

Community Wildfire Protection Plan for Kahikinui, Island of Maui, Hawaii

Sponsored by the Department of Hawaiian Home Lands
September 2008



DEPARTMENT OF HAWAIIAN HOME LANDS



Written by Denise Laitinen

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This Community Wildfire Protection Plan was made possible with the assistance of the Department of Hawaiian Home Lands. The author would like to extend a sincere mahalo nui loa to the following people and agencies for their assistance: Todd Gray and Mike Robinson of the Department of Hawaiian Home Lands; Maui County Fire Department; Hawaii State Division of Forestry and Wildlife; Maui County Civil Defense; Patrick V. Kirch, Professor of Anthropology and Integrative Biology, University of California, Berkeley; and the residents of Kahikinui and members of KOOK, particularly Chad Newman. A very special mahalo nui loa to Cheyenne Perry for researching and creating the GIS maps used in this project.

Cover photo: View of 2003 Kahikinui wildfire. Photo courtesy of the Maui County Fire Department.

Kahikinui Community Wildfire Protection Plan

Kahikinui Community Wildfire Protection Plan
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**Kahikinui Community Wildfire Protection Plan
Mutual Agreement Page**

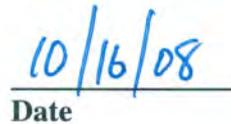
The Community Wildfire Protection Plan (CWPP) developed for Kahikinui, Maui, by the Department of Hawaiian Home Lands:

- Was collaboratively developed. Interested parties and federal land management agencies managing land in the vicinity of Kahikinui have been consulted.
- This Plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect Kahikinui.
- This Plan recommends measures to reduce the ignitability of structures throughout the area addressed by the Plan.

The following entities mutually agree with the contents of this Community Wildfire Protection Plan:



Paul J. Conry
State Forester, Division of Forestry and Wildlife



Date



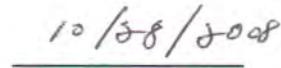
Jeff Murray
Fire Chief, Maui County Fire Department



Date



Gen Iinuma, M.P.H.
Administrator, Maui County Civil Defense Agency



Date

Linda Chinn
Administrator, Land Management Division
Department of Hawaiian Home Lands

Date

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Executive Summary:

The community of Kahikinui in Maui County, on the leeward side of the Island of Maui, is under the jurisdiction of the Department of Hawaiian Home Lands (DHHL). Kahikinui is in a wildland urban interface (WUI) environment - that is where wild lands and houses meet. These interface areas pose the highest risk of loss of life and property due to wildland fire. The risk of wildland fire impacting homes in the WUI is determined by several factors, including the ignitability of fuels, structural ignitability, weather conditions, and topographical features, such as slope. Unlike other parts of the United States, wildfire is not a natural part of Hawaii's ecosystem. In Hawaii, wildfires destroy native plants, which can impact the watershed and the habitat of threatened and endangered native Hawaiian animals. Wildfires in Hawaii can also cause soil erosion, which has the potential to cause runoff that negatively impacts ocean reefs.

The overwhelming majority of wildfires in the state of Hawaii, and Kahikinui in particular, are caused by arson or human error. Human error includes errant fireworks, rubbish, cooking, or agricultural fires that get out of control in the wildland-urban interface, as well as vehicle-caused wildfires.

Principal stakeholders who have an interest in protecting Kahikinui from wildfire include the Maui County Fire Department, Department of Hawaiian Home Lands, which sponsored this CWPP, as well as the State Division of Forestry and Wildlife (DOFAW), Maui County Civil Defense Agency, Kahikinui Game Land Management Ohana (KGLMO), Living Indigenous Forest Ecosystems (LIFE), and the residents themselves who are members of Ka 'Ohana O Kahikinui (KOOK). These stakeholders were invited to participate in the development of this Plan.

A wildfire risk hazard assessment determined that the WUI areas in this community have a high risk of wildland fire. In recent years wildland fires in the area have threatened the 104 house lots of Kahikinui.

Meetings with community members and fire agency personnel identified 12 priority mitigation measures that can reduce the wildfire risk in Kahikinui, as well as improve community safety. These include: (1) improvement (i.e. grading and paving) of the main access road in the residential village, as well as improvement of the Jeep trail as a secondary emergency egress; (2) creation of a grazing buffer zone around the residential zone; (3) creation of static water resources, such as reservoirs and dip tanks, for fire suppression purposes; (4) creation of dedicated helicopter landing zones and creation of a contingency fund for helicopter use during wildfires; (5) the need to save nearby dryland forests; (6) reduction of fuel load along Piilani Highway; (7) reduction of fuel load around lessee homes; (8) identifying evacuation routes within the residential village; (9) increasing wildfire risk awareness among hunters; (10) developing a Community Emergency Operation Plan; (11) forming a Community Emergency Response Training (CERT) team and undergo training; and (12) renting/purchasing heavy equipment for fuel reduction projects.

Background:

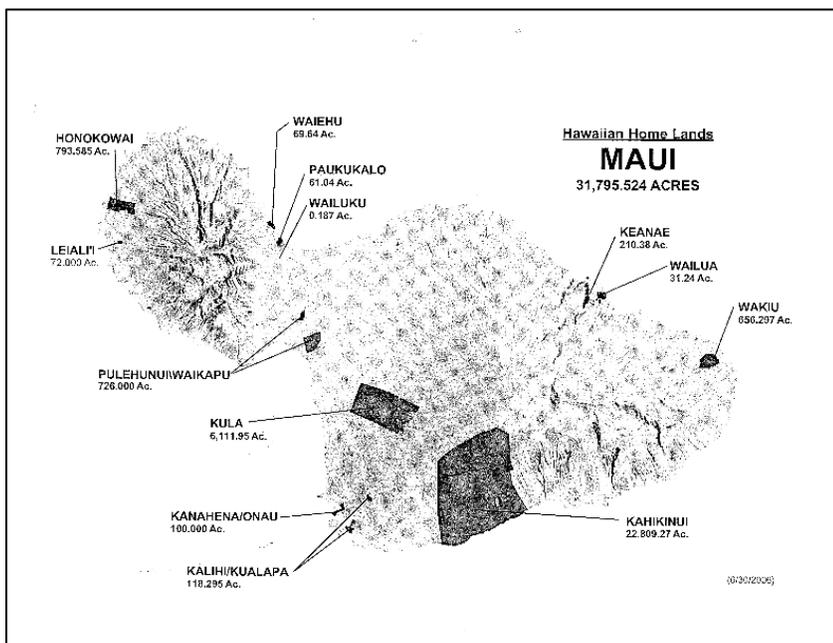
Kahikinui is located on the slopes of Haleakala on the leeward side of the Island of Maui. An arid, remote area, Kahikinui is more than a community. Historically, it encompassed an entire moku composed of several ahupua'a, a land division within Hawaiian culture extending from the ocean to the mountaintop.

For centuries the uplands of this region were a vast dryland forest, home to a sizable Native Hawaiian population in the pre-contact era. However, within the last two hundred years, particularly after the Great Mahele (land division) of 1848-1852, the area was deforested and became sparsely populated. Prior to the Great Mahele, the land was under the jurisdiction of Lot Kamehameha, who turned it over to

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the Hawaiian government after 1852, the government in turn leased a great deal of the land to neighboring ranches.

After the annexation of Hawaii, Congress created *The Hawaiian Homes Commission Act of 1920* as a land trust. The purpose of the Act was the rehabilitation of native Hawaiians, those individuals of not less than one-half Hawaiian blood. The program offered 99-year leases for residential, agricultural, and pastoral homesteads on the islands of Kauai, Oahu, Maui, Molokai, and the island of Hawaii. When Hawaii became the 50th state in the U.S., one of the conditions of statehood was that the State of Hawaii would administer this program. [*Hawaiian Homes Commission Act of 1920*, www.capitol.hawaii.gov] The mission of DHHL is to manage the Hawaiian Home Lands trust effectively and to develop and deliver land to native Hawaiians [*DHHL 2007 Annual Report*, <http://hawaii.gov/dhhl/publications/annual-report>]. DHHL partners with others towards developing self-sufficient and healthy communities.



DHHL's 15 land holdings on Maui total 31,795 acres, of which the Kahikinui ahupua'a is the largest encompassing 22,809 acres.

The area for this CWPP encompasses the entire 22,809-acre Kahikinui ahupua'a from the forest reserve at the 10,000-foot elevation to sea level (mauka to makai). This CWPP encompasses only Kahikinui Hawaiian Home Lands TMK No.'s (2) 1-9-1:003, 007, 008 & 011. DHHL owns the entire moku with the exception of three kuleana parcels: two of which are at Lualailua and the other is at Manawainui. See Figure 1 for detail.

The area was used as ranch land for most of the 20th century. Little has changed at the beginning of the 21st century.

Figure 1: At nearly 22,809 acres, Kahikinui is the largest of DHHL's 15 land holdings on Maui and the only one to include an entire ahupua'a.

Since 1999, leases have been awarded to those willing to live in this remote area with the premise of eventually creating a self-sufficient community. To that end, a community group, Ka Ohana O Kahikinui (KOOK) a non-profit 501(c) corporation, was created. KOOK's purpose is to "develop, implement, and maintain a community-based land and natural resource management program; the documentation and registration of all historical and archeological sites in Kahikinui; the restoration and maintenance of those archeological sites determined to have cultural significance; and to develop self-sufficiency through subsistence homesteading." There are 104 subdivided lots in the residential area of the ahupua'a and although approximately 75 leases have been awarded, only nine families live in Kahikinui.

Infrastructure:

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Kahikinui is one of the few places on Maui that has not been touched by development or urbanization. Residents of Kahikinui have no running water and must haul water by personal truck or use limited catchment water. There are no fire hydrants within the residential area.

There are no energy utilities in the community with residents relying on generator and solar power. However, Sandwich Isles Communications Inc. installed underground phone cables that provide phone service to residents.



Left: gated front entrance to Kahikinui residential area from Piilani Highway. Right: the Hana-bound direction of Piilani Highway.

Piilani Highway (Route 31), a 20-foot wide two-lane paved highway, runs east to west at the 1,200-foot elevation dividing the ahupua'a into mauka (mountain side) and makai (ocean side) sections.

The main road from the highway to the residential village is a gated single-lane dirt road less than 14 feet in width that is accessible only by four-wheel drive vehicles. A portion of the main entrance road is paved and the side roads are unpaved. Standard fire trucks can not access the area due to the



Left: side road within Kahikinui residential area. A portion of the main entrance road is paved and the side roads are unpaved. Right: main access road for the residents of Kahikinui. The road is so rugged it takes an hour to drive four miles from the house at the top of the residential area down to the highway. Rough road conditions have been an issue during past wildfire evacuations.

rough terrain. The road is so rugged that it takes an hour to travel four miles from the entrance of the community to the house at the highest elevation. The road is frequently washed out during periods of heavy rain making it difficult to travel. Residents periodically hold community workdays to cement pave the roughest sections of the road in spans of 50-100 feet long. There are four side roads stemming

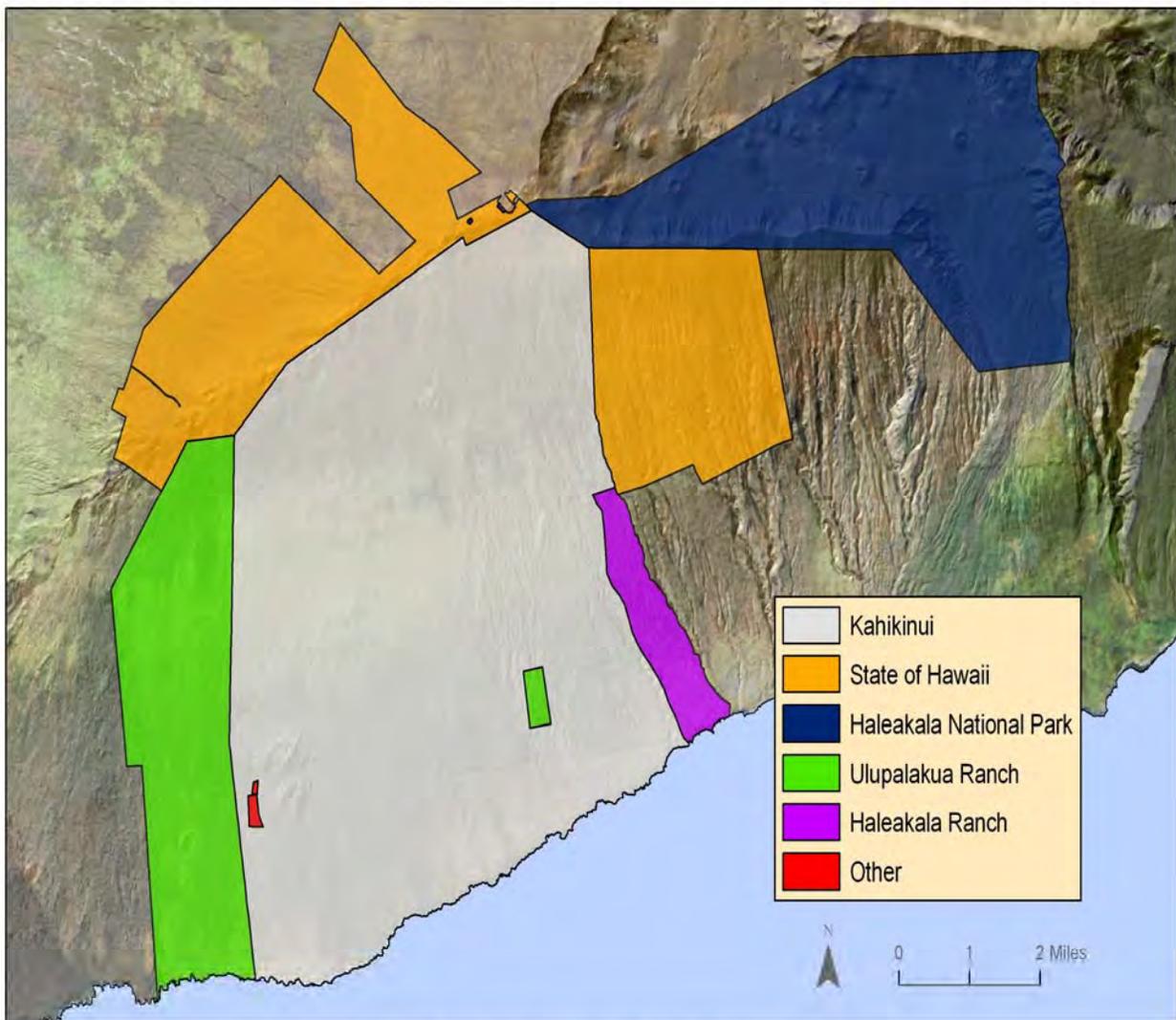
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from the main road, all of which are unmarked dirt roads. An unpaved single-lane Jeep trail runs westward and down along the west portion of the ahupua'a.

Upslope of the residential area, the forest tree line begins at the 5,000-foot elevation and continues up to the boundary of the ahupua'a at the 10,00-foot elevation. Adjacent landowners include Haleakala National Park, the State of Hawaii, Ulupalakua Ranch, and Haleakala Ranch. Figure 2 below illustrates landowner boundaries.

Figure 2: four major landowners neighbor Kahikinui Hawaiian Home Lands. Three kuleana parcels lie

Kahikinui and Adjacent Landowners



Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008
 Data Sources: <http://www.state.hi.us/dbedt/gis/index.html> and <http://hawaii.wr.usgs.gov/maui/data.html>

Vegetation:

Kahikinui was once a vast expanse of dryland forest before being turned into grazing lands. Today, pockets remain of native Hawaiian koa and sandalwood trees. In fact, areas of Kahikinui are home to some of the best remnant dryland forest on island (Medeiros 1996). Efforts are underway by multiple

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groups, such as Living Indigenous Forest Ecosystems (LIFE), to reforest sections of the ahupua'a during community workdays. Reforesting the land, especially at upper elevations, will enable trees to comb moisture from the clouds and bring much needed water to the area.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Above: 'Oha wai, a tall tree with curved flowers, is one of the endangered plants located in Kahikinui. East Maui is one of only two places in the world where this plant is found. Photo credit: Clyde Imada for Hawaii's Biological Survey, Bishop Museum.

Kahikinui is also home to several endangered plants and animals, some of which are found nowhere else in the world. The southern slopes of Haleakala are the only place on Maui that 'Oha wai (*Clermontia lindseyana*) trees are found and one of two places in the world where it grows (the slopes of Mauna Kea on Hawaii Island being the other location). This tall tree relies on the native Hawaiian bird 'i'iwi for pollination.

The Blackburn's hawk moth (*Manduca blackburni*), which was once found on several Hawaiian Islands, is now found only on Maui in coastal and dry areas, including Kahikinui. The plants ko'oko'olau (*Bidens micrantha kalealaha*), asplenium-leaved diellia (*Diellia erecta*), the shrubs (*Neraudia sericea*) and Wawae'iole (*Phlegmariurus manni*), and the Lanai sandalwood tree (*Santalum freycinetianum var. lanaiense*) are other endangered native Hawaiian plants found in Kahikinui.

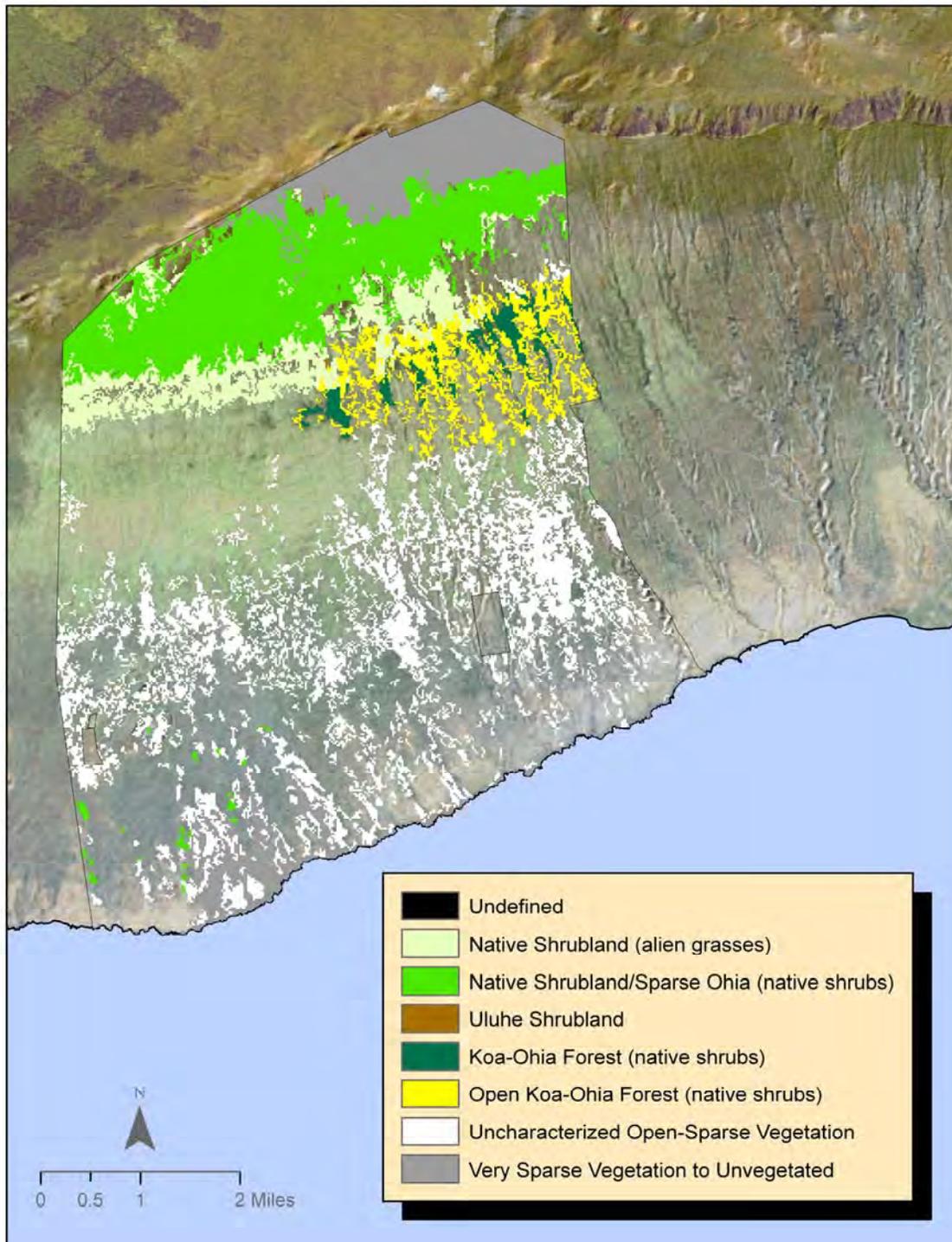
Native vegetation in Kahikinui consists of open grasslands and pockets of dryland forest (see Figure 3). There are sizable expanses within Kahikinui covered in thick grasses or duff that dry out in the summer months. Invasive grasses and shrubs can be found throughout the ahupua'a (see Figure 4). Although the amount of gorse (*Ulex europaeus*) has increased in recent years, community members are taking a proactive stance to reduce it with periodic gorse removal projects. A known fire hazard (Amme 1983), gorse is an invasive shrub, dense in thickness that grows 3 to 10 feet in size.

Vegetation along the highway includes kiawe (*Prosopis pallida*) and a variety of grasses. Considered an invasive plant, kiawe grows as a moderately sized shrub and tree. Used as firewood, kiawe has a long burn time. Since there are no road shoulders, vegetation often grows right up to the road. Piilani Highway is the only road connecting the east end of Hana and the entire eastern slope of Haleakala with the rest of the island. Tourists often use this road to travel to Hana and are unfamiliar with wildfire risks to the region. It's possible for roadside fires to be started by catalytic converters and mufflers from cars and motorcycles.

With the exception of the highway corridor, the general public is not granted access to Kahikinui. Nor is camping allowed within the ahupua'a. Only hunting groups with licenses from DHHL are allowed access to hunt in the forest reserve. The nonprofit group Kahikinui Game Land Management Ohana (KGLMO) has a license to hunt in the forest reserve. KGLMO is more than a hunting club with many of its members performing hours of community service restoring trails in the community.

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Kahikinui Native Vegetation



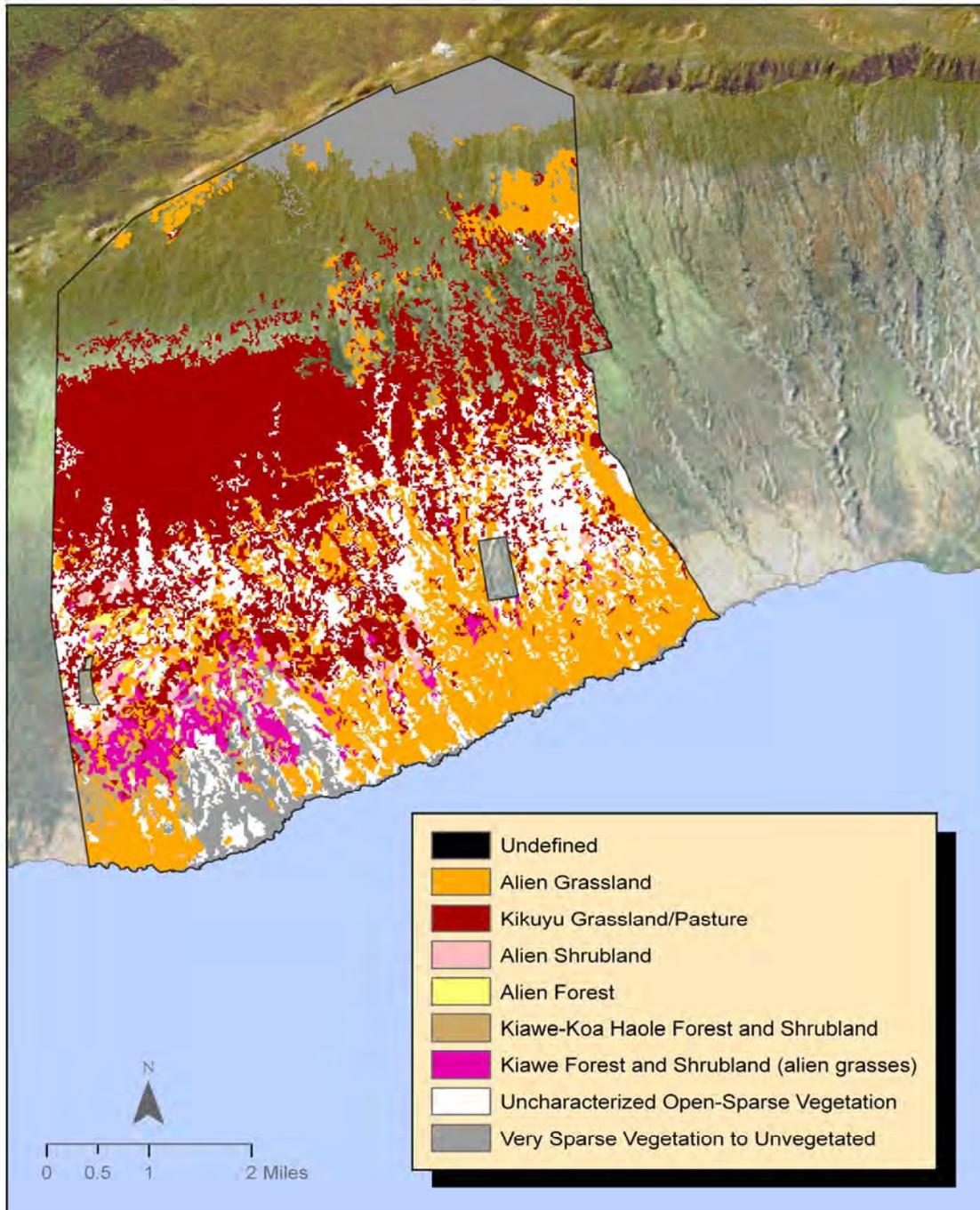
Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008

Data Sources: <http://hawaii.gov/dbedt/gis/>, <http://hawaii.wr.usgs.gov/maui/data.html> and http://hbmp.hawaii.edu/Public_data/HIGAP/

Figure 3: the dark green areas denote native ohia and koa forests while lime green areas represent native shrub land and alien grasses. Gold areas denote native shrubland with sparse ohia while grey areas depict very sparse vegetation.

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Kahikinui Introduced Vegetation



Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008

Data Sources: <http://hawaii.gov/dbedt/gis/>, <http://hawaii.wr.usgs.gov/maui/data.html> and http://hbmp.hawaii.edu/Public_data/HIGAP/

Figure 4: there are a variety of invasive grasses and shrubs found throughout Kahikinui. Red areas depict alien forests, while yellow depicts alien grasslands and orange highlights alien shrubs. White areas have uncharacterized sparse vegetation, while grey areas have little or no vegetation.

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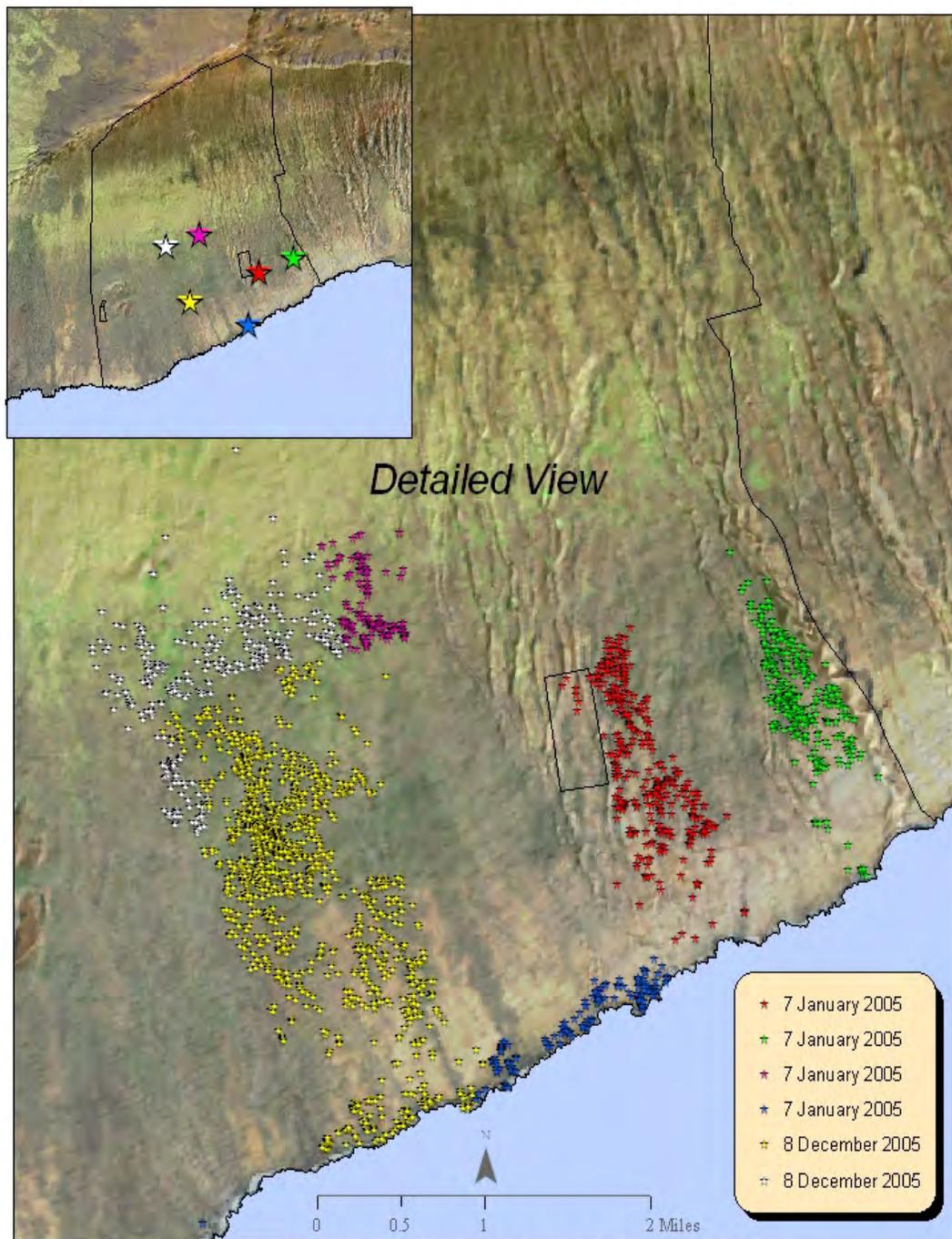
Archeology:

In addition to endangered plant life, there are thousands of archeological sites within the Kahikinui ahupua'a, including 26 heiau (sacred temples.) With its isolated and rugged location, Kahikinui is one of the few, if not the only place in Hawaii where the archeological landscape is still relatively untouched. Archeologists from around the country study Kahikinui for its rich archeological history. Remnants of dwellings and temples dating to the twelfth century have been documented in the ahupua'a and it is estimated there were roughly 8,000 Hawaiians living in the community in the 1700s.

The importance of this archeological treasure trove cannot be overstated. Nowhere else on Maui is an entire ahupua'a in relatively pristine archeological condition. While the community recognizes that preservation of life is foremost during wildfires, the use of dozers and other heavy equipment is a concern in fire suppression because many archeological sites are in close proximity to roadsides. Any future mitigation projects within the ahupua'a will need to keep archeological preservation in mind. Figure 5 shows just some of the recently documented archeological locations.

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Archaeological Surveys



Prepared for The Department of Hawaiian Home Lands by: C. Perry, February 2008
 Data Sources: Professor Patrick Kirch of the Oceanic Archaeology Laboratory, University of California, Berkeley,
<http://hawaii.gov/ohedtt/gis/>; and <http://hawaii.wr.usgs.gov/maui/data.html>

Figure 1. The inset map shows clusters of sites. For example: the red star signifies 359 sites in the Mehamenui portion; the yellow star represents 1,418 sites in Kipapa; the green star denotes 351 sites at Manawainui; the purple star denotes 146 sites at Nakeohu; the blue star represents 166 sites at Nakeohu; and the white star represents 419 sites at Kipapa.

Fire History:

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Maui County Fire Department is responsible for fire suppression in the district. The nearest fire station is in Kula, 19 miles away (a nearly 45-minute drive) and houses two apparatus: a pumper with a 750-gallon tank capacity and a utility truck (Chevy Blazer). There are reported to be five reservoir ponds in Kahikinui (condition unknown) that have the potential to hold approximately one million gallons of water when full.

According to Maui County Fire Department data, between January 2000 and December 2006 17 wildfires in Kahikinui burned more than 7,500 acres. Of these blazes, 14 were of undetermined cause, 2 were caused negligently, and 1 was unintentional.

Given the area's arid conditions, rough terrain, and strong winds, wildfires in Kahikinui can grow rapidly. In September 2006 four separate roadside fires were reported at 11 p.m. on a Saturday night. The fires quickly spread and became one large fire. By Monday the wildfire had grown to 5,500 acres, requiring the suppression efforts of three helicopters and 60 firefighters. The blaze forced the closure of Piilani Highway between Ulupalakua and Oheo Gulch and came dangerously close to several homes.

A 2,500-acre fire in July 2003 burned for more than a month in inaccessible terrain and could only be suppressed with the use of helicopters.

In the 2006 fire, residents self-evacuated before police notified them they had to leave. Residents in the lower portion of Kahikinui were able to evacuate, but a resident in the upper portion of Kahikinui had to be evacuated by helicopter because flames had blocked the main entrance road as he tried to escape.

In terms of natural or man-made disasters, wildfires are the most frequent threat to Kahikinui. Given the rugged location, wildfires can spread quickly, burning thousands of acres and threatening area homes. In contrast, tsunamis would have little impact on the community since residents are upland, and while the region is susceptible to hurricanes and earthquakes, these events occur quite rarely. However, flash floods are an issue in the area as they wash out sections of the main road in the residential area.

Stakeholders:

Stakeholders are individuals or groups who have a high level of interest in the protection of their assets from wildfire. The residential portion of Kahikinui encompasses 1,340 acres and lies within a wildland urban interface zone. In addition to community members and fire response agencies, landowners that border Kahikinui, such as Haleakala National Park, Ulupalakua Ranch, Haleakala Ranch, and the State of Hawaii have an interest in reducing the wildfire risk in Kahikinui. Contact information for principal stakeholders is listed below.

Federal:

Haleakala National Park / Hawaii Volcanoes National Park

Joe Molhoek, Pacific Island Fire Management Officer

P.O. Box 52

HNP, HI 96718

(808) 985-6042

Joe_Molhoek@nps.gov

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State:

Department of Hawaiian Home Lands

Linda Chinn, Administrator, Land Management Division
P.O. Box 1879
Honolulu, HI 96805
(808) 620-9450

Department of Hawaiian Home Lands

Maui District Office
655 Kaunualii Street, Suite 1
Wailuku, HI 96793
(808) 760-5120

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

Wayne Ching, State Protection Forester
1151 Punchbowl Street, Room 325
Honolulu, HI 96813
(808) 587-4173

Wayne.F.Ching@hawaii.gov

County:

Maui County Department of Fire and Public Safety

Fire Chief Jeff Murray
200 Dairy Road
Kahului, HI 96732
(808) 270-7561
Jeff.Murray@co.maui.hi.us

Maui County Civil Defense Agency

Gen Iinuma, M.P.H., Administrator
200 High Street, 1st Floor
Wailuku, HI 96793
(808) 270-7285
gen.iinuma@co.maui.hi.us

Community:

Ka 'Ohana O Kahikinui (KOOK)

'Aimoku Pali Sr., KOOK Board President
P.O. Box 1132
Kula, HI 96790
(808) 760-3028

Additional Stakeholders:

Haleakala Ranch

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Greg Friel
529 Kealaloa Avenue
Makawao, HI 96768
(808) 572-1500

Kahikinui Game Land Management Ohana (KGLMO)

Kawika Davidson, KGLMO President
685 Akaku Street
Wailuku, HI 96793
(808) 269-0699

Leeward Haleakala Watershed Restoration Partnership

Art Medeiros, Ph.D., Coordinator
P.O. Box 652
Makawao, HI 96768
auwahi@yahoo.com

Living Indigenous Forest Ecosystems (LIFE)

Walter Kanamu
President
27 Ho'ehaili Way
Wailuku, HI 96793
(808) 760-8224

Sandwich Isles Communications Inc.

Rodney Kaulupali, General Manager
1001 Bishop Street, Pauahi Tower, 27th floor
Honolulu, HI 96813
(808) 524-8400

Ulupalakua Ranch

Sumner Erdman
HC 1 Box 901
Kula, HI 96790
(808) 878-1202

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Base Map of Kahikinui:

The areas containing critical human infrastructure i.e. houses, are in the residential area of the ahupua'a. Areas of community importance include: The Kahikinui House, Hale Pili, Hale Malama, Sandwich Isles Communications Center, various archeological sites, and native forests. Figure 6 depicts the boundary of the community.

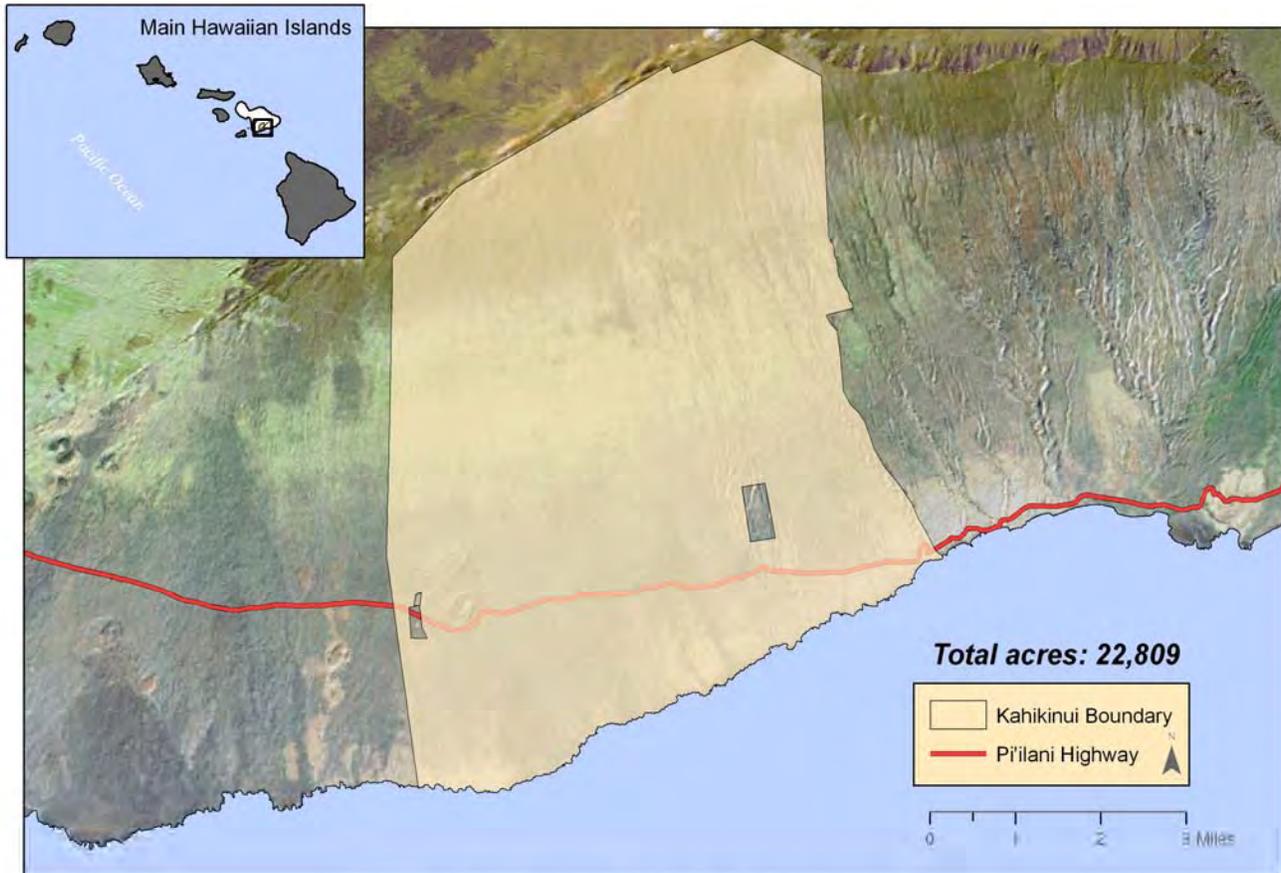
Kahikinui, Maui

Figure 6: area of consideration for the Kahikinui CWPP.

Fire Risk Assessment for Kahikinui:

The Kahikinui community encompasses an entire ahupua'a from sea level to an elevation of 10,000 feet. There are no commercial districts within the community. The residential area of Kahikinui is composed of 104 house lots spread out across approximately 1,340 acres ranging from the 1,200- to 4,200-foot elevation on the mauka side of the highway. Lots vary between 10 and 17 acres. Of the 104 house lots, 75 leases have been awarded and 9 families live in Kahikinui. There are 25 structures within the residential village, including the Sandwich Isles Communications Center (a windowless structure serving as an equipment substation) and an outdoor pavilion made of stone pillars and a metal roof that serves as the community center.

The Hale Pili, a three-walled meeting area with a metal roof on the makai side of the highway; Hale Malama, a structure for community use; and the historic Kahikinui House round out the additional structures in the CWPP project area. There are no schools, commercial businesses, industrial facilities,

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gas stations, or other facilities within the area. St. Ynez church, abandoned in the 1860s, is not in use today.

Structures within the Kahikinui residential village are composed of post and pier or concrete slab construction. While some houses have non-combustible siding, the majority of houses have



Left and right: houses within the residential area of Kahikinui. Some are post and pier construction while others are built on a concrete slab. The majority of homes have at least 30 feet of defensible space around the house.

noncombustible roofing and combustible (wood) siding. Since the entire ahupua'a is on the side of a volcanic mountain, the residential village is by definition on a slope with hilly areas and gulches throughout the ahupua'a. Rugged hills and steep ravines are a concern because they can channel fire within the community. Some structures are within 30 feet of steep slope, and while slope in some areas can be as steep as 20-30%, most houses are built on a flat area within the lot. The majority of the homes have at least 30 feet of defensible space, although some structures have vegetation growing within 30 feet of the structure.

Lot numbers are visible on the front gates of driveways making them easily identifiable in case of an emergency. Driveways for house lots average more than 300 feet long and driveway entrances tend to be paved with cement for only the first 20-50 feet. Some house lots have locked metal gates at the driveway entrances. Locked gates have the potential to hinder first responders from accessing the property in times of emergencies. However most emergency vehicles would be unable to enter individual house lots, as the main road is only accessible by four-wheel drive vehicles.

There are vast open grasslands as far as the eye can see in Kahikinui that harken from the days when the land was used for ranching. Wild cattle, goats, and pigs can be found in the forested area of the ahupua'a above the house lots and are actively managed by licensed groups, such as KGLMO. There is no organized grazing within the residential area although grazing occurs outside the residential area. Neighboring Ulupalakua and Haleakala Ranches conduct grazing to the east and west of the ahupua'a respectively.

There is no county water system and therefore no fire hydrant system in Kahikinui. Residents rely on catchment water and haul their own water for drinking and household purposes.

Residents can usually only haul about 200 gallons of water at a time given the rough terrain and weight of the water. Five inactive reservoirs are within the ahupua'a and have the potential to be improved and



Rolling hillsides spread as far as the eye can see in Kahikinui. The open lands are filled with native and invasive shrubs and grasses.

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used for fire suppression purposes. There are also no energy utilities in the community, with residents relying on generators and solar power for electricity.

Given its dry and isolated location, there is a great deal of wildland urban interface in Kahikinui. The area receives an average of 15 inches of rainfall annually and is buffeted by strong winds that shear around Haleakala. Vegetation includes koa and sandalwood trees found in the upper forest, as well as iliahi and wilwili trees. There is an abundance of native and invasive shrubs and grasses in the area, including scrub kiawe, kikuyu grass, lantana, and gorse. Homes throughout the Kahikinui residential area contain mature vegetation, including trees, shrubs, and plants. Some homesteaders have planted dozens of native koa trees around their property.

A Hawaii Wildland Fire Risk and Hazard Severity Assessment based on the Assessment in Appendix A of NFPA 1144, *Standard for Protection of Life and Property from Wildland Fire*, was conducted by the Hawaii Firewise Coordinator and the past president of KOOK on November 27, 2007 to identify the level of wildland fire risk of Kahikinui. The Firewise Coordinator and Maui Fire Department personnel also conducted a wildfire hazard assessment in July 2003.

Using a pre-established point system, the Wildland Fire

Risk and Hazard Severity Assessment is a tool used to determine the level of wildfire risk to a home or community. Points are assigned regarding overall terrain and location, road width, local fire history, prevailing winds and seasonal weather, geographical contours, native vegetation, water availability, location of fire suppression resources, as well as the combustibility of building materials, including roof, siding, and attached items, such as decks, fencing, or an additional unit. The combined points in all these categories are added together and the overall risk is determined by whether the score falls in the low-, medium-, high-, or extreme-risk point range. Given the rugged terrain, strong winds, lack of water, difficulty in traversing egress routes, and preponderance of high-intensity burning vegetative fuels in close proximity to structures, Kahikinui scored in the high-risk range of the Wildland Fire Risk and Hazard Severity Assessment, a copy of which can be found in Appendix A.

This Plan focuses on structures within the wildland urban interface in Kahikinui. Overgrown vegetation, structures with combustible building materials, and limited ingress into the community all contribute to unsafe fire conditions.

Community Assets at Risk:

Assets at risk are valued resources that can be damaged or destroyed by wildfire. In addition to ensuring firefighter safety and protecting residents and visitors, the following assets warrant consideration in pre-incident planning: watersheds; forest reserves; wildlife; rare and endangered plants and animals; scenic, cultural, and archeological sites; and structures.

The following were identified as valued resources within the Kahikinui community that would be adversely affected by wildfire.

Commercial resources:



Maui Fire Department personnel from Kula station and a Kahikinui resident survey the land during a wildfire hazard assessment in July 2003.

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- Sandwich Isles Communications Center

Historical resources:

- The Kahikinui House and the ruins of St. Ynez church are historical resources. The State of Hawaii classifies buildings over 50 years old as historical structures in accordance with National Park Service Administrative Rule Chapter 6E.

Natural resources:

- Kahikinui is home to thousands of archeological sites, including 26 documented heiau.
- Native Hawaiian endangered animals found in Kahikinui include the Blackburn's hawk moth (*Manduca blackburni*), which is found only on Maui in coastal and dry areas. Native Hawaiian owls are known to have nesting spots in upper elevations of the ahupua'a.
- Endangered native plants found in the ahupua'a include ko'oko'olau (*Bidens micrantha kalealaha*), mint (*Phyllostegia mollis*), asplenium-leaved diellia (*Diellia erecta*), shrubs such as Wawae'iole (*Phlegmariurus mannii*), and the Lanai sandalwood tree (*Santalum freycinetianum var. lanaiense*). Kahikinui is one of two places in the world where the tree 'Oha wai (*Clermontia lindseyana*) can be found.
- Remnant forests of sandalwood, koa, and iliahi trees are considered by the community to be both an economic and natural resource. Members of the Leeward Haleakala Watershed Restoration Partnership are working on mapping the GPS coordinates of these natural resources. While the location of such natural resources may be known to residents and Ulupalakua Ranch employees, (and therefore known to need protection during a wildfire), responding Maui County firefighters may not know the locations of these important resources.

Economic resources

- Cattle: both wild and those grazed by neighboring ranches, when managed properly, can be considered an economic resource.

The mix of flammable vegetation, including kiawe trees is a concern since firebrands, consisting of burning embers and small burning matter, can travel up to a mile when strong winds are present. Kiawe trees are known carriers of firebrands. The grasses found within Kahikinui are high-intensity fuels, which burn quickly and can rapidly spread fire to other fuels, such as kiawe. The high-fire hazard in this area is demonstrated by a history of large wildfires in the region. Open lands filled with a mixture of flammable grasses and kiawe trees encompass Kahikinui. While most homes have fire resistant roofing, a number of homes in the Kahikinui residential village have wood siding and lanais (decks), further enhancing the fire problem.

Previous mitigation efforts undertaken in Kahikinui

Kahikinui residents and KOOK members are well aware of the wildfire risk to their community and in recent years have been taking steps to reduce that risk.

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In August 2003 the community held a multi-agency meeting to explore the idea of developing a fire plan for the community. Meeting attendees included representatives from the Maui County Fire Department, Hawaii State Division of Forestry and Wildlife (DOFAW), Department of Hawaiian Home Lands, Ulupalakua Ranch, and Haleakala National Park.

Firewise presentations were made to the KOOK Board of Directors, as well as the general community in the Fall 2003. A Firewise workshop was held for Kahikinui residents in December 2003. Seven residents attended, as well as personnel from Maui County Fire Department and DOFAW.

In April 2004 a community workday was held during which fuel load reduction (brush clearing) occurred along the main road, as well as along cement areas of interior roads within the community. During the same event a buffer zone of defensible space was created around Hale Pili on Piilani Highway. Eighteen lessees participated in this workday.

KOOK members have been in discussions with the County of Maui Department of Public Works Highways base yard to assist in roadside brush cutting, particularly between mile markers 22 and 26.

The Maui DOFAW office donated two three-foot by four-foot reflectorized Smokey Bear signs to KOOK to increase awareness of the wildfire hazard in the community, particularly to tourists driving through the area. One of these signs is posted at the 21 mile marker and the other is posted at the main entrance to the Kahikinui residential village.

In the past, KOOK members have applied for DHHL grant funding to create an emergency contingency fund for helicopter support from private helicopter companies in the event of a wildfire. Given Kahikinui's remote location and topography, as well as the size of recent wildfires, it is strongly recommended that such a contingency fund be established. Helicopters provide crucial initial response to wildfires in isolated areas and their use in tactical operations can prevent small fires from becoming large dangerous conflagrations. Should KOOK get the funding for such a fund, the Maui County Fire Department and the selected helicopter company would need to establish a Memorandum of Agreement (MOA) with the understanding that this contingency fund would only be used for fire suppression in Kahikinui.

Community Concerns for Kahikinui:

DHHL commissioned the CWPP because the agency is concerned about wildfire negatively impacting the community. Wildfires can potentially be caused by human error along the highway, i.e. tossed cigarettes, errant fireworks, and catalytic converters of cars parked in dry grasses. Wildfires can damage structures, as well as negatively impact the watershed, degrade native forests and wildlife habitat, and destroy cultural and historic areas. Multiple meetings with community members and fire

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agencies specifically on this CWPP held in November and December 2007 identified the most pressing wildfire concerns in Kahikinui. These include in order of priority:

1. Need to improve main access road within community, as well as improve the Jeep trail for use as a secondary emergency egress and fire break road.
2. Need for a buffer zone around the residential village.
3. Need of additional water resources for fire suppression.
4. Need for dedicated landing zones for helicopters for fire suppression purposes.
5. Need to save dryland forests.
6. Need for buffer zones along Piilani Highway, cutting grass back 10-20 feet from roadsides.
7. Need for continuing public education: remind residents to create and maintain 30-100 feet of defensible space around their home.
8. Identify evacuation routes.
9. Need for campfire protection measures.
10. Need for development of a Community Emergency Operation Plan.
- 10a. Need for a Community Evacuation Plan.
11. Residents want to become better prepared to deal with emergencies.
- 11a. Need for better communications among residents during emergencies, i.e. use of ham radios.
12. Need for equipment/machinery to use in fuel mitigation projects, such as a chipper; a truck to haul the chipper to Kahikinui; a tractor mower (one of the lessees has volunteered use of his tractor); and a low boy to haul tractor from Wailuku to Kahikinui.

Recommended Action for Kahikinui:

Multiple meetings with community members and fire agencies specifically on the CWPP process in November 2007 identified the most pressing fire concerns in Kahikinui. These include in order of priority:

1. Improvement of, i.e. paving, main entrance road in residential village. Improvement of Jeep access trail as a secondary means of emergency egress.
2. Creation and maintenance of a buffer zone / fuel break around entire 1,340-acre residential settlement.

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A fuel break of such size would require tremendous man-hours and maintenance. It is therefore recommended that KOOK consider partnering with a neighboring ranch to graze a buffer zone around the residential settlement.

- 2a. Creation and maintenance of a fuel break along fence line being installed by Art Medeiros of the Leeward Haleakala Watershed Restoration Partnership.
3. Increase utilization of current reservoirs and/or installation of dip tanks. These water resources could be fed by seasonal rains from nearby gulches and/or runoff from the Communications Center.
 - 3a. Developing wells or damming narrow gulches are other possibly means of increasing water reservoir resources.
 - 3b. Installation of a fog catcher to catch water in the upper forest area.
4. Creation of dedicated landing zones for helicopters for fire suppression purposes.
- 4a. Creation of a contingency fund to hire private government-certified helicopters during wildfires.
5. To save dryland forests during wildfires, KOOK members are encouraged to meet with Maui County Fire Department officials for pre-incident planning meetings to make fire officials aware of sensitive ecological areas.
6. Work with Maui County Department of Public Works to ensure Piilani Highway roadsides are mowed, particularly in the dry summer months. (Maui County Fire Department Chief said he would contact DPW and make this request.) When KOOK members conduct community workdays clearing roadside brush, it should be cleared a minimum of 10-20 feet.
7. Reduction of fuel load around individual properties. Increase awareness among homesteaders of the need to create defensible space with Firewise tips in community newsletter. Hold a fire prevention awareness event at least once a year.
8. Install metal reflectorized signs showing evacuation routes within the residential village.
9. Increase awareness among hunters of risk of wildfires from guns and/or campfires through informational sessions and outreach with KGLMO members.
10. Develop a Community Emergency Operation Plan. This would include identifying points of contact for ham radio operators, as well as learning how to use ham radios and the purchase of the equipment. [KOOK members may wish to contact the Ocean View Disaster Preparedness Committee in Hawaiian Ocean View Estates (HOVE) on the Island of Hawaii who instituted a similar plan utilizing block captains and ham radio operators for their community.]
11. Community Emergency Response Training (CERT) is recommended for KOOK members.
 - 11a. Build a fire tower lookout on Lot #75. Such a fire tower would require staffing by a predetermined agency or group and the securing of funding for such staff.
12. KOOK may want to look into the feasibility of using grant funding to rent a chipper and tractor mower during periodic community workdays.

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Based on the results of the community wildfire hazard risk assessment, priority ratings have been selected for Kahikinui. The community recommendations for the type and method of treatment for the surrounding vegetation are listed in the following table.

Community at risk	Type of Treatment	Method of Treatment	Overall Priority
Kahikinui	Mechanical	Improvement of main access road. Improvement of Jeep trail as a secondary emergency egress.	Very High
	Mechanical / Grazing	Buffer zone around residential village.	Very High
	Mechanical	Need for additional water resources.	Very High
	Mechanical	Creation of dedicated helicopter landing zones.	High
	Hand Labor	Save dryland forest.	High
	Mechanical / Chemical / Hand Labor	Creation/maintenance buffer zone along Piilani Highway.	High
	Hand Labor / Chemical	Creation of defensible space around community homes.	High
	Education	Identify evacuation routes with signage.	Medium
	Public Education and Outreach	Need for campfire protection measures.	Medium
	Public Education and Outreach	Develop a Community Emergency Operation Plan.	Medium
	Public Education and Outreach	Community CERT training.	Medium
	Mechanical	Need for equipment/machinery to use in fuel mitigation projects.	Medium

Community, federal agencies, and private landowners surrounding Kahikinui were invited to submit projects that provide protection and reduce wildland fire risk. The following table displays a list of projects based on recommendations from community and fire-related organizations.

Community, structure or area at risk	Project	Agency	Funding Needs	Timetable	Community Recommendation
Kahikinui	Improvement of main access road. Improvement of Jeep trail as a secondary emergency egress.	DHHL/ Others	Cooperative & Grant Funding Estimated cost: \$4 million DHHL intends to budget \$100,000 annually for Kahikinui road improvement. Total estimated cost of road improvement is \$4 million.	2008-2011	Yes
	Grazing of buffer zone around residential village.	KOOK / neighbor ranches	Cooperative Funding Estimated cost: _____) NRCS can do cost	2008-2010	Yes

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			sharing of creating fuel breaks. (Contact Neil Fujiharata, NRCS)		
	Need for improving current reservoirs and installing additional water resources.	Multiple agencies	Cooperative & Grant Funding Estimated cost: \$20,000 per dip tank	2008-2010	Yes
	Creation of dedicated helicopter landing zones.	DHHL / KOOK / Private	Cooperative & Grant Funding Estimated cost: \$	2008-2010	Yes
	Creation of buffer zone along Piilani Highway	Maui County / KOOK	County / Grant Funding Estimated cost: \$	2008-2010	Yes
	Creation of defensible space around community homes	KOOK	Individual Estimated cost: \$ minimal	2008-2010	Yes
	Identify and clearly mark evacuation routes with metal reflectorized signage.	DHHL / KOOK	Cooperative & Grant Funding Estimated cost: \$	2008-2010	Yes
	Need for campfire protection measures.	KOOK / KGLMO	Estimated cost: \$	2008-2010	Yes
	Develop a Community Emergency Operation Plan. Purchase ham radios; build and staff fire tower.	DHHL / KOOK / private	Grant Funding Estimated cost of radios: \$ Estimated cost of building fire tower: \$	2008-2010	Yes
	Community CERT training.		Free to community members	2008-2010	Yes
	Need for equipment/machinery to use in fuel mitigation projects.	KOOK / private	Grant Funding Estimated cost: \$	2008-2010	Yes

Reduce Structural Ignitability:

As part of its fire prevention education efforts, Firewise provides recommendations to reduce structural ignitability. Individuals and the Kahikinui community can reduce structural ignitability throughout the community by taking the following measures.

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- Create a buffer zone of defensible space around a property of at least 30 to 100 feet. 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. And whenever possible use native Hawaiian or succulent plants.
- 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.

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Appendix A:

Please see below the Hawaii Wildland Fire Risk and Hazard Severity Assessment Form conducted for Kahikinui, Hawaii.

Hawaii Firewise Wildland Fire Risk & Hazard Severity Assessment Form

Assign a value to the most appropriate element in each category and add the point totals. This assessment was adapted from Appendix A of NFPA 1144, Standard for Protection of Life and Property from Wildland Fire. When assessing a home or community, look at the overall terrain and site location, local area fire history, prevailing winds and seasonal weather (keep Kona wind conditions in mind), property contours, native vegetation, irrigation requirements, as well as the combustibility of roof, siding, and attached items, such as lanai, fencing, or an ohana unit.

Area Assessed: Kahikinui, Maui Hawaii
 Assessment Conducted by: Denise Laitinen, Firewise Coordinator 11/27/07

Element	Possible Points	Points Given	NOTES
A. Means of Access			
1. Ingress and egress			
a. Two or more roads in/out	0		
b. One road in/out	7	7	
2. Road width			
a. Greater than 24 ft.	0		
b. Greater than 20 ft. but less than 24 ft.	2		
c. Less than 20 ft.	4	4	
3. Road condition			
a. Surfaced road, grade less than 5%	0		
b. Surfaced road, grade greater than 5%	2		
c. Non-surfaced road, grade less than 5%	2		
d. Non-surfaced road, grade greater than 5%	5	5	
4. Fire service access to community or home			
a. Driveway is less than 300 ft. with turnaround space for fire trucks	0		
b. Greater than 300 ft. with turnaround	2	2	
c. Less than 300 ft. with no turnaround	4		
d. Greater than 300 ft. with no turnaround	5		
5. Driveway is at least 12 ft. wide with 15-foot vertical clearance	0	0	
a. Driveway is <12 ft. wide with <15-ft. clearance	3		
6. Street signs			
a. Present (4 inches in size and reflectorized)	0		
b. Not present	5	5	
B. Vegetation			
1. Type of vegetation within 100 ft. of structure or to property line, whichever is closer			
a. Light: grasses less than 12 inches high	5		
b. Medium: light brush and small trees; guinea and fountain grass (high intensity fuel)	10	10	
c. Heavy: dense brush, timber, hardwoods	20		
d. Slash: timber harvesting or landscape residue, compost piles, etc	25		
2. Defensible space around the home/community			
Fuelbreaks			
a. Trees are spaced 10 ft. apart, low flammability plants are low lying and	0		

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carefully spaced. Ladder fuels have been removed.			
b. Fuel breaks exist: i.e. driveways, pools, gravel walkways, lawns within 30 ft. of structure	0	0	varies
c. Area around structure has no fuel breaks	3		
Fuel Treatment (has homeowner created defensible space?)			
a. Vegetation 100 ft.+ from structure or to property line	1		
b. Vegetation 71-100 ft. from structure	3		
c. Vegetation 30-70 ft. from structure	5		
d. Vegetation 0-30 ft. from structure	7	7	varies
e. Vegetation has not been maintained	10		
C. Topography within 300 feet of structure			
1. Slope 0-9%	1		
2. Slope 10%-20%	4		
3. Slope 21%-30%	7	7	varies
4. Slope 31%-40%	8		
5. Slope greater than 41%	10		
D. Additional rating factors that may apply (highest total points = 20)			
1. Area has history of fire occurrence (arson, ag burning)	0-5	4	
2. Area subject to strong dry, winds	0-5	5	
3. Separation of adjacent structures that may contribute to fire spread (i.e. ohana unit within 30 ft.)	0-5	0	
4. Topographic features that adversely affect wildland fire behavior	0-5	4	
E. Roofing Assembly			
1. Class A roof (asphalt shingle, clay tile, metal)	0	0	
2. Class B roof (treated wood shake)	3		
3. Class C roof (wood shake)	15		
4. Nonrated or Debris on roof (leaves, needles, etc.)	25		
F. Building construction			
1. Materials (predominate)			
a. Fire-resistive siding, eaves, & lanai and/or fencing (stucco, masonry, stone)	0		
b. Fire resistive siding; combustible lanai and/or fencing	5		
c. Combustible siding, lanai and/or fencing	10	10	
2. Windows, skylights			
a. Window panes are small in size, double paned or tempered glass	0		
b. Windows are single pane, and/or large in size	3	3	
c. Skylights: tempered glass with metal framing	0		
d. Skylights: plastic with vinyl framing	2		
3. Building setback relative to 30% slope			
a. Structure is more than 30 ft. away from slope	1	1	
b. Structure is less than 30 ft. from slope	5		
4. Eaves, soffits, exposed openings into structure			
a. Wire mesh no bigger than 1/8" on vents, chimneys, exposed areas under house	0		
b. Vents, chimneys, and/or space under house is large enough for embers to enter	3	3	

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G. Available Fire Protection			
1. Water Source Available			
a. Pressurized water source availability			
Hydrants (500 gpm) are <1,000 feet apart	0		
Hydrants (250 gpm) are 1,000 ft. apart	1		
b. Non-pressurized water source availability (catchment)			
More than 250 gpm continuous for 2 hours	3		
Less than 250 gpm continuous for 2 hours	5		
c. Water unavailable	10	10	
3. Organized Response Resources			
a. Fire station is 5 or less miles from structure	1		
b. Fire station is more than 5 miles from structure	3	3	
H. Placement of Gas and Electric Utilities			
1. Both utilities are underground	0		
2. One utility is underground, one aboveground	3	3	Phone underground
3. Both are above ground	5		

Total points: 93

Totals for Home or Subdivision: (total for all above points)

Hazard Assessment:	Total Points:		
1. Low Hazard	0-37	3. High Hazard	68-110
2. Moderate Hazard	38-67	4. Extreme Hazard	111+

Appendix B: Project List 2010-2012

Agencies and private landowners surrounding Kahikinui were invited to submit projects that provide wildfire protection and reduce risk. The following table displays a list of recommended projects.

Community or area at risk	Project	Agency	Funding Needs	Timetable	Community Recommendation?
Kahikinui	Improvement of main access road. Improvement of Jeep trail as a secondary emergency egress.	Others	Cooperative & Grant Funding Estimated cost: \$4 million DHHL intends to budget \$100,000 annually for Kahikinui road improvement. Total estimated cost of road improvement is \$4 million.	2008-2011+	Yes
	Maintenance grazing	DHHL /	Cooperative Funding	2010-	Yes

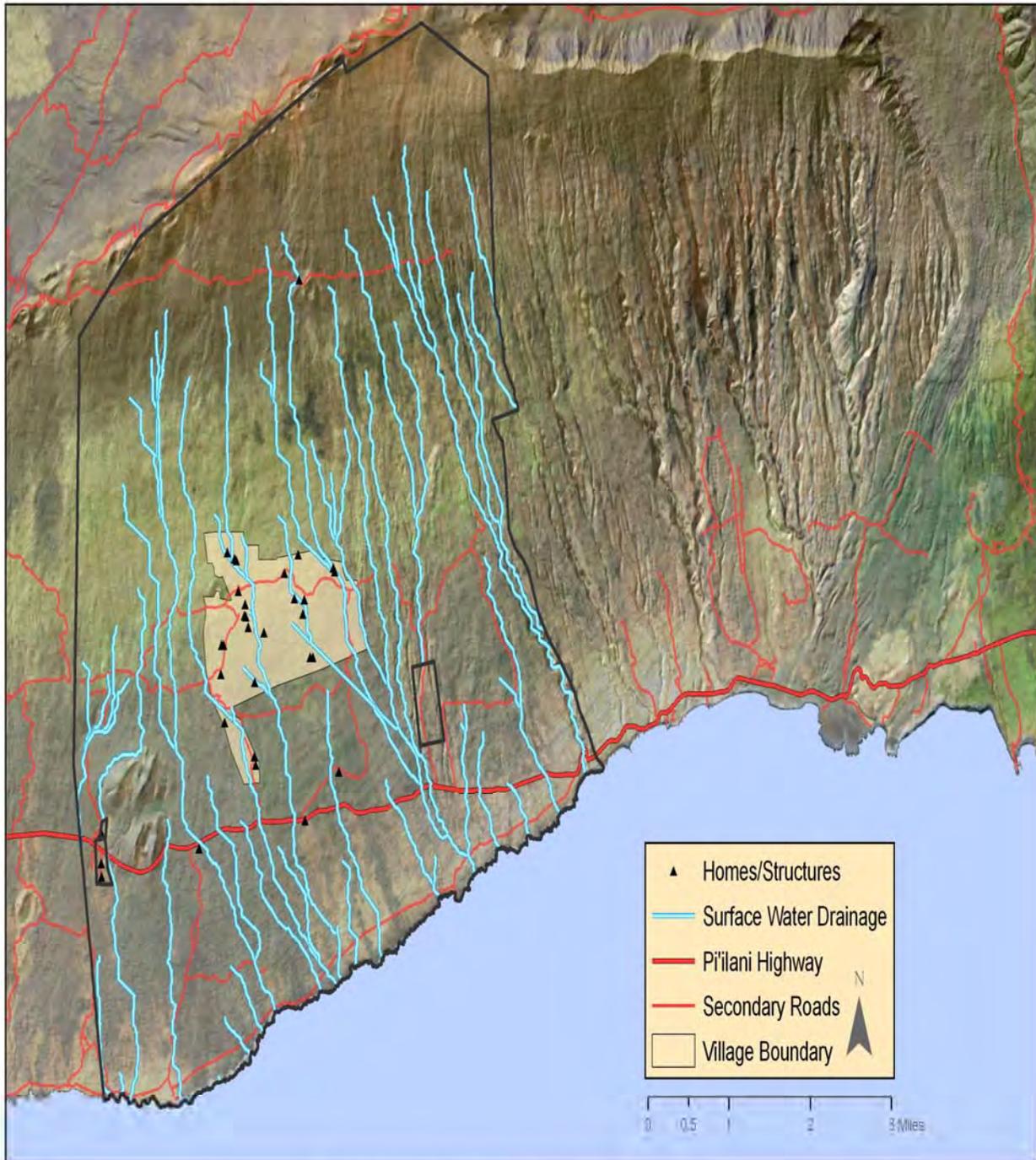
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	of buffer zone around residential village.	KOOK / neighbor ranches	Estimated cost: _____) NRCS can do cost sharing of creating fuel breaks. (Contact Neil Fujiharata, NRCS)	2012+	
	Need for additional water resources. Maintenance of water sources.	Multiple agencies	Cooperative & Grant Funding Estimated cost: \$20,000 per dip tank	2010-2012+	Yes
	Maintenance of dedicated helicopter landing zones.	KOOK / Private	Cooperative & Grant Funding Estimated cost: \$	2010-2012+	Yes
	Maintenance of buffer zone along Piilani Highway.	Maui County / KOOK	County / Grant Funding Estimated cost: \$	2010-2012+	Yes
	Maintenance of defensible space around homes.	KOOK	Estimated cost: \$	2010-2012+	Yes
	Campfire safety awareness program.	KOOK / KGLMO	Estimated cost: \$	2010-2012+	Yes
	Maintenance of Community Emergency Operation Plan. Maintenance of ham radios, fire tower.	KOOK / private	Grant Funding Estimated cost of radios: \$ Estimated cost of fire tower: \$	2010-2012+	Yes
	Refresher of Community CERT training.		Free to community members	2010-2012	Yes
	Maintenance of equipment/ machinery for fuel mitigation projects.	KOOK / private	Grant Funding Estimated cost: \$	2010-2012	Yes

Appendix C: Kahikinui Surface Water Drainage & Watershed Boundaries Maps

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Kahikinui Surface Water Drainage

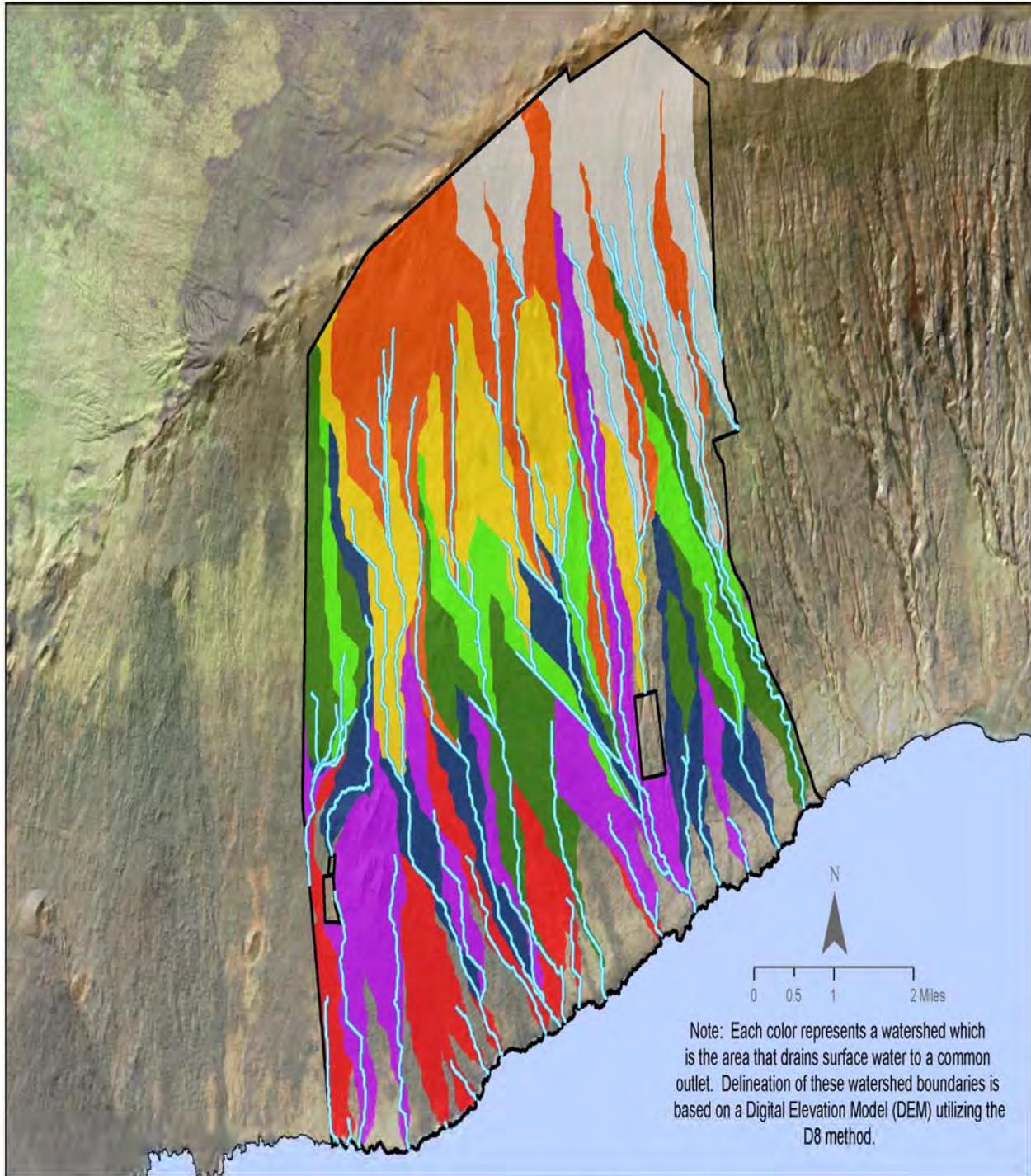


Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008

Data Sources: <http://hawaii.gov/dbedt/gis/>, <http://hawaii.wr.usgs.gov/maui/data.html> and DEM: USGS National Elevation Dataset (NED)

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Kahikinui Watershed Boundaries



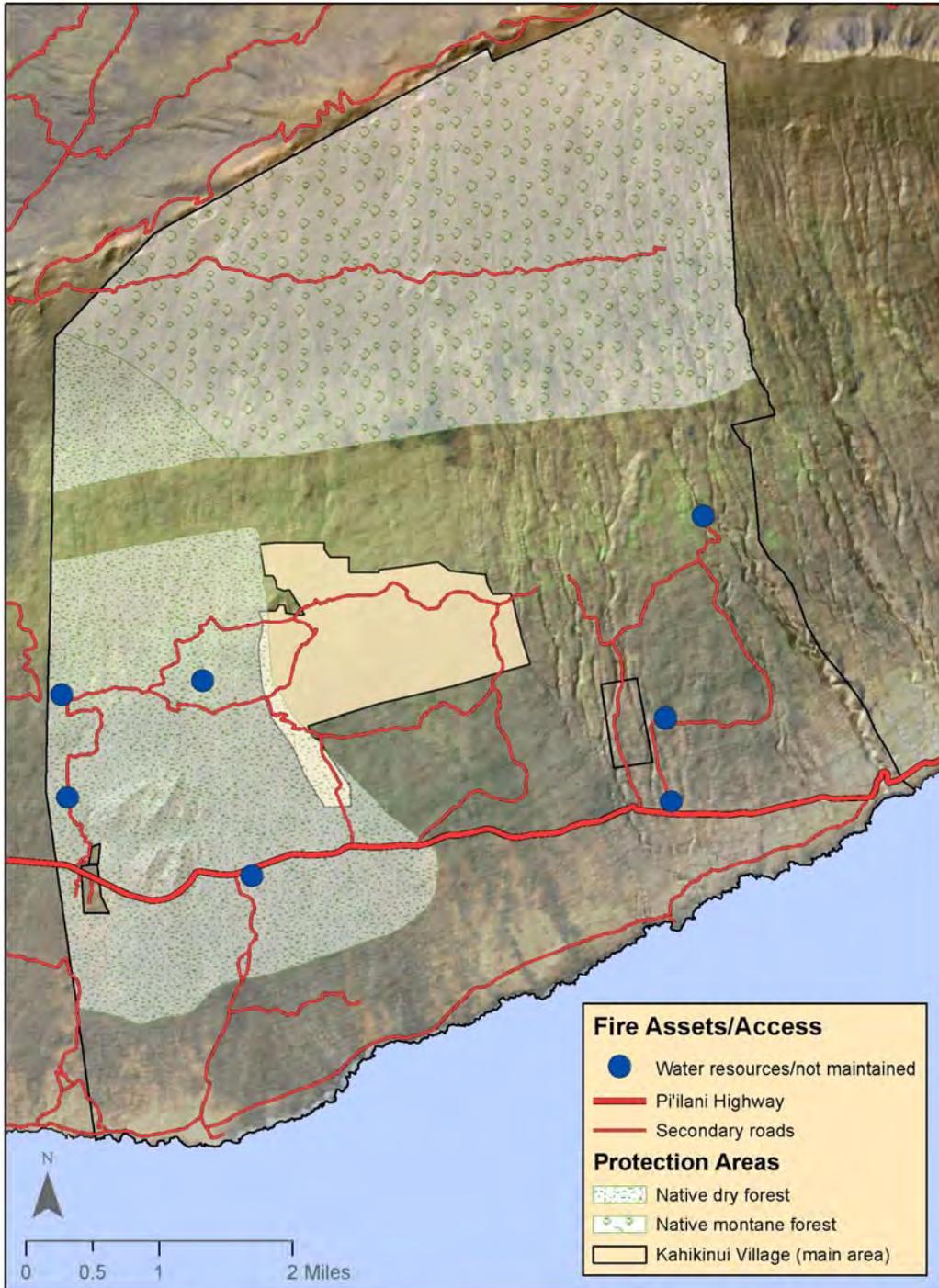
Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008

Data Sources: <http://hawaii.gov/dbedt/gis/>, <http://hawaii.wr.usgs.gov/maui/data.html> and DEM: USGS National Elevation Dataset (NED)

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Appendix D: Maps of Fire Assets and Protection Areas & Possible Fuels Buffer

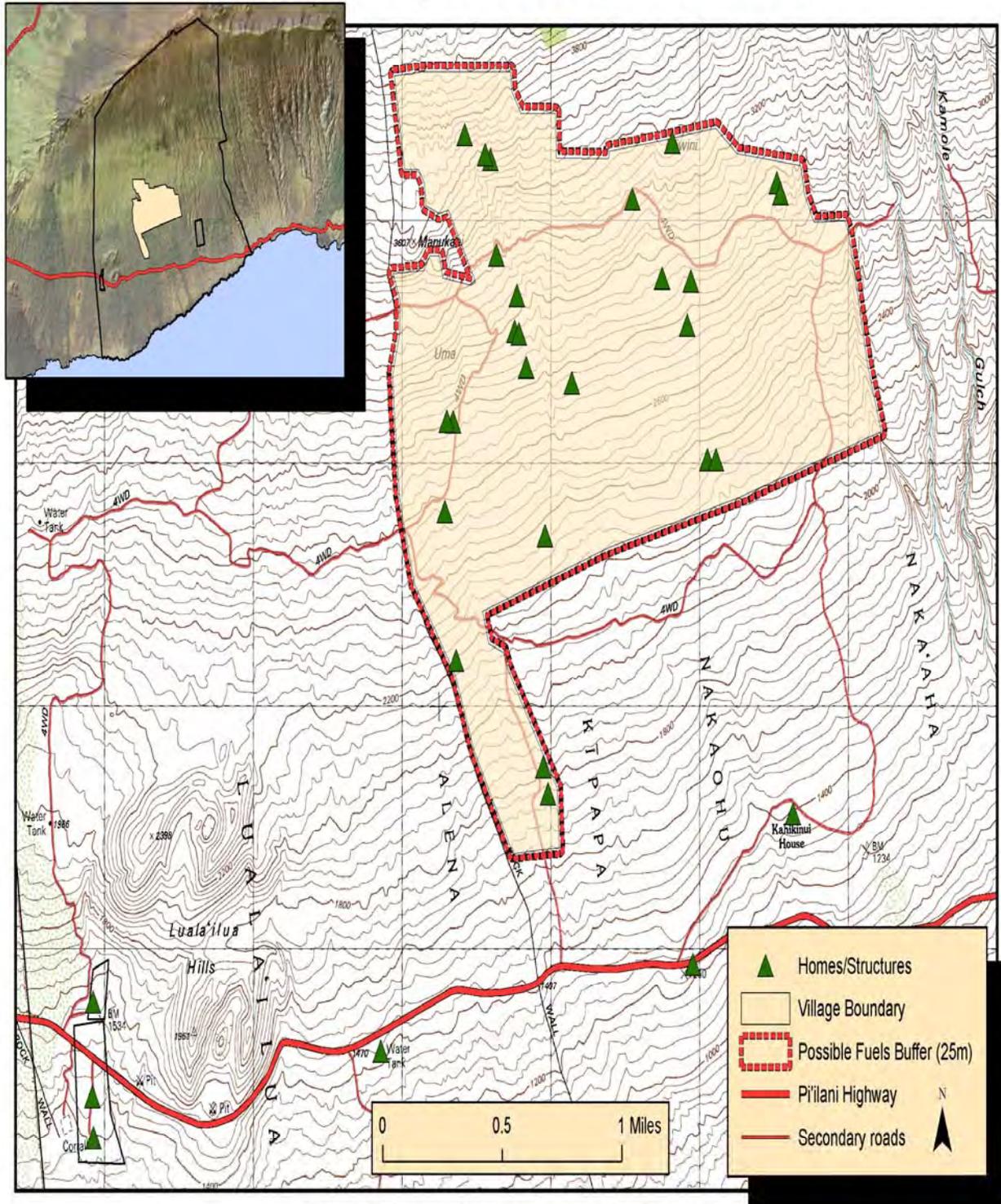
Fire Assets/Access and Protection Areas



Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008

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Kahikinui Village and Possible Fuels Buffer



Prepared for the Department of Hawaiian Home Lands by: C. Perry, February 2008

Data Sources: <http://www.state.hi.us/dbed/gis/index.html> and <http://hawaii.wr.usgs.gov/maui/data.html>

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Appendix E: List of Potential Grant Resources

Below is a list of potential grant sources to help fund mitigation projects described within this CWPP. The list is by no means exhaustive and community groups seeking potential grant funding should research additional grant-funding sources available to them.

Grant Program	Deadline	Contact Information	Matching Funds Required?
<p>State Fire Assistance Grants. Funds target hazard mitigation in the wildland urban interface for mitigating risks of hazardous fire conditions through hazardous fuels reduction, information and education, and homeowner and community defensible space treatments.</p>	<p>September 11, 2008 for 2009-2010 competitive funding</p>	<p>Division of Forestry and Wildlife Attn: Wayne Ching, 1151 Punchbowl St., Rm. # 325 Honolulu, HI 96813 (808) 587-4173 Fax: (808) 587-0160 http://www.state.hi.us/dlnr/dofaw/fmp/wui0809.htm</p>	<p>Yes: 50/50 match</p>
<p>FM Global Prevention Grants Through their new Fire Prevention Grant Program, fire departments, national, state, regional, local and community organizations can apply for funding to support a wide array of fire prevention, preparedness and control efforts, including:</p> <ul style="list-style-type: none"> • Pre-fire planning for commercial, industrial and institutional facilities • Fire and arson prevention and investigation • Fire prevention education and training programs 	<p>Awarded quarterly.</p>	<p>www.fmglobal.com/page.aspx?id=01060200 or email: firepreventiongrants@fmglobal.com</p>	<p>No</p>
<p>Department of Homeland Security (DHS) DHS grants include: Citizen Corps is the Department of Homeland Security's grassroots initiative that encourages citizens to play a role in hometown security through personal preparedness and coordinated by over 1,200 local Citizen Corps Council nationwide. Grant funding supports Citizen Corps Councils in efforts to engage citizens in personal preparedness, exercises, ongoing volunteer programs, and surge capacity response, in order to better prepare citizens to be fully aware, trained, and practiced on how to prevent, protect/mitigate, prepare for, and respond to all threats and hazards. This program provides funding on a formula basis to all 56 states and territories. Other Homeland Security Grant Programs include:</p>		<p>www.dhs.gov/xgovt/grants/index.shtm</p> <p>MG Robert Lee Adjutant General 3949 Diamond Head Rd. Honolulu, HI 96816-4495 808-733-4246 www.scd.state.hi.us</p>	

**Kahikinui Community Wildfire Protection Plan
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<ul style="list-style-type: none"> • Infrastructure Protection Program • Regional Catastrophic Preparedness Grant Program 			
<p>Rural Fire Assistance Grants (RFA) The Dept. of the Interior receives an appropriated budget each year for a rural fire assistance (RFA) grant program. This funding enhances the fire protection capabilities of rural and volunteer fire departments through training, equipment purchases, and fire prevention work on a cost-shared basis. This program is primarily for rural departments serving populations under 10,000 that have responsibilities to provide mutual aid to Dept. of Interior lands (e.g., Tribal, National Parks etc.) The DOI assistance program targets rural and volunteer fire departments that routinely help fight fire on or near DOI lands. One of these four agencies administers those lands: Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), U.S. Fish and Wildlife Service (FWS) and the National Park Service (NPS).</p>	Varies by state	Hawaii Volcanoes National Park Joe Molhoek Pacific Island Fire Mgmt. Officer PO Box 52, HNP, HI 96718 (808) 985-6042 Joe_Molhoek@nps.gov	The maximum award is \$20,000. This year RFA grants will require 90/10 cost-share.