.



Michael J. Walker, State Fire Protection Forester
Department of Land and Natural Resources
Division of Forestry and Wildlife

12/19/2024

Date



Kazuo S.K.L. Todd, Fire Chief
County of Hawaii
Hawaii Fire Department

01/13/2025

Date



Talmadge Magno, Administrator
Hawaii County Civil Defense Agency

12/19/2024

Date

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INTRODUCTION

Goals and Objectives of the South Kona CWPP

This Community Wildfire Protection Plan (CWPP) was developed by the Hawaii Wildfire Management Organization (HWMO) with guidance and support from South Kona community members, decision makers, and local/state agencies concerned about fire issues in South Kona. The Hawai'i County Fire Department, the Hawai'i County Civil Defense, the National Park Service, and the Hawaii Department of Land and Natural Resources were primary partners in developing this plan.

The goals and objectives of this plan follow the intent and requirements of the *Healthy Forests Restoration Act (HFRA) – HR 1904*, which describes a CWPP as a fire mitigation and planning tool for an at-risk community that:

- A) Is developed within the context of the collaborative agreements and the guidance established by the Wildland Fire Leadership Council and agreed to by the applicable local government, local fire department, and State Agency responsible for forest management, in consultation with interested parties and the Federal land management agencies managing land in the vicinity of the at-risk community.
- B) Identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure.
- C) Recommends measures to reduce structural ignitability throughout the at-risk community.ⁱ

This plan addresses elements of fire protection, hazard assessment, wildfire mitigation priorities, and community outreach and education. The process used to develop this plan engaged a diversity of agencies and individuals concerned with the at-risk area, following the guidelines and requirements of federal grants programs such as the Federal Emergency Management Agency (FEMA) Pre-Disaster Mitigation program and the National Fire Plan (NFP).

Planning Area Boundaries

The South Kona CWPP covers an area approximate to the Hawaii County district boundaries of South Kona, stretching for nearly 30 miles between the North Kona district in the north and the Ka'u district in the south. The planning area is bordered on the west by the coastline and on the east by the higher elevations of Hualalai and Mauna Loa where the density of fuels is less. The CWPP planning boundaries are the same as the wildland-urban interface (WUI) at-risk areas, which include surrounding lands to ensure adequate protection of WUI areas. Parts of the South Kona CWPP boundaries coincide with boundaries of other CWPP-covered areas: Hawaii Volcanoes National Park and Ocean View, Hawaii. See map below for planning area boundaries.

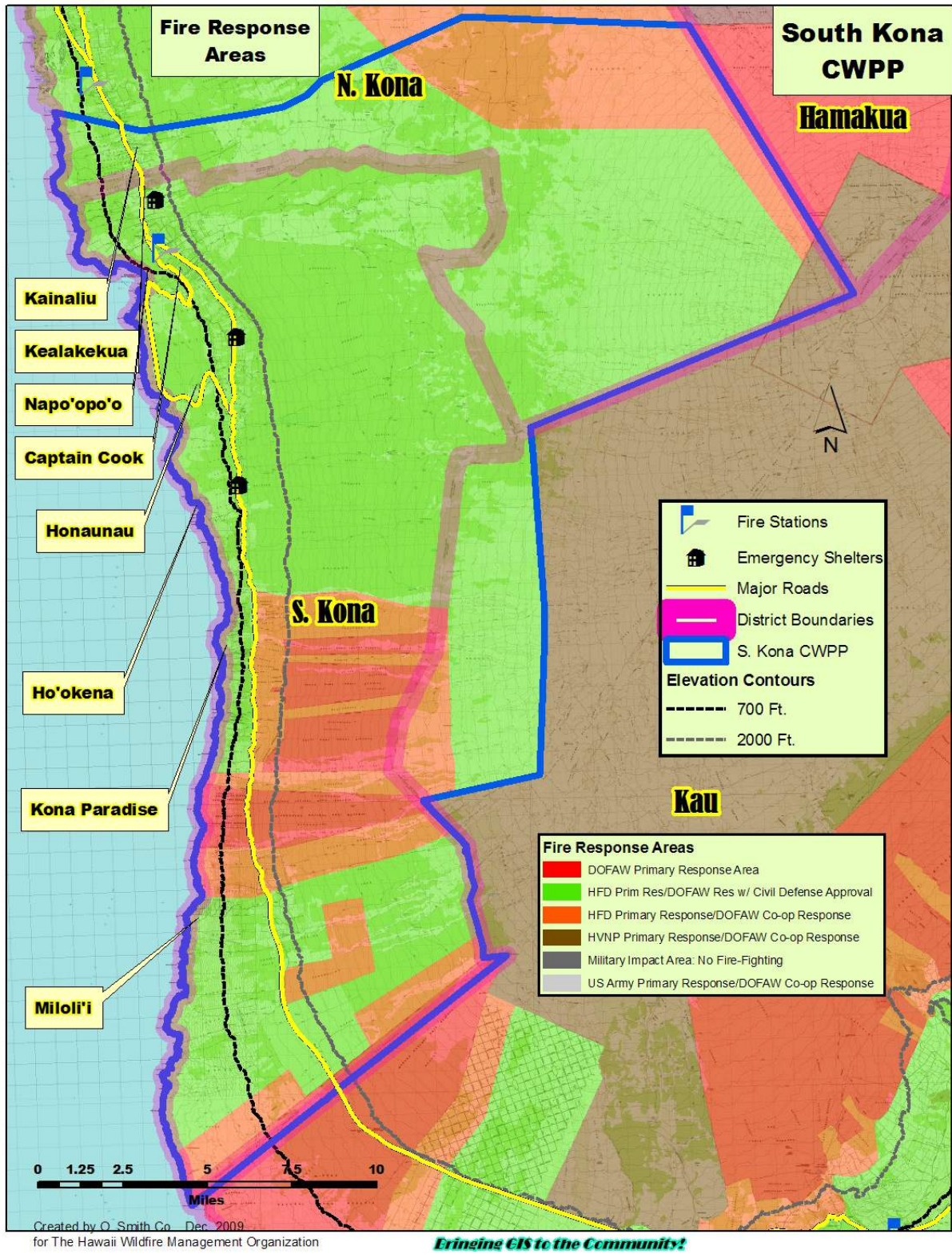


Figure 1. CWPP Boundary Map.

BACKGROUND

South Kona Community and Landscape

South Kona stretches for approximately 30 miles between Kailua-Kona and Ka'u, on the leeward side of Hawaii Island. The South Kona area is home to almost 11,000 people (2000 U.S. Census Bureau) and includes Kealahou, Captain Cook, Honaunau, Napo'opo'o, Ke'ei, Miloli'i, Ho'okena, Papa Bay, Kona Paradise, and other smaller communities and farm areas. Steep slopes and rough terrain dominate most of South Kona, with residential areas, businesses, community infrastructure, cultural resources, and farms spread throughout the district and ranging from sea level to upland areas. The region is primarily rural with low-density development. Over half of these residents depend on rain catchment and hauling or delivery of potable water.

Environment and Natural Resourcesⁱⁱ

South Kona is situated along the western slopes of both Hualalai and Mauna Loa volcanoes, and is geologically young. Elevations range from sea level to over 13,000 feet at the top of Mauna Loa. In South Kona, the land is particularly steep. Individual sections, some fairly large in area, have slopes greater than 10%,

The South Kona region is unique due to the wide range of climatic conditions over a relatively small distance, providing diverse physical environments that vary considerably between the coastline and high elevations. Lava fields with mixed shrubs and grasses characterize the low-lying coastal areas. The prime agricultural belt lies between 700 – 2,000 ft elevation. Upland forests and high elevation grasslands are found above Mamalahoa Highway.

South Kona is protected from the prevailing northeast trade winds due to its position on the leeward slopes of Mauna Loa and Hualalai. It is more greatly affected by diurnal thermal winds, which are experienced as an alternating land-sea system of air circulation resulting from the differential heating of the land and ocean. On-shore breezes prevail in the morning and early afternoon, while offshore breezes develop in the late afternoon and evening. The average rainfall varies from less than 30 inches per year along the coast to more than 100 inches on the slopes around and directly above the prime agricultural belt (700-2,000 ft), decreasing dramatically to 50 inches at the 5,000 ft elevation level.

Lower elevation temperatures range between 70 F in the winter to the 90 F in the summer. Inland higher elevation areas experience cooler trends than the coast, with temperatures decreasing with elevation.

Differences in climate, topography, and soils have resulted in unique natural ecosystems. The classification of terrestrial ecosystems is based on the elevation at which they occur. Before human settlement the North and South Kona districts were made up of the following ecosystems:

- Subalpine forest, woodland, and shrub land
- Montane dry and mesic forest and woodland
- Wet forest and woodland
- Lowland and dry and mesic forest, woodland, and shrub land
- Lowland dry shrub land and grassland

In the past several hundred years of human habitation, pristine native ecosystems have diminished. Human activity and introduction of non-native plants and animals have displaced many of the historic plant and animal communities. Today, invasive grasses and shrubs and human-caused fire starts contribute to a cycle of hazardous wildfire conditions and increased post-burn conversion to non-native fire-promoting species. Despite the widespread alteration of native ecosystems, a few areas in South Kona remain as habitat for rare and endangered species and are protected. Upland areas are less disturbed and contain abundant 'ohia and koa forests.

Natural Water Resources

Water resources in the Kona area are associated with groundwater reserves. The North and South Kona districts overlie the Hualalai and Southwest Mauna Loa Aquifers. There are no perennial streams in the Kona area. However, several well defined drainage channels or watercourses are found within the high rainfall areas situated on the slopes of Mauna Loa and Hualalai. Kona streams are significantly affected by the seasonal rainfall pattern. There are multiple watersheds and ahupua'a within the South Kona District.

Ho'okena is the southernmost region of South Kona served by municipal water. Residents south of Ho'okena depend on rain catchment and hauling for potable water.

Population and Land Use

South Kona has limited slow growth, with greater population stability and a higher rate of homeownership than its neighbor district of North Kona. According to the 2000 U.S. Census Bureau, moderate growth in both population and housing construction has occurred in the district of South Kona.

Seventy-six percent of South Kona land use is designated as Agricultural, 8.3 % is zoned Open, and 0.25 % is zoned for single-family residence. There is no land set aside specifically for industrial uses in South Kona, and only 15 acres are zoned as resort. Many of the industrial activities are located on Agricultural zoned lands and approved through the issuance of Special Permits. With the majority of land use being agricultural, many residents are farmers growing coffee, macadamia nuts, avocado, and a variety of fruits and vegetables. Cattle ranching is also a significant economic activity, with several active ranches in the region. The region has several parks and natural area reserves managed by the State and The Nature Conservancy.

South Kona is home to the Kona Coffee Belt, located above Kealahou. The coffee belt is a narrow belt of land approximately 2 miles wide running parallel to the Kona coast from 700 feet elevation to 2,000-foot elevation. South Kona produces much of the island's coffee crop. There are approximately 650 farms cultivating coffee on the western slopes of Mauna Loa and Hualalai mountains in the Kona district. Approximately, 3,500 acres of land is utilized for Kona coffee farming, producing about 3.8 million pounds a year, valued at about \$14 million (County of Hawaii, 2006).

Macadamia nuts are also an important agricultural product to South Kona. The district is home to MacFarms of Hawaii and Kapua Orchards, the primary producers of macadamia nuts. During the 2003 and 2004 growing season, Hawaii produced 53 million pounds of macadamia nuts with

a significant amount coming from South Kona (Kona-Kohala Chamber of Commerce, 2005). Other agricultural activities such as fruits, plants and flowers, and specialty and diversified food crops are also expanding the agricultural base in Kona.

Additional South Kona activities include food packing and processing, and ancillary agricultural services. Other service related industrial uses such as warehousing, garages and auto body shops are located in clusters along Mamalahoa Highway. Because of its topographic condition, however, level land necessary for development in South Kona is limited in the mauka (upland) areas.

Wildfire History in South Kona

Steep slopes, rough terrain, and a prevalence of fire-promoting fuels characterize the South Kona landscape. This, coupled with warm weather, recurring drought conditions, and a history of human-caused fire starts puts South Kona at risk of wildfire. The area is extremely isolated and the closest water source can be up to 20 miles away. Catchment systems are the only source of water between Hookeena and Waiohinu in the Ka'u district. The distances to water resources and the high cost of hauled water are problematic for residents, business owners, and farmers, and hinder fire suppression capabilities in the area.

Local fire fighting agency records document numerous fire starts along the main highway that spread through unmanaged fuels in the untended lands along the road and between homes. This is a fire issue because houses tend to be spread out, allowing significant fire spread through the areas in between roads and buildings. Structural fires often occur in old coffee plantation homes from candles and deteriorating home electrical components, also spreading through the patchwork of unmanaged vegetation. While the bulk of wildfires begin in the wildland-urban interface (WUI) areas, occasional but devastating fires occur in the upland forested and grassland regions. These fires threaten nearby community infrastructure, neighborhoods, grazing lands, and valuable native flora and fauna.

South Kona was recently reminded that upland wildfire is a significant threat. It took weeks for firefighters to extinguish the 1800 acre wildfire which began at Kealakekua Ranch on December 27, 2009. Grasses ignited by lightning were fueled by mature 'ohi'a and koa trees, hard woods which can burn for weeks. These long burning fuels and rhizomous



Photo 1. 2009-2010 Upland fire in South Kona. Photo Courtesy: Jody Fergerstrom.

grasses that can smolder and carry fire underground made the fire extremely challenging to put out. The rugged terrain at the 4,400-foot elevation where the fire broke out, along with lack of access to water, abundant fuel sources, dry conditions, and warm weather causing smoldering to reignite all combined to create difficult and hazardous conditions for the dozens of firefighter who worked 24-hour shifts to battle the blaze and protect the community. Smoke from the fire, trapped by Kona's temperature inversion layer, created health hazards for fire fighters and the entire South Kona

community.

A fire history map of South Kona was created that documents Hawaii County Fire Department's response to fires over 5 acres between January 1998 and January 2010. Records of all County response fires since 1998 in South Kona can be found in the appendix. Additional upland fires have taken place on private lands, with significant community-wide effects. See the fire history map below. Note the high frequency of fires near roads and neighborhoods on the WUI boundaries.

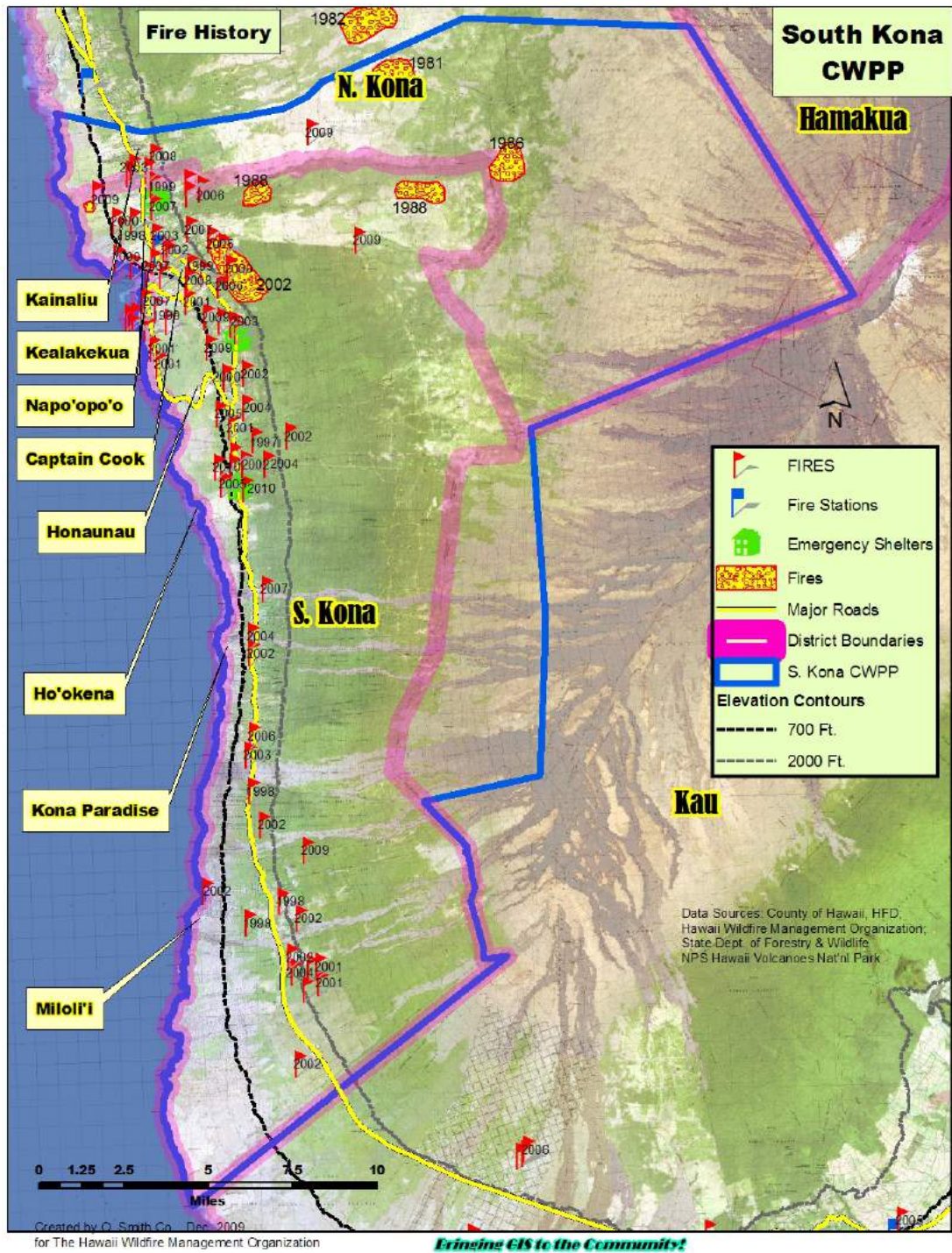


Figure 2. Fire History Map.

EMERGENCY MANAGEMENT

Fire Suppression Capabilities and Resourcesⁱⁱⁱ

Initial response to most fire, medical, and associated emergencies is the responsibility of the Hawaii County Fire Department. State Department of Land and Natural Resources (DLNR), Federal, and landowner crews provide additional wildland fire fighting assistance.

Although the County Fire Department has the following equipment, its resources are spread across the entire island of Hawai'i. All of the equipment is not available for use in one specific district at one time due to geographic distance.

For wildfire and rural use, the County Fire Department is equipped with ten water tenders deployed around the island, which have a total capacity of 13,850 gallons. In addition, they have acquired two special "brush" trucks for wildfire use. They operate a rescue helicopter and an ambulance helicopter that can drop water when necessary. When more air support is needed, small and medium size private helicopters are hired. The National Guard maintains five large helicopters (Blackhawks) in Hilo, which have water bucket capabilities and have occasionally been hired by the State. In addition to DLNR support, federal firefighters may be available from their station in the National Parks and the Army's Pohakuloa Training Area.

Training Resources and Needs

Recommendations for additional training for firefighters include:

- Basic Wildland Fire Training and Refresher Courses
- Initial Attack Incident Command
- Basic Fire Behavior
- Helicopter Operations
- Strategy and Tactics (S-336)
- Basic and intermediate Incident Command System (ICS)
- Wildland Fire Chainsaws (S-212)

Emergency Management Documents and Plans

The CWPP is non-regulatory and cooperative in nature. The plan provides (1) a foundation for increased communication, coordination and collaboration among agencies and the public, (2) identification and prioritization of areas for hazardous fuel reduction projects and wildfire mitigation actions, and (3) assistance meeting federal and state planning requirements and qualifying for assistance programs^{iv}.

The CWPP works in conjunction with other County and State plans and programs including but not limited to:

County of Hawaii:

Kona Community Development Plan.¹

Hawaii County Multi-Hazard Mitigation Plan.²

County of Hawaii Drought Mitigation Strategies^v

Ka'u to South Kona Water Master Plan^{vi}

State of Hawaii:

State Drought Plan and the County Drought Mitigation Strategies^{vii}

State of Hawaii Multi-Hazard Mitigation Plan^{viii}

Multiple-Agency Agreements

The federal, state, and local fire agencies of the Big Island have organized into the Big Island Wildfire Coordinating Group (BIWCG). Members include:

- National Park Service
- U.S. Fish and Wildlife Service
- U.S. Army,
- Hawai`i County Civil Defense
- Hawai`i Fire Department
- Department of Transportation - Airports Division, Hawaii District.
- Hawaii Department of Land and Natural Resources (DLNR) – Division of Forestry and Wildlife

BIWCG was established to further inter-agency cooperation, communications and coordination, and to implement directions and standards for incident management activities. BIWCG coordinates the programs of the participating wildland fire agencies on the big island of Hawai'i and provides a forum for leadership, cooperation and the exchange of information^{ix}. It also improves procedures to rapidly provide the most effective response to wildfires in the island. In coordination with Civil Defense, drought and other fire-hazard conditions are constantly monitored and actions such as burning bans and closures are instituted when needed. The public is informed of these restrictions by radio announcements and newspaper notices.²

The agencies represented in BIWCG have participated in the South Kona CWPP as direct partners and/or as Board members of the Hawaii Wildfire Management Organization.

Evacuation Protocols and Needs

Evacuation protocols for neighborhoods and areas in South Kona have been determined for natural hazards such as tsunamis, and can be found in the documents listed above. However, fire safety zones for all neighborhoods and areas of South Kona are yet to be determined, and are a priority action determined by the community as part of this CWPP process.

Next Steps- Needs and Recommendations

Priority next steps recommended by the involved agencies regarding wildfire are:

- Increase fire fighting resources
- Develop a Type III Team for multi-agency wildfire/fire management
- Develop interagency training program
- Implement an interagency Fire Danger Rating System

PLANNING PROCESS

CWPP Process and Methods

The process of developing a CWPP helps to clarify and refine priorities for the protection of life, property, and critical infrastructure in the South Kona wildland-urban interface areas. Local residents, landowners, fire suppression agencies, and community leaders have participated in valuable discussions regarding wildfire history, resources at risk, areas of concern, and priority mitigation actions.

The methods used to create this CWPP followed the guidelines established for the HFRA, which requires the following actions during the planning process:

- Step 1- Convene Decision Makers
- Step 2- Involve Federal Agencies
- Step 3a- Involve State and Local Agencies
- Step 3b- Engage Interested parties

Decision Makers

The decision-makers for this Community Wildfire Protection Plan are represented in the following table:

Requirement	Agency or Organization	Name
Local Fire Chief	Hawai'i County Fire Department	Darryl Oliveira
Local/County Government	Hawai'i County Civil Defense Department	Quince Mento
State Forestry Agency	Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife	Paul Conry Wayne Ching

Federal Agencies

The representatives of the federal agencies involved in managing the land and fires in the vicinity of the South Kona area are:

Agency	Representative(s)
National Park Service	Joe Molhoek, Fire Management Officer
US Army	Eric Moller, USAG-HI, Deputy Fire Chief
US Fish and Wildlife Service	Dawn Greenlee, Fish and Wildlife Biologist

State and Local Agencies

The representatives of the state/local agencies that have jurisdictional responsibilities in the vicinity of the South Kona areas are:

Agency	Representative(s)
Hawai'i County Fire Department	Darryl Oliveira, Fire Chief Dennis Iyo, Battalion Chief Marshall Luke, Battalion Chief Mike Tomich, FEO
Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife	Wayne Ching, State Protection Forester Roger Imoto, Hawaii Island Forestry & Wildlife Manager Jay Hatayama, Protection Forester

Interested Parties

The parties from our community that have shown interest in forest/fire management and have been involved in this CWPP are:

Interested Parties	Affiliation (if any)
Kona Community Development Plan, Action Committee	Hawaii County
Large Landowners	Kamehameha Schools, Hokukano and Kealakeua Ranches, The Nature Conservancy TNC
Private Citizens	
Local Associations and Organizations	Hawaii Wildfire Management Organization, Big Island Wildfire Coordinating Group
Public At Large	

Meetings were held with agency representatives, community members, and interested parties at:

- Hawaii Wildfire Management Organization Office in Kamuela, Hawaii on September 3, 2009, October 1, 2009, January 7, 2010, February 4, 2010, and March 4, 2010.
- Keauhou Fire Station on February 19, 2010.
- Hawaii County Fire Department Dispatch Office in Hilo, Hawaii on February 23, 2010.
- County Planning Department Community Meeting Room on February 24, 2010.
- Konawaena Elementary School on March 11, 2010.



Photo 2. HWMO, local firefighters, and other interested parties review fire history map and discuss local wildfire issues at the Keauhou Fire Station. *Photo Courtesy: HWMO.*



Photo 3. Miles Nakahara of HWMO, explains the CWPP process to South Kona residents and collects public input. *Photo Courtesy: HWMO.*

Public Service announcements regarding wildfire risk and the CWPP were published in the West Hawaii Today newspaper and Hawaii 24/7 news website. Public comments were accepted beginning February 4, 2010.

Valuable public input regarding community concerns and priority actions was acquired on the March 11, 2010 meeting at Konawaena Elementary School. The meeting was attended by Community Development Plan committee members, homeowners association members, County Fire Department representatives, local firefighters, and South Kona area residents. Attendees of the meeting enthusiastically supported the CWPP plan and its objectives, noting that South Kona residents are very concerned with local wildfire issues and eager to begin reducing the risk of wildfire.

HWMO intends to post the plan on its website for public use.

WILDFIRE RISK ASSESSMENT

Purpose and Methods

The purpose of the community risk assessment is to:

1. Provide site-specific information to the community to promote wildfire awareness;
2. Help identify and prioritize areas for treatment; and
3. Determine the highest priority uses for available financial and human resources.

The methods for the community wildfire risk assessment followed the guidelines established for the HFRA, which requires the following actions:

- Step 4- Establish a Community Base Map
- Step 5a- Develop a Community Risk Assessment
- Step 5b- Identify Overall Community Priorities

The wildfire risk assessment follows the guidelines and requirements of the Federal Emergency Management Agency (FEMA) Pre-Disaster Mitigation program and the National Fire Plan (NFP).

Community Base Map

Using GIS technology and local expertise, HWMO has developed a base map of the community and adjacent landscapes of interest. The map is a visual aid from which community members and agencies identified values and resources at risk in the South Kona Area.

After considering the location of the inhabited areas, the critical human infrastructure, the areas of community importance, and the risk of wildfire, the community identified a wildland-urban interface (WUI) zone around community assets.



Photo 4. Local firefighters discuss hazards and fire history patterns revealed through mapping. Photo Courtesy: HWMO.



Photo 5. Smoke from upland fires spreads to lowland areas of South Kona via wind. Photo Courtesy: Jesse Acosta, DLNR-DOFAW.

The community and local agencies determined that areas upslope from the major highway must be included in the CWPP boundaries. These upslope areas have access roads (multiple ignition points) and include older settlement areas, historical buildings, irreplaceable natural and cultural resources. Also, the smoke from fires in this upland area creates safety (visibility) and health

hazards because the prevailing winds move the smoke into the lower elevations. Wildfires in these higher elevations also create post-fire flooding and erosion conditions that threaten communities down slope. In many cases, fires 8-15 miles away from the main highway have put community resources at risk, as witnessed in the recent South Kona fires (2009 Hokukeno and Kealakekua fires). See Community Base Map below.

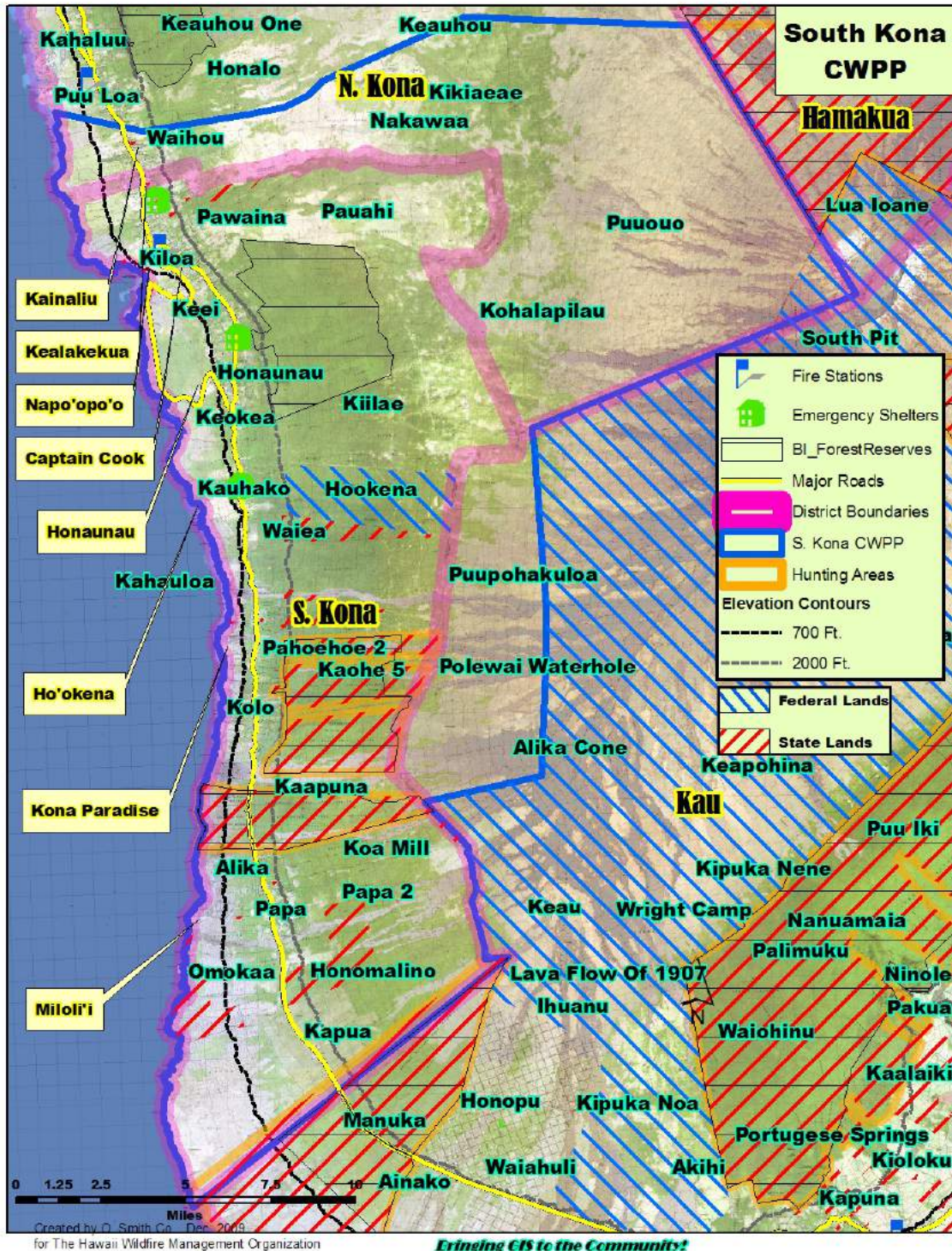


Figure 3. Community Base Map.

Community Risk Assessment

As designated on the Community Bas Map (Figure 3 above), the following table lists the community assets, resources, and values at risk. With fire fighting agencies and landowners, HWMO assessed these resources for relative risk of wildfire and assigned a hazard ranking of low (LOW), moderate (MOD), or High (HIGH) for the following categories:

- *Fuel Hazards* – An evaluation of vegetation conditions within the community and on adjacent lands.
- *Risk of Wildfire Occurrence* – An evaluation of the probability of fire ignition within the community and surrounding lands, based on fuels, weather, topography, likelihood of ignition.
- *Structural Ignitability*- An evaluation of the vulnerability of structures within the community to ignition from firebrands, radiation, and convection.

The fourth category, *Local Preparedness and Fire Suppression Capacity*, describes the capacity of fire suppression resources, proximity to water resources, accessibility and proximity to adequate roads, defensible space, etc. Capacity is assigned a ranking of poor (POOR), moderate (MOD), or excellent (EXCELLENT). The ranking for capacity is inversely proportional to hazard, e.g. poor preparedness and suppression capacity creates a high hazard.

Community Resource, Structure, or Value at Risk	RANKED BY HAZARD			RANKED BY CAPACITY	OVERALL RISK
	Fuel Hazard	Risk of Wildfire Occurrence	Structural Ignitability	Preparedness & Suppression Capacity	
Homes at lower elevation areas	MOD-HIGH	MOD	HIGH	POOR	MOD-HIGH
Homes at mid-elevation (agricultural belt) areas	MOD	MOD	HIGH	MOD	MOD
Homes and structures at higher elevation areas	HIGH	*	HIGH	POOR (no water, limited access)	MOD-HIGH
Businesses including historic buildings along Mamalahoa Hwy and associated economic, scenic, and historical values	LOW-MOD	LOW	HIGH	MOD	MOD
Historical sites throughout South Kona and associated cultural values	MOD-HIGH	MOD-HIGH	MOD	MOD	MOD
Agricultural grazing lands and associated cultural, economic, and scenic values	*	MOD-HIGH	MOD	POOR-MOD (no water, limited access)	MOD-HIGH
Farms- Coffee, Mac Nuts, etc. and associated cultural, economic, and scenic values	LOW	LOW	MOD	POOR-MOD (no water, limited access)	LOW-MOD
Mauka forested lands, parks, and reserves, and associated cultural, scenic, recreational, and environmental values	*	MOD-HIGH	MOD	POOR (no water, limited access, difficult terrain)	HIGH

Community Resource, Structure, or Value at Risk	RANKED BY HAZARD			RANKED BY CAPACITY	OVERALL RISK
	Fuel Hazard	Risk of Wildfire Occurrence	Structural Ignitability	Preparedness & Suppression Capacity	
Coastal areas and parks, and associated cultural, scenic, recreational, and environmental values	LOW-MOD	MOD	MOD	MOD	MOD
Schools (Konawaena Elementary, Konawaena Middle School, Konawaena High School, Honaunau Elementary, Ho'okena Elementary, Honaunau ECE)	LOW-MOD	LOW-MOD	MOD	MOD	LOW-MOD
Kona Community Hospital	LOW-MOD	LOW-MOD	MOD	MOD	LOW-MOD

* Fuels and risk are dependent on 1) the season, and 2) fuels management practices, i.e. grazing, mechanical/chemical treatments, etc. Fuels and risk are LOW- MOD if fuels are properly managed and it is a wet year; fuels and risk are HIGH if fuels are not managed and it is a dry year.

Communities at Risk from Wildfires

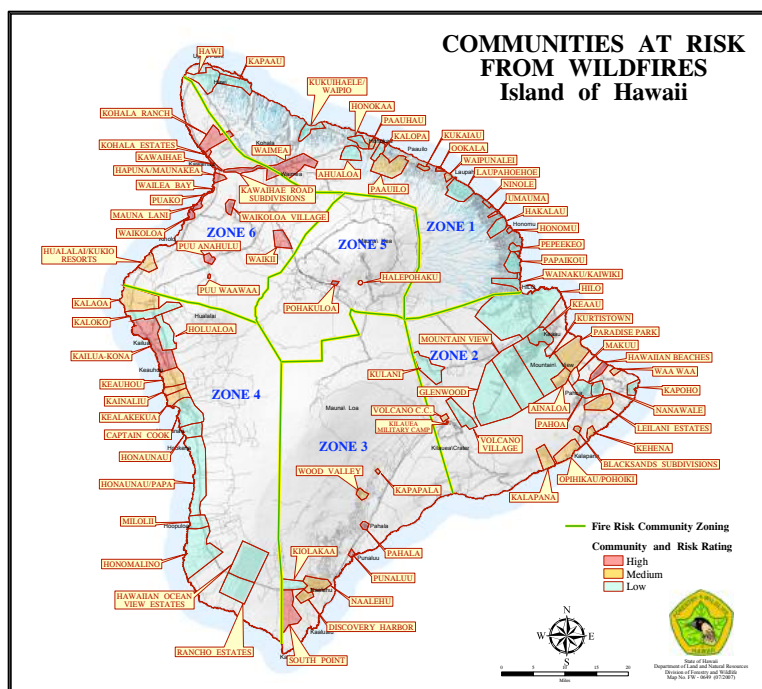


Figure 4. DOFAW Communities at Risk From Wildfires Map, 2005.

The delineation of areas and resources at risk in South Kona builds on the *Communities at Risk from Wildfires, Island of Hawaii* assessment, mapped in 2005 by the Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW), (Figure 4, left). At that time, only the communities from Keauhou to Kealahou received an elevated community risk rating (ranked in 2005 as medium risk). Updated hazard rankings for South Kona (table above) and fire history (Figure 2) demonstrate elevated risk to a variety of community resources, structures, and values throughout the entire South Kona area. Community priorities are based on the updated risk assessment, and address threatened

resources according to overall risk ranking rather than by specific towns or neighborhoods.

Overall Community Priorities

Community value and cultural value were determined for each community resource, structure, or value at risk. The following table demonstrates the value of each resource to the community, and its priority level for mitigation/protection based on its value and overall risk of wildfire.

Community Resource, Structure, or Value at Risk	Overall Risk (from above)	Community Value	Cultural Value	Overall Priority
Homes at lower elevation areas	MOD-HIGH	HIGH	HIGH	HIGH
Homes at mid-elevation (agricultural belt) areas	MOD	HIGH	HIGH	HIGH
Homes and structures at higher elevation areas	MOD-HIGH	HIGH	HIGH	HIGH
Businesses including historic buildings along Mamalahoa Hwy	MOD	VERY HIGH	VERY HIGH	HIGH
Historical sites throughout South Kona	MOD	HIGH	VERY HIGH	HIGH
Agricultural grazing lands	MOD-HIGH	VERY HIGH	HIGH	HIGH
Farms	LOW-MOD	VERY HIGH	HIGH	HIGH
Mauka forested lands, parks, and reserves	HIGH	VERY HIGH	VERY HIGH	VERY HIGH
Coastal areas and parks	MOD	VERY HIGH	VERY HIGH	HIGH
Schools and Hospital	LOW-MOD	VERY HIGH	HIGH	HIGH

Community Concerns

In addition to prioritizing resources to protect, community and agency representatives developed a list of concerns regarding wildfire issues. They are listed below in order of priority:

1. Insufficient water infrastructure to adequately and quickly suppress wildfires, including dip tanks.
2. Inadequate fire suppression and support resources, such as rapid and on-site mapping capabilities and GPS technologies, vehicles, water tankers.
3. Regional and local planning and development standards do not require community and subdivision designs to consider and/or mitigate fire risk:
 - a. Design, materials, and placement of structures and landscaping promote/do not mitigate fire risk.
 - b. Roads and highways are not always constructed with wide shoulders, fire lanes, emergency ingress/egress, or fuel mitigation in mind.
4. Fuel loading along roadsides, in community open areas, around and between individual homes and farms.
5. Lack of public awareness of the wildfire threat, to include lack of appropriate awareness by elected officials, planning agencies, land managers, scientists, and homeowners regarding:

- a. Fire history and fire hazards.
 - b. Fire-mitigating landscaping techniques.
 - c. Fuels management tools and methods.
 - d. Common human-caused fire starts, such as roadside ignitions, fireworks, catalytic converters, and arsonists.
6. Need to increase/integrate communication (protocols, equipment, pre- and post- fire planning) between state, federal, and county agencies, particularly to maximize initial attack capabilities and to utilize specialized wildland expertise and training for wildfire situations.
 7. Need to reduce and/or control invasive species that possess inherent fire or ignition properties, e.g. ignite easily and/or carry fire easily.
 8. Arson- Not well known whether there is amnesty for reporting nor what civil liabilities and penalties exist for arsonists.
 9. Lack of emergency access staging areas and safety zones/areas within subdivisions for evacuation purposes.
 10. Inadequate community egress and firefighting vehicle ingress during a wildfire. Need to identify evacuation routes/roads within subdivisions.

HAZARD REDUCTION PRIORITIES

Purpose and Methods

Priority action items have been developed from a number of sources, including input from community and agency participants in the planning process, noted deficiencies in local firefighting capabilities, and issues identified through the risk assessment. These actions address the following goals:

1. Enhance wildfire response capabilities.
2. Reduce risk and hazards through pro-active wildfire mitigation, including:
 - Increasing stakeholder knowledge about wildfire risk through education and outreach.
 - Encouraging the treatment of structural ignitability.
 - Prioritizing fuel reduction projects.
 - Increasing opportunities for collaboration and coordination to implement wildfire mitigation projects.
3. Address the list of community concerns.

These priority action items follow the guidelines for HFRA, which requires:

- Step 6a- Community Hazard Reduction Priorities
 - Priority Actions (General)
 - Hazardous Fuels Reduction
- Step 6b- Recommendations to Reduce Structural Ignitability

Priority Actions for South Kona

Action items addressing wildfire issues are listed below, in order of priority:

1. Install pre-staged static water and helicopter dip tanks.
2. Acquire adequate resources for first responders:
 - a. Appropriate technology resources for mapping at each fire station and on-location.
 - b. Water tanker/tenders (minimum 2000-gallon tanker/tender with high wheelbase for off-highway capabilities).
3. Wise development in fire prone areas. Create development standards and implement community planning that requires the mitigation of wildfire risks at the regional, community/subdivision, roads/highways, and individual structure levels.
4. Reduce fuel load and/or appropriately convert fuels along road sides, in community open areas, around individual homes:
 - a. Appropriate conversion would include transition to vegetation with low ignition potential and low ability to carry fire, especially native plants. This can be accomplished through installing/ establishing living fuel breaks.
 - b. Reduction of fuels could be by carried out through managed grazing, mechanical reduction, prescribed fire, herbicide or combinations of all treatments.
 - c. Encourage/educate large landowners to reduce fuels on private property.
 - d. Identify opportunities to assist vulnerable populations (elderly, disabled) in creating defensible space around homes and property.

5. Continue fire prevention education and outreach, including arson prevention education:
 - a. Hold community workshops.
 - b. Implement the fire danger rating system.
 - c. Provide individual home and neighborhood assessments.
 - d. Increase public service announcements during high fire hazard periods.
 - e. Develop wildland fire materials for youth and implement educational programs in local schools.
6. Increase communication capabilities between state, federal, and county agencies, particularly to maximize initial attack capabilities in wildfire events:
 - a. Integrate current and future communication equipment utilized by federal, state, and county fire suppression personnel to increase effective firefighting response.
 - b. Develop protocols for multi-agency involvement to utilize available specialized wildland fire expertise and equipment/resources.
7. Reduce and/or control invasive species that increase fire risk and, where appropriate, convert to vegetation as described in priority number three.
8. Advocate for increased penalties for arson and some level of amnesty for reporting fire.
9. Develop emergency staging areas within communities and promote awareness of such areas within the community, including holding mock disaster drills.
10. Create/improve secondary access roads for those communities with only one means of ingress/egress; identify evacuation route roads within subdivisions, especially in neighborhoods where secondary access roads are not available.

Hazardous Fuels Reduction

A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure. Based on the fuel hazard ratings acquired during the hazard assessment, recommendations for the type and method of vegetative fuels reduction treatments for high fuel hazard areas are listed in this table.

Community Resource, Structure, or Value at Risk	Fuel Hazard Rating	Type of Treatment	Method of Treatment
Agricultural grazing lands	HIGH IF UNMANAGED	Mechanical	Continue properly managed grazing
Mauka forested lands, parks, and reserves, and	HIGH IF UNMANAGED	Mechanical, hand labor, chemical	Continue properly managed grazing, weed whip, mow, hand-pull, and herbicide where appropriate. Conduct post-fire restoration as appropriate.
Homes and structures at higher elevation areas	HIGH	Mechanical, hand labor, chemical, fuels conversion	Continue properly managed grazing, weed whip, mow, hand-pull, and herbicide where appropriate. Convert fuels to landscaping with drought-tolerant, fire-resistant plants.
Homes at lower elevation areas	MOD-HIGH	Mechanical, hand labor, chemical, fuels conversion	Weed whip, mow, hand-pull, and herbicide where appropriate. Convert fuels to drought-tolerant, fire-resistant plants.

Community Resource, Structure, or Value at Risk	Fuel Hazard Rating	Type of Treatment	Method of Treatment
Historical sites throughout South Kona	MOD-HIGH	Mechanical, hand labor, chemical, fuels conversion	Weed whip, mow, hand-pull, and herbicide where appropriate. Convert fuels to drought-tolerant, fire-resistant plants.
Roadsides	MOD-HIGH IF UNMANAGED	Mechanical, hand labor, chemical	Continue roadside treatment: mowing, herbicide spray, weed whip. Where appropriate convert fuels to fire-resistant plants that do not require little or no maintenance.

The photos below provide examples of hazardous fuels and wildfire risk in the South Kona area.



Photo 6. The wildland-urban interface in the coastal communities of South Kona has steep terrain, limited access for suppression, dry hazardous fuels, and little to no water resources. Wildfires can spread quickly, threatening lives and homes.



Photo 7. Unmanaged vegetation in between houses (pictured above) can carry wildfires rapidly through neighborhoods.

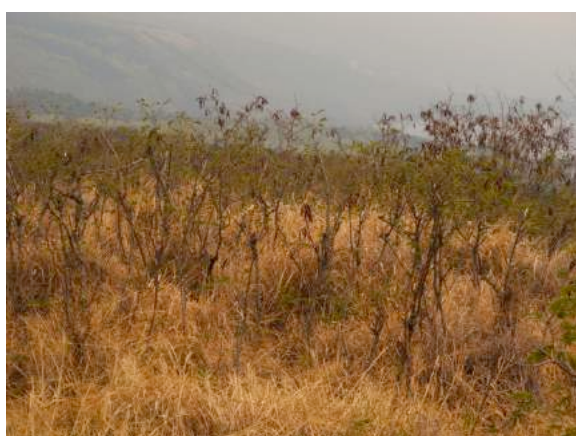


Photo 8. (Left) Low-elevation fuels in South Kona include grasses and shrubs. Seedpods from burning *Haole Koa* (in foreground) create flying embers that can ignite areas miles away. Note the hazy conditions in background, caused by smoke blown toward the coast from upland fires.



Photo 9. Green waste dumping along roadsides substantially increases fire hazard and likelihood of roadside ignition.



Photo 10. (Above) Evidence of fire in unmanaged roadside fuels is found throughout the South Kona area. Pictured above: Napo'opo'o Road.



Photo 11. (Above) Continued roadside fuels management on Highway 11 is a priority wildfire mitigation action for South Kona.



**Photo 12. (Left)
Photo 13. (Right)**

Reducing fuels around homes, in vacant lots, and along roadsides is also a priority action for wildfire mitigation in South Kona. Wildfire can spread easily and rapidly through unmanaged fire fuels on personal properties such as these.



Reducing Structural Ignitability

A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures. Individuals and community associations can reduce structural ignitability throughout their community by taking the following measures recommended by the Firewise program as outlined below. However, because the most endangered dryland forest in the world and critical habitat are in Kona, it is highly recommended that individuals and communities consult with dryland foresters or biologists before clearing trees and significant amounts of vegetation.

Recommendations for reducing structural ignitability:

- Create a buffer zone of defensible space around a property of at least 30 feet or to the property line if the house has less than 30 feet of yard. Remove flammable vegetation and combustible growth within 30 feet of the house.
- Prune tree limbs 6 – 10 feet above the ground.
- Space trees and shrubs ten feet apart in the yard.
- Make sure that plants closest to the house are low-lying.
- Whenever possible use fire-resistant Native Hawaiian species. Succulent plants are also good choices for converting fire fuels into Firewise landscaping.
- Routinely remove dead leaves and other organic matter from the yard.
- Sweep and/or clean gutters, eaves, and roofs regularly to prevent the build-up of leaves and other matter.
- Use fire-resistant building materials for the roof, siding, and decks, such as metal, stucco, tile, brick, and cement.
- Install firebrand-proof ceiling vents to prevent structure fires caused by wind-blown firebrands.

ACTION PLAN

The South Kona CWPP Action Plan follows the guidelines for HFRA:

- Step 7a- Develop and Action Plan
- Step 7b- Develop an Implementation and Maintenance (Assessment) Strategy
- Step 8- Finalize Plan

South Kona CWPP Action Plan

The South Kona CWPP Action Plan was developed through an analysis of the issues identified in the risk assessment, community and agency meetings, and through a review of other Community Wildfire Protection Plans. Federal, State, and County agencies, and private landowners were invited to submit projects that provide protection and reduce risk. The community concerns and action items listed above served as the basis for the projects listed below that will guide hazard reduction efforts in the future.

Landowners and agencies are invited to continue to submit projects that provide community protection and mitigate wildfire risk. HWMO and the Big Island Wildfire Coordinating Group intend to meet annually to evaluate progress on projects and mutually agree on treatment priorities. Additional projects will be displayed as appendices in updated versions of this plan.

The following table lists initial projects suggested to address community hazard reduction priorities.

Project	Agency	Funding Needs	Time-table	Community Recommended
Install of pre-staged static water and helicopter dip tanks	Multiple Agencies: federal, state, county, and private	Cooperative Funding \$828,000	2011-2013	Yes
Reduce and/or convert fuel load along roadsides, community open areas, and individual homes	Multiple Agencies: county	Cooperative Funding \$850,000	2010 - 2014	Yes
Create development standards and conduct community planning that requires the mitigation of wildfire risks	Multiple Agencies: county and state	Cooperative Funding \$150,000 for outreach, any needed impact studies and education		Yes
Increase mapping technologies and capabilities for fire agencies	Multiple Agencies: federal, state, county, and private	Cooperative funding: \$100,000	2010-2013	Yes
Install street signage identifying evacuation routes	Multiple Agencies: federal, state, county, and private	Cooperative Funding \$50,000	2010 - 2014	Yes

Project	Agency	Funding Needs	Time-table	Community Recommended
Develop emergency staging areas within communities, promoting awareness of such areas within the community, including holding mock disaster drills	Multiple agencies: private	Cooperative Funding \$33,000 for planning and outreach	2010 - 2012	Yes
Reduce, control, and or convert of invasive species	Multiple Agencies: federal, state, county, and private	Cooperative Funding \$1,500,000 includes maintenance, grazing, and conversion projects	2008 - 2012	Yes
Continue fire prevention education and outreach, including arson prevention education	Multiple agencies: federal, state, county, and private	Cooperative Funding \$30,000	2010 - 2014	Yes
Increase effective integrated communication and initial attack protocol between federal, state, and county fire suppression agencies	Multiple agencies	Cooperative Funding \$150,000	2010 - 2014	Yes

Plan Implementation and Maintenance

The Healthy Forest Restoration Act (HFRA) requires that the Hawai'i County Fire Department, the Hawai'i County Civil Defense Department, and the Hawaii Department of Land and Natural Resources all agree on the final contents of the South Kona CWPP. The plan will be signed by each agency in order to meet HFRA and FEMA requirements. Because of the non-regulatory nature of the CWPP, the relevance and effectiveness of the South Kona CWPP will rely heavily upon community initiative and involvement. Expertise, technical support, and implementation assistance will be provided by the appropriate agencies and organizations involved in fire issues in the South Kona Area.

Hawaii Wildfire Management Organization, in cooperation with the Big Island Wildfire Coordinating Group, will provide technical support, identify and coordinate funding, and serve as a centralized resource for wildfire risk reduction efforts for South Kona. Together, representatives will prioritize and recommend funding for projects, document the successes and lessons learned from those projects, and evaluate and update the CWPP as needed.

Many South Kona CWPP action items will require continuing support for wildfire risk mitigation projects. This will involve actively pursuing funding for projects, staying informed and in contact with one another, and updating the CWPP regularly so that it remains a "living" document. Continuing to build community awareness and fostering community ownership of these issues and actions will assist with creating support for individual and community investment in projects.

Finalize Plan

The following County, State, and Federal representatives have a high level of interest in the protection of the South Kona area from wildfire, and have reviewed and support this CWPP. Contact information for principal government stakeholders is listed below.

Federal:

Pohakuloa Training Area (U.S. Army)

Eric Moller, Deputy Fire Chief
USAG-HI, DES, FES
Box 4607, Hilo, HI 96720
(808) 969-2447/2448
eric.moller@us.army.mil



Hawaii Volcanoes National Park

Joe Molhoek, Pacific Island Fire Mgmt. Officer
PO Box 52, HNP, HI 96718
(808) 985-6042
Joe_Molhoek@nps.gov



State:

**Department of Land and Natural Resources:
Division of Forestry and Wildlife**

Wayne F. Ching, State Protection Forester
1151 Punchbowl St., Room 325, Honolulu, HI 96813
(808) 587-4173
Wayne.F.Ching@hawaii.gov



County:

Hawaii Fire Department

Fire Chief Darryl Oliveira
25 Aupuni St., Hilo, HI 96720
(808) 981-8394
Hcfdfl@co.hawaii.hi.us



County:

Hawaii County Civil Defense

Quince Mento, Civil Defense Administrator
920 Ululani St., Hilo, HI 96720
(808) 961-8229
qmento@co.hawaii.hi.us



The Signature Page presented at the beginning of this document demonstrates the required multi-agency participation and acknowledgement of this plan.

REFERENCES

- ⁱ **Healthy Forests Restoration Act of 2003– HR 1904. US Federal Register.**
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:h1904enr.txt.pdf
- ⁱⁱ **Kona Community Development Plan. 2008**
<http://www.hcrc.info/community-planning/north-and-south-kona-cdp/cdp-final-drafts/>
- ⁱⁱⁱ **Hawaii County Multi-Hazard Mitigation Plan, 2003**
<http://co.hawaii.hi.us/cd/mmp/main.html>
- ^{iv} **Adapted from Linn County Community Wildfire Protection Plan, ECONorwest, September, 2007**
https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/5795/Linn_County_Wildfire_Plan.pdf?sequence=1
- ^v **County of Hawaii Drought Mitigation Strategies, 2004**
<http://hawaii.gov/dlnr/drought/preparedness/HawaiiDroughtMitigationStrategies.pdf>
- ^{vi} **Ka‘u to South Kona Water Master Plan, 2004**
http://www.co.hawaii.hi.us/info/projectsarchive/k2skwmp/finalrpt/WMPFinal_Sept2004.pdf
- ^{vii} **State Drought Plan and the County Drought Mitigation Strategies**
<http://hawaii.gov/dlnr/drought/preparedness.htm>
- ^{viii} **State of Hawaii Multi-Hazard Mitigation Plan, 2007**
http://www.scd.state.hi.us/HazMitPlan/executive_summary.pdf
- ^{ix} **Big Island Wildfire Coordinating Group**
http://www.state.hi.us/dlnr/dofaw/fmp/biwcg_charter.htm#Duties

Addendum 1

South Kona Community Wildfire Protection Plan January 2015 Update



Photo Credit: Jody Fergerstrom

Coordinated and developed by:

Hawaii Wildfire Management Organization, a 501(c)3 nonprofit organization dedicated to protecting Hawaii's communities and natural resources from wildfire.



Updated in partnership with:

Hawaii County Civil Defense, Hawaii Fire Department, State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife

Written by:

Elizabeth Pickett and Ilene Grossman, Hawaii Wildfire Management Organization, © 2015

Funded by:

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Cover photo.	2009-2010 Upland fire in South Kona. Photo Credit: Jody Fergerstrom.
Photo 2.	Unmanaged vegetation in between houses can carry wildfires rapidly through neighborhoods. Photo Credit: HWMO
Photo 3.	South Kona participants work in small groups to identify wildfire concerns and prioritize recommendations. Photo Credit: HWMO
Photo 4.	South Kona participants select areas and resources of high value on the community base map. Photo Credit: HWMO

CWPP Update Overview

January 15, 2015

At the time of this update, there are currently five CWPPs for Hawaii Island including: Volcano, Ka'ū, Ocean View, South Kona and NW Hawaii Island. Although there is no requirement to update the CWPPs, Hawaii Wildfire Management Organization (HWMO) staff and technical advisors determined an update would be an important tool to revitalize community engagement and action in wildfire protection and hazard reduction activities. In addition, the community input and action projects needed to be updated. Wildfire hazard is predicted to increase with high vegetation and continued drought.

Within the last two years, HWMO conducted a statewide wildfire hazard assessment and a statewide wildfire history map that shows wildfire ignitions on each island between 2002-2011. The resulting maps and assessments for the South Kona CWPP planning area are included in this addendum.

Community input is critical to making the plan a living document that can be used as a resource to help guide community associations, fire agencies, landowners, and natural resource agencies towards meeting their fire protection goals. The CWPP Update process provided a venue for residents and agency personnel to discuss wildfire concerns and brainstorm solutions together during four community meetings.

Wildfire Ignitions Map

The map below displays results from an HWMO-led effort to compile wildfire records from all fire suppression agencies across the state, which resulted in a quality-controlled wildfire database and region-specific wildfire incident maps. The South Kona Wildfire Incident Map (Figure 1 below) includes data from the following agencies between 2002-2012: Hawaii County Fire Department, Hawaii Volcanoes National Park, and Department of Land and Natural Resources Division of Forestry and Wildlife (DLNR-DOFAW). Statewide, 1,854 wildfire ignitions were mapped out of a total of 2,707 total fire records. Unmapped fires are a result of unavailable or ambiguous fire location information firefighting records. It is important to note that the map below displays ignition points, and does not indicate the size of wildfires or the final perimeters of burned areas. Ignitions are important for understanding trends and patterns of fires. From the map below it is clear that WUI, roadside, and human access area fire starts are important trends across the South Kona region.



Figure 1. Wildfire Ignitions Map

Wildfire Hazard Assessment Maps and Ratings

In 2011-2013, HWMO staff assessed subdivisions across the state to rate wildfire hazards within the following categories: Vegetation, Building, Subdivision, Fire Environment and Fire Protection. Each of those categories is comprised of several contributing factors, all of which were assessed and ranked with a rating of high, moderate, or low hazard, depending on their characteristics. The categories and specific hazard ratings assigned to the subdivision areas with the South Kona CWPP planning area are below:

Subdivision Hazard Ratings

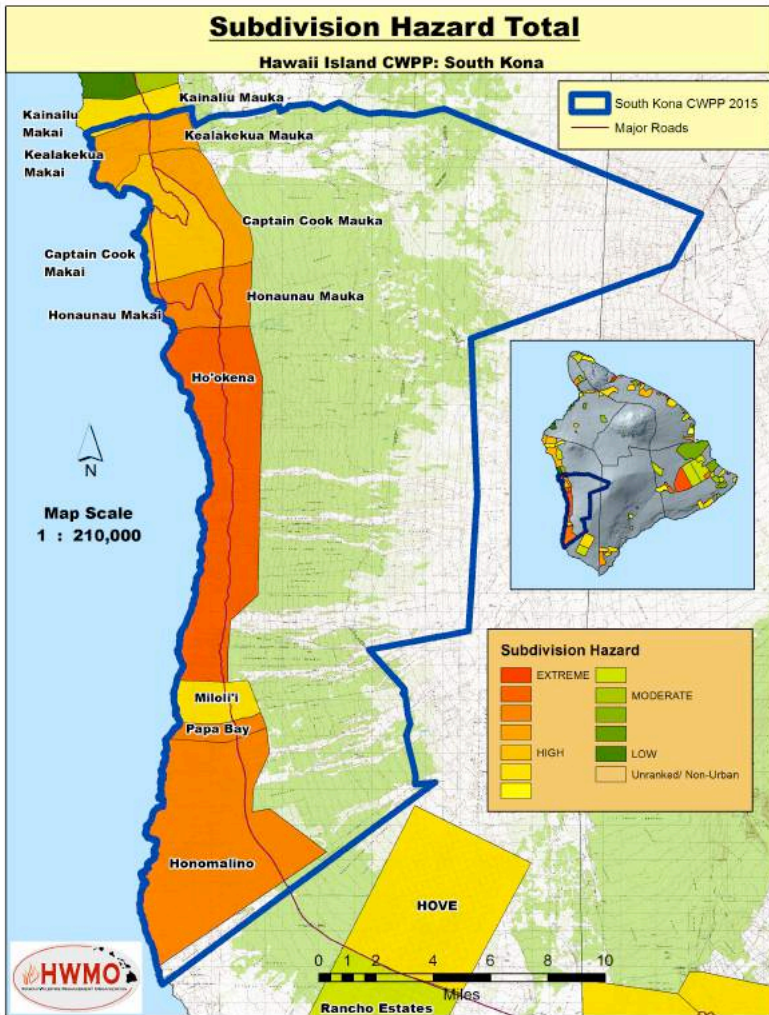


Figure 2. Subdivision Hazard Total Map

South Kona Subdivision Hazards		
Specific Hazard	Subdivision	Hazard Rating
Ingress/ Egress	Kealakekua Makai	Moderate - Limited access routes. 2 ways in and 2 ways out. Moderate grades.
	Kealakekua Mauka	Moderate - Limited access routes. 2 ways in and 2 ways out. Moderate grades.
	Captain Cook Makai	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades
	Captain Cook Mauka	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades
	Honaunau Makai	Moderate - Limited access routes. 2 ways in and 2 ways out. Moderate grades.
	Honaunau Mauka	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades
	Ho'okena	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades
Miloli'i	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades	

	Papa Bay	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades
	Honomalino	High - Narrow, dead end roads or 1 way in, 1 way out. Steep grades
Road Maintenance	Kealakekua Makai	High - Narrow and or single lane, minimally maintained, no shoulders.
	Kealakekua Mauka	High - Narrow and or single lane, minimally maintained, no shoulders.
	Captain Cook Makai	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
	Captain Cook Mauka	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
	Honaunau Makai	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
	Honaunau Mauka	High - Narrow and or single lane, minimally maintained, no shoulders.
	Ho'okena	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
	Miloli'i	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
	Papa Bay	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
	Honomalino	Moderate - Roads maintained. Some narrow two lane roads with no shoulders.
Road Width	Kealakekua Makai	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
	Kealakekua Mauka	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
	Captain Cook Makai	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
	Captain Cook Mauka	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
	Honaunau Makai	High - Less than 20 feet wide. Narrow roads coupled with poor visibility limit evacuation and emergency response. Traffic problems will occur. Entrapment is likely.
	Honaunau Mauka	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
	Ho'okena	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
	Miloli'i	High - Less than 20 feet wide. Narrow roads coupled with poor visibility limit evacuation and emergency response. Traffic problems will occur. Entrapment is likely.
	Papa Bay	High - Less than 20 feet wide. Narrow roads coupled with poor visibility limit evacuation and emergency response. Traffic problems will occur. Entrapment is likely.
	Honomalino	Moderate - 20'-24' wide. Medium width roads with drivable shoulders and good visibility, support evacuation and emergency response time.
All-Season Road Condition	Kealakekua Makai	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Kealakekua Mauka	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Captain Cook Makai	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Captain Cook Mauka	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Honaunau Makai	Low - Flat or gently sloping surfaced roads can support high volumes of large fire equipment.
	Honaunau Mauka	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Ho'okena	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Miloli'i	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.

	Papa Bay	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
	Honomalino	Moderate - Surfaced road with 5%+ grade or non-surfaced road with <5% grade that can still support fire equipment. Road and right-of-way maintenances is essential for access and visibility.
Fire Service Access	Kealakekua Makai	Moderate - <300' with no turnaround. Short or dead-end streets will become crowded with homeowner's vehicles.
	Kealakekua Mauka	Moderate - <300' with no turnaround. Short or dead-end streets will become crowded with homeowner's vehicles.
	Captain Cook Makai	Moderate - <300' with no turnaround. Short or dead-end streets will become crowded with homeowner's vehicles.
	Captain Cook Mauka	High - 300'+ with no turnaround. Long dead-end streets will become crowded with vehicles. Two-way visibility is an issue.
	Honaunau Makai	Moderate - <300' with no turnaround. Short or dead-end streets will become crowded with homeowner's vehicles.
	Honaunau Mauka	High - 300'+ with no turnaround. Long dead-end streets will become crowded with vehicles. Two-way visibility is an issue.
	Ho'okena	High - 300'+ with no turnaround. Long dead-end streets will become crowded with vehicles. Two-way visibility is an issue.
	Miloli'i	High - 300'+ with no turnaround. Long dead-end streets will become crowded with vehicles. Two-way visibility is an issue.
	Papa Bay	High - 300'+ with no turnaround. Long dead-end streets will become crowded with vehicles. Two-way visibility is an issue.
	Honomalino	High - 300'+ with no turnaround. Long dead-end streets will become crowded with vehicles. Two-way visibility is an issue.
Street signs	Kealakekua Makai	Low - Present. Most are at least 4' in size and are reflectorized.
	Kealakekua Mauka	Low - Present. Most are at least 4' in size and are reflectorized.
	Captain Cook Makai	Low - Present. Most are at least 4' in size and are reflectorized.
	Captain Cook Mauka	Moderate - Present and reflectorized with some exceptions.
	Honaunau Makai	Moderate - Present and reflectorized with some exceptions.
	Honaunau Mauka	Moderate - Present and reflectorized with some exceptions.
	Ho'okena	Moderate - Present and reflectorized with some exceptions.
	Miloli'i	Moderate - Present and reflectorized with some exceptions.
	Papa Bay	Moderate - Present and reflectorized with some exceptions.
	Honomalino	Moderate - Present and reflectorized with some exceptions.
Structure Density	Kealakekua Makai	Moderate - Density and ignition probability are both moderate, or one is high but is balanced by the other being low.
	Kealakekua Mauka	Moderate - Density and ignition probability are both moderate, or one is high but is balanced by the other being low.
	Captain Cook Makai	Moderate - Density and ignition probability are both moderate, or one is high but is balanced by the other being low.
	Captain Cook Mauka	Low - Low structure density and low ignition probability.
	Honaunau Makai	Moderate - Density and ignition probability are both moderate, or one is high but is balanced by the other being low.
	Honaunau Mauka	Low - Low structure density and low ignition probability.
	Ho'okena	Low - Low structure density and low ignition probability.
	Miloli'i	Low - Low structure density and low ignition probability.
	Papa Bay	Low - Low structure density and low ignition probability.
	Honomalino	Low - Low structure density and low ignition probability.
Home Setbacks	Kealakekua Makai	Moderate - 10-50% of homes have defensible setbacks from property lines and sloped areas.
	Kealakekua Mauka	Moderate - 10-50% of homes have defensible setbacks from property lines and sloped areas.
	Captain Cook Makai	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
	Captain Cook Mauka	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
	Honaunau Makai	Moderate - 10-50% of homes have defensible setbacks from property lines and sloped

		areas.
	Honaunau Mauka	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
	Ho'okena	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
	Miloli'i	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
	Papa Bay	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
	Honomalino	Low - Majority (50%+) of homes are set back from property lines and slopes by at least 30 feet.
Unmanaged, untended, undeveloped lands	Kealakekua Makai	Moderate - Some isolated unmaintained lots or undeveloped vegetated areas within subdivision. 10-50% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance and/or restricted access. Hazard ranking is dependent on ignition risk, size of area, and fuel type.
	Kealakekua Mauka	Moderate - Some isolated unmaintained lots or undeveloped vegetated areas within subdivision. 10-50% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance and/or restricted access. Hazard ranking is dependent on ignition risk, size of area, and fuel type.
	Captain Cook Makai	Moderate - Some isolated unmaintained lots or undeveloped vegetated areas within subdivision. 10-50% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance and/or restricted access. Hazard ranking is dependent on ignition risk, size of area, and fuel type.
	Captain Cook Mauka	Moderate - Some isolated unmaintained lots or undeveloped vegetated areas within subdivision. 10-50% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance and/or restricted access. Hazard ranking is dependent on ignition risk, size of area, and fuel type.
	Honaunau Makai	High - Abundant unmanaged, vegetated corridors and vacant lots throughout community. Agricultural lands irregularly maintained leaving dry weedy species causing increased ignition risk. Numerous ladder fuels and high risk fuels. Greater than 75% of lots have not been developed or Separation of adjacent structures that can contribute to fire spread
	Honaunau Mauka	Moderate - Some isolated unmaintained lots or undeveloped vegetated areas within subdivision. 10-50% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance and/or restricted access. Hazard ranking is dependent on ignition risk, size of area, and fuel type.
	Ho'okena	High - Abundant unmanaged, vegetated corridors and vacant lots throughout community. Agricultural lands irregularly maintained leaving dry weedy species causing increased ignition risk. Numerous ladder fuels and high risk fuels. Greater than 75% of lots have not been developed or Separation of adjacent structures that can contribute to fire spread
	Miloli'i	Low - Few to no weedy vacant lots. Few to no undeveloped unmaintained vegetated areas or corridors between homes. Less than 10% of lots remain undeveloped and pose an additional wildfire hazard due to lack of maintenance and/or restricted access.
	Papa Bay	High - Abundant unmanaged, vegetated corridors and vacant lots throughout community. Agricultural lands irregularly maintained leaving dry weedy species causing increased ignition risk. Numerous ladder fuels and high risk fuels. Greater than 75% of lots have not been developed or Separation of adjacent structures that can contribute to fire spread
	Honomalino	Moderate - Some isolated unmaintained lots or undeveloped vegetated areas within subdivision. 10-50% of lots have not been developed and pose an additional wildfire hazard due to lack of maintenance and/or restricted access. Hazard ranking is dependent on ignition risk, size of area, and fuel type.
Private landowner actions / Firewise landscaping and	Kealakekua Makai	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Kealakekua Mauka	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Captain Cook Makai	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.

defensible space	Captain Cook Mauka	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Honaunau Makai	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Honaunau Mauka	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Ho'okena	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Miloli'i	Low - 70% of homes have improved survivable space around property, reduced ignition risk, hardened homes, and no ladder fuels.
	Papa Bay	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
	Honomalino	Moderate - 30-70% homes have improved survivable space around property and well-maintained landscapes.
Proximity of subdivision to wildland areas	Kealakekua Makai	Moderate - Wildland areas adjoin subdivision on 1-2 sides.
	Kealakekua Mauka	Moderate - Wildland areas adjoin subdivision on 1-2 sides.
	Captain Cook Makai	Moderate - Wildland areas adjoin subdivision on 1-2 sides.
	Captain Cook Mauka	Moderate - Wildland areas adjoin subdivision on 1-2 sides.
	Honaunau Makai	Moderate - Wildland areas adjoin subdivision on 1-2 sides.
	Honaunau Mauka	Moderate - Wildland areas adjoin subdivision on 1-2 sides.
	Ho'okena	High - Wildland areas surround subdivision on at least 3 sides.
	Miloli'i	Low - Wildland areas share no borders with the subdivision. Little to no undeveloped and unmaintained vegetated areas within community. Little to no ladder fuels along community boundaries.
	Papa Bay	High - Wildland areas surround subdivision on at least 3 sides.
Honomalino	High - Wildland areas surround subdivision on at least 3 sides.	

Table 1. *Subdivision Hazards*

Vegetation Hazard Ratings

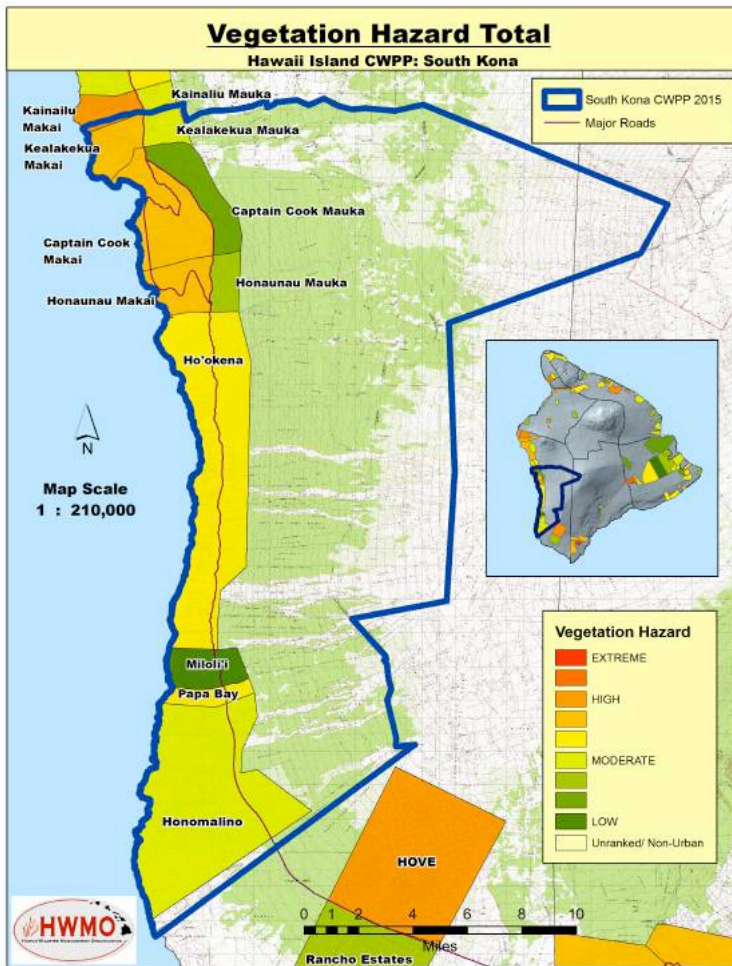


Figure 3. Vegetation Hazard Total Map



Photo 2. Unmanaged vegetation in between houses can carry wildfires rapidly through neighborhoods.

South Kona Vegetation Hazards		
Specific Hazard	Subdivision	Hazard Rating
Proximity of flammable fuels around subdivision	Kealakekua Makai	High - Less than 40'
	Kealakekua Mauka	Moderate - 40-100'
	Captain Cook Makai	Moderate - 40-100'
	Captain Cook Mauka	Low - Greater than 100'
	Honaunau Makai	Moderate - 40-100'
	Honaunau Mauka	Low - Greater than 100'
	Ho'okena	Moderate - 40-100'
	Miloli'i	Low - Greater than 100'
	Papa Bay	High - Less than 40'
	Honomalino	Moderate - 40-100'
Type of predominant vegetation within 300' of homes	Kealakekua Makai	High - Dense grass, brush, timber, and/or hardwoods. Moderate to heavy dead and downed vegetation. Fuels greater than 12 feet tall. Heavy vegetation.
	Kealakekua Mauka	Low - Grasses less than 6 inches in height. Light leaf litter.
	Captain Cook Makai	High - Dense grass, brush, timber, and/or hardwoods. Moderate to heavy dead and downed vegetation. Fuels greater than 12 feet tall. Heavy vegetation.
	Captain Cook Mauka	Moderate - Grasses 6-12 inches in height. Grasses 6-12" tall. Light brush and small

		trees. Patchy fuels.
	Honaunau Makai	High - Dense grass, brush, timber, and/or hardwoods. Moderate to heavy dead and downed vegetation. Fuels greater than 12 feet tall. Heavy vegetation.
	Honaunau Mauka	Moderate - Grasses 6–12 inches in height. Grasses 6-12” tall. Light brush and small trees. Patchy fuels.
	Ho’okena	Moderate - Grasses 6–12 inches in height. Grasses 6-12” tall. Light brush and small trees. Patchy fuels.
	Miloli’i	Moderate - Grasses 6–12 inches in height. Grasses 6-12” tall. Light brush and small trees. Patchy fuels.
	Papa Bay	Moderate - Grasses 6–12 inches in height. Grasses 6-12” tall. Light brush and small trees. Patchy fuels.
	Honomalino	Moderate - Grasses 6–12 inches in height. Grasses 6-12” tall. Light brush and small trees. Patchy fuels.
Fuel loading	Kealakekua Makai	Moderate - 31-70% cover
	Kealakekua Mauka	Moderate - 31-70% cover
	Captain Cook Makai	Moderate - 31-70% cover
	Captain Cook Mauka	Moderate - 31-70% cover
	Honaunau Makai	Moderate - 31-70% cover
	Honaunau Mauka	Moderate - 31-70% cover
	Ho’okena	Moderate - 31-70% cover
	Miloli’i	Low - 0-30% cover
	Papa Bay	Moderate - 31-70% cover
Honomalino	Moderate - 31-70% cover	
Fuel structure and arrangement	Kealakekua Makai	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
	Kealakekua Mauka	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
	Captain Cook Makai	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
	Captain Cook Mauka	Low - Non-contiguous or patchwork arrangement. Little to no ladder fuels.
	Honaunau Makai	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
	Honaunau Mauka	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
	Ho’okena	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
	Miloli’i	Low - Non-contiguous or patchwork arrangement. Little to no ladder fuels.
	Papa Bay	Moderate - Some areas of contiguous vegetation. Few ladder fuels.
Honomalino	Moderate - Some areas of contiguous vegetation. Few ladder fuels.	
Defensible Space/ Fuels reduction around homes & structures	Kealakekua Makai	Moderate - 31-100 ft of vegetation treatment from structures.
	Kealakekua Mauka	Moderate - 31-100 ft of vegetation treatment from structures.
	Captain Cook Makai	Moderate - 31-100 ft of vegetation treatment from structures.
	Captain Cook Mauka	Low - Vegetation is treated 100 feet or more from structures.
	Honaunau Makai	Moderate - 31-100 ft of vegetation treatment from structures.
	Honaunau Mauka	Low - Vegetation is treated 100 feet or more from structures.
	Ho’okena	Moderate - 31-100 ft of vegetation treatment from structures.
	Miloli’i	Low - Vegetation is treated 100 feet or more from structures.
	Papa Bay	Low - Vegetation is treated 100 feet or more from structures.
Honomalino	Low - Vegetation is treated 100 feet or more from structures.	

Table 2. Vegetation Hazards

Building Hazard Ratings

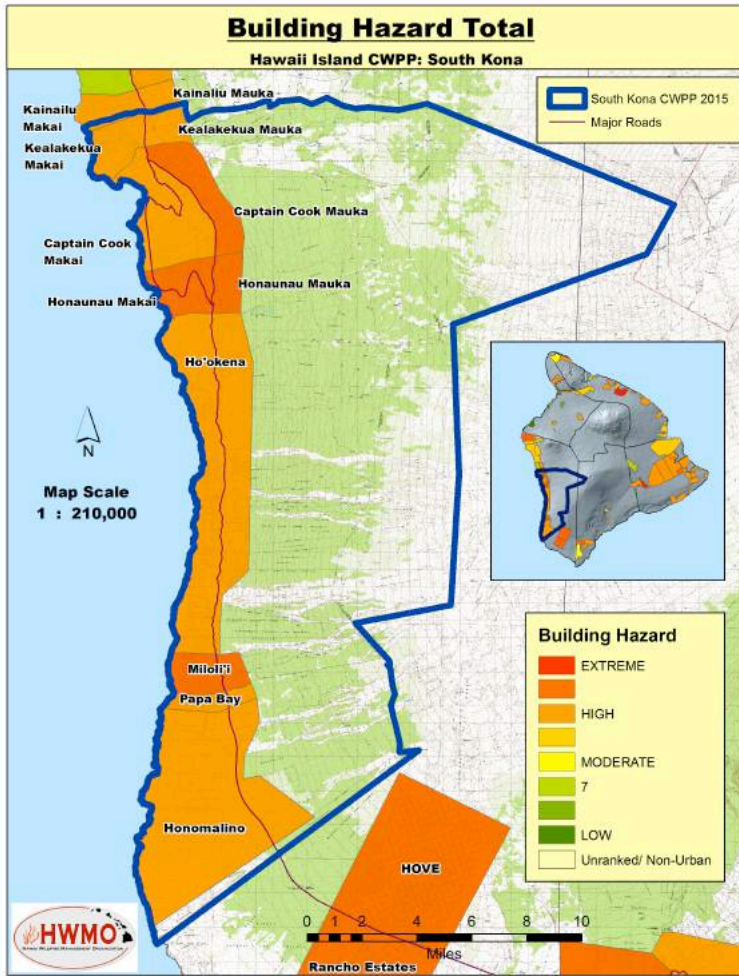


Figure 4. Building Hazard Total Map

South Kona Building Hazards		
Specific Hazard	Subdivision	Hazard Rating
Roofing Assembly	Kealakekua Makai	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Kealakekua Mauka	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Captain Cook Makai	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Captain Cook Mauka	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Honaunau Makai	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Honaunau Mauka	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Ho'okena	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Miloli'i	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
	Papa Bay	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).

	Honomalino	Low - Greater than 75% of homes have Class A roofs (metal, asphalt, or fiberglass roofing material).
Siding/ Soffits	Kealakekua Makai	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Kealakekua Mauka	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Captain Cook Makai	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Captain Cook Mauka	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Honaunau Makai	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Honaunau Mauka	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Ho'okena	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Miloli'i	High - Less than 50% of homes have fire resistant siding and soffits.
	Papa Bay	Low - Greater than 75% of homes have fire resistant siding and soffits.
	Honomalino	Low - Greater than 75% of homes have fire resistant siding and soffits.
Under- skirting around decks, lanais, post- and-pier structures.	Kealakekua Makai	Moderate - 50-75% of homes have the equivalent of fine non-combustible mesh screening.
	Kealakekua Mauka	Moderate - 50-75% of homes have the equivalent of fine non-combustible mesh screening.
	Captain Cook Makai	High - Less than 50% of homes have the equivalent of fine non-combustible mesh screening.
	Captain Cook Mauka	High - Less than 50% of homes have the equivalent of fine non-combustible mesh screening.
	Honaunau Makai	High - Less than 50% of homes have the equivalent of fine non-combustible mesh screening.
	Honaunau Mauka	High - Less than 50% of homes have the equivalent of fine non-combustible mesh screening.
	Ho'okena	Moderate - 50-75% of homes have the equivalent of fine non-combustible mesh screening.
	Miloli'i	Moderate - 50-75% of homes have the equivalent of fine non-combustible mesh screening.
	Papa Bay	Moderate - 50-75% of homes have the equivalent of fine non-combustible mesh screening.
	Honomalino	Moderate - 50-75% of homes have the equivalent of fine non-combustible mesh screening.
Utilities Placement- Gas and Electric	Kealakekua Makai	High - Both above ground.
	Kealakekua Mauka	High - Both above ground.
	Captain Cook Makai	High - Both above ground.
	Captain Cook Mauka	High - Both above ground.
	Honaunau Makai	High - Both above ground.
	Honaunau Mauka	High - Both above ground.
	Ho'okena	High - Both above ground.
	Miloli'i	High - Both above ground.
	Papa Bay	High - Both above ground.
	Honomalino	High - Both above ground.
Structural Ignitability	Kealakekua Makai	Moderate - 50-75% of homes store combustibles properly.
	Kealakekua Mauka	Moderate - 50-75% of homes store combustibles properly.
	Captain Cook Makai	Low - Greater than 75% of houses are spaced with cleared boundaries. Flammables and combustible materials stored according to fire-safe principles.
	Captain Cook Mauka	Moderate - 50-75% of homes store combustibles properly.
	Honaunau Makai	Moderate - 50-75% of homes store combustibles properly.
	Honaunau Mauka	Moderate - 50-75% of homes store combustibles properly.
	Ho'okena	Moderate - 50-75% of homes store combustibles properly.
	Miloli'i	Moderate - 50-75% of homes store combustibles properly.
	Papa Bay	Moderate - 50-75% of homes store combustibles properly.
	Honomalino	Moderate - 50-75% of homes store combustibles properly.

Table 3. Building Hazards

Fire Environment Hazard Ratings

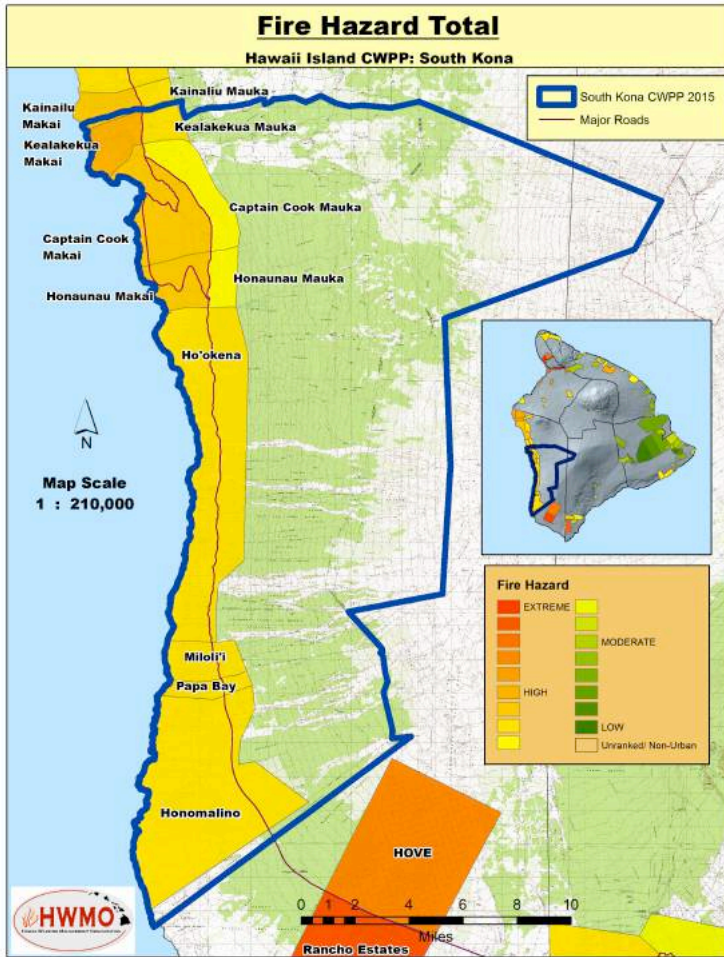


Figure 5. Fire Environment Hazard Total Map

South Kona Fire Environment Hazards		
Specific Hazard	Subdivision	Hazard Rating
Slope	Kealakekua Makai	High - Steep slopes (>30%)
	Kealakekua Mauka	High - Steep slopes (>30%)
	Captain Cook Makai	Moderate - Moderate slopes (10-30%)
	Captain Cook Mauka	High - Steep slopes (>30%)
	Honaunau Makai	High - Steep slopes (>30%)
	Honaunau Mauka	High - Steep slopes (>30%)
	Ho'okena	High - Steep slopes (>30%)
	Miloli'i	High - Steep slopes (>30%)
	Papa Bay	High - Steep slopes (>30%)
	Honomalino	High - Steep slopes (>30%)
Average rainfall *Score 1-6 instead	Kealakekua Makai	Moderate – Moderate Precipitation 4
	Kealakekua Mauka	Moderate – Moderate Precipitation 4
	Captain Cook Makai	Moderate – Moderate Precipitation 3
	Captain Cook Mauka	Moderate – Moderate Precipitation 3
	Honaunau Makai	Moderate – Moderate Precipitation 3
	Honaunau Mauka	Moderate – Moderate Precipitation 3
	Ho'okena	Moderate – Moderate Precipitation 4
Miloli'i	Moderate – Moderate Precipitation 4	

	Papa Bay	Moderate – Moderate Precipitation 4
	Honomalino	Moderate – Moderate Precipitation 4
Prevailing wind speeds and direction *Score 1-4 instead	Kealakekua Makai	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Kealakekua Mauka	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Captain Cook Makai	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Captain Cook Mauka	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Honaunau Makai	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Honaunau Mauka	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Ho’okena	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Miloli’i	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Papa Bay	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
	Honomalino	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds.1
Seasonal or periodic high hazard conditions	Kealakekua Makai	High - Area is seasonally exposed to unusually severe fire weather, drought conditions, lightning storms, desiccated vegetation, and/or strong dry winds.
	Kealakekua Mauka	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
	Captain Cook Makai	High - Area is seasonally exposed to unusually severe fire weather, drought conditions, lightning storms, desiccated vegetation, and/or strong dry winds.
	Captain Cook Mauka	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
	Honaunau Makai	High - Area is seasonally exposed to unusually severe fire weather, drought conditions, lightning storms, desiccated vegetation, and/or strong dry winds.
	Honaunau Mauka	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
	Ho’okena	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
	Miloli’i	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
	Papa Bay	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
	Honomalino	Moderate - Area is occasionally (e.g., once per decade) exposed to fire prone conditions: drought, lightning storms, desiccated vegetation, and/or strong dry winds.
Ignition risk	Kealakekua Makai	Moderate - Some history of wildfire, but not particularly fire prone area due to prevailing lack of fire prone conditions, weather, and vegetation type.
	Kealakekua Mauka	Low - Little to no natural (lightning or lava) ignition risk. No history of arson. Wildland areas absent or distant from public and/or vehicular access.
	Captain Cook Makai	Moderate - Some history of wildfire, but not particularly fire prone area due to prevailing lack of fire prone conditions, weather, and vegetation type.
	Captain Cook Mauka	Low - Little to no natural (lightning or lava) ignition risk. No history of arson. Wildland areas absent or distant from public and/or vehicular access.
	Honaunau Makai	High - Most historic wildfire events were anthropogenic with easy access to wildland areas via roads or proximity to development OR natural ignition sources such as lightning or lava are prevalent. Fire prone area. High rate of ignitions or history of large scale fires and/or severe wildfire events.
	Honaunau Mauka	Low - Little to no natural (lightning or lava) ignition risk. No history of arson. Wildland areas absent or distant from public and/or vehicular access.
	Ho’okena	Moderate - Some history of wildfire, but not particularly fire prone area due to prevailing lack of fire prone conditions, weather, and vegetation type.
	Miloli’i	Moderate - Some history of wildfire, but not particularly fire prone area due to prevailing

		lack of fire prone conditions, weather, and vegetation type.
	Papa Bay	Moderate - Some history of wildfire, but not particularly fire prone area due to prevailing lack of fire prone conditions, weather, and vegetation type.
	Honomalino	Moderate - Some history of wildfire, but not particularly fire prone area due to prevailing lack of fire prone conditions, weather, and vegetation type.
Topographical features that adversely affect wildland fire behavior	Kealakekua Makai	High - Major feature such as box canyon, ravines, chutes, saddles, transition zones.
	Kealakekua Mauka	High - Major feature such as box canyon, ravines, chutes, saddles, transition zones.
	Captain Cook Makai	High - Major feature such as box canyon, ravines, chutes, saddles, transition zones.
	Captain Cook Mauka	High - Major feature such as box canyon, ravines, chutes, saddles, transition zones.
	Honaunau Makai	Moderate - Minor features such as low or occasional hills.
	Honaunau Mauka	High - Major feature such as box canyon, ravines, chutes, saddles, transition zones.
	Ho'okena	Moderate - Minor features such as low or occasional hills.
	Miloli'i	Moderate - Minor features such as low or occasional hills.
	Papa Bay	Moderate - Minor features such as low or occasional hills.
	Honomalino	Moderate - Minor features such as low or occasional hills.

Table 4. Fire Environment Hazards

Fire Protection Hazard Ratings

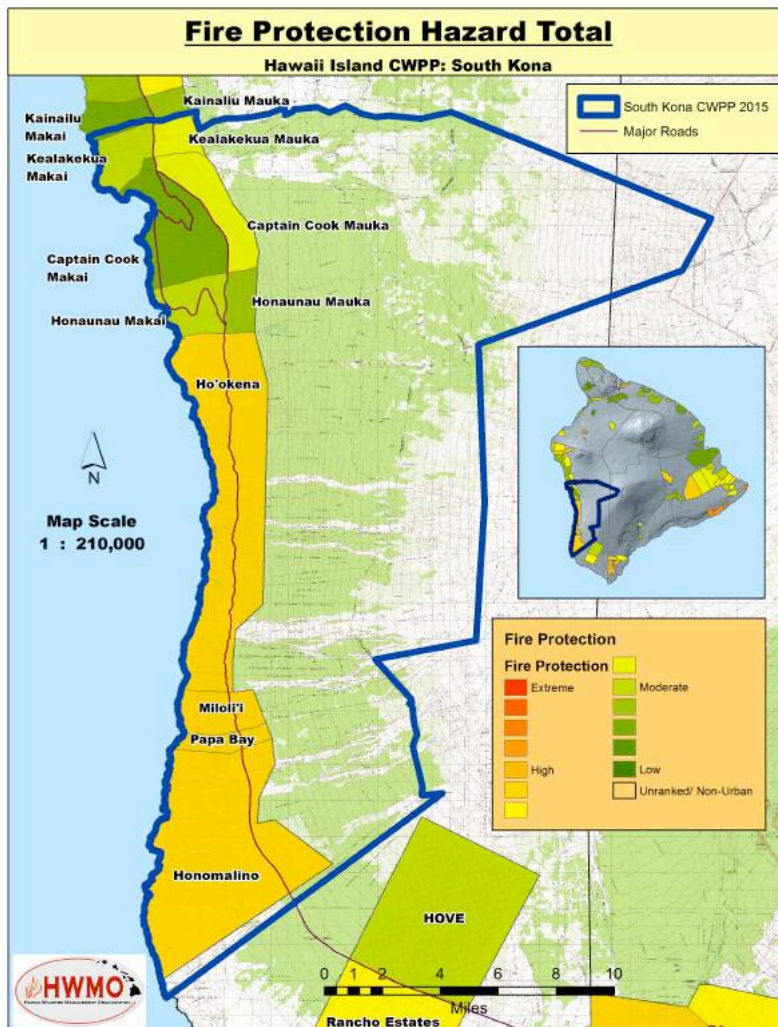


Figure 6. Fire Protection Hazard Total Map

South Kona Fire Protection Hazards		
Specific Hazard	Subdivision	Hazard Rating
Water source availability	Kealakekua Makai	Moderate - Non-pressurized water source availability (offsite or draft location) or dipsite. Homes on catchment water have fire-hose hookups.
	Kealakekua Mauka	Moderate - Non-pressurized water source availability (offsite or draft location) or dipsite. Homes on catchment water have fire-hose hookups.
	Captain Cook Makai	Low - Pressurized water source availability. 500 GPM less than 1000 ft spacing.
	Captain Cook Mauka	Moderate - Non-pressurized water source availability (offsite or draft location) or dipsite. Homes on catchment water have fire-hose hookups.
	Honaunau Makai	Moderate - Non-pressurized water source availability (offsite or draft location) or dipsite. Homes on catchment water have fire-hose hookups.
	Honaunau Mauka	Moderate - Non-pressurized water source availability (offsite or draft location) or dipsite. Homes on catchment water have fire-hose hookups.
	Ho'okena	High - Water unavailable, or offsite water more than 20 minute round trip.
	Miloli'i	High - Water unavailable, or offsite water more than 20 minute round trip.
	Papa Bay	High - Water unavailable, or offsite water more than 20 minute round trip.
Response time	Honomalino	High - Water unavailable, or offsite water more than 20 minute round trip.
	Kealakekua Makai	Low - Within 15 minutes
	Kealakekua Mauka	High - Greater than 30 minutes
	Captain Cook Makai	Low - Within 15 minutes
	Captain Cook Mauka	High - Greater than 30 minutes
	Honaunau Makai	Low - Within 15 minutes
	Honaunau Mauka	Low - Within 15 minutes
	Ho'okena	Moderate - 16-30 minutes
	Miloli'i	Moderate - 16-30 minutes
Fire Station Proximity	Papa Bay	Moderate - 16-30 minutes
	Honomalino	Moderate - 16-30 minutes
	Kealakekua Makai	Moderate - 6-10 miles
	Kealakekua Mauka	Low - Less than 5 miles
	Captain Cook Makai	Low - Less than 5 miles
	Captain Cook Mauka	Low - Less than 5 miles
	Honaunau Makai	Moderate - 6-10 miles
	Honaunau Mauka	Low - Wind rarely (less than 10% of time) exceeds 15 mph. Protection from predominant winds. ¹
	Ho'okena	High - More than 10 miles
Fire department structural training and expertise	Miloli'i	High - More than 10 miles
	Papa Bay	High - More than 10 miles
	Honomalino	High - More than 10 miles
	Kealakekua Makai	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
	Kealakekua Mauka	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
	Captain Cook Makai	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
	Captain Cook Mauka	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
Honaunau Makai	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.	
Honaunau Mauka	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.	
Ho'okena	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.	

	Miloli'i	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
	Papa Bay	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
	Honomalino	Low - Large fully paid fire department with personnel that meet NFPA or NWCG training requirements and have adequate equipment.
Wildland firefighting capability of initial response agency	Kealakekua Makai	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Kealakekua Mauka	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Captain Cook Makai	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Captain Cook Mauka	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Honaunau Makai	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Honaunau Mauka	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Ho'okena	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Miloli'i	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Papa Bay	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
	Honomalino	Moderate - Limited personnel, and or equipment but with some wildland firefighting expertise and training. Smaller supply of fire apparatus in fairly good repair with some specialty equipment.
Interagency Cooperation	Kealakekua Makai	Low - Mutual aid agreements and resources available to deploy.
	Kealakekua Mauka	Low - Mutual aid agreements and resources available to deploy.
	Captain Cook Makai	Low - Mutual aid agreements and resources available to deploy.
	Captain Cook Mauka	Low - Mutual aid agreements and resources available to deploy.
	Honaunau Makai	Low - Mutual aid agreements and resources available to deploy.
	Honaunau Mauka	Low - Mutual aid agreements and resources available to deploy.
	Ho'okena	Low - Mutual aid agreements and resources available to deploy.
	Miloli'i	Low - Mutual aid agreements and resources available to deploy.
	Papa Bay	Low - Mutual aid agreements and resources available to deploy.
	Honomalino	Low - Mutual aid agreements and resources available to deploy.
Local emergency operations group or other similar	Kealakekua Makai	Low - Active EOG or CERT. Evacuation plan in place.
	Kealakekua Mauka	Low - Active EOG or CERT. Evacuation plan in place.
	Captain Cook Makai	Low - Active EOG or CERT. Evacuation plan in place.
	Captain Cook Mauka	Low - Active EOG or CERT. Evacuation plan in place.
	Honaunau Makai	Low - Active EOG or CERT. Evacuation plan in place.
	Honaunau Mauka	Low - Active EOG or CERT. Evacuation plan in place.
	Ho'okena	Low - Active EOG or CERT. Evacuation plan in place.
	Miloli'i	Low - Active EOG or CERT. Evacuation plan in place.
	Papa Bay	Low - Active EOG or CERT. Evacuation plan in place.
Honomalino	Low - Active EOG or CERT. Evacuation plan in place.	
Community planning practices	Kealakekua Makai	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents

and ordinance		are mostly compliant.
	Kealakekua Mauka	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Captain Cook Makai	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Captain Cook Mauka	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Honaunau Makai	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Honaunau Mauka	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Ho'okena	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Miloli'i	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Papa Bay	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
	Honomalino	Moderate - Have voluntary ordinances for fire safe practices. Local officials have an understanding of appropriate wildfire mitigation strategies. Fire department has limited input to fire safe planning and development efforts and limited enforcement. Residents are mostly compliant.
Community fire-safe effort and programs already in place	Kealakekua Makai	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Kealakekua Mauka	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Captain Cook Makai	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Captain Cook Mauka	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Honaunau Makai	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Honaunau Mauka	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Ho'okena	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Miloli'i	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Papa Bay	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.
	Honomalino	Moderate - Limited provision of or interest in educational efforts. Fire Department or local group does some limited prevention and public education.

Table 5. Fire Protections Hazards

Community Concerns & Recommendations

The South Kona Community Input meeting was held at the Konawaena Elementary School on November 5th from 6-8pm and included a short presentation followed by a facilitated public input process. Community members, Kamehameha Schools land managers, a rancher, former politician, a former wildland firefighter, and HFD firefighters were split into two groups where they shared their wildfire concerns and recommended actions during the input process. Each group presented to the whole group and then each person voted with 3 stickers on their priority concerns/actions. Then each person was given another 3 stickers to place on the enlarged South Kona map for their most valued areas or community resources (home, park, cultural site, etc.) The community input was organized in two ways, first by Cohesive Strategies and second by Subject Area.

Input Organized According to Cohesive Strategy

The National Cohesive Wildland Fire Management Strategy (or Cohesive Strategy) encourages communities to develop a dynamic approach to planning for, responding to, and recovering from wildland fires. It provides a framework for wildfire-related discussion, efforts, and goals across the United States. The overarching national strategy is further divided into three regions for tighter collaboration and coordination in each area. Hawai'i falls into the Western Region that delineates its goals into the following categories:

- Restore and Maintain Landscapes
- Fire-Adapted Communities
- Improve Wildfire Response

The results of the public meeting have been organized according to this framework to mesh with this national planning strategy. The following figure and tables depict the results relative to the Cohesive Strategy. The pie chart is based on the number of votes each community member cast for each concern/recommendation: 57% of the community concerns and recommendation votes focused on the Cohesive Strategy “Fire Adapted Communities,” 39% on “Improving Wildfire Response,” and 4% of votes for “Restore and Maintain Landscapes.” These votes and percentages helped determine the priority level of the action item suggested within Tables 6-11.



Photo 3. South Kona participants identify wildfire concerns and prioritize recommended actions

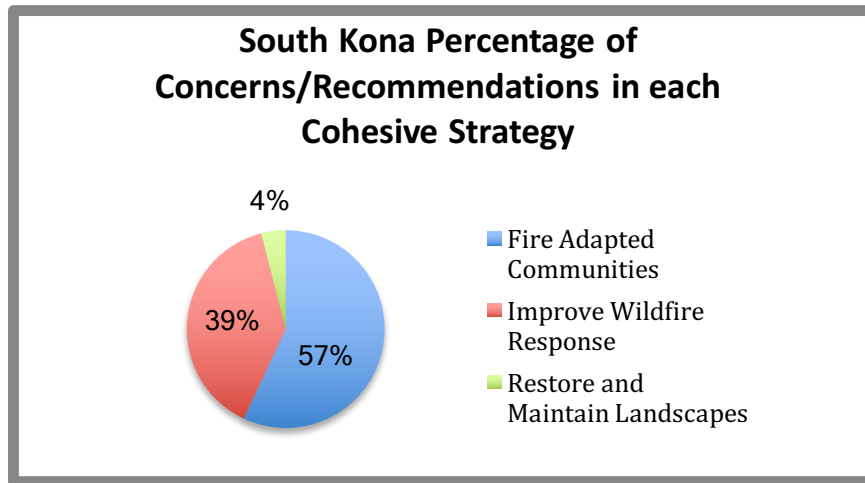


Figure 7. Percentage of Concerns/Recommendations in each Cohesive Strategy

Input per Cohesive Strategy Category

The following tables articulate all concerns and recommended actions that were provided at the input meetings. All input was put into priority order by participants.

Public Input – Prioritized Concerns and Recommended Actions Category: Fire Adapted Communities	
Wildfire Concern (in priority order)	Recommended Action
Fuels Management <ul style="list-style-type: none"> Overgrown large properties Adjacent landowners not managing fuels 	<ul style="list-style-type: none"> Create fuel abatement legislation and enforcement Develop a permit process requirement for vegetation maintenance responsibility Conduct outreach to landowners, farmers, lessees, CTAHR, Ag. Coops/groups, and developers
Legislation/Enforcement/Firefighter Capacity	<ul style="list-style-type: none"> Work to develop HFD enforcement capability for fuel abatement violations
Education/Outreach	<ul style="list-style-type: none"> Conduct outreach to landowners, farmers, lessees, CTAHR, Ag Coops/groups, developers about fuels management violations and wildfire threat/issues.
Roadside ignitions <ul style="list-style-type: none"> In urban & rural areas Unknown causes 	<ul style="list-style-type: none"> Provide ongoing wildfire training for HFD Increase/Improve roadside vegetation treatment Conduct more thorough investigations of ignitions
Squatters starting fires in Kailua sites	<ul style="list-style-type: none"> Cooperation between landowners, agencies Provide wildfire education program for squatter community
Urban expectations in rural areas for firefighter capacity	<ul style="list-style-type: none"> Did Not Answer (Education/Outreach??)

Table 6. Public Input Fire Adapted Communities Cohesive Strategy

Public Input – Prioritized Concerns and Recommended Actions Category: Improve Wildfire Response	
Wildfire Concern (in priority order)	Recommended Action
Firefighter Capacity <ul style="list-style-type: none"> Off-road capabilities limited for HFD 	<ul style="list-style-type: none"> Seek funding for appropriate equipment Solicit donations of equipment from federal programs (auctions,

(Can't go up mauka side: Telephone Exchange Rd., Tobacco Rd., Filipino Clubhouse Rd., etc. + makai side also difficult)	programs for local firefighting agencies)
Wildfire Ignitions	
<ul style="list-style-type: none"> Multiple roadside ignitions in urban & rural areas 	<ul style="list-style-type: none"> Offer ongoing wildfire training for HFD Increase/Improve roadside vegetation treatment
<ul style="list-style-type: none"> Locating fire ignition sources on substandard roads 	<ul style="list-style-type: none"> Invest in specific technology (i.e. drones) to assist with ignition locating
Firefighter Access to Water	
<ul style="list-style-type: none"> Limited water supply for mauka fires (too long of a response time; No water between Ho'okena and HOVE - isolation issue) 	<ul style="list-style-type: none"> Funding

Table 7. *Public Input Improve Wildfire Response Cohesive Strategy*

Public Input – Prioritized Concerns and Recommended Actions	
Category: Restore and Maintain Landscapes	
Wildfire Concern (in priority order)	Recommended Action
<ul style="list-style-type: none"> Largest fires have been mauka in dryland forest areas 	<ul style="list-style-type: none"> Did Not Answer (diptanks, etc.??)

Table 8. *Public Input Restore and Maintain Landscapes Cohesive Strategy*

Input Organized by Subject Matter

The community input results were tallied and organized by subject area to aid the development of a priority projects list. The graph below demonstrates how many times each topic was addressed or referred to within the participant input. The most frequently discussed issue was Firefighter Capacity, followed by Fuels Management, Education/Outreach and then Large Landowner Responsibility and Enforcement/Legislation. See tables above for participant concern/recommendation details related to each subject.

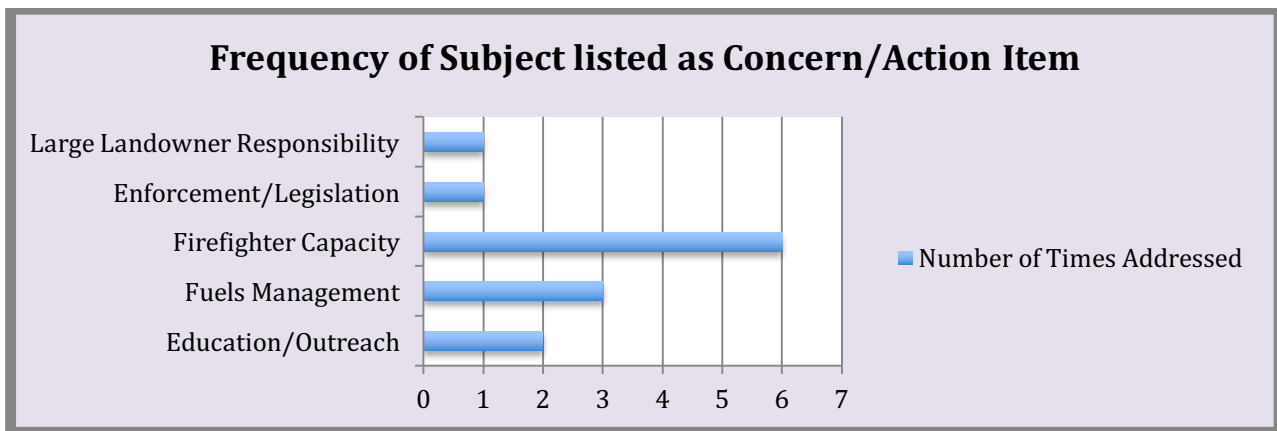


Figure 8. *Frequency of Subject listed as Concern/ Action Item*

Recommended Next Steps

The South Kona updated action plan was developed through an analysis of the issues identified in the risk assessment, community and agency input, and through a review of other Community Wildfire Protection Plans. Private landowners, Federal, State, and County agencies and were invited to submit projects that provide protection and reduce risk. The community concerns and action items listed above served as the basis for the projects listed below that will guide hazard reduction efforts in the future.

Landowners and agencies are invited to continue to submit projects that provide community protection and mitigate wildfire risk. HWMO and the Big Island Wildfire Coordinating Group intend to meet annually to evaluate progress on projects and mutually agree on treatment priorities. Additional projects will be displayed as appendices in updated versions of this plan.

The following table lists initial projects suggested to address community hazard reduction priorities.

Immediate Projects (1-3 Years) In Priority Order:

Proposed Project	Anticipated Cost	When	Lead
1. Improve wildland firefighting capacity (training, funding, ignition source investigations, solicit equipment donations)	\$300,000 Cooperative Funding	2016	HFD, Volunteer Fire Depts., Communities
2. Fuels Management (Legislation, Education, Enforcement; Roadside vegetation management)	\$500,000 Cooperative Funding	2016-2018	Community, HWMO
3. Improve firefighter access to water resources (Funding? For diptanks??)	\$200,000??	2016-2018	Multiple Agencies (federal, state, county, private)
4. Wildfire Education (Outreach to landowners, farmers, lessees, CTAHR, Ag groups/coops, developers)	Cooperative Funding \$50,000	2015-2017	HWMO/Private

Table 9. Next Steps: Immediate Projects

The following 2010 project list was revisited by participants of the 2014-15 CWPP update process, with projects that remain a priority noted within each table.

Original South Kona Projects List 2010						
Community, structure, or area at risk	Project	Agency	Funding Needs	Time table	Community Recommendation	Continues to be a priority during 2014-15 update?
South Kona	Creation of pre-staged static water tanks	Multiple Agencies: federal, state, county, and private	Cooperative Funding	2006 - 2007	Yes	Yes
South Kona	Improved communication between emergency officials and residents	Multiple Agencies: OVCA, County	Cooperative Funding	2006 - 2007	Yes	Yes

	regarding evacuation					
South Kona	Creation of secondary emergency ingress/egress roads	Multiple Agencies: federal, state, county, and private	Cooperative Funding	2006 - 2007	Yes	Yes
South Kona	Street signage identifying evacuation routes	Multiple Agencies: federal, state, county, and private	Cooperative Funding	2006 - 2007	Yes	Yes
South Kona	Reduction of fuel load along roadsides	Private	Cooperative Funding	2006 - 2007	Yes	Yes
South Kona	Reduction of invasive species	HAVO	Cooperative Funding	2006 - 2007	Yes	Yes
South Kona	Continued fire prevention education and outreach	Multiple agencies: federal, state, county, and private	Cooperative Funding	2006 - 2007	Yes	Yes
South Kona	Strengthening of County fire ordinances	Multiple agencies	Cooperative Funding	2006 - 2007	Yes	Yes
Lorenzo Road	Reduction of fuel load along roadsides	Multiple agencies	Cooperative Funding	2006 - 2007	Yes	Yes
Lorenzo Road	Continued fire prevention education and outreach	Multiple agencies	Cooperative Funding	2006 - 2007	Yes	Yes

Table 10. Original South Kona Projects List 2010

Plan Implementation and Maintenance

Because of the non-regulatory nature of the CWPP, the relevance and effectiveness of the South Kona CWPP and its subsequent updates rely heavily upon community initiative and agency involvement. Expertise, technical support, and implementation assistance will be provided by the appropriate agencies and organizations involved in fire issues in the South Kona Area, and area residents are urged to contribute their time and effort to implement the actions they self-identified in South Kona CWPP planning and update processes.

Hawaii Wildfire Management Organization, in cooperation with the Big Island Wildfire Coordinating Group, is available to provide technical support, identify and coordinate funding when possible, and serve as a centralized resource for wildfire risk reduction efforts in South Kona. Together, representatives will continue to prioritize and recommend funding for projects, document the successes and lessons learned from those projects, and evaluate and update the CWPP as needed.

Hawaii Wildfire Management Organization will provide outreach and educational programs to youth and adults through school programs, community events, homeowners/community association programs, and workshops in the coming year to kickstart additional community involvement in implementing the actions identified in this plan.

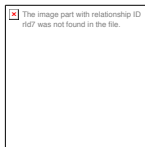
Many South Kona CWPP action items will require continuing support for wildfire risk mitigation projects. This will involve actively pursuing funding for projects, staying informed and in contact with one another, and updating the CWPP regularly so that it remains a “living” document. Continuing to build community awareness of these issues and actions will assist with fostering individual and community investment in projects.

The following County, State, and Federal representatives have a high level of interest in the protection of the South Kona area from wildfire, and have reviewed and support this CWPP. Contact information for principal government stakeholders is listed below.

County:

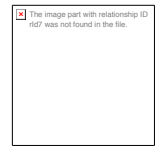
Hawaii Fire Department

Darren Rosario, Fire Chief
25 Aupuni St. #2501 Hilo, HI 96720
(808) 932-2903



Hawaii County Civil Defense

Darryl Oliveira, Administrator
920 Ululani St. Hilo, HI 96720
(808) 935-0031
doliveira@co.hawaii.hi.us



State:

Department of Land and Natural Resources, Division of Forestry and Wildlife

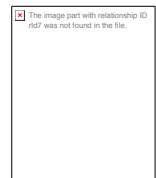
Lisa J. Hadway, Administrator
1151 Punchbowl St., Room 325, Honolulu, HI 96813
(808) 587-4173
Lisa.J.Hadway@hawaii.gov



Federal:

National Park Service

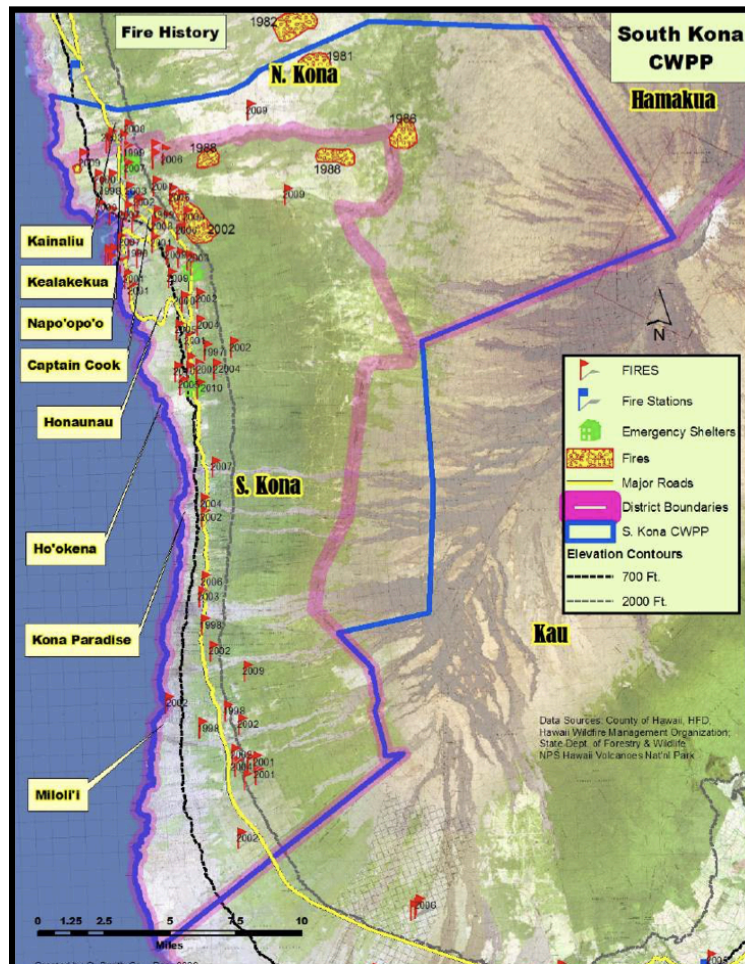
James Courtright, Fire Management Officer
Hawaii Volcanoes National Park & Pacific Islands Network
(808) 985-6042
James_Courtright@nps.gov



APPENDIX A:

**2024 LIST OF PRIORITY
PROJECTS AND ACTIONS
SOUTH KONA, HAWAII ISLAND**

2024 LIST OF PRIORITY PROJECTS AND ACTIONS



South Kona, Hawaii Island State of Hawaii

Drafted by Hawaii Wildfire Management Organization, in cooperation with the Department of Land and Natural Resources - Division of Forestry and Wildlife, Hawaii Fire Department, and Hawaii County Civil Defence

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I. INTRODUCTION

Community Wildfire Protection Plans (CWPP) are a great community planning tool and have become a prerequisite for receiving federal funding for wildfire protection projects. A CWPP assists a community in identifying and prioritizing areas for hazardous fuel reduction treatments and supports communities in taking action. The plans assess values at risk, such as safety, natural resource protection, recreation, scenic values, and economic assets. Through a collaborative process involving input from community members, resource management and firefighting agencies, and various other interested parties, CWPPs help bring wildfire hazard information and planning and action opportunities to all parties. These plans are increasingly important in Hawaii, which faces unique wildfire threats that are becoming more challenging due to increasing ignitions, drought episodes, and land use changes.

In order to keep the CWPPs current and relevant, this Appendix to the CWPP serves as a repository for annual updates to the list of priority projects and actions. These project and action updates are designed to keep the CWPP actionable and aligned with the community's current needs and opportunities for wildfire mitigation. In this appendix, you will find a list of projects and actions that help at-risk communities to protect their citizens, homes, and resources from the destruction of catastrophic wildfires in the wildland-urban interface (WUI).

This approach was mutually agreed upon and affirmed through the signatures at the front of this document, ensuring collective commitment to maintaining the CWPP as a living and evolving tool. By focusing on shovel-ready priority projects, we enable more effective planning, resource allocation, and funding efforts. Each update reflects the collaborative efforts of stakeholders and represents the best available information for advancing wildfire risk reduction.

Readers are encouraged to refer to these updates in conjunction with the foundational elements of the CWPP. Together, they provide a comprehensive framework for understanding wildfire risks and implementing effective mitigation strategies.

II. TABLE OF PROJECTS AND ACTIONS

Project Name: Fire Adapted Hawaii County	
Communities and Neighborhoods that will benefit from this project: Waikoloa Village, Kailua, Honaunau-Napoopoo, Kealakehe, Pahala, Waiohinu	
Affiliation: Hawaii Wildfire Management Organization (HWMO)	Project Lead: HWMO Partners: DLNR-DOFAW, Hawaii Fire Department
CWPP Area: South Kona, Hawaii Island	Cost: \$1,395,297
<p>Project Description: The proposed project is for HWMO to lead the following two programs for Hawaii County:</p> <ol style="list-style-type: none"> 1. The Firewise Communities (FC) program, which leads resident education, aids communities through the Firewise hazard assessment and recognition process. It also supports defensible space and risk-reduction efforts for at-risk, underserved communities via vegetation removal/transport assistance; and 2. The Wildfire Resilient Landscapes (WRL) program, which provides education and technical support for land managers, policymakers, emergency responders, and others. The WRL program provides education via in-person and virtual workshops, facilitates collaboration by facilitating ongoing working groups toward sustained multi-partner planning and cross-boundary mitigation, and provides area-specific and onsite technical mitigation and planning guidance. <p>This work will be implemented in close partnership with fire and forestry agencies.</p> <p>The August 2023 fires on Hawaii Island and Maui were spread by heavy winds and through unmanaged lands heavily invaded by fire-prone grasses that entered the built environment, causing substantial damage to life and property. These wildfires were the most devastating and publicized fires in Hawaii's history in terms of the number of lives and structures lost. However, wildfire size and frequency has been growing over the past few decades with broad and long-lasting impacts. Hawaii County's infrastructure is not designed or built with wildfire safety in mind, nor are its ecosystems adapted to fire. Every CWPP in Hawaii County has prioritized community and/or land manager education and vegetation management in and around at-risk communities and WUI boundaries. This project supports both.</p> <p>These programs address several CWPP priorities at once. CWPP priority actions that are addressed via the proposed Firewise Communities program are as follows:</p>	

NW Hawaii Island CWPP 2016 Update action items: (from Waikoloa, Puako, & North Kohala Action Tables, pgs 47-49, 51): Support financial and logistical assistance programs that assist residents; Develop neighborhood action items and programs to educate and assist with risk reduction; Increase HWMOs ability to be present in the area, support part of staff time to dedicate to this areas awareness and education, and Firewise leadership; Share in cost of container for private green waste disposal days; Develop and/or support community programs and workdays for fuels management and reduction of fire prone vegetation; Hold residential/neighborhood green waste removal and chipper days; Support Firewise program to help communities through Firewise process; Education and outreach via HWMO and Firewise program.

North Kona CWPP 2016 Action Plan Items (page 60-62): Assist interested communities in completing Firewise certification process; Green waste removal and recycle programs; Increase outreach to community associations; Provide wildfire education for decision makers;

South Kona CWPP 2015 Update, Concern #3 (page 21): Education/Outreach: Conduct outreach to landowners (page 21). Action Item #4 (page 24): Continued fire prevention education and outreach (page 23).

Kau CWPP Update: Wildfire Concern #1: Outreach and Education (page 20). Projects #1, 2, and 5: Wildfire education, community awareness programs; fuels management via community volunteer work days; and community chipper days as incentives/educational programs. Action Item #1 Wildfire Education- (Support) community awareness programs.

The CWPP priority actions that are addressed via the proposed Wildfire Resilient Landscapes portion of the program are as follows:

NW Hawaii Island CWPP 2016 Update (pgs 50-51): Work with property managers- education and facilitation of better collaborations; Develop and implement longer term strategy, such as grazing corridors or re-planting of less fire-prone plants; Work with DOT to understand what is already covered and how often, fill in gaps; Develop protocol for mitigation/fuels reduction in a culturally sensitive way.

North Kona CWPP 2016: Action Plan Items (page 60-62): Develop pre-fire mitigation and fire management plans for reserves and large landholdings; Work with large landowners to encourage fuels/access management.

South Kona CWPP 2016 Concern # 1, 2: Fuels Management: Overgrown large properties; Adjacent landowners not managing fuels; Action items: Conduct outreach to landowners, farmers, lessees, CTAHR, agricultural groups, and developers; Fuels Management legislation, education (page 21, 23).

The project supports the updated goals of the Cohesive Wildland Fire Management Strategy (CWFMS, 2023). By providing the opportunity for people to work together to

reduce fire risk the project will support the goal of creating fire-adapted communities. By engaging practitioners to inform, learn and work toward climate-smart land and fire management, the project will support the goal of creating resilient landscapes by prioritizing management actions to safeguard and restore landscapes. The project also supports the new wildland fire critical emphasis areas of: (1) community resilience, and (2) diversity, equity, inclusion and environmental justice in creating fire-adapted communities.

This need for community risk reduction education and fuels management is also highlighted in the Hawaii Forest Action Plan (<https://dlnr.hawaii.gov/forestry/files/2013/09/Hawaii-Forest-Action-Plan-2016-FINAL.pdf>) as Issue # 3: Wildfires: Priority 1.a. Prevention education: Reduce the threat from wildfires to native ecosystems, forests, watersheds, and threatened and endangered species as well as communities within WUI areas through established fire prevention programs; and Priority 2.c Pre-suppression fuels management: Mitigate the impacts of wildfires on natural and built environments.

By bringing together a diverse group of agencies, organizations, and the public, the two proposed programs also support the State of Hawaii Forest Action Plan (FAP) by providing an opportunity to address wildfire issues in Hawaii by strengthening collaborative partnerships through the partner-heavy implementation of the FC program, and by facilitating collaborative learning and project planning across jurisdictional and land ownership boundaries through the WRL program. The full set of programs will operate throughout Hawaii County, focusing on the communities with the highest fire threat, all of which are identified as Communities at Risk by the State Division of Forestry and Wildlife and Hawaii Wildfire Management Organization. Wildfire in Hawaii County poses threats to many communities on the island, however many of our communities at highest risk of wildfire are also socioeconomically vulnerable, underserved, and/or low-income, particularly Hawaiian Homestead Lands in leeward Hawaii County, which are designated as underserved Tribal areas in the CWDG tool.

Importance: These two programs have been key to Hawaii's progress toward wildfire preparedness and risk reduction thus far, but support is needed to carry forward the programs at the county level. The request for participation in the programs has increased 1,500% since our recent devastating fires. People across Hawaii County have become both scared and motivated. This proposal will meet those emotions and motivations with meaningful programming, sound information, and sustained technical support and risk reduction project assistance, carried out at the county level instead of at the existing, albeit limited, statewide level. Supporting county-level implementation of the two programs will provide higher quality education and technical support for individuals and communities (via FC program) and for others who influence fire outcomes (land stewards, large landowners, policymakers, and more, via the WRL program) in this new era when capacity, not complacency, has become our biggest obstacle.

Project Name: Dedicated Risk-Reduction Support for Native Hawaiians	
Communities and Neighborhoods that will benefit from this project: All DHHL Homestead Communities	
Affiliation: Department of Hawaiian Home Lands (DHHL)	Project Lead: Richard Hoke
CWPP Area: South Kona, Hawaii Island	Cost: \$150,000 annually per firewise coordinator, plus annual mitigation funds
<p>Project Description: DHHL homesteaders are Native Hawaiians who receive land leases from DHHL to build homes and establish sustainable communities. Many face socioeconomic challenges, including lower income levels and limited access to essential resources. While DHHL will provide financial assistance for community mitigation efforts, grant funds will directly support the hiring of a dedicated Firewise Coordinator for these vulnerable communities, enabling unified efforts in wildfire preparedness and mitigation.</p> <p>As a central point of contact, the Coordinator will support three groups: those interested in wildfire preparedness (Firewise-interested sites), those needing assistance to meet Firewise requirements (emerging sites), and those already in the Firewise program seeking advanced guidance (existing sites).</p> <p>Firewise-interested sites will receive resources and participate in workshops aimed at increasing knowledge around wildfire risks and mitigation best practices. Emerging sites will benefit from social and technical support to meet Firewise criteria, including forming a team, completing a hazard assessment, developing an action plan, and executing a risk-reduction project. Emerging and existing sites will receive technical assistance for mitigation planning and implementation, as well as access to the broader community of Firewise sites across the state (HI-Firewise Network).</p> <p>Mitigation projects to be designated by this Firewise assessment process.</p>	
<p>Importance: We are committed to investing millions in fuel breaks & land management activities to enhance the health/safety of the lands & communities we steward. However, achieving this vision requires the cooperation & active participation of our beneficiaries/homesteaders. Our primary aim is to target the enabling factors that will empower them to take proactive risk-reduction actions, while DHHL simultaneously mitigates risks on surrounding lands. This initiative will assess the impact of coordination support for our homestead communities and the availability of funds for their risk-reduction projects. Targeting both residential areas and DHHL-owned lands fosters a cohesive approach to wildfire management. This strategy encourages collaboration among neighboring communities and with DHHL, effectively reducing overall risk across the landscape. Additionally, this initiative aligns with broader wildfire management strategies, contributing to a unified regional response. As communities implement their mitigation plans and achieve Firewise recognition, we will establish a network of prepared landscapes and neighborhoods. This collaborative effort will collectively reduce wildfire hazards and promote sustainable, long-term risk reduction strategies.</p>	

Project Name: Quarterly Chipper/green waste cleanup, residents maintaining their defensible space	
Communities and Neighborhoods that will benefit from this project: Primarily Kona Paradise neighborhood but also surrounding properties within 2 miles	
Affiliation: Kona Paradise, sanctioned Firewise Community	Project Lead: Rod Streeter Partners: Kona Paradise Firewise Team, HWMO
CWPP Area: South Kona, Hawaii Island	Cost: \$4000 annually (\$1000 per event, 4 events/yr)
Project Description: 1) Kona Paradise clean-up 2) fuel mitigation, establishing defensible space 3) dumpster and chipper to aid residents in establishing defensible space on their property	
Importance: Community involvement, education, fuel reduction	

Project Name: Chipper / green waste of community common areas including Park area	
Communities and Neighborhoods that will benefit from this project: Primarily the Kona Paradise Neighborhood, as well as surrounding properties within 2 miles. These mitigation projects will reduce risk of wildfire spreading.	
Affiliation: Kona Paradise Firewise Team	Project Lead: Rod Streeter Partners: Kona Paradise Firewise Team and HWMO
CWPP Area: South Kona, Hawaii Island	Cost: \$2,000 (2 dumpsters \$1500, Chipper rental \$500)
Project Description: Chipper/ green waste clean up of common areas including park area. Will solicit community volunteers and a green waste dumpster will be required.	
Importance: Important because it promotes community involvement and education, helps residents reduce fuel hazards in their defensible space, reduces fuel hazards community common areas.	

Project Name: Roadway and power pole /line fuel reduction	
Communities and Neighborhoods that will benefit from this project: Primarily Kona Paradise neighborhood as well as surrounding property for 2 miles. These mitigation projects will reduce the risk of wildfires spreading.	
Affiliation: Rod Streeter	Project Lead: Rod Streeter Partners: Kona Paradise Firewise Team and HWMO
CWPP Area: South Kona, Hawaii Island	Cost: \$5,000
Project Description: Contract with an arborist and solicit volunteer labor to trim areas near power poles and vegetation along roadways throughout the community. KP is a one way in - one way out community; for this reason it is imperative to keep the roadway free of overhanging brush and fuel.	
Importance: Important because it provides education and community involvement, helps residents reduce fuel hazard in their defensible space, reducing fuel hazards in community common areas and powerline easements.	

Project Name: Hawaii Fire Department Curbside Chipping Program	
Communities and Neighborhoods that will benefit from this project: Waikoloa Village, Kailua, Honaunau-Napoopoo, Kealakehe, Pahala, Waiohinu	
Affiliation: Hawaii Fire Department	Project Lead: Hawaii Fire Department Partners: COH Dept of Public Works, COH Dept of Environmental Managements Solid Waste Division, Office of the Mayor, DLNR-DOFAW, HWMO, and others
CWPP Area: South Kona, Hawaii Island	Cost: \$3,039,232
Project Description: Unmanaged fuels and inadequate defensible space within and around community areas were a contributing factor to the four concurrent wildfires that occurred across Hawaii Island in August 2023. These wildfires resulted in mandatory evacuations, structure loss, and damage to hotel and residential properties along with ecosystem impacts. Unprepared agencies and communities are now eager to change behavior and practices to catch up to the current and growing wildfire risks faced by island communities and landscapes, including the more widespread adoption of creating buffers (defensible space) around homes and neighborhoods for mitigation and	

firefighter access/safety purposes. Major sticking points to defensible space progress (voiced by island homeowners after receiving home assessments) are the dearth of available and affordable mitigation contractors, lack of financial resources to complete mitigation recommendations, and lack of defensible space information and resource offerings from the Fire Department.

Hawaii Fire Department (HFD) needs a minimum of \$2,482,579 over 5 years to provide curbside chipping services and coordination/planning support to at-risk neighborhoods across Hawaii County. Community projects eligible to receive the services will include community-level defensible space projects (e.g. clearing of common areas, roadsides, fire/fuel breaks), residential-level defensible space projects (e.g. min. 15 households completing defensible space actions on their private lots), and defensible space projects that span land ownership to include larger lands adjacent to at-risk communities. The curbside chipping service will be available once per month during months 6-12 and twice per month during years 2-4. Months 1-6 will consist of program planning and coordination, equipment purchasing, and promoting the services to at-risk communities.

The funds will be used to purchase two 15 Vermeer BC1500 brush chippers and two Ram 5500 trucks/cabs with chip boxes (one set for each side of the island), one support truck (for moving/storing supplies and small hand-tools) with an attached trailer unit (for hauling green waste), and a Morbark 950 tub grinder and a Kubota KX080-4 compact excavator (for loading debris into the tub grinder and that will be hauled by a DPW truck) for larger-scale chipping projects. Funds will also be used to pay personnel to operate the curbside chippers and to contract a trusted community-based nonprofit partner to help promote the program, support the at-risk communities, and track outcomes. Personnel will come from either the County Fire Department or the County Department of Public Works (DPW). Only personnel that are trained to safely operate the machinery and are familiar with the equipment will be used. The County will be responsible for storing and maintaining the equipment when not in use, and HFD will work with DPW and other departments to develop a plan for using this equipment when not in use to further the county's work in reducing fire fuels on county-owned lands adjacent to at-risk communities.

This project will reduce the structural ignition potential of 60 homes (yr1)/300 homes (yrs2-5) (1,260 homes total), reduce the wildfire risks in and around 26 at-risk WUI communities by removing 4,612.5 cubic yards of hazardous fuels per year (generating 1,153.1 cubic yards of chipped debris), and build community and HFD capacity towards improved wildfire outcomes through community partnership.

The curbside chipping services will be available for free to at-risk neighborhoods that work together to plan and coordinate community defensible space projects. Each neighborhood that enrolls will have a pile registration deadline and all participating residents within that neighborhood (including the adjacent large landowners) must register their physical address, # hrs spent cutting, dragging and making the piles (to serve as an in-kind matching contribution), and other information on/before deadline

date. Online pile registration forms will be built using Google forms. For residential-level defensible space projects, all participating households will be required to have a home assessment completed ahead of time and to indicate on the registration form the date in which the home assessment was completed. Free assessments can be requested on HWMOs website (www.hawaiiwildfire.org/home-assessments).

During community events, chips will be piled or broadcast on site depending on the participants choice on the registration form, or will be hauled away to the County's Solid Waste Facility for a \$25 haul fee (or to a common area pre-determined by the neighborhood). For chipped debris that remains on site for piling or broadcasting, education will be provided around the ideal location (where needed for water retention, erosion control, and landscaping) and the not-ideal location (within the first 5 feet from structures).

Public education/outreach and community engagement will be key to this project's success. HFD will work with the Firewise USA Communities and Home Assessment Programs to promote the program, as well as with the broader wildfire mitigation and education work being conducted in partnership with the Big Island Wildfire Coordinating Group (government emergency management and forestry agencies, Hawaii Wildfire Management Organization, and Hawaii Community College Fire Science Program).

Contracted work will include a contractor that will help promote the program, provide assistance/support to communities planning/coordinating community mitigation events, manage the on-line registration portal that accepts requests for participation (including an option for registering over the phone for residents who don't have access to the Internet), liaise and coordinate logistics between HFD and neighborhood, and track in-kind contributions (number of hours spent making the piles) and the amount of chipped debris generated.

CWPP Priority: This program strategically addresses several CWPP priorities at once. CWPPs were written to specifically address the goals and tenets of the Cohesive Strategy so the priorities concurrently represent both our CWPPs and the Cohesive Strategy because that was the foundational framework for CWPP development. The priorities addressed are as follows:

NW Hawaii Island 2016 update, Priorities #2, 3, 4: Controlling vegetation: Enforce brush abatement codes, Enforce unmaintained vegetation on private property and developer lands; Address vegetation management in gulches and unmanaged vegetated areas; Develop neighborhood action items and programs to educate and assist with risk reduction.

South Kona CWPP Fire Adapted Communities Priorities #1, 2, 3 (page 21): Address overgrown large properties and large lands adjacent to communities who aren't managing fuels through fuel abatement legislation and enforcement, maintenance

responsibility, and by conducting outreach to landowners.

North Kona CWPP: Every priority provided by meeting participants throughout North Kona in the Resilient Landscapes Category of goals except for one pertains to vegetative fuels management (page 50-51), with top concerns including: Debris around homes, Undeveloped acres ringed by houses, Lots of hazardous brush next to homeowners, and similar (Page A-2)

Kau CWPP Fire Adapted Communities Priorities (Page 20) # 1, 2, 3: Education, Fuels Management on Private Land, and Fuels Management of guinea grass.

The project supports the updated goals of the Cohesive Wildland Fire Management Strategy (CWFMS, 2023). By providing the opportunity for people to work together to reduce fire risk the project will support the goal of creating fire-adapted communities; and it will support the goal of creating resilient landscapes by prioritizing management actions to safeguard and restore landscapes and by engaging members of the community who can contribute their traditional ecological knowledge (TEK) to inform climate-smart land and fire management.

The low-income and socially vulnerable communities of Hawaii Island are traditionally underserved. The project also supports the CWFMS new critical emphasis areas in resilience and diversity, equity, inclusion and environmental justice in creating fire-adapted communities. This program will provide added assistance to these communities so that their residents have the social and technical support needed to organize their communities around community- and residential-level defensible space projects and the planning and coordination that is required of them. For participating residents that prefer to have their chipped debris hauled off site the \$25 haul fee will be waived. For participating residents that have access and mobility needs, HWMO will assist them in addressing their defensible space needs through their partnership with Team Rubicon who has trained sawyers available for socially vulnerable resid

Importance: The overall goal of this program is to help at-risk communities/residents create defensible space in and around their neighborhoods to minimize loss of life and property due to the increasing occurrence of devastating wildfires in the wildland-urban interface in Hawaii County.

Project Name: Hawaii Fire Department Defensible Space Inspection Program	
Communities and Neighborhoods that will benefit from this project: Waikoloa Village, Kailua, Honaunau-Napoopoo, Kealahou, Pahala, Waiohinu	
Affiliation: Hawaii Fire Department	Project Lead: Hawaii Fire Department Partners: Hawaii County Civil Defence, DLNR-DOFAW, HWMO, and others
CWPP Area: South Kona, Hawaii Island	Cost: \$5,344,342
<p>Project Description: Every CWPP in Hawaii County has prioritized vegetation management and enforcement. This proposal represents HFDs increased commitment to reducing wildfire risk ahead of events by building internal capacity to conduct education and inspections, and by shifting local culture regarding vegetation management to one of knowledge and accountability.</p> <p>HFD is requesting \$4,823,612.48 over 5 years to provide a year-round workforce of 1 captain level fire management officer, 4 Inspectors, and support for a collaborative program for defensible space educational home assessments. This combined workforce of HFD inspectors who carry out inspections and enforcement, and community-based educators/ home assessors at the residential level will provide a solid foundation upon which to build a comprehensive Defensible Space Inspection (DSI) program to adequately address the growing number of parcels in high fire risk areas of Hawaii County that are not in compliance.</p> <p>This project falls under the Wildfire Prevention and Mitigation Education/Outreach project type in the NOFO as Property inspections and/or assessments and/or Adoption, implementation, enforcement, and training of [NFPA] or [ICC], or similar codes.</p> <p>Background: Lack of defensible space is a major factor in our fires, and has contributed to the majority of our destructive fires for more than two decades. HFD has been unable to address this issue because of a lack of capacity, too few inspectors, and no HFD fire management officer to focus on wildland fire issues.</p> <p>While HFD is the primary response and initial attack agency for wildfires in Hawaii County, it is also responsible for ambulance/medical response, structural fires, hazmat, ocean safety, and more, making large wildfire events a challenge for response when resources are stretched extremely thin to also maintain daily operations. As an island-county, we are limited to the resources we have on-island for suppression. HFD is prioritizing education, code inspection, and enforcement as an essential pathway toward reducing risk and the likelihood of the extreme fire behavior we are increasingly experiencing.</p> <p>Overall Strategy: HFD will implement a comprehensive DSI program for high-risk areas, that is capable of inspecting 100% of complaint driven inspection requests (upward of 200 annually), and 80% of the large-acreage parcels that threaten communities in the target area.</p>	

Comprehensive follow up enforcement activities will be completed on the 35 or so large land parcels each year that remain non-compliant after the inspectors make multiple attempts to work with the property owner.

Community-based educational home assessments will also be conducted for 1000 residential parcels over the 5-year period through a contracted partner program.

HFD leadership will oversee the entire DSI effort, including the supervision and direction of the DSI personnel, ensuring documentation and records are completed properly, and determining which parcels will be referred for further follow up and possible legal action. The contracted community program will coordinate the educational home assessments program.

Inspection Details: The DSI program personnel will conduct initial and follow-up property evaluations on both a proactive and complaint-driven basis. The Inspectors will engage owners of non-compliant properties in a constructive, education-focused process to bring the parcel into compliance. Voluntary compliance is, by far, the primary objective of this program. Those parcels that remain non-compliant after multiple on-site assessments will be evaluated by the fire management officer and fire chief on a case-by-case basis for referral through the legal enforcement process as governed by Hawaii revised Statutes Duties of the Fire Chief, which govern the enforcement process.

As we implement the DSI program, we will track gaps and sticking points in enforcement and/or codes and use that information to inform and modify our next fire code adoption to better meet our wildfire risk reduction and vegetation management needs.

There is political will and an appetite for this DSI program and for ongoing improvement of it in order to improve fire outcomes across Hawaii County.

Education and Public Engagement: The DSI program personnel and cooperators will engage residents during community events, one-on-one discussions, and other outreach opportunities, providing education regarding defensible space, fuel reduction, and techniques to harden their property and improve their property's chance of surviving a wildfire. Some examples of community events include community and HOA meetings, hazard preparedness events and planning meetings, CWPP meetings and working groups, and local festivals.

The DSI program strategically addresses several CWPP priorities at once. Our CWPPs are actually written to specifically address the goals and tenets of the Cohesive Strategy, so the priorities concurrently represent both our CWPPs and the Cohesive Strategy because that was the foundational framework for CWPP development. The priorities addressed are as follows:

NW Hawaii Island 2016 update, Priorities #2, 3, 4: Controlling vegetation: Enforce brush abatement codes, Enforce unmaintained vegetation on private property and developer lands; Address vegetation management in gulches and unmanaged vegetated areas; Develop neighborhood action items and programs to educate and assist with risk reduction.

South Kona CWPP Fire Adapted Communities Priorities #1, 2, 3 (page 21): Address overgrown large properties and large lands adjacent to communities who aren't managing

fuels through fuel abatement legislation and enforcement, maintenance responsibility, and by conducting outreach to landowners. Work to develop HFD enforcement capability for fuel abatement violations

North Kona CWPP: Every priority provided by meeting participants throughout North Kona in the Resilient Landscapes Category of goals except for one pertains to vegetative fuels management (page 50-51), with top concerns including: Debris around homes, Empty lots and unmanaged fuels, Adjacent properties that have unmanaged fuels need penalties, Undeveloped acres ringed by houses, Lots of hazardous brush next to homeowners, and similar (Page A-2)

Kau CWPP Wildfire Response Priority #3 (page 19) Fire inspection to address wildfire hazard violations; and Fire Adapted Communities Priorities (Page 20) # 1, 2, 3: Education, Fuels Management on Private Land, and Fuels Management of guinea grass.

Specific to the Cohesive Strategy itself, this project supports the Creating fire-adapted communities factor, along with the guiding principle that Rigorous wildfire prevention programs are supported across all jurisdictions and the outcome goal of "Individuals and communities accept and act upon their responsibility to prepare their properties for wildfire".

This need for community risk reduction education and fuels management is also highlighted in the Hawaii Forest Action Plan as Issue # 3: Wildfires: Priority 1.a. Prevention education: Reduce the threat from wildfires to native ecosystems, forests, watersheds, and threatened and endangered species as well as communities within WUI areas through established fire prevention programs; and Priority 2.c Pre-suppression fuels management: Mitigate the impacts of wildfires on natural and built environments through fuel assessment, modeling, reduction, and management.

The full defensible space program will operate throughout Hawaii County, focusing on the communities with the highest fire threat, all of which are identified as Communities at Risk by the State Division of Forestry and Wildlife and Hawaii Wildfire Management Organization, as shown on page 104 of the Forest Action Plan. Wildfire in Hawaii County poses threats to a diversity of communities on the island, however many of our communities at highest risk of wildfire are also socioeconomically vulnerable, underserved, and/or low-income, particularly Hawaiian Homestead Lands in leeward Hawaii County, which are designated Tribal areas.

Importance: The overall goal for this program is to launch and carry out a Defensible Space Inspection program in Hawaii County to educate property owners about defensible space and wildfire risk reduction, conduct defensible space inspections and enforcement, and promote a culture of personal responsibility and accountability for fuels management across our county.

Certificate of Completion

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Elizabeth Pickett

elizabeth@hawaiiwildfire.org

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talmadge.magno@hawaiicounty.gov  **Verified**

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elizabeth@hawaiiwildfire.org  **Verified**

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Elizabeth Pickett has invited to sign the document

elizabeth@hawaiiwildfire.org  **Verified**


19 Dec, 2024, 11:36 PM UTC

Elizabeth Pickett has invited to sign the document

elizabeth@hawaiiwildfire.org  **Verified**



20 Dec, 2024, 12:59 AM UTC

Michael Walker has signed the document
michael.j.walker@hawaii.gov  **Verified**
2603:800c:701:c516:5cef:160:f653:f2ae


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Elizabeth Pickett has sent reminder to sign the document
elizabeth@hawaiiwildfire.org  **Verified**

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elizabeth@hawaiiwildfire.org  **Verified**

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Kazuo Todd has signed the document
kazuo.todd@hawaiiicounty.gov  **Verified**
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