

**DRAFT ENVIRONMENTAL ASSESSMENT**

**APPENDICES C through F**

**HAWAII WILDFIRE MANAGEMENT ORGANIZATION**

**CRITICAL FUEL BREAK MANAGEMENT AND**

**DIP TANK PROJECT**

**FEMA 1640-DR-HI, HMGP 1640-7**

**July 2014**

## **Appendix C—USFWS Correspondence**

## **Appendix C**

Appendix C contains a letter, dated August 28, 2009, from the USFWS to FEMA on the informal consultation for Hazard Mitigation Grant Program funding of fuel breaks and dip tanks in Western Hawaii County. The letter expresses concurrence by the USFWS with FEMA's determination that installation and maintenance of the proposed fuel breaks and dip tanks in West Hawaii are not likely to adversely affect the Hawaiian hoary bat, Hawaiian hawk, Blackburn's sphinx moth, and Blackburn's sphinx moth critical habitat.

The appendix also contains a follow-up letter, dated June 24, 2013, from FEMA to USFWS on informal consultation for the proposed fuel break and dip tank project. The letter includes FEMA's determination that the proposed action may affect but is not likely to adversely affect any listed or proposed threatened and endangered species or designated or proposed critical habitat. Also contained in the appendix is a letter received July 31, 2013 from USFWS to FEMA agreeing with FEMA's determination. This description applies to the next 11 pages.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122, Box 50088  
Honolulu, Hawaii 96850

In Reply Refer To:  
2009-I-0355

AUG 28 2009

Mr. Steven Phillips  
Environmental & Historic Preservation Specialist  
Department of Homeland Security  
Federal Emergency Management Agency Region IX  
1111 Broadway, Suite 1200  
Oakland, California 94607-4052

Subject: Informal Consultation for Hazard Mitigation Grant Program Funding of Fuelbreaks and Dip Tanks in Western Hawaii County (FEMA-1640-DR-HI)

Dear Mr. Phillips:

We have reviewed your email, dated August 25, 2009, requesting our concurrence with your determination that development of fuelbreaks and dip tanks in western Hawaii County is not likely to adversely affect listed species pursuant to the Endangered Species Act of 1973 [16 U.S.C. 1531-1544], as amended. A description of the proposed project was submitted to our office by Gail Byrne, Executive Director of the Hawaii Wildfire Management Organization on July 22, 2009. The Hawaii Wildfire Management Organization is the project applicant facilitating implementation of the project proposed for funding by a Federal Emergency Management Agency Hazard Mitigation Grant. Based on the information you and the project applicant provided, and pertinent information in our files, the following endangered species have been observed in the vicinity of the proposed project: the Hawaiian hoary bat (*Lasiurus cinereus semotus*), the Hawaiian hawk (*Buteo solitaries*), and the Blackburn's sphinx moth (*Manduca blackburni*). The action area contains approximately 0.03 acre (ac) (0.13 hectare (ha)) of the 24,597 ac (9,954 ha) Puu Waawaa unit of Blackburn's sphinx moth critical habitat.

### *Project Description*

The proposed project consists of construction and maintenance of new dip tanks and fuelbreaks to minimize fire spread in western Hawaii County (Figure 1). Seven dip tanks ranging in diameter from 12 to 21 feet (3.6 to 6.4 meters) in diameter will be constructed and maintained. Six fuelbreaks totaling 8.25 miles (13.3 kilometers) ranging from 30 to 148 feet (nine to 45 meters) in width will be established and maintained using herbicide and mechanical treatments.

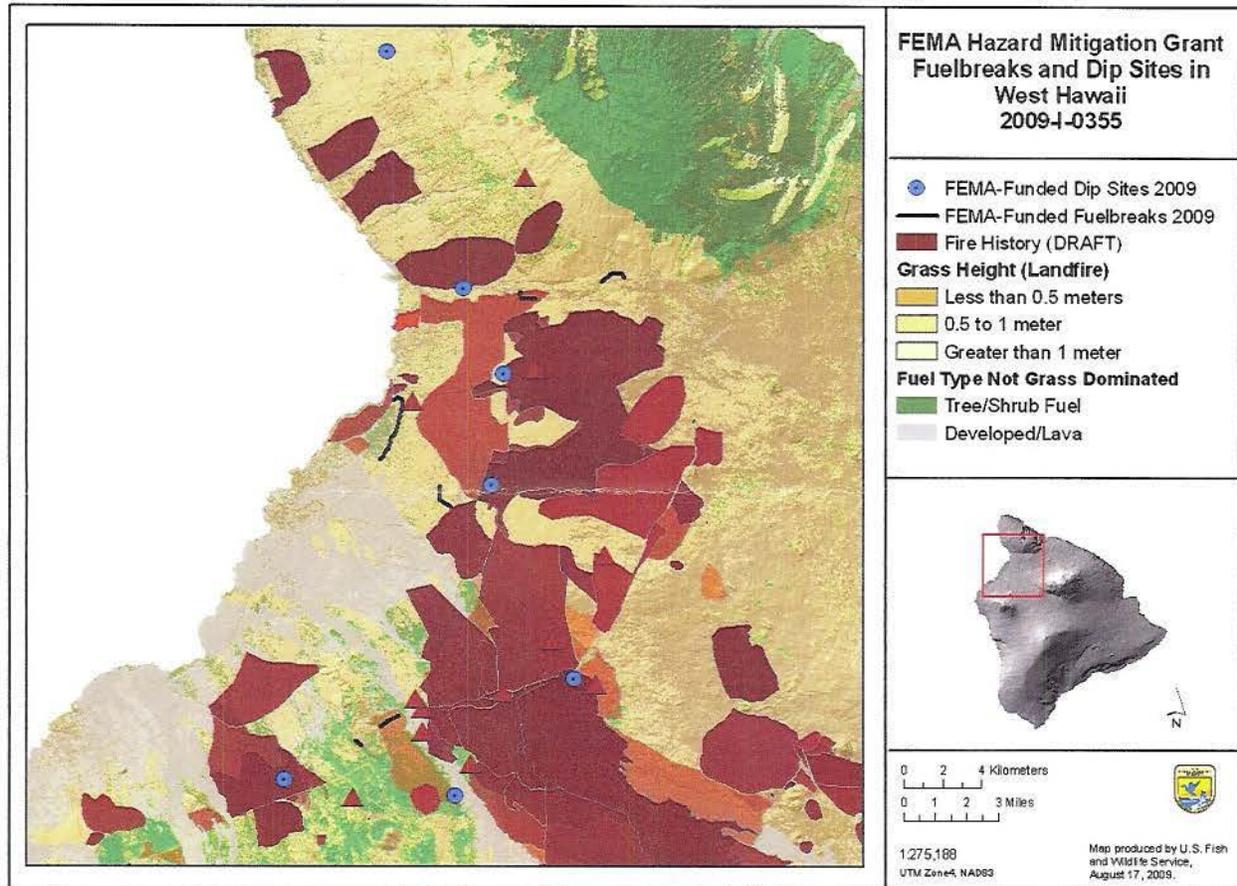


Figure 1. Location of proposed dip tanks and fuelbreaks in relation to historic fires.

### *Conservation Measures*

The following conservation measures are designed to avoid or minimize effects to the listed species reviewed in this informal consultation and are considered part of the project description. Any changes to, modifications of, or failure to implement these conservation measures may result in a need to reinstate this consultation. In a July 22, 2009, telephone conversation, Gail Byrne, Executive Director of the Hawaii Wildfire Management Organization, confirmed the following measures will be incorporated into the project to avoid potential project impacts to the Hawaiian hoary bat, the Hawaiian hawk, and the Blackburn's sphinx moth and in your August 25, 2009 email, you formally agreed to the following conservation measures:

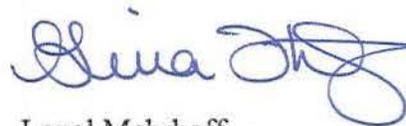
- To avoid impacts to the endangered Hawaiian hoary bat, woody plants greater than 4.6-meters (15-feet) tall will not be removed or trimmed during the bat birthing and pup rearing season (May 15 through August 15).
- Hawaiian hawks nest in both exotic and native trees. No trees will be cut or cleared during the March through September Hawaiian hawk breeding season.
- Blackburn's sphinx moth may occur in the project area and one of the dip tanks will be constructed within area designated critical habitat for the Blackburn's sphinx moth. The adult moth feeds on nectar from native plants including beach morning glory (*Ipomoea*

*pes-caprae*), iliee (*Plumbago zeylanica*), maiapilo (*Capparis sandwichiana*), and the larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and the native *Nothocestrum breviflorum*. All of these host plant species may occur within the project area. Prior to mechanical removal of vegetation, treatment areas will be surveyed for the presence of Blackburn's sphinx moth host plants and if a host plant is found, it will be marked with flagging. No host plants will be removed or trimmed and the soil within 10 meters of the plants will be protected from disturbance. All dip tanks will be located on sites which are free of Blackburn's sphinx moth host plants.

Implementation of measures to avoid removal of woody plants and trees during the Hawaiian hoary bat and Hawaiian hawk nesting seasons and avoidance of Blackburn's sphinx moth host plants minimizes the potential project impacts to these species. One of the dip tanks will occupy approximately 0.03 ac (0.13 ha) of the 24,597 ac (9,954 ha) Puu Waawaa unit of Blackburn's sphinx moth critical habitat. The dip tank would occupy an insignificant percentage of the critical habitat unit. In addition, this dip tank provides an overall benefit by reducing the risk of fire spread in a fire-prone area.

Therefore, because measures have been incorporated into the project to minimize potential project impacts to listed species and because the extent of impact to Blackburn's sphinx moth critical habitat is insignificant, we concur with your determination that installation and maintenance of the proposed fuelbreaks and dip tanks in West Hawaii are not likely to adversely affect the Hawaiian hoary bat, Hawaiian hawk, Blackburn's sphinx moth, and Blackburn's sphinx moth critical habitat. We base this determination on our understanding that the conservation measures, outlined above, will be implemented. We appreciate your commitment to fund measures to minimize fire impacts in Hawaii. If you have questions or would like additional information, please contact Dawn Greenlee, Fish and Wildlife Biologist (phone: 808/792-9469; fax: 808-792-9581).

Sincerely,



Loyal Mehrhoff  
Field Supervisor



**FEMA**

June 24, 2013

Ms. Rachel Rounds  
U.S. Fish and Wildlife Service  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawaii 96813

**Re: Informal Consultation for Fuel Break and Dip Tank Project in West Hawaii County,  
FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Ms. Rounds:

The purpose of this letter is to follow up on previous correspondence with your office regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP), through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner and/or lessee).

A copy of the correspondence previously provided by your office regarding this project is enclosed (USFWS reference 2009-I-0355; dated August 28, 2009). This letter indicated that endangered species that have been documented in the vicinity of the originally proposed project include: the Hawaiian hoary bat (*Lasiurus cinereus semotus*), the Hawaiian hawk (*Buteo solitaries*), and the Blackburn's sphinx moth (*Manduca blackburnii*). In addition, it noted the Puu Waawaa unit of designated critical habitat for the Blackburn's sphinx moth occurs within the originally proposed project site. In the letter, your office concurred that, with implementation of the documented conservation measures, the project would result in a not likely to adversely affect determination for these species and designated critical habitat.

Subsequent to this correspondence, approval and funding of the proposed project was delayed. Given the elapsed time since the original grant application, modifications have been made to the proposed project. This letter is intended to inform you of the proposed changes, and based on this revised information, to request your concurrence with FEMA's determination of potential effects.

#### Revised Project Description

The originally proposed project included: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires at three sites and (2) installation of seven new dip tanks to provide water resources for aerial fire suppression activities. However, since the original grant application, one of the three fuel break sites and two of the seven dip tank sites have been eliminated, as the fire management needs at these sites have already been met. In addition, the location and specific components of the remaining measures have been modified to reflect updated fire patterns and new fire management strategies; these are further described below.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of five tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in

these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the DOFAW Fire Management Program.

The revised fuel break management and dip tank measures are summarized in Table 1. The general location and action area associated with each measure are shown in Figures 1 through 8 of the enclosed biological survey. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement (MOA) detailing the maintenance responsibility would be signed before work commences.

**Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures**

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; action area includes entire fuel break, as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; action area includes entire fuel break, as shown in Figure 3
Kuainiho Diptank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; action area includes dip tank location, as shown in Figure 4
1859 Flow Diptank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline along existing access road to deliver water to tank from nearby cattle trough; action area includes dip tank location and existing access road, as shown in Figure 5
Waikoloa Diptank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; action area includes dip tank location and existing access road, as shown in Figure 6
Ponoholo Diptank Site	359003004	Clear and grade area (approx. 20'x20'); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from existing water line; action area includes dip tank location, access road and pipeline corridor, as shown in Figure 7
Lalamilo Diptank Site	366001002	Grade area (approx. 20'x20'); smooth grade along 0.5-mile-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; action area includes dip tank location, access road and pipeline corridor, as shown in Figure 8

Summary of Biological Resources and Assessment of Potential Effects

A biological resource survey was conducted at each of these sites in October and November 2012 and April 2013 by Dr. Ron Terry (Geometrician Associates), under subcontract to FEMA. This effort included a botanical survey, with a focus on rare, threatened, or endangered species that are

known to occur in nearby areas, including uhiuhi (*Mezoneuron kavaiense*), halapepe (*Pleomele hawaiiensis*), po'e (*Portulaca sclerocarpa*), spreading nehe (*Lipochaeta venosa*), vigna (*Vigna o-wahuensis*), and red ilima (*Abutilon menziesii*). The survey effort also included observation of faunal species, as well as identification of any habitat for rare, threatened, or endangered faunal species, particularly those referenced in the previous correspondence from your office. A copy of the survey report is enclosed; a brief summary of the survey results and an assessment of the potential effects of the proposed project are provided below.

The results of the survey indicate that the vegetation at all of the sites is generally dominated by non-native species. Of the species found on the seven sites, nine are indigenous and two are endemic. These native species are all common in the region and in other areas of the Hawaiian Islands. No listed or proposed threatened or endangered plant or wildlife species were documented in any of the action areas.

A single uhiuhi, which is federally listed as an endangered species, was documented within 100 feet of the proposed Waikoloa diptank site. Several wiliwili (*Erythrina sandwicensis*), which is not a federally listed species but is considered rare, were also documented in the general vicinity. These species are carefully managed as part of the Waikoloa Dryland Forest Initiative (WDFI). The proposed site for this diptank was selected in coordination with WDFI staff so as to have a diptank readily available to fight wildfires within the preserve but at a sufficient distance so as to avoid adverse impacts to these species; in fact, the proposed project could result in a beneficial effect by providing an available source of water for fighting wildfires that threaten these populations.

Individuals of tree tobacco (*Nicotiana glauca*), a weed which often emerges after land clearing and is recognized as an occasional host for the endangered Blackburn's sphinx moth, have been previously observed in the general vicinity of five of the seven sites. During the botanical survey, the only tree tobacco that was observed was a patch at the Puako fuel break site, located within a pushpile of dead kiawe. Tree tobacco may persist for years but often dies in unfavorable environments, and it is uncertain if these plants will persist in this unusual context. However, to minimize the potential for impacts to the Blackburn's sphinx moth, this location will be inspected by a qualified biologist prior to project implementation; if the stand of tree tobacco is still present, a qualified entomologist will inspect the larval host plants to ensure that no Blackburn's sphinx moths are present prior to vegetation removal.

The biological survey indicates that the bird species likely to occur in the action areas are almost exclusively comprised of non-native species, with the exception of some native (but common) species such as the Pacific golden plover (*Pluvialis fulva*) and the short-eared owl (*Asio flammeus sandwichensis*). Hawaiian hawks are unlikely to nest within the action area, as there are no tall trees suitable for nesting, with the exception of a limited number of trees at the Puako fuel break site. Although not detected during the survey (which took place in full daylight), the Hawaiian hoary bat could also roost in these trees. Given the small amount of available habitat, the potential for either of these species to occur within the action area is limited; however, potential impacts will be minimized by restricting vegetation clearing within the Puako fuel break site to outside the Hawaiian hawk breeding season (March through September) and bat birthing and pup rearing season (June through September): If this time period cannot be avoided, the trees will be inspected by a qualified biologist to ensure that no hawk nests or bat roosting sites are present prior to vegetation removal. With

implementation of these measures, potential impacts to Hawaiian hawks and Hawaiian hoary bat are expected to be avoided and/or minimized, such that the effects are considered discountable.

None of the action areas are located within currently designated critical habitat. However, on October 17, 2012, the U.S. Fish and Wildlife Service published a proposed rule in the Federal Register (77 FR 63928) to list 15 species as endangered. In addition, the proposed rule would designate critical habitat on Hawaii Island for one of the proposed plant species, ko'oko'olau (*Bidens micrantha* ssp. *ctenophylla*), and for two previously listed plant species, uhiuhi and wahine noho kula (*Isodendron pyrifolium*). One of the units of the proposed critical habitat (Unit 32, shown in Figure 9) is located in the area in which the Waikoloa dip tank is proposed. As discussed above, the surface alteration necessary for the installation of the dip tank is minimal, surveys have been undertaken to ensure that it does not directly affect these or other listed species, the action would not alter the characteristics of the land in a way that degrades the primary constituent elements that make it suitable as critical habitat, and the action will help to protect the habitat from wildfire. Therefore, the action is not expected to adversely modify the proposed critical habitat, if and when it is designated.

Based on the information presented above, FEMA has determined that the proposed action may affect but is not likely to adversely affect any listed or proposed threatened or endangered species or designated or proposed critical habitat. Your concurrence with this determination is requested in accordance with the consultation requirements of Section 7 of the Endangered Species Act.

If you should require any additional information on the proposed project or FEMA's request, please contact me at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or at the letterhead address. Thank you in advance for your assistance.

Sincerely,



G. Morgan Griffin  
Deputy Regional Environmental Officer

Enclosures



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawaii 96850

In Reply Refer To:  
2013-I-0339  
2009-I-0355



JUL 25 2013

Mr. G. Morgan Griffin  
Federal Emergency Management Agency  
U.S. Department of Homeland Security  
111 Broadway, Suite 1200  
Oakland, California 94607

Subject: Informal Consultation for the Fuel Break and Dip Tank Project in West Hawaii County, Hawaii

Dear Mr. Griffin:

The U.S. Fish and Wildlife Service (Service) received your letter dated June 24, 2013, requesting an informal section 7 consultation and conference opinion for the installation of fuel breaks and dip tanks in West Hawaii County, Hawaii. The project is funded by the Federal Emergency Management Agency (FEMA). At issue are the potential effects of the proposed project on the endangered Blackburn's sphinx moth (*Manduca blackburni*), Hawaiian hoary bat (*Lasiurus cinereus semotus*), uhiuhi (*Mezoneuron kavaiense*), Hawaiian hawk (*Buteo solitaries*), and on proposed lowland dry ecosystem critical habitat. The findings and recommendations in this consultation are based on: (1) your letter dated June 24, 2013; (2) emails between Rachel Rounds (Service) and Morgan Griffin (FEMA); and (3) other information available to us. This response is in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). A complete administrative record is on file in our office.

### *Project Description*

FEMA proposes to fund the Hawaii Wildfire Management Organization for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The communities that are subject of this assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfire threatening human life and property, as well as some of the state's remaining intact dryland forest habitat.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily composed of invasive,



non-native grasses and woody shrubs. The project would also include installation of five dip tanks near the communities of Waikoloa, Kohala, Waimea, and Puu Anahulu to provide water for use in fire suppression activities.

#### *Results of Biological Resource Surveys*

A biological resource survey was conducted in October and November, 2012, and April 2013. The results of the surveys indicate that vegetation at the proposed project sites is dominated by non-native species. No species listed under the Act were found within the project footprint. A single uhiuhi was documented within 100 feet of the proposed Waikoloa diptank site. Tree tobacco (*Nicotiana glauca*), a weed which emerges after land clearing and which is a host for the Blackburn's sphinx moth, has been observed in the general vicinity of five of the project sites. During the botanical survey a small patch of tree tobacco was observed at the Puako fuel break site, within a pile of dead wood, and close to the dip tank site at the Waikoloa Dry Forest Preserve. The only site with trees large enough for Hawaiian hawk nests are at the Puako fuel break site. Hawaiian hoary bats may also roost in trees at proposed project sites.

#### *Conservation Measures*

The following measures identified in your letter will be implemented at the project site to avoid and minimize project impacts to listed species and critical habitat. These conservation measures are considered part of the project description. Any changes to, modifications of, or failure to implement these conservation measures may result in the need to reinitiate this consultation.

1. No woody plants over 15 feet tall will be removed, cut, or trimmed during the sensitive bat pup-birthing and rearing season of June 1 to September 15.
2. No brush or tree clearing will occur during the hawk nesting season of March through September.
3. In addition to the survey for larval host plants of the Blackburn's sphinx moth that has already been conducted, the project area will again be surveyed for the presence of larval host plants and Blackburn's sphinx moth immediately prior to the beginning of construction. If potential signs of Blackburn's sphinx moth are found during these surveys, the Service will be contacted.
4. To avoid impacts to uhiuhi, the uhiuhi tree within 100 feet of the Waikaloa dip tank shall be encircled by construction fencing throughout the entire construction period to clearly identify the tree as a no construction area.

#### *Uhiuhi*

No uhiuhi will be harmed by the proposed project. The single uhiuhi within 100 feet of the proposed Waikoloa diptank site will be protected by the above conservation measures.

#### *Hawaiian hoary bat and Hawaiian hawk*

The proposed project site is within the range of the Hawaiian hoary bat and Hawaiian hawk. By implementing the above conservation measures, the proposed project will avoid potential adverse effects to Hawaiian hoary bats and Hawaiian hawks.

*Blackburn's sphinx moth*

The proposed project site is within the range of the Blackburn's sphinx moth. The nearest location that Blackburn's sphinx moth has been observed to Puako fuel break is approximately nine miles away near Puuwaawaa. There are only a few tree tobacco at the Puako site, and they have likely only been there a short time as they are in a pile of dead wood, and therefore it is unlikely that Blackburn's sphinx moth are using these tree tobacco as host plants. The tree tobacco at the Waikaloa dip site is not within the project footprint and will not be damaged by the proposed project. The nearest known Blackburn's sphinx moth location to the Waikaloa site is over six miles. Neither site is within the currently known occupied range of the Blackburn's sphinx moth. Implementation of the above conservation measures will avoid and minimize potential adverse effects to the Blackburn's sphinx moth.

*Proposed Lowland Dry Critical Habitat*

The Waikaloa diptank site is located within the proposed lowland dry ecosystem critical habitat Unit 32. Approximately 400 square feet (0.009 acre) of proposed critical habitat will be cleared along an existing access road to install a 12-foot diameter dip tank. The location of the diptank was selected in coordination with staff from the Waikoloa Dry Forest Initiative to avoid adverse impacts to listed and other native species within the Waikaloa Dry Forest Preserve. Proposed critical habitat Unit 32 is 1779 acres, and therefore the diptank will occupy an insignificant portion of the proposed critical habitat unit. In addition, locating the diptank within the preserve will benefit native species and habitats by providing an available water source for fighting wildfires that threaten them.

Because of the small size of the project footprint, the careful selection of a site location, and the benefit of increased fire-fighting capacity, the proposed project is not likely to destroy or adversely modify proposed critical habitat.

*Summary*

We concur that the proposed project may affect, but is not likely to adversely affect, the Hawaiian hoary bat, Hawaiian hawk, Blackburn's sphinx moth, and uhiuhi, and will not adversely modify proposed lowland dry critical habitat, based on conservation measures included in the project description.

If you have questions regarding this consultation, please contact Rachel Rounds, Fish and Wildlife Biologist, (phone: 808-792-9400, email: rachel\_rounds@fws.gov).

Sincerely,



Loyal Mehrhoff  
Field Supervisor

**Appendix D—Archaeological Survey Reports  
(Confidential)**

## **Appendix D**

Appendix D contains the archaeological assessments and inventory surveys, dated May 2013 and June 2013, by Haun & Associates for the proposed fuel break and dip tank sites. The survey reports contain detailed descriptions of the Areas of Potential Effects and background history and findings relative to each treatment site. No archaeological sites or features were found for five of the sites. At two sites (Ponoholo and Lalamilo) archaeological sites or features were identified and assessed as significant under Criterion D of national and state register evaluation criteria. The archaeological assessments and inventory surveys have been withheld from publication in the Draft EA because of confidential information contained within.

## **Appendix E—Section 106 Correspondence**

## **Appendix E**

Appendix E contains letters from the State of Hawaii, Department of Land and Natural Resources, dated December 21, 2009 and February 4, 2010, to FEMA on site visits to potential fuel break and dip tank locations in connection with the National Historic Preservation Act Section 106 review of the proposed fuel break and dip tank project on Hawaii Island. The appendix also contains letters, dated June 27, 2013 and June 28, 2013, from FEMA to the Department of Land and Natural Resources on Section 106 consultation for the proposed project. The letters express FEMA's determination of the Area of Potential Effects and National Register eligibility for the proposed Ponoholo site and determination of "no historic properties affected" for five sites and "no adverse effect" for the Lalamilo site.

The appendix also contains a consultation letter, dated July 1, 2013, from FEMA to the State of Hawaii, Office of Hawaiian Affairs and consultation letters, dated July 2, 2013, from FEMA to the following organizations: Association of Hawaiian civic Clubs, Hawaii Island Burial Council, Hui Malana I Na, Kupuna O Hawaii Nei, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, Puuanahulu Community Association and Moku O Kona.

Finally, the appendix also contains a response letter from the Department of Land and Natural Resources to FEMA, dated July 22, 2013 and received August 16, 2013, requesting additional information in connection with the Section 106 consultation for the proposed Ponoholo dip tank site and a response letter from the Office of Hawaiian Affairs to FEMA, dated August 15, 2013, requesting clarifications in connection with the Section 106 consultation for the proposed Lalamilo dip tank site. This description applies to the next 65 pages.

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

December 21, 2009

Donna Meyer  
Deputy Regional Environmental & Historic Preservation Officer  
DHS/FEMA Region IX  
Via email to: [Steven.Phillips1@dhs.gov](mailto:Steven.Phillips1@dhs.gov)

LOG NO: 2009.3392  
DOC NO: 0912MD19  
Archaeology

Dear Mr. Phillips:

**SUBJECT: National Historic Preservation Act (NHPA) Section 106 Review –  
Fuelbreak/Dip Tank Project on the Big Island  
Multiple Ahupua`a, North and South Kohala Districts, Island of Hawaii**

Thank you for the opportunity to comment on the aforementioned undertaking, which we originally received on September 18, 2009 from Steven Phillips prior to his ending his deployment later that month. We apologize for the delay in our reply. The purpose of the undertaking is to construct seven new fuelbreaks and four new diptanks, all for fire prevention purposes. The applicant is the Hawaii Wildfire Management Organization (HWMO).

We have been in contact with Gail Byrne, Executive Director of HWMO. Because the numerous locations have not all been previously surveyed (or have been subject to partial survey such as aerial but not foot reconnaissance) we have requested the opportunity to visit the proposed locations and Ms. Byrne has agreed to accompany us. In order that the resulting delay not affect their application, we are submitting this interim letter to you to inform you that the site visit will take place on January 26, 2010 after which we will report to you in writing.

Please contact Morgan Davis at (808) 896-0514 or via email to: [morgan.e.davis@hawaii.gov](mailto:morgan.e.davis@hawaii.gov) if you have any questions or concerns regarding this letter.

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State Historic Preservation Division

LINDA LINGLE  
GOVERNOR OF HAWAII



**STATE OF HAWAII**  
**DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

LAURA H. THIELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUIJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

February 4, 2010

Donna Meyer  
Deputy Regional Environmental & Historic Preservation Officer  
DHS/FEMA Region IX  
Via email to: [Steven.Phillips1@dhs.gov](mailto:Steven.Phillips1@dhs.gov)

LOG NO: 2010.0774  
DOC NO: 1002MD02  
Archaeology

Dear Mr. Phillips:

**SUBJECT: National Historic Preservation Act (NHPA) Section 106 Review –  
Fuelbreak/Dip Tank Project on the Big Island  
Multiple Ahupua`a, North Kona and North & South Kohala Districts, Island of  
Hawaii**

This letter is a follow up to our earlier correspondence in December 2009 regarding the aforementioned undertaking (*Log No. 2009.3392, Doc No. 0912MD19*). The purpose of the undertaking is to construct seven new fuelbreaks and four new diptanks, all for fire prevention purposes. The applicant is the Hawaii Wildfire Management Organization (HWMO).

On February 1, 2010 a site visit was conducted to all 16 potential locations for both dip tanks and fuelbreak locations by Morgan Davis, SHPD archaeologist with Gail Byrne and Miles Nakarahara of HWMO. We understand that the fuelbreaks (with the exception of the green break being created in Puako) will be created using weed whackers, not bulldozers.

Fifteen of the 16 potential sites have **no historic properties**. One site, the green break at Puako, does have a c-shaped temporary enclosure that **has not** yet been recorded. We have notified HWMO that this needs to occur prior to extending the green break into the next southern acre. They can arrange with our Hilo office to have that done. Please contact Morgan Davis at (808) 896-0514 or via email to: [morgan.e.davis@hawaii.gov](mailto:morgan.e.davis@hawaii.gov) if you have any questions or concerns regarding this letter.

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State Historic Preservation Division

Cc:

Gail Byrne, Executive Director of the Hawaii Wildfire Management Organization, via email to:  
[gailbyrne@hawaii.rr.com](mailto:gailbyrne@hawaii.rr.com)



**FEMA**

June 27, 2013

Mr. William J. Aila, Jr.  
State Historic Preservation Officer and Chairperson  
State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamokila Boulevard, Room 555  
Kapolei, Hawai'i 96707

**Re: National Historic Preservation Act Section 106 Consultation for Proposed PonoHolo Dip Tank Site, North Kohala District, TMK (3) 5-9-03: Por. 004, Hawaii Island (Log No. 2009.3392 and Doc No. 0912MD19), FEMA-1640-DR-HI, HMGP 1640-7 Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Aila:

The purpose of this letter is to follow up on previous correspondence with your office regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island (Undertaking). As part of the previous National Historic Preservation Act Section 106 consultation process, your office provided correspondence to FEMA dated February 4, 2010, concurring that actions at fifteen of sixteen potential sites would result in "no historic properties affected" (Log No. 2009.3392 and Doc No. 0912MD19). A copy of this letter is enclosed. Subsequent to this correspondence, approval and funding of the Undertaking was delayed. Given the elapsed time since the original grant application, modifications have been made to the Undertaking and the area of potential effects (APE). This letter is intended to inform you of the proposed changes and to request your concurrence with FEMA's determination of the APE and determination of eligibility for one of the proposed projects (PonoHolo dip tank) pursuant to Stipulation VII (Standard Project Review) of the Programmatic Agreement among FEMA, the Hawaii State Historic Preservation Officer, the State of Hawaii Department of Defense, and the Advisory Council on Historic Preservation (Agreement); a separate letter will be sent relative to the other six proposed projects.

### Revised Project Description

The original Undertaking included: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires at three sites and (2) installation of seven new dip tanks to provide water resources for aerial fire suppression activities. Since the original grant application was evaluated, one of the three fuel break sites and two of the seven dip tank sites have been eliminated, as the fire management needs at these sites have already been met. In addition, the location and specific components of the remaining measures have been modified to reflect updated fire patterns and new fire management strategies. Following is a description of the Undertaking at the Ponoholo dip tank site; as noted above, descriptions of the Undertaking at the other six sites are described in a separate letter.

The Undertaking at the Ponoholo dip tank site would involve installation of a tank near the community of Kohala to provide water for use in fire suppression activities. Many of the wildfires in this area must be treated using helicopters due to the uneven and inaccessible terrain. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in this area. In the event of a wildfire, the dip tank would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife Fire Management Program.

The Undertaking at the Ponoholo dip tank site would be located within tax map key (TMK) (3)5-9-003:004; the approximate location is shown in Figures 1 and 2 (enclosed). The Undertaking would involve installing a 12-foot-diameter dip tank, grading an existing access road, and installing a 1- to 2-inch-diameter HDPE pipeline in a shallow trench to deliver water to the tank from an existing water line. The APE for the Undertaking includes the dip tank location (approximately 20-foot-by-20-foot area within a larger 50-meter-diameter survey area), access road corridor (approximately 120 meters long by 5 meters wide), and pipeline corridor (approximately 1450 meters long by 30 meters wide), as shown in Figure 2. The Undertaking would be implemented by HWMO in coordination with the landowner, who would be responsible for ongoing maintenance. A Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

### Archaeological Survey Results and Determination of Eligibility

In compliance with the historic preservation regulatory review requirements of Section 106 and the Agreement, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates). A copy of the report is enclosed; the results are summarized below.

The survey identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as "hav[ing] yielded...information important in history or prehistory". Pursuant to Stipulations VII.A and VII.B of the Agreement, FEMA requests

Mr. William Aila  
June 27, 2013  
Page 3

your concurrence with its determination of the APE and determination of eligibility under Criterion D. Following your response, FEMA will provide your office with a determination of effect pursuant to Stipulations VII.C and VII.D (and Stipulation VIII, if necessary) of the Agreement.

If you should require any additional information on Undertaking or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or at the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Amaglio", followed by the word "for" in a smaller, less distinct script.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures

cc: Ms. Theresa Donham, Hawaii State Historic Preservation Division  
Mr. Reid Nelson, Advisory Council on Historic Preservation



**FEMA**

June 28, 2013

Mr. William J. Aila, Jr.  
State Historic Preservation Officer and Chairperson  
State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamokila Boulevard, Room 555  
Kapolei, Hawai'i 96707

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island (Log No. 2009.3392 and Doc No. 0912MD19), FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Aila:

The purpose of this letter is to follow up on previous correspondence with your office regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island (Undertaking). The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source,

which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner and/or lessee).

As part of the previous National Historic Preservation Act Section 106 consultation process, your office provided correspondence to FEMA dated February 4, 2010, concurring that actions at fifteen of sixteen potential sites would result in "no historic properties affected" (Log No. 2009.3392 and Doc No. 0912MD19). A copy of this letter is enclosed. One of the proposed sites (Puako fuel break) included a c-shaped temporary enclosure; your office indicated that this site needed to be recorded prior to implementation of the project. Subsequent to this correspondence, approval and funding of the Undertaking was delayed. Given the elapsed time since the original grant application, modifications have been made to the Undertaking and the area of potential effects (APE). This letter is intended to inform you of the proposed changes and to request your concurrence with FEMA's determination of effects for six of the seven proposed projects pursuant to Stipulation VII (Standard Project Review) of the Programmatic Agreement among FEMA, the Hawaii State Historic Preservation Officer, the State of Hawaii Department of Defense, and the Advisory Council on Historic Preservation (Agreement); FEMA submitted a separate letter (dated June 27, 2013) regarding the seventh proposed project (Ponoholo dip tank).

#### Revised Project Description

The original Undertaking included: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires at three sites and (2) installation of seven new dip tanks to provide water resources for aerial fire suppression activities. Since the original grant application was evaluated, one of the three fuel break sites and two of the seven dip tank sites have been eliminated, as the fire management needs at these sites have already been met. In addition, the location and specific components of the remaining measures have been modified to reflect updated fire patterns and new fire management strategies. In particular, the location of the Puako fuel break has been modified, such that the c-shaped temporary enclosure referenced in your office's previous correspondence is no longer within the APE. Following is a description of the Undertaking at the six proposed project sites; as noted above, a description of the Undertaking at the Ponoholo dip tank site is described in a separate letter.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu`u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The revised fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figures 1. The APE for the fuel break measures generally includes the entire area within which the vegetation would be cleared and/or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and is shown in Figures 2 through 7 (with additional figures provided in the enclosed reports). Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

**Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures**

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 7

### Archaeological Survey Results and Determination of Effects

In compliance with the historic preservation regulatory review requirements of Section 106 and the Agreement, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below, with additional detail provided in the enclosed reports:

1. *Waikoloa Fuel Break Site*. No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed Undertaking would result in no historic properties affected at this location.
2. *Puako Fuel Break Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed Undertaking would result in no historic properties affected at this location.
3. *Kuainiho Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed Undertaking would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed Undertaking would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed Undertaking would result in no historic properties affected at this location.
6. *Lalamilo Dip Tank Site*. The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihii shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as "hav[ing] yielded...information important in history or prehistory". These sites have been adequately documented in the enclosed reports, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed undertaking would have no adverse effect on historic properties at this location.

Conclusion

FEMA has made a determination of “no historic properties affected” for five locations and a determination of “no adverse effect” for one location. FEMA requests your concurrence with its findings. Pursuant to Stipulations VII.C and VII.D of the Agreement, FEMA may authorize funding for the Undertaking unless you notify FEMA of your objection within 21 days of your receipt of this documentation.

Finally, as part of FEMA’s Section 106 consultation process and pursuant to the Agreement, FEMA is requesting contact names of any knowledgeable individuals or Native Hawaiian organizations that may have an interest in the proposed Undertaking; a similar request has also been sent to the Office of Hawaiian Affairs, Hawaii Island Burial Council, Na Ala Hele, Hui Malama I Na Kupuna O Hawai’i Nei, KAHEA, Royal Order of Kamehameha, Association of Hawaiian Civic Clubs, Kona Hawaiian Civic Club, Kailapa Community Association, and Puuanahulu Community Association.

If you should require any additional information on the Undertaking or FEMA’s request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read "Alessandro Amaglio for". The signature is fluid and cursive.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures

cc: Ms. Theresa Donham, Hawaii State Historic Preservation Division  
Mr. Reid Nelson, Advisory Council on Historic Preservation



**FEMA**

July 1, 2013

Mr. Keola Lindsey  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Suite 500  
Honolulu, Hawaii 96813

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Lindsey:

The purpose of this letter is to follow up on previous correspondence with your office regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island (Undertaking). The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

FEMA's records indicate that your office exchanged a series of email messages in 2009 with Steven Phillips, FEMA Historic Specialist, as part of the National Historic Preservation Act Section 106 consultation process for the Undertaking. FEMA requested input from your office, including the names of knowledgeable individuals and Native Hawaiian Organizations (NHOs) that may be interested in the Undertaking, pursuant to the consultation requirements of Section 106 and its implementing regulations at 36 CFR Part 800. Subsequent to this correspondence, approval and funding of the Undertaking were delayed. Given the elapsed time since the original grant application, modifications have been made to the Undertaking and the area of potential effects (APE). This letter is intended to inform your office of the proposed changes and to request additional input relative to the Undertaking.

#### Revised Project Description

The original Undertaking included: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires at three sites and (2) installation of seven new dip tanks to provide water resources for aerial fire suppression activities. Since the original grant application was evaluated, one of the three fuel break sites and two of the seven dip tank sites have been eliminated, as the fire management needs at these sites have already been met. In addition, the location and specific components of the remaining measures have been modified to reflect updated fire patterns and new fire management strategies; these are further described below.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The revised fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The APE for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

**Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures**

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site*. No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the Undertaking would result in no historic properties affected at this location.
2. *Puako Fuel Break Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the Undertaking would result in no historic properties affected at this location.
3. *Kuainiho Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the Undertaking would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the Undertaking would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the Undertaking would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site*. The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the Undertaking or impose conditions, in coordination with SHPD, such that the Undertaking would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site*. The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihī shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been

adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the Undertaking would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the Undertaking. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the Undertaking on historic properties.

Furthermore, as part of FEMA's Section 106 consultation process, FEMA is requesting contact names of any knowledgeable individuals or NHOs that may have an interest in the Undertaking; to date, a similar request for input has been sent to the Hawaii Island Burial Council, Na Ala Hele, Hui Malama I Na Kupuna O Hawai'i Nei, KAHEA, Royal Order of Kamehameha, Association of Hawaiian Civic Clubs, Kona Hawaiian Civic Club, Kailapa Community Association, and Puuanahulu Community Association.

If you should require any additional information on the Undertaking or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alessandro Amaglio for', written in a cursive style.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Mr. Soulee LKO Stroud  
Association of Hawaiian Civic Clubs  
P.O. Box 1135  
Honolulu, Hawaii 96807

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Stroud:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

**Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures**

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

### Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site*. No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site.* The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site.* The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Mr. Soulee LKO Stroud  
July 2, 2013  
Page 5

Hawaiian Affairs, Hawaii Island Burial Council, Hui Malama I Na Kupuna O Hawai'i Nei, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Amaglio for". The signature is fluid and cursive, with the word "for" written in a simpler, more legible font at the end.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Mr. Kimo Lee  
Hawaii Island Burial Council  
c/o Kauano'e Hoomanawanui  
40 Po'okela Street  
Hilo, Hawaii 96720

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Lee:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an

opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

### Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site*. No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site.* The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site.* The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Mr. Kimo Lee  
July 2, 2013  
Page 5

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hui Malama I Na Kupuna O Hawai'i Nei, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alessandro Amaglio', with a small 'fr' written to the right of the signature.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Mr. Edward Halealoha Ayau, Executive Director  
Hui Mālama I Na Kūpuna O Hawai'i Nei  
622 Wainaku Avenue  
Hilo, Hawaii 96720

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Ayau:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site.* No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site*. The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site*. The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihī shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Mr. Edward Halealoha Ayau  
July 2, 2013  
Page 5

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Amaglio for', written in a cursive style.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Mr. Isaac Harp  
KAHEA  
P.O. Box 37368  
Honolulu, Hawaii 96837

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Harp:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

### Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site.* No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site*. The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site*. The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Mr. Isaac Harp  
July 2, 2013  
Page 5

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, Hui Mālama I Na Kūpuna O Hawai'i Nei, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Amaglio for". The signature is fluid and cursive, with the word "for" written in a smaller, simpler font at the end.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Kailapa Community Association  
61-4016 Kai Opae Place  
Kawaihae, Hawaii 96743

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

To Whom It May Concern:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife

Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu`u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

**Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures**

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site.* No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site.* The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site.* The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, Hui Mālama I Na Kūpuna O Hawai'i Nei, KAHEA, Kona Hawaiian Civic Club, Na Ala Hele, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Amaglio for', written in a cursive style.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Mr. Winfield Chang  
Kona Hawaiian Civic Club  
P.O. Box 4098  
Kailua-Kona, Hawaii 96745

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Chang:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

### Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site.* No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site*. No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site*. The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site*. The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Mr. Winfield Chang  
July 2, 2013  
Page 5

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, Hui Mālama I Na Kūpuna O Hawai'i Nei, KAHEA, Kailapa Community Association, Na Ala Hele, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read "Alessandro Amaglio for". The signature is stylized and cursive.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Mr. Clement Chang  
Trail and Access Specialist  
Na Ala Hele  
Division of Forestry and Wildlife  
Department of Land and Natural Resources  
19 East Kawili Street  
Hilo, Hawaii 96720

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Mr. Chang:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source,

which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

### Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site*. No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site*. No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site.* The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site.* The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

## Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Mr. Clement Chang  
July 2, 2013  
Page 5

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, Hui Mālama I Na Kūpuna O Hawai'i Nei, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Puuanahulu Community Association, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Amaglio', followed by the word 'for' written in a cursive script.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Ms. Ku'ulei Keakealani  
Puuanahulu Community Association  
71-1490 Mamalahoa Highway  
Kailua-Kona, Hawaii 96740

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

Dear Ms. Keakealani:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu'u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site.* No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site.* The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as "hav[ing] yielded...information important in history or prehistory", pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site.* The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as "hav[ing] yielded...information important in history or prehistory". These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Ms. Ku'ulei Keakealani  
July 2, 2013  
Page 5

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, Hui Mālama I Na Kūpuna O Hawai'i Nei, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, and Royal Order of Kamehameha.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Amaglio', followed by the word 'for' written in a smaller, cursive script.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures



**FEMA**

July 2, 2013

Royal Order of Kamehameha I  
Moku O Kona  
P.O. Box 1872  
Kailua-Kona, Hawaii 96745

**Re: National Historic Preservation Act Section 106 Consultation for Proposed Fuel Break and Dip Tank Projects, North Kona and North and South Kohala Districts, Various TMKs, Hawaii Island, FEMA-1640-DR-HI, HMGP 1640-7  
Subgrantee: Hawaii Wildfire Management Organization**

To Whom It May Concern:

In compliance with the consultation requirements of the National Historic Preservation Act Section 106, I am writing to request your input regarding proposed funding by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program, through the Hawaii State Civil Defense, to the Hawaii Wildfire Management Organization (HWMO) for implementation of measures to reduce wildfire hazards and improve wildfire suppression capabilities in several communities on the west side of Hawaii Island. The proposed measures were identified based on the recommended actions presented in the Community Wildfire Protection Plan for Northwest Hawaii Island, which was adopted by Hawaii County and signed by representatives from Hawaii County Civil Defense and the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife (DOFAW).

The communities that are the subject of the HMGP assistance have been identified as some of the most fire-prone areas in the State of Hawaii, with wildfires threatening human life and property, as well as some of the state's remaining intact dryland forest habitat. Historically one of the most diverse ecosystems in Hawaii, native dryland forest habitat is now highly imperiled, with only an estimated 10 percent of the original habitat still intact; a large number of Hawaii's endangered species occur within this remaining habitat. Hawaii's Comprehensive Wildlife Conservation Strategy, which reviews the status of the state's native species and presents strategies for the long-term conservation of these species and their habitats, identifies wildfire as a key threat to these resources. Unlike many continental ecosystems, Hawaiian plants and animals are not adapted to periodic fire. However, invasive fire-adapted species provide an easily combustible fuel source, which combined with human activities, has led to an increase in wildfires in Hawaii, particularly on the dry leeward side of the islands. In addition to destroying native habitat, these fires provide an opportunity for further invasion of fire-adapted species, thus increasing the fuel load and continuing

the wildfire cycle. Conservation objectives included in Hawaii's Comprehensive Wildlife Conservation Strategy specifically identify fire threat mitigation as a high priority; the objectives also include establishment of partnerships with private landowners, non-traditional partners, and community groups to facilitate implementation of conservation actions. The proposed HMGP project is consistent with these conservation objectives: implementation of fire hazard reduction measures by HWMO, in coordination with local partners (for example, the land owner or lessee).

### Project Description

The proposed project includes the following measures: (1) implementation of fuel break management measures to reduce hazardous vegetative fuel for wildfires in two locations and (2) installation of new dip tanks to provide water resources for aerial fire suppression activities in five locations.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to slow the spread of fire toward the communities of Puako and Waikoloa. Vegetation that would be removed is primarily comprised of invasive, non-native grasses (e.g., fountain grass and buffel grass) and woody shrubs (e.g., kiawe and haole koa); these types of vegetation are highly flammable and can result in rapid rates of fire spread. In addition to decreasing hazardous fuel loads, the fuel breaks would create defensible space to help stop or slow the spread of wildfire toward the adjacent communities.

The dip tank measures would involve installation of tanks near the communities of Waikoloa, Kohala, Waimea, and Pu`u Anahulu to provide water for use in fire suppression activities. Most of the wildfires in these areas must be treated using helicopters due to the uneven terrain, as well as prevalence of unexploded ordnance remaining from past military training exercises. Reducing the travel time between bucket drops for helicopters greatly improves fire suppression, decreasing the likelihood that a wildfire will accelerate, and thus reducing the risk of catastrophic fire events in these areas. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawaii County Fire Department and the State of Hawaii DOFAW Fire Management Program.

The fuel break management and dip tank measures are summarized in Table 1; the general locations of the measures are shown in Figure 1. The area of potential effects (APE) for the fuel break measures generally includes the entire area within which the vegetation would be cleared or maintained. For the dip tank sites, the APE generally includes the dip tank location, a corridor for installation of a pipeline to fill the dip tank (if no existing water source is available), and an access road to reach the dip tank (if an existing access road is not available). The APE for each site is described in Table 1 and shown in Figures 2 through 8. Each measure would be implemented by HWMO, in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences.

Table 1. Summary of Proposed Fuel Break Management and Dip Tank Measures

Proposed Site	Tax Map Key (TMK)	Proposed Activity
Waikoloa Fuel Break	368003030, 368003037, 368003029, 368003028, 368002016, 368002051	Trim existing vegetation with weed-whackers and/or hand tools within approx. 0.5-mile-long fuel break (~30 feet wide), with new fuel break tying into existing fuel break around apartment complex on Pua Melia Street; maintain trimmed vegetation within both new and existing fuel break; APE includes entire fuel break (approx. 30 feet wide by 2,637 feet long), as shown in Figure 2
Puako Fuel Break	369001017, 369001015, 369002027, 369002023	Clear vegetation, grade, and place mulch in western half of existing 2-mile-long fuel break (~100 feet wide); work has already been completed by others within eastern half; maintain cleared vegetation within entire fuel break; APE includes entire fuel break (approx. 100 feet wide by 10,560 feet long), as shown in Figure 3
Kuainiho Dip Tank Site	371004001	Install 12-foot diameter dip tank within existing staging area; tank to be filled with water delivered via water truck; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 4
1859 Flow Dip Tank Site	371004018	Clear and grade area along existing access road (approx. 20'x20'); install 12-foot diameter dip tank; install 1-2" diameter aboveground pipeline within existing access road to deliver water to tank from nearby cattle trough; APE includes dip tank location (approx. 20-foot by 20-foot area) and existing access road (approx. 10 feet wide by 820 feet long), as shown in Figure 5
Waikoloa Dip Tank Site	368002015	Clear and grade area (approx. 20'x20') along existing access road; install 12-foot diameter dip tank; tank to be filled using existing water line; APE includes dip tank location (approx. 20-foot by 20-foot area), as shown in Figure 6
Ponoholo Dip Tank Site	359003004	Clear and grade area (approx. 20 feet by 20 feet); smooth grade along approx. 500-foot-long dirt access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline in shallow trench to deliver water to tank from existing water line; APE includes dip tank location (approx. 20 foot by 20 foot area), access road corridor (approx. 5 meters wide by 120 meters long) and pipeline corridor (approx. 30 meters wide by 1450 meters long), as shown in Figure 7
Lalamilo Dip Tank Site	366001002	Grade area (approx. 20'x20'); smooth grade along access road; install 12-foot diameter dip tank; install 1-2" diameter pipeline to deliver water to tank from adjacent property; APE includes dip tank location (approx. 20-foot by 20-foot area), access road corridor (approx. 131 feet wide by 2,100 feet long) and pipeline corridor (approx. 100 feet wide by 1,870 feet long), as shown in Figure 8

### Archaeological Survey Results and Assessment of Potential Effects

In compliance with the historic preservation regulatory review requirements of Section 106, an archaeological assessment of the APE was conducted in October and November 2012 and March 2013 by Dr. Alan Haun (Haun & Associates), under subcontract to FEMA. The results for each site and an assessment of the potential effects are summarized below:

1. *Waikoloa Fuel Break Site.* No archaeological sites or features were identified with the APE; the absence of archaeological sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
2. *Puako Fuel Break Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that previously occurred to establish a fuel break in this area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.

3. *Kuainiho Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the extensive disturbance that has occurred in the maintained fire suppression staging area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
4. *1859 Flow Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of archaeological sites is attributable to the relatively recent lava flow and the arid conditions in the area. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
5. *Waikoloa Dip Tank Site.* No archaeological sites or features were identified within the APE; the absence of sites is attributable to the arid conditions and is consistent with the extremely low density of sites found as part of previous archaeological studies for nearby areas. Based on the absence of sites, FEMA has determined that the proposed project would result in no historic properties affected at this location.
6. *Ponoholo Dip Tank Site.* The survey of the Ponoholo dip tank site identified a single site, consisting of a historic road located in the inland portion of the proposed pipeline corridor; this site was assigned SIHP number 29758. The road is a portion of the Pu`u Hue Trail that connected Pu`u Hue Ranch with the town of Kawaihae; it was also used during World War II for civil defense purposes. It is also probable that the road follows the path of a prehistoric trail that once connected the rich agricultural fields to the north with the coastal settlement at Kawaihae. This site has been assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”, pending concurrence from Hawaii State Historic Preservation Division (SHPD). Assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the proposed project or impose conditions, in coordination with SHPD, such that the proposed project would have no adverse effect on historic properties at this location.
7. *Lalamilo Dip Tank Site.* The survey of the Lalamilo dip tank site identified five archaeological sites with 16 features. These features consist of 14 agricultural mounds, one alignment, and one irrigation ditch (auwai). Two of the sites are located within the proposed access road corridor and three are in the proposed waterline corridor. The survey also noted seven isolated objects, consisting of an opihi shell fragment, fragments of waterworn coral, two basalt adze fragments, and a groundstone fragment. The sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria, as “hav[ing] yielded...information important in history or prehistory”. These sites have been adequately documented, such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the proposed project would have no adverse effect on historic properties at this location.

### Conclusion

Pursuant to the National Environmental Policy Act, FEMA is preparing an Environmental Assessment to address potential impacts of the proposed project. As part of this process and pursuant to the requirements of Section 106, FEMA is requesting your input regarding the potential effects of the proposed project on historic properties. A similar request for input has been sent to the Office of

Hawaiian Affairs, Association of Hawaiian Civic Clubs, Hawaii Island Burial Council, Hui Mālama I Na Kūpuna O Hawai'i Nei, KAHEA, Kailapa Community Association, Kona Hawaiian Civic Club, Na Ala Hele, and Puuanahulu Community Association.

If you should require any additional information on the proposed project or FEMA's request, please contact Mr. Morgan Griffin, Deputy Regional Environmental Officer, at (510) 627-7033, [morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov), or the letterhead address.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alessandro Amaglio', with a stylized flourish at the end.

Alessandro Amaglio  
Regional Environmental Officer

Enclosures

## **Griffin, Morgan**

---

**From:**  
**Sent:**  
**To:**  
**Subject:**

Ms. Donham,

FEMA sent a request for Section 106 consultation to your office dated June 27, 2013, and received by your office July 2, 2013, for an Undertaking consisting of installation of a dip tank at Ponoholo (FEMA HMGP 1640-7, State HPD Log 2009.3392 / Doc 0912MD19). FEMA determined that a single site existed in the area of potential effects assessed as eligible for the National Register of Historic Places under Criterion D. FEMA requested that your office concur with FEMA's determination of eligibility before FEMA continued consultation with your office regarding determination of effect. To date, FEMA has not received a response. Please let me know if your office requires more time to review FEMA's documentation and, if so, when FEMA can expect a response. FEMA prefers to ensure that your office agrees with its determination of eligibility before proceeding with a determination of effect.

FEMA sent a separate request for Section 106 consultation to your office dated June 28, 2013, and received by your office July 3, 2013, for an Undertaking consisting of the implementation of fuel breaks and installation of dip tanks at six sites in Hawaii County (FEMA HMGP 1640-7, State HPD Log 2009.3392 / Doc 0912MD19). FEMA made a finding of no historic properties affected for this Undertaking. Based on the stipulations in the applicable Programmatic Agreement, FEMA may consider the Section 106 review complete and fund the Undertaking unless your office objects within 21 days upon receipt of FEMA's documentation. To date, FEMA has not received a response. Please let me know if your office requires more time to review FEMA's documentation and, if so, when FEMA can expect a response. If I don't receive a response from your office by the end of the week, FEMA will follow the stipulations of the Programmatic Agreement and proceed with implementation of the Undertaking.

Thanks,  
Morgan

**G. Morgan Griffin**  
Deputy Regional Environmental Officer  
FEMA Region IX  
1111 Broadway, Suite 1200  
Oakland, California 94607  
510.627.7033 (office)  
510.541.9537 (mobile)  
510.627.7138 (fax)  
[morgan.griffin@fema.dhs.gov](mailto:morgan.griffin@fema.dhs.gov)  
<http://www.fema.gov/environmental-historic-preservation>

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

WILLIAM J. AILA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ESTHER KIA'AINA  
FIRST DEPUTY

WILLIAM M. TAM  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

July 22, 2013

Morgan Griffin  
U.S. Department of Homeland Security  
FEMA Region IX  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052  
[Morgan.griffin@fema.dhs.gov](mailto:Morgan.griffin@fema.dhs.gov)

LOG NO: 2013.4090  
DOC NO: 1307MV16  
Archaeology



SUBJECT: **National Historic Preservation Act (NHPA) Section 106 Consultation –  
Proposed Ponooho Dip Tank Site  
Pahinahina Ahupua'a, North Kohala District, Island of Hawaii  
TMK (3) 5-9-003: 004**

This is in response to your request for consultation regarding the proposed Ponooho dip tank site, which we received July 2, 2013. The proposed undertaking involves the installation of a dip tank site, an access road corridor and a waterline corridor. The area of potential effect (APE) for this undertaking includes the dip tank site, which is a 20 sq. ft. area with a 12 ft. diameter tank to store water for aerial fire suppression. The APE for the undertaking also includes a 120 meter long by 5 meter wide dip tank access road that roughly follows an existing dirt road, and a waterline corridor 30 meters wide and 1,450 meters long that extends from the dip tank site up to an existing waterline. Trenching will be required to bury the pipe within the waterline corridor. SHPD agrees with the proposed APE for this undertaking.

An archaeological inventory survey (AIS) of the proposed site location, completed by Haun & Associates (May 2013), was included as an attachment to this consultation letter. The AIS indicates that there is an existing historic trail, known as the Pu'u Hue Trail (SIHP number 50-10-05-29758) located within the project area. According to the AIS, the trail was utilized during World War II in conjunction with civil defense activity in the area. The AIS also states that Site 29758 likely follows the route of an earlier prehistoric foot trail used to travel between North Kohala and Kawaihae, although no physical evidence of a foot path remains. According to the AIS, Site 29758 is significant under National and State significance criterion D. It is also determined to be culturally significant under criterion E of the State Significance criteria (HAR 13-275-6). We agree with the significance assessment of Site 29758 as significant under criteria D and E, however, we also believe that it is significant under criterion A, because it is associated with events such as the development and use of the Kohala field system and civil defense activities during WWII, that have made an important contribution to the broad patterns of our history.

According to the AIS the proposed waterline corridor intersects Site 29758. This action has the potential to affect this historic property. However, because the material components and design of the trail have been previously impacted through mechanical grading activities we believe that the impacts to the trail will not adversely affect the qualities of the sites integrity that make it historically significant. We believe that the character and use of this site (transportation) will not be affected by this undertaking.

Prior to concurring with your determination of no adverse effect, we request more information regarding your consultation process, pursuant to 36 CFR Part 800.3(f)(2). We request that the agency official make a reasonable and good faith effort to identify any Native Hawaiian Organizations (NHO) that might attach religious and cultural significance to historic properties within the project area, and invite them to be consulting parties. We request that NHO are consulted in both the identification and evaluation phases of this Section 106 review. We recommend that consultation also occur with DLNR's Na Ala Hele program regarding the historic trail. If this consultation has occurred, please update our office on the participants and the outcome.

Morgan Griffin  
July 22, 2013  
Page 2

Finally, the AIS report indicates that Native Hawaiian burial sites (SIHP 1107I) have been identified along Pu'u Hue Trail in the vicinity of this project area. Therefore, we request that an archaeological monitor be onsite during ground disturbing activities, including the excavation of the waterline trench. We look forward to the opportunity to review an archaeological monitoring plan (AMP) prior to the commencement of project activities, and we look forward to the opportunity to continue consultation on this undertaking.

Please contact Michael Vitousek at (808) 692-8029 or [Michael.Vitousek@hawaii.gov](mailto:Michael.Vitousek@hawaii.gov) if you have any questions or concerns regarding this letter.

Aloha,



Theresa K. Donham  
Deputy State Historic Preservation Officer  
Historic Preservation Division

cc: Dr. Alan E. Haun Haun & Associates  
73-1168 Kahuna A'o Road  
Kailua-Kona HI 96740

PHONE (808) 594-1888

FAX (808) 594-1865



**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
711 KAPI'OLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813



HRD13\_6794

August 15, 2013

Alessandro Amaglio, Regional Environmental Officer  
U.S. Department of Homeland Security  
Federal Emergency Management Agency, Region IX  
1111 Broadway, Suite 1200  
Oakland, CA 94607-4052

**Re: National Historic Preservation Act consultation  
Construction of Fuel Breaks and Dip Tank Sites as Wildfire Suppression Measures  
North Kona and Kohala, Island of Hawai'i**

Dear Alessandro Amaglio:

The Office of Hawaiian Affairs (OHA) is in receipt of your July 1, 2013 letter with enclosures that continues National Historic Preservation Act (NHPA) consultation for the proposed construction of fuel breaks and dip tank sites at various locations on the Island of Hawai'i (the undertaking). Funding from the Federal Emergency Management Agency (FEMA)-Hazard Mitigation Grant Program (HMGP) through the Hawai'i State Civil Defense to the Hawai'i Wildfire Management Organization will support the undertaking. The communities selected to potentially receive this HMGP assistance are identified as some of the most wildfire-prone areas in the State of Hawai'i.

Your letter correctly notes that NHPA for this undertaking with OHA began in 2009. It is our understanding that one of the three fuel breaks and two of the seven dip tank sites originally detailed for the undertaking have been eliminated. The undertaking now proposes the construction of two fuel breaks in Waikoloa and Puako and five dip tank sites in Kuainiho, Pu'uanaulu (referred to as the "1859 Flow" site in your letter), Waikoloa, Lalamilo and Kalala (identified as the "Ponoholo" site in your letter).

Alessandro Amaglio, Regional Environmental Officer  
U.S. Department of Homeland Security  
Federal Emergency Management Agency, Region IX  
August 15, 2013  
Page 2

The area of potential effect (APE) for the undertaking is described in Table 1 and depicted on Figures 1-8 of your letter. The APE is inclusive of the extent of the two fuel breaks that are 0.5 miles long by 30 feet wide (Waikoloa) and two miles long by 100 feet wide (Puako) respectively. The APE for the dip tank sites is inclusive of the location where the dip tanks will be constructed and access road corridors that will be required for water delivery trucks. Certain dip tanks will be filled by existing water lines. Certain new waterlines that will be required will be installed on existing access road corridors. The Lalamilo dip tank site will require the construction of a new access road corridor (131 feet wide by 2,100 feet long) and the preparation of a new waterline corridor (100 feet wide 1,870 feet long). The Kalala dip tank site will require the preparation of a new waterline corridor (30 meters wide by 1450 meters long).

An archaeological assessment of the APE has been conducted. A single historic property (a segment of the historic Pu'u Hue Trail) was identified at the Kalala dip tank APE. A traditional site complex consisting of 5 sites and 16 component features was identified at the Lalamilo site. Two of these sites are within the access road corridor and three of these sites are in the proposed waterline corridor. Cultural items such as shell fragments, water worn coral, basalt adz fragments and a ground stone fragment were also identified.

In regards to the historic properties identified at the Lalamilo dip tank site, your letter states (page 4-5) that *...the sites were assessed as significant under Criterion D of the National Register of Historic Places evaluation criteria...and...have been adequately documented such that no further work or preservation is recommended. Based on this assessment, FEMA has determined that the Undertaking would have no adverse effect on historic properties at this location.*

OHA does not agree with your determination regarding the historic properties identified at the Lalamilo dip tank site at this time. OHA respectfully requests that we be sent a hardcopy and electronic copy of the archaeological assessment referenced in your letter so that we can review it and gather additional information regarding the historic properties at the Lalamilo dip tank site and then continue NHPA consultation with FEMA for this undertaking. It should be noted that the merits of a given undertaking and "adequate archaeological documentation" do not by themselves, provide adequate justification for the destruction of our traditional sites that each have the potential to offer 'ike (knowledge) from our ancestors and are our tangible connections to our only homeland.

Your proposed determination for the Lalamilo dip tank site is especially curious when compared to your determination for the historic property identified at the Kalala dip tank site (page 4) that *...assuming the site is determined to be significant under Criterion D, FEMA proposes to modify the Undertaking or impose conditions, in coordination with SHPD, such that the Undertaking would have no adverse effect on historic properties at this location.*

OHA seeks a greater understanding of the FEMA rational that seems to support undertaking modification (or impose conditions) to accommodate the historic road at Kalala, yet is agreeable to the destruction of traditional Hawaiian sites with what appears to be no effort to modify the undertaking (or impose conditions) to avoid any unnecessary adverse impacts.

Alessandro Amaglio, Regional Environmental Officer  
U.S. Department of Homeland Security  
Federal Emergency Management Agency, Region IX  
August 15, 2013  
Page 3

OHA also requests clarification on why the widths of the required waterline corridors described in your letter seem so large when compared to the size of the pipelines (1-2") that will be installed. The widths of the access road corridors also seem to be inconsistent (Kalala is approximately 15 feet wide, Lalamilo is approximately 131 feet wide). We request clarification on this issue as well.

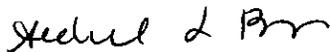
Your letter also mentions that FEM will be preparing an environmental assessment pursuant to the requirements of the National Environmental Policy Act (NEPA) to support the undertaking. OHA seeks clarification whether the NEPA document will assess alternative alignments for the Lalamilo dip tank site road and waterline corridors that would avoid impacts to the identified historic properties in the APE.

To be clear, OHA is in full support of the undertaking moving forward and the identified communities receiving this much needed HMGP funding support to provide these protections from the devastating and destructive effects of wildfire. Our only concerns are related to the Lalamilo dip tank site and we are confident that they can be resolved through the NHPA consultation process.

In regards to the request in your letter for recommendations for additional Native Hawaiian organizations (NHO) who may be interested in participating in NHPA consultation, after reviewing the NHO listed in your letter, we have no recommendations to offer at this time.

Thank you in advance for your anticipated response to our requests for clarification and we look forward to receiving the archaeological assessment for review and continuing NHPA consultation with FEMA. Should you have any questions, please contact Keola Lindsey at 594-0244 or keolal@oha.org.

'O wau iho nō me ka 'oia'i'o,



Kamana'opono M. Crabbe, Ph.D.  
Ka Pouhana, Chief Executive Officer

KM:kl

C: William Aila, Jr., Hawai'i State Historic Preservation Officer  
Theresa Donham, Deputy Hawai'i State Historic Preservation Officer (via email)  
Morgan Griffin, FEMA-Deputy Regional Environmental Officer (via email)

## **Appendix F—Distribution List**

## **Appendix F**

Appendix F contains: Notice of Availability of Draft Environmental Assessment, Agency Distribution List, and Comment Letters Received during the Review Period.

**Notice of Availability**  
**Draft Environmental Assessment**  
**Critical Fuel Break Management and Dip Tank Project**  
**FEMA-1640-DR-HI, HMGP 1640-7**

The Hawai`i Wildfire Management Organization (HWMO) has applied, through the State of Hawai`i State Civil Defense (SCD), to the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) for funding under the Hazard Mitigation Grant Program (HMGP) to (1) implement fuel break management measures in two locations to reduce hazardous vegetative fuel for wildfires and (2) install three or five new dip tanks to provide water resources for aerial wildfire suppression activities. The proposed activities would be implemented to reduce wildfire hazards for several communities on the west side of Hawai`i Island.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to mitigate the spread of wildfire toward the communities of Puako and Waikoloa. The dip tank measures would involve installation of three or five new dip tanks near Waikoloa, Kohala (Kahua), Waimea, and Pu`u Anahulu to provide readily available sources of water for use in wildfire suppression activities in these areas. Each measure would be implemented by HWMO in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawai`i County Fire Department and the State of Hawai`i Department of Land and Natural Resources Division of Forestry and Wildlife Fire Management Program.

FEMA has prepared a Draft Environmental Assessment (EA) in compliance with the National Environmental Policy Act, as amended, and applicable implementing regulations. The Draft EA evaluates the environmental impacts of HWMO's proposed project and alternatives. FEMA has made the Draft EA available for public review and comment at <http://www.fema.gov/media-library/assets/documents/93430> and the following locations: HWMO, 65-1279 Kawaihae Road, Suite #211, Kamuela (call 808-885-6534 for location information) and Thelma Parker Public Library, 67-1209 Mamalahoa Highway, Kamuela (call 808-887-6067 for location information).

FEMA, SCD, and HWMO will consider all comments on the Draft EA before making decisions regarding HWMO's proposed project. Comments relevant to the Draft EA should be provided in writing to FEMA Region IX EHP, Hawaii Fire Reduction Draft EA, 1111 Broadway, Suite 1200, Oakland, CA 94607-4052 or electronically to [fema-rix-ehp-documents@fema.dhs.gov](mailto:fema-rix-ehp-documents@fema.dhs.gov). Questions regarding the Draft EA or its availability may also be asked by telephone at (510) 627-7027 (messages only). To be considered in the decision-making process, comments on the Draft EA must be received by May 23, 2014.

**Notice of Availability  
Draft Environmental Assessment  
Critical Fuel Break Management and Dip Tank Project  
FEMA-1640-DR-HI , HMGP 1640-7**

The Hawai'i Wildfire Management Organization (HWMO) has applied, through the State of Hawai'i State Civil Defense (SCD), to the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) for funding under the Hazard Mitigation Grant Program (HMGP) to (1) implement fuel break management measures in two locations to reduce hazardous vegetative fuel for wildfires and (2) install three or five new dip tanks to provide water resources for aerial wildfire suppression activities. The proposed activities would be implemented to reduce wildfire hazards for several communities on the west side of Hawai'i Island.

The fuel break management measures would involve reducing hazardous vegetation in designated wildland-urban interface areas to mitigate the spread of wildfire toward the communities of Puako and Waikoloa. The dip tank measures would involve installation of three or five new dip tanks near Waikoloa, Kohala (Kahua), Waimea, and Pu'u Anahulu to provide readily available sources of water for use in wildfire suppression activities in these areas. Each measure would be implemented by HWMO in coordination and with ongoing maintenance performed by a local partner (generally the landowner or lessee). For each site, a Memorandum of Agreement detailing the maintenance responsibility would be signed before work commences. In the event of a wildfire, the dip tanks would be used, as appropriate, by responders from the Hawai'i County Fire Department and the State of Hawai'i Department of Land and Natural Resources Division of Forestry and Wildlife Fire Management Program.

FEMA has prepared a Draft Environmental Assessment (EA) in compliance with the National Environmental Policy Act, as amended, and applicable implementing regulations. The Draft EA evaluates the environmental impacts of HWMO's proposed project and alternatives. FEMA has made the Draft EA available for public review and comment at <http://www.fema.gov/media-library/assets/documents/93430> and the following locations: HWMO, 65-1279 Kawaihae Road, Suite #211, Kamuela (call 808-88 5-6534 for location information) and Thelma Parker Public Library, 67-1209 Mamalahoa Highway, Kamuela (call 808-887-6067 for location information).

FEMA, SCD, and HWMO will consider all comments on the Draft EA before making decisions regarding HWMO's proposed project. Comments relevant to the Draft EA should be provided in writing to FEMA Region IX EHP, Hawaii Fire Reduction Draft EA, 1111 Broadway, Suite 1200, Oakland, CA 94607-4052 or electronically to [fema-rix-chp-documents@fema.dhs.gov](mailto:fema-rix-chp-documents@fema.dhs.gov). Questions regarding the Draft EA or its availability may also be asked by telephone at (510)627-7027 (messages only). To be considered in the decision-making process, comments on the Draft EA must be received by May 23, 2014.

(No. 168352-West Hawaii Today: April 28, 2014)

West Hawaii Today p.4B

Hawaii Wildfire Management Organization  
List of Contacts for Diptanks and Fuelbreaks

**Distribution List**  
**Notice of Availability — Draft Environmental Assessment**  
**Critical Fuel Break Management and Dip Tank Project**  
**FEMA-1640-DR-HI, HMGP 1640-7**

**Hawaii State Civil Defense**

3949 Diamond Head Road  
Honolulu, HI 96816  
Havinne Okamura, Hazard Mitigation Planner  
hokamura@scd.hawaii.gov

**Hawaii Wildlife Management Organization**

Elizabeth Pickett, Executive Director  
65-1279 Kawaihae Road, Suite 211  
Kamuela, HI 96743  
elizabeth@hawaiiwildfire.org

**U.S. Fish and Wildlife Service**

Loyal Mehrhoff, Supervisor  
Rachel Rounds, Biologist  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Blvd, Room 3-122  
Honolulu, HI 96850  
Rachel\_rounds@fws.gov

**Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW)**

Roger Imoto, Administrator  
Wayne F. Ching, State Protection Forester & Fire Management Officer  
Division of Forestry and Wildlife  
1151 Punchbowl St., Rm. 325  
Honolulu, HI 96813

Lisa Hadway, Hawaii Island Branch Manager  
Jay Hatayama, Hawaii Island Protection Forester  
Division of Forestry & Wildlife  
19 E. Kawili St.  
Hilo, HI 96720

**State of Hawaii Historic Preservation Division**

Theresa Donham, Deputy State Historic Preservation Officer  
P.O. Box 621  
Honolulu, HI 96809

Michael Vitousek, Archaeologist  
Michael.Vitousek@hawaii.gov

**Office of Hawaiian Affairs**

Kamana`opono Crabbe, Chief Executive Officer  
Keola Lindsey  
711 Kapiolani Blvd, Suite 500  
Honolulu HI 96813  
[keolal@oha.org](mailto:keolal@oha.org)

**Hawaii County Council**

Council Member Margaret Wille, District 9, North and South Kohala  
25 Aupuni Street  
Hilo, HI 96720  
mwille@co.hawaii.hi.us

Hawaii Wildfire Management Organization  
List of Contacts for Diptanks and Fuelbreaks

**Waikoloa Village Association**

Roger Wehrsig, General Manager  
P.O. Box 383910  
Waikoloa, HI 96738-3910  
gm@wvagolf.com

**Puako Community Association**

Peter Hackstedde, President  
P.O. Box 44345  
Kawaihae, Hawaii 96743  
phack@hawaii.rr.com

**Waikoloa Dryland Forest Initiative**

68-3720 Lua Hoana Place  
Waikoloa, HI 96738  
wdfi@waikoloadryforest.org

**Ponoholo Ranch**

Pono von Holt  
59-927 Kohala Mountain Rd  
Kapaa, HI 96755  
(808) 884-5100  
pono@ponoholo.com

**Freddy Rice Cattle Company**

PO Box 98  
Kamuela, HI 96743  
frcattlecompany@gmail.com

**Kailapa Community Association**

61-4016 Kai Opae Place  
Kawaihae, HI 96743

**Pu`u Anahulu Community Association**

71-1490 Hawaii Belt Rd  
Kailua-Kona, HI 96740-8306

**Kohala Ranch Community Association**

Susan Gand  
Pacifica Realty Management, Inc.  
75-1029 Henry Street, #202  
Kailua-Kona, HI 96740-1666  
pacific@pacific-hawaii.com

**Parker Ranch**

66-1304 Mamalahoa Hwy.  
Kamuela, HI 96743

**Waimea Community Association**

Sherm Warner, President  
65-1184 Mamalahoa Hwy  
Waimea, HI 96743  
wcapres@hawaiiintel.net

**Sierra Club, Moku Loa Group**

P.O. Box 1137  
Hilo HI 96721

*Margaret Wille*  
Council Member  
District 9 - North and South Kohala



Phone No. Hilo: (808) 961-8027  
Phone No. Waimea: (808) 887-2043  
Fax No.: (808) 887-2072  
E-Mail: [mwille@co.hawaii.hi.us](mailto:mwille@co.hawaii.hi.us)

## HAWAI'I COUNTY COUNCIL

*County of Hawai'i*

*Hawai'i County Building  
25 Aupuni Street  
Hilo, Hawai'i 96720*

*Holomua Center  
64-1067 Mamalahoa Highway, Suite C-5  
Waimea, Hawai'i 96743*

*West Hawai'i Civic Center Bldg. A  
74-5044 Ane Keohokalole Hwy.  
Kailua-Kona, Hawai'i 96740*

FEMA Region IX EHP  
Hawaii Fire Reduction Draft EA  
1111 Broadway  
Suite 1200  
Oakland, California 94607-4052

May 16, 2014

I am in strong support of the Draft Environmental Assessment regarding the Hawai'i Wildfire Management Organization's Critical Fuel Break Management and Dip Tank Project (Hawai'i Wildfire Management Organization FEMA-1640-DR-HI, HMGP 1640-7).

As the Council Member of District 9, which is North West Hawai'i and includes many of the areas in the study, I understand the critical need for better fire prevention and management. As an example the Waikoloa Village, Puako and Kawaihae areas are in a very dry climate with a dryland ecosystem and generally have high winds. They have experienced all too frequent fires threatening their communities. Other communities in District 9 such as Kamuela and Hawi, while not as dry, are also prone to threatening wildfires.

I feel strongly that the study's recommended actions for North West Hawai'i should be implemented for the safety of the communities as well as the firefighters.

Sincerely,

A handwritten signature in black ink, appearing to read "Margaret Wille", with a long, sweeping underline.

Margaret Wille  
Council Member District 9  
North & South Kohala

MW/dh

*Serving the Interests of the People of Our Island  
Hawai'i County Is An Equal Opportunity Provider And Employer*

## Barboza, Ana (Gilda)

---

-----Original Message-----

From: Elizabeth Pickett [<mailto:elizabeth@hawaiiwildfire.org>]

Sent: Thursday, May 29, 2014 5:24 PM

To: Havinne Okamura

Subject: HWMO EA

Aloha Havinne,

This email is just to confirm that we received only four responses during the EA period related to the EA:

1. Roger Wehrsig, Waikoloa Village Association president, who was inspired to discuss additional project ideas and vegetation management assistance requests from HWMO.
2. Jen Lawson, WDFI project manager, who offered continued support for the project.
3. Peter Hackstedde, Puako Community Association President, asking about timing for funding and continuation of the fuel break development in Puako (fire season is here).
4. Someone at the State Office of ?? (message wasn't clear), who said we didn't have to do an EA. I called to discuss and spoke with his secretary, who must have explained (as I did to her) that this would be a FEMA-funded project and therefore required an EA.

Thank you,  
Elizabeth