

**THE KOHALA WATERSHED PARTNERSHIP
COMMUNITY-BASED ECOSYSTEM ASSESSMENT PROJECT**

Submitted by:

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EXECUTIVE SUMMARY

November 13, 2019
The Kohala Center
Kamuela, County of Hawai‘i, State of Hawai‘i

The Kohala Center (TKC) and the Kohala Watershed Partnership (KWP) are requesting \$100,000 over a two year period for a Community-based Ecological Assessment Project. This project will evaluate the impact of watershed conservation efforts over the last 12 years resulting in an updated Kohala Watershed Management Plan from 2007. This proposal uniquely engages Kohala stakeholders, especially those under-represented in the first planning process, to contribute to this updated plan. Using a participatory evaluation process guided by a Community-based Ecological Assessment toolkit, stakeholders will become data gatherers of indicators showing improved (or not) ecological, social, cultural and/or economic conditions in the designated project areas. In these ways, the proposed project contributes to accomplishing the goals of the USDO I to create a conservation stewardship legacy and restore trust in our local communities. Funds will primarily be used to contract a part-time Project Coordinator to facilitate engagements designed for building deeper connections to the sources and uses of Kohala’s water as a means to foster trust and communal well-being as the foundation for addressing complex water issues.

The proposed project length is two-years from July 1, 2020 through June 30, 2022.

The proposed project is not located on a Federal facility.

BACKGROUND DATA

The Kohala Mountain hosts a cloud forest that supports a unique ecosystem with over 155 native species of vertebrates, crustaceans, mollusks, and plants. Cloud forests make up only 2.5% of the total area of the world’s tropical forests. As the oldest volcano on Hawai‘i Island, Kohala Mountain’s ecosystems provide a complexity and diversity unlike other volcanoes on the island. Kohala hydrology is distinctive in that most precipitation comes from water captured by clouds passing through mountain cloud forests. These are vital for recharge of the Kohala Aquifer (KA), which according to the Hawaii Department of Water Supply (DWS) has a total sustainable yield (SY) of 154 million gallons per day (mgd) providing water to 26,000 people in the Kohala District & supporting 100,000 acres of agriculture.

Yet over the past 200 years the Kohala landscape has been reshaped to serve communal and societal demands. Lush forested area both wet and dryland were replaced by hundreds of acres of pasture for ranching, residential development and/or monocrop agriculture. This resulted in native forest and coastline devastation. Many of the endemic forest species found on the mountain have become rare and/or endangered.

The importation of cattle, sheep, goats and pigs by early settlers of Polynesian and European ancestry was sufficient to convert most of the former tropical forests to pastures, eventually resulting in bare soil and the grasslands of today.

Today alien plants and animals and their effects are the primary threats to the Kohala's watersheds. It is estimated that half of Hawai'i's forests have been lost to deforestation. Rising temperatures and lower rainfall due to climate change will increase the stress on native plants and animals (Leong, et al., 2014), and a significant decrease in water quality and quantity are already increasing water-related challenges for our native communities. (Bennett, et al., 2014)

A recent University of Hawai'i study identified Kohala as one of the highest priority areas for cost-effective watershed management due to large recharge benefits. Conservation of these forests was estimated to avoid the loss of approximately 378 billion gallons of water yield & 193 billion gallons of groundwater recharge over 50 years.

TKC has not had any past working relationships with Reclamation.

PROJECT LOCATION

The watersheds of Kohala are located in the County of Hawai'i, on the north side of the island of Hawai'i, in the State of Hawai'i. The area addressed by the current Management Plan includes approximately 68,000 acres of forest and grass lands on the windward and leeward slopes of the Kohala Volcano identified as the Kohala Watershed Management Area (WMA). The project location includes several small watersheds in the USGS Region 2-Hawai'i, Subregion 2001 - Hawai'i Island, Hydrologic Unit Code (HUC) #20010000.

TECHNICAL PROJECT DESCRIPTION

Applicant Category:

TKC is seeking funding for the KWP as an Existing Watershed Group.

Efforts to protect vital watershed values began to coalesce when a group of government and private landowners signed a Memorandum of Understanding (MOU) in August 2003, officially forming the KWP. By signing this MOU, partners committed to work collaboratively to protect the Kohala Mountain watersheds, despite differences in priorities, mandates, and constituencies. The KWP is a voluntary alliance of public and private landowners as well as non-landowner, associate partners who are committed to watershed protection. KWP is one out of ten watershed partnerships statewide.

KWP current projects include: (1) rehabilitating degraded pastures and reforestation of a 2-mile riparian corridor totaling 360 acres on leeward Kohala at the Koai'a Corridor Native Plant Sanctuary & Restoration Project, among others; (2) revegetating a 10-acre riparian corridor in Honokoa watershed as a seed and water source for expansion of dryland, mesic reforestation by community stewards; (3) establishment of an ungulate free ecological restoration unit for Kailapa Community Association families at the base of the Kohala Mountain; (4) installing and repairing nearly 9,000 feet of paddock fence to implement a rotational and targeted grazing program to reduce erosion into Pelekāne Bay in the Kawaihae 2 watershed.

KWP past projects have included: (1) creating the Pelekane Bay Watershed Restoration Corridor along 10,500 feet of the Luahine and Waiakamalii Streams to protect and reforest 300 acres in the upper portion of the Kawaihae 2 watershed with native plants; (2) restoring 500 acres of degraded forest and protection of globally rare species of native snail and flowering plants in Kanea'a-Ponoholo Biodiversity Preserve; (3) creating a 270-acre cloud forest reserve to protect native biodiversity and a unique concentration of rare and endangered plant species, as well as native forest birds, at the Pu'u Pili Biodiversity Preserve; (4) protecting 2,000 acres of high-yield aquifer recharge areas on windward Kohala Mountain, as well as globally-imperiled montane bog ecosystems, seabird nesting areas, and rare/endangered native plants, at Upper Laupāhoehoe Nui Watershed Reserve;

Eligibility of Applicant:

TKC is a 501(c)3 organization located in Hawai'i that has successfully administered the KWP as part of its programs and services since 2008. KWP is a grassroots, non-regulatory entity that addresses water availability and quality issues within Kohala's watersheds, makes decisions on a consensus basis, and represents a diverse group of stakeholders including ranchers, farmers, irrigators, recreation groups including hunters, environmental and educational organizations, Hawaiian cultural non-profits and county and state government agencies.

KWP Goals and Objectives:

1. Management Goal 1: Protect Water Resources.
 - a. Objective 1a: Maintain a structurally-complex vegetative cover that promotes infiltration and groundwater recharge and minimizes erosion.
 - b. Objective 1b: Protect, enhance, and manage high yield watershed areas to maintain water quantity and quality.
 - c. Objective 1c: Monitor the quality and integrity of ground water, surface waters, and aquatic environments.
 - d. Objective 1d: Develop a thorough understanding of the nature of groundwater resources affected by Kohala Mountain.
 - e. Objective 1e: Support appropriate water development to meet the needs of future demand.
2. Management Goal 2: Prevent New Introductions and Effectively Control Existing Invasive Plant Species.
 - a. Objective 2a: Prevent the introduction of new potentially-invasive plant species.
 - b. Objective 2b: Manage the spread of incipient and well-established weed pests.
 - c. Objective 2c: Conduct monitoring and research to determine efficacy of control measures and to identify occurrences and distribution of other new species.
3. Management Goal 3: Control Non-Native Animal Populations within Designated Areas.
 - a. Objective 3a: Remove feral cattle from the WMA.
 - b. Objective 3b: Implement pig control to minimize loss of watershed vegetation cover, watershed soil erosion, and human health risks associated with animal-borne diseases.
 - c. Objective 3c: Slow the rate of introduction and manage established alien aquatic species.

- d. Objective 3d: Reduce the impacts of rats and other small mammals and promote control of other non-native animals as appropriate.
- 4. Management Goal 4: Protect Unique Biological Communities and Rare Species.
 - a. Objective 4a: Protect unique plant and animal communities within the WMA.
 - b. Objective 4b: Control priority invasive aquatic species in windward streams within the WMA.
- 5. Management Goal 5: Prevent and Minimize Wildfire.
 - a. Objective 5a: Protect the WMA from the threat of wildfire.
- 6. Management Goal 6: Manage Access for Compatible Public Use.
 - a. Objective 6a: Support continued public hunting on DLNR-managed lands, where compatible with the conservation of water and related watershed values.
 - b. Objective 6b: Establish and maintain suitable hiking access trails where the activity is compatible with conservation of water and related watershed values.
 - c. Objective 6c: Permit public access to and over private property only with explicit permission of private property owner or representative.
 - d. Objective 6d: Ensure that cultural practices, and archaeological and other cultural sites within the WMA are identified, protected, and enhanced.
 - e. Objective 6e: Generate community awareness and support of watershed values and management activities on Kohala Mountain.
- 7. Management Goal 7: Provide Effective Administrative Coordination and Infrastructure.
 - a. Objective 7a: Provide and maintain the appropriate infrastructure and administration to allow for effective watershed management.

Approach:

This Community-based Ecosystem Assessment Project has been designed to enhance the existing Kohala Watershed Management Plan in three ways:

- 1) Task A – Water Group Development: TKC-KWP will draw upon its trusted relationships with key stakeholders affected by Kohala’s watersheds with a specific focus on un- and under-represented members of the community.

The strategic approach is to develop Accountability Partners with those who also hold value for native research and evaluation processes as well as responsibility for the protection of these special lands and waters of Kohala. The role of a contracted, part-time KWP Coordinator will be to facilitate communication and community outreach with key stakeholders including KWP partners and associates and Kohala-based affected stakeholders.

- 2) Task B – Watershed Restoration Planning: TKC will utilize a community-based approach to assess the impact of past watershed practices on the ecosystems in designated project areas. The role of a contracted, part-time KWP Coordinator will be to work with TKC to develop and utilize a Community-based Ecosystem Assessment Toolkit and to engage members in the process of ongoing kilo (Hawaiian observation and inquiry) and evaluation. Stakeholders are invited into the field and participate directly in the process of watershed restoration through experiential learning activities. This is a critical strategy for ongoing engagement and sustaining relationships during and beyond the two-year project

- 3) Task C – Watershed Management Project Design: Through experimentation, a myriad of data collection strategies will be employed including quantitative and qualitative methods. Specific indigenous methods for collecting data (mo‘olelo or story-telling and catching) and analyzing the data will be used alongside Western means of observation, reflection and measurement. This is an important design element that creates space for both Western and Hawaiian ways of thinking, knowing and doing.

Gathering stakeholders for regular sessions to assess for learning allows for time to garner and uplift diverse perspectives, insights and innovations. The results of this co-creative and participatory evaluation processes will be documented and incorporated in to both the Community-based Ecosystem Assessment Toolkit and Updated KWP Management Plan and Priorities.

EVALUATION CRITERIA

Evaluation Criterion A— Watershed Group Diversity and Geographic Scope

Sub-criterion No. A1. Watershed Group Diversity

Description of The Kohala Watershed Partnership (KWP)

TKC is a 501(c)(3) non-profit founded in 2000 with a mission to respectfully engage the island of Hawaii as a model of and for the world. Since 2008, TKC has administered the KWP as part of its programs and services.

The KWP, created in 2003, brings together major landowners on Kohala Mountain and other key stakeholders to protect the water resources, watershed functions, and the natural and cultural resources of the forested watersheds. The current watershed management area (WMA) in Kohala covers more than 68,000 acres and includes several small watersheds in the USGS Region 2-Hawai‘i, Subregion 2001 - Hawai‘i Island, Hydrologic Unit Code (HUC) #20010000. KWP is a voluntary alliance of public and private landowners as well as non-landowner, associate partners who are committed to watershed protection. The 11 partners encompass a diverse group of stakeholders including ranchers, farmers, irrigators, recreation groups including hunters, environmental and educational organizations, Hawaiian cultural non-profits and county and state government agencies as follows:

1. Parker Ranch (7% 4,408 acres) is a private, large-scale ranching business established in 1847 and headquartered in Waimea. Parker Ranch facilities include water capture, storage, and transport system. They bring water from Kohala streams to the Waimea-Waikoloa Plains delivering livestock water. Parker Ranch also offers a variety of scenic hunting areas on its lands which across Hawai‘i Island includes 130,000 acres.
2. Kahuā Ranch (4% or 2,346 acres) is a private, working ranch encompassing 8,500 acres across 6 precipitation zones stretching from the rain forest to the ocean. Kahuā raises cattle naturally on open pastures as its primary industry. In addition, they offer many recreational activities including horseback rides, ATV eco tours, and other family events. Housed on

Kahuā lands is the forested Pu‘u Pili which is a self-contained watershed unit which includes a reservoir system for water storage.

3. Ponoholo Ranch (3% or 2,261 acres) is a private 11,000 acre cattle ranch covering 3 climate zones on Kohala Mountain. It has the second largest herd of cattle on the island after Parker Ranch. Ponoholo operates in an environmentally sensitive manner and its livestock are sent to the continental U.S. for finishing. The ranch also offers horseback riding to guests. The 160 unit located in part on Ponoholo lands is targeted for biodiversity conservation.
4. Kamehameha Schools (KS: 14% or 9,088 acres) is a private charitable educational trust endowed by the will of princess Bernice Pauahi Bishop, the last direct descendent of King Kamehameha I. The mission of KS is to improve the capability and well-being of Hawaiians through education serving over 6,900 students of Hawaiian ancestry attending their K-12 campuses. KS is Hawaii’s largest private land owner, stewarding over 365,000 acres including over 9,000 acres of land in the Kohala WMA. KS owns the primary source of water to The Kohala Ditch in Honokāne.
5. Queen Emma Foundation (QEF: 3% or 2,261 acres) established in 1979 is a non-profit land management organization that ensures that quality health services can be provided to native Hawaiians and all of the people of Hawai‘i in perpetuity through its Queens Medical facilities. QELC owns and stewards over 10,000 acres both inside (2,261) and outside of the KWP management area on Kohala Mountain including high elevation, intact native forest ecosystems and degraded dryland forest ecosystems extending down to the shoreline.
6. Surety Kohala Corporation (8% or 5,072 acres) is a private landowner of The Kohala Ditch that once provided water to the Kohala sugar plantations in the early 1900s. As an irrigator, Surety provides water for a myriad of small private entities for irrigation, hydroelectric power, aquaculture, and livestock water.
7. Laupāhoehoe Nui, LLC (3% or 2,261 acres) is a private corporation that owns land that captures prime watershed between 3,500 and 4,000 feet on the windward slope of Kohala Mountain.
8. Hawai‘i Department of Land and Natural Resources (DLNR: 52% or 34,862 acres) is a state agency responsible for managing Hawai‘i’s public lands, water resources, navigable streams, ocean waters and coastal areas. Significant land areas on Kohala mountain managed by DLNR include Pu‘u O ‘Umi Natural Area Reserve (10,142 acres) and four fenced enclosures protecting a rare bog ecosystem, an intact leeward plant community, a native riparian habitat, and a mid-elevation uluhe forest. Within DLNR’s Koai‘a Plant Sanctuary, hiking and walking, nature appreciation, scientific studies, and photography are allowed. Public hunting is also allowed on approximately 32,000 acres of public lands within the WMA.
9. Department of Hawaiian Home Lands (DHHL: 4% or 2,949 acres) DHHL is a state department that manages over 200,000 acres of land state-wide for the purpose of homestead leases for native Hawaiians and to generate income from non-homestead land

to supplement its programs. In Kohala, DHHL maintains the Kawaihae Water System which includes 3 stream diversions and a number of wells in the Kawaihae watershed.

10. The Hawai'i County Department of Water Supply (DWS) is a semi-autonomous agency of the County of Hawai'i with the primary function to provide domestic water service. DWS is an associate partner of KWP because it relies on the streams and groundwater of Kohala Mountain. Its distribution system, with 8 wells, is the largest source of drinking water in Kohala. DWS supports domestic and commercial use as well as agricultural production in Kohala.
11. The Nature Conservancy is a global environmental non-profit stewarding lands and oceans and protecting diversity of plants and animals in Hawai'i since 1980. TNC is an associate partner of KWP because of their experience in and commitment to effective watershed protection including the watersheds and natural resources on Mauna Loa, Kilauea and Hualalai mountains.

KWP has also recently invited the South Kohala Coastal Partnership as an additional non-landowner stakeholder to attend quarterly meetings:

12. The South Kohala Coastal Partnership conducts ridge-to-reef management strategies for the South Kohala area including lands that are ecologically and culturally connected to the coastal waters. SKCP and KWP partner to support watershed management projects that reduce threats to the coastal area. Over 30 agencies and organizations contributed to the current management plan.

Prior Community Engagement Challenges

As early as the 1980s, planning and management efforts related to watershed management in Kohala were underway due to increases in human population, ranching and plantations. The KWP Management Plan of 2007 incorporated many of the recommendations from these previous activities and added others drawn from a series of planning meetings with landowners, resource managers and community members.

The current process led to a plan that identifies high-yield watershed units (approx. 6,600 acres) and biodiversity units (approx. 4,200 acres) of the total 68,000 acres. Priority activities included fencing, ungulate removal, and weed and pest control. Other planned actions were trail maintenance, native forest restoration, fire management and surveys throughout the watershed. Finally, public outreach and education were cited as key components of the plan.

In reviewing public response letters to the KWP Management Plan and Draft Environmental Assessment, there were a series of common concerns raised by Hawaiian cultural practitioners, native Kohala families who have stewarded the forests for generations, native environmentalists, kumu hula, and Hawaiian cultural non-profits. Some of these include:

- Lack of substantive Hawaiian cultural information and analysis of the potential impacts on Native Hawaiian cultural practices, beliefs, and resources.

- The subsequent KWP Management Plan does not include any ethnographic or oral history interviews or any biographic information of cultural practitioners.
- Failure to adequately address the role of the pua‘a (pig) in Hawaiian culture and society, especially for cultural practices and ceremonial uses. The current plan only categorizes the pig as a feral animal and pig hunting as a recreational activity. It does not describe the impact of eradicating the pua‘a as a food source and traditional practice.
- Failure to address traditional trails. A request was made to map locations of marked and unmarked trails as well as traditional trails to determine any impacts.
- Lack of consideration for fencing that is aligned with traditional ahupua‘a boundaries instead of arbitrary parcels draw on topographic maps.
- Inadequate accounting of the potential impacts upon Native Hawaiian families who hunt for subsistence, cultural, and/or ceremonial uses of the areas fenced/to be fenced. Desire for public hunters to be involved in feral ungulate management to ensure continued use of these resources by native families.
- Focus in the plan on designated management units (10,500 acres) with little information regarding the larger partnership area of 54,500 acres.
- Concerns about damaging the forests due to fencing, building boardwalks, and using poisons to kill invasive plants. Failure to address the impact of fencing and eradication of pig on the forest and the environment. The potential for drought and blockages to streams due to inadequate fence maintenance.
- Desire for community-based stewardship opportunities including opening trails to gather natural resources for cultural purposes, teach school groups about the forest, and assist in weed control.

In summary, those who shared their concerns emphasized the need for sustainable stewardship practices that honored the interdependence between the forest, ocean, and humans. These community members expressed disappointment that their voices were not heard or incorporated into the KWP Management Plan and Final Environmental Assessment.

KWP believed at the time that the cultural impact assessment conducted was adequate and satisfied the Office of Environmental Quality Control (OEQC) guidelines. The KWP Management Plan cited best practices based on western research by federal and state agencies to support fencing and animal removal from priority high-yield water areas and important biodiversity areas.

KWP expressed its plans to continue dialogue with community through outreach events, talks at community associations, school activities and other individual meetings. This was reiterated as an important, ongoing process prior to future actions. The desire by KWP was also to expand volunteer opportunities to involve the community in further appreciating and protection Kohala’s natural areas.

Proposed Community Engagement Plan

Thirteen years have passed since the completion of the KWP plan. It is not clear if the responses from KWP to several affected stakeholders were sufficient back then. But it is clear today that KWP has yet to determine an effective process for ongoing communications with affected stakeholders outside of the partnership. Also lacking is a process to evaluate the impact of its

watershed management actions as a means to determine future strategies and actions. In addition, KWP relies solely on western research and management practices and has yet to value ancestral knowledge and native research methodologies for sustainable stewardship practices.

Thus TKC has carefully designed a communal approach for engaging different audiences including partners and non-partners in evaluation of current conditions throughout Kohala's watersheds. In this way, TKC-KWP is able to collect multiple data points through organized, monthly work sessions to identify indicators of improved (or not) ecosystem health to better understand impact of KWP Management Plan activities initiated 13 years ago.

To ensure engagement by native Kohala families who have stewarded the forests for generations and other native environmentalists and Hawaiian cultural practitioners, TKC will draw upon its relationships with two specific, family-based, non-profit organizations:

1. Kailapa Community Association (KCA): represents 150+ Native Hawaiian families living in the Kawaihae Hawaiian Homestead along the South Kohala coastline. Living in one of the driest areas of the main Hawaiian islands, these families lack sufficient quantity and quality of water and are most directly impacted by the success or failure of KWP's watershed management plan.
2. Nā Kalai Wa'a (NKW): is dedicated to the maintaining of cultural values and customs through non-instrument navigation and open ocean voyaging. NKW relies on Kohala Mountain as a primary source of canoe construction materials, medicinal and edible plants, and decorative and ceremonial materials and is committed to the maintenance of these natural and cultural resources.

TKC will also extend invitations through its educational program and services that reach K-12 teachers, students, and their families throughout Kohala.

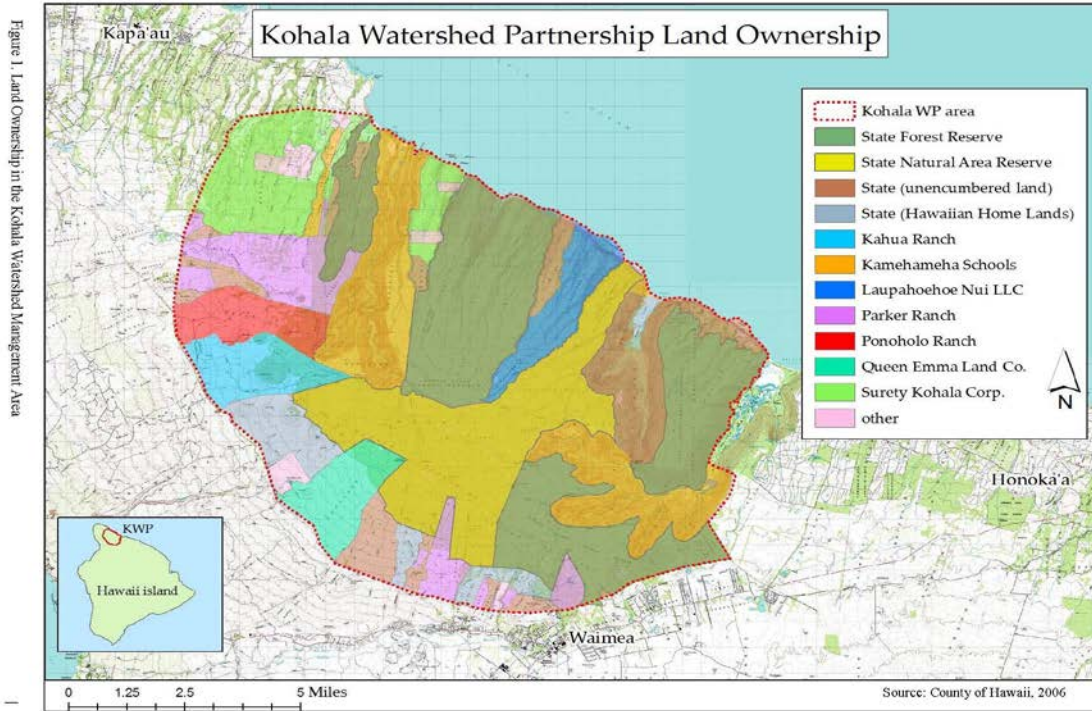
Finally, TKC will utilize its existing newsletter, website, marketing materials and social media accounts to reach a wider audience as appropriate.

Sub-criterion No. A2. Geographic Scope

Extent of Existing KWP

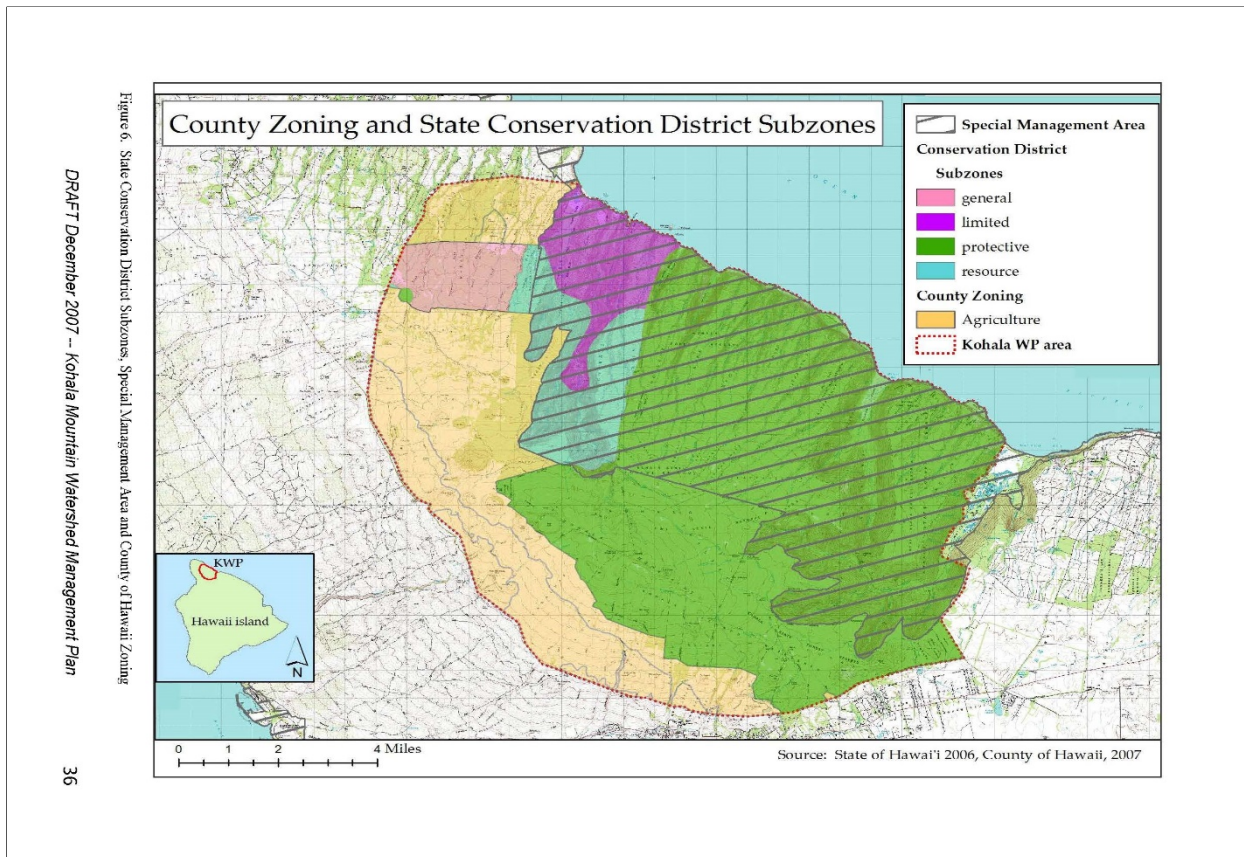
There are eight major landowners holding properties of more than 500 acres within the Kohala Mountain WMA. These landowners are all members of the KWP. Land ownership is spread across the landscape between public and private landowners, with approximately 56% of the WMA publicly-owned (see Figure. 1). This distribution of land ownership provides many opportunities for public-private partnerships to implement management projects in the watershed.

Figure 1. – Land Ownership in the Kohala Watershed Management Area



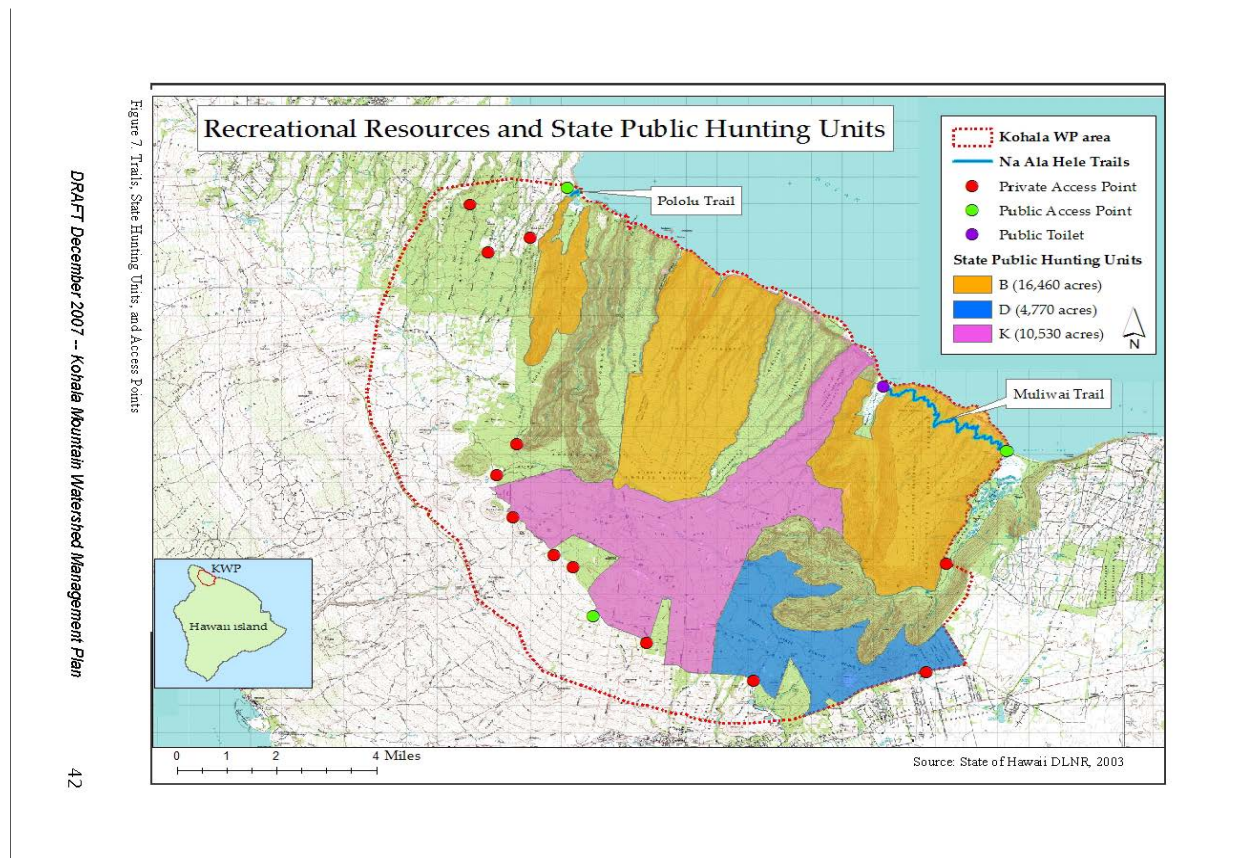
State zoning regulations dictate the kinds of uses and projects that are acceptable in any given area. Approximately 30% of the WMA is designated “Agricultural” while most other lands (71%) are designated as “Conservation District”. Most of the conservation district land in the Kohala WMA is in the “Protective” subzone (38,689 acres) requiring protection of watersheds, water sources, and water supplies as well as natural ecosystems and significant historic, archaeological and geological features. The other subzones include “Limited” (3,473 acres) where natural conditions suggest constraints on human activities; “Resource” (4,521 acres) to be managed to ensure sustained use of the natural resources; and “General (2,100 acres) designated as open space where specific conservation uses many not be defined but where urban use is premature (see Figure 2.).

Figure 2. – County Zoning and State Conservation District Subzones in the Kohala Watershed Management Area



Approximately 30,000 acres of public hunting areas are located on Kohala Mountain within designated units (see Figure 3.). Some designated units allow year-round hunting while others limit hunting to the weekend and holidays. Bird hunting is permitted in designated areas during hunting seasons. The 10,175 acres Kohala Restricted Watershed (Hunting Unit D) was established in 1980 within the Kohala Forest Reserve to protect a watershed where public supplies are vulnerable to contamination by public access. Allowed activities in the nature reserve include hiking, nature study, and bedroll camping and hunting pursuant to rules.

Figure 3. – Recreational Resources and State Public Hunting Units in the Kohala Watershed Management Area



Currently there are few residents who live within the WMA boundaries. However, there are major communities that surround the watershed areas. According to the 2010 Census, the town of Waimea is the largest neighboring community with a population of approximately 9,212 residents. Kapa‘au and Hāwī in North Kohala have populations of 2,815. To the east is Honoka‘a with a population of 2,258 residents. Kukuihaele has a population of 336 residents and Pa‘auilo has a population of 595. A common factor among all of these communities is their reliance on the water resources of Kohala Mountain whether surface water, groundwater or spring water. The proximity of these population centers to the Kohala watersheds also means that these are the people who are most likely to use the watershed area for hunting, hiking, and gathering of plants for personal and cultural uses.

See Community Engagement Plan and Implementation Plan for further details on how this project will target stakeholders that represent the full geographic scope of the area in which the watershed group will work.

E.1.2.Evaluation Criterion B — Addressing Critical Watershed Needs

Sub-criterion No. B1. Critical Watershed Needs or Issues

Issue Identification

Half of Hawai'i's original watershed forests have been destroyed and only 13% of those remain are in active protection (Hawai'i Fresh Water Initiative Report). The critical issues in the Kohala watersheds are:

Erosion and sedimentation: Compared to continental systems, Hawaiian island watersheds are steep and short, streams are flashy, and the connection between land-based contaminants and coastal environments is very direct. Erosion and sedimentation are particular problems for the leeward watersheds of Kohala Mountain. For example, the Kawaihae 1 watershed, an estimated 4,000 tons of sediment are deposited into the ocean each year on average, smothering coral and degrading marine habitat. During storm events, sediment loads are exponentially larger.

Presence of non-native, invasive plant species: Many of the endemic forest species found on Kohala Mountain have become rare and/or endangered because of loss of habitat and ungulate disturbance. Invasive plants interfere with ecological processes and functions, such as reducing the ecosystems ability to capture fog and store rainfall and fog water for steady release into streams. Weed species are most prevalent at the interface between pasture and forest, edges of the forest reserve, along trails, and in disturbed areas.

Deforestation and overgrazing by domesticated and feral cattle: The upper portion of Kohala's watersheds (3,000-4,800 feet) was once continuous rain forest, with dozens of flowing streams originating in the boggy dwarf forest near the summit of Kohala Mountain. Over the course of a century, domestic and feral cattle have destroyed the forest. The landscape is now mostly barren of trees, except in a few steep isolated stream gulches where cattle cannot reach. This alien grassland is dominated by non-native African kikuyu grass (*Pennisetum clandestinum*). Wild cattle persist in limited forested areas where inadequate or absent fencing enables unmanaged cattle to be destructive.

Feral Pigs: Pigs facilitate the spread of alien plants through seed dispersal and creation of sites favorable for colonization, vector disease and pathogens, and facilitate erosion. The effects of these ungulates on the Kohala watershed hydrology is to reduce and change understory vegetation, thereby affecting the vegetation's ability to capture fog, and store and release fog and rain water to streams and groundwater. Exposed soil causes erosion of nutrient-rich organic matter resulting in decreased surface water quality and more favorable sites for invasive plants.

Feral goats: There are no native land mammals in Hawaii. As a result, the native vegetation of Hawaii evolved without any impact from terrestrial mammals. The forest trees in the formerly dominant tropical forests are not adapted to grazing or browsing, are uniformly shallow-rooted, and their roots are immediately destroyed by the trampling action of hooved animals or any soil compaction. Similarly, the understory forbs and shrubs evolved with animal impacts limited to use by native birds and a very narrow band of insects. In the dry lower sections of the leeward watersheds, thousands of goats browse freely on vegetation in

pastures, yards, and gardens, trample the soil, and create dusty conditions that are inhospitable for plant germination and growth.

Human activity: Humans despite good intentions can damage vegetation directly through trampling and over-collection, and indirectly by introducing weed seeds or by providing the ignition source for fire.

Wildfires: Fire removes ground cover that holds soil during storms and the heat of a fire changes the physical characteristics of soil particles, making them hydrophobic or unable to absorb water. In recent decades, the increasing human population has created more ignition potential, and the invasion of non-native grasses has increased the intensity and extent of wildfires. Most native species are not fire-adapted and are unable to recover well after wildfires. Fire favors non-native species that are adapted to a frequent fire cycle, and post-fire they regenerate and dominate the landscape. Two exotic grasses cover the ground here: buffelgrass (*Cenchrus ciliaris*), an excellent forage for cattle, and fountain grass (*Pennisetum setaceum*), an unpalatable bunch grass. Both produce large amounts of leaf litter and are fire adapted. Cattle do not graze fountain grass, so its biomass increases at an uncontrolled rate, which then increases the amount of fuel available to feed a fire.

Storm events: The watersheds of West Hawaii have the steepest rainfall gradient in the world. From the ocean to the summit of Kohala Mountain—a distance of just 11 miles—the rainfall ranges from 2 inches to almost 200 inches annually. Across the landscape, infrequent but heavy rain dumped by sudden storm events (at the most a few times per year) wash away topsoil, leaving bare hardpan. These sudden, heavy storm events also create head-cutting gullies, where large blocks of soil crumble and are washed downstream.

Climate change: These threats are exacerbated by climate change, which predicts for this area hotter and drier weather conditions, with fewer but larger storm events, causing a pattern of drought followed by floods. This type of weather pattern restricts vegetative growth, especially at sites that are already compromised by overgrazing. The combination of less vegetation and more intense storms significantly increases the risk of erosion and sedimentation.

Sub-criterion No. B2. Developing Strategies to Address Critical Watershed Needs or Issues

Underlying the Goals and Objectives in the current KWP Management Plan are an existing set of recommended actions that address each threat to the watersheds of Kohala.

Thus, this Community-based Ecosystem Assessment Project has been designed to enhance this plan in three ways:

- 1) Task A – Water Group Development: TKC-KWP will draw upon its trusted relationships with key stakeholders affected by Kohala’s watersheds with a specific focus on un- and under-represented members of the community.

The strategic approach is to develop Accountability Partners with those who also hold value for native research and evaluation processes as well as responsibility for the

protection of these special lands and waters of Kohala. In other words, they own the learning and the stewardship as much as TKC and KWP and will serve as support to our partners and staff. TKC looks to inviting those in our community from which we have established trust to ensure generous feedback and critical, rigorous evaluation. Potential support can come from a) Kohala-based scholars who were in one of our ten Hawaiian Doctoral and Post-Doctoral Fellowship cohorts, b) place-based non-profit partners who intersect with this work from other perspectives including health, agriculture, economic development and conservation, and c) leaders from Kohala families who are directly impacted by the success or failure of native forest regeneration such as Native Hawaiian homesteaders lacking sufficient quantity and quality of water due to deforestation. In this way, evaluation extends beyond the life of this project because deep-rooted accountability to each other and our environmental kin already exists and is nurtured during the pilot.

The role of a contracted, part-time KWP Coordinator will be to facilitate communication and community outreach with key stakeholders including KWP partners and associates and Kohala-based affected stakeholders.

- 2) Task B – Watershed Restoration Planning: TKC will utilize a community-based approach to assess the impact of past watershed practices on the ecosystems in designated project areas. The role of a contracted, part-time KWP Coordinator will be to work with TKC to develop and test a Community-based Ecosystem Assessment Toolkit and to engage members in the process of ongoing kilo (Hawaiian observation and inquiry) and evaluation. Fundamental to these engagements is the addition of assessing the environmental conditions and looking at ecological, cultural, social and economic indicators of ecosystem health and wellbeing. In this way participants learn from the environment and better understand the impact the environment and present conditions have on past and future watershed activities, not just the impact human activities have on the environment. Stakeholders are invited into the field and participate directly in the process of watershed restoration through experiential learning activities. This is a critical strategy for ongoing engagement and sustaining relationships during and beyond the two-year project
- 3) Task C – Watershed Management Project Design: Through experimentation, a myriad of data collection strategies will be employed including quantitative and qualitative methods. Specific indigenous methods for collecting data (mo'olelo or story-telling and catching) and analyzing the data will be used alongside Western means of observation, reflection and measurement. This is an important design element that creates space for both Western and Hawaiian ways of thinking, knowing and doing. Using a multimodal data collection approach, evaluation of places of alignment and connections with the frameworks and epistemologies of the home community, allowing 'ike kūpuna (ancient knowledge) will enable cross-validations and guide understanding of transformations that might be revealed.

Gathering stakeholders for regular sessions to assess for learning allows for time to garner and uplift diverse perspectives, insights and innovations. The results of this co-creative and participatory evaluation processes will be documented and incorporated in to both the Community-based Ecosystem Assessment Toolkit and Updated KWP Plan and Priorities.

KWP Coordination

The role of the KWP Coordinator will be to:

Year One:

1. Review existing documents to summarize work completed to date and accomplishments as of the time the final report was submitted
2. Develop and implement a data management plan and technology to include collection, storage and access
3. Co-design and test with key stakeholders a Community-based Ecosystem Assessment Toolkit
4. Work with Accountability Partners to review and analyze data in order to better evaluate the impact of past watershed activities.
5. Meet regularly with KWP partners on partner land to assess conditions and gather further insights and direction
6. Coordinate meetings and regular updates with KWP partners and affected stakeholders

Year Two:

1. Support training for a series of half-day stewardship work days in the field
2. Work with Accountability Partners to review and analyze data in order to better evaluate the impact of past watershed activities.
3. Identify and document Federal, State, local, and traditional Hawaiian best management practices to guide future watershed conservation efforts
4. Complete prioritization of watershed management projects and site specific project planning for high priority projects
5. Revise KWP Management Plan 2007 as appropriate with updated information, progress to-date and priorities
6. Disseminate revised plan broadly
7. Coordinate meetings and regular updates with KWP partners and affected stakeholders

E.1.3.Evaluation Criterion C— Implementation and Results

Sub-criterion No. C1—Understanding of and Ability to Meet Program Requirements

Implementation Plan

Milestone Goal 1: Identify KWP Planned vs. Actual Accomplishments since 2008				
Timeframe	Objectives	Project Tasks	Desired Outcomes	Costs
July - Sept 2020	Engage key stakeholder partners in project	Hold a series of initial gatherings to share the project, garner feedback and establish an	A Core Project Team including Accountability Partners and	\$5,000

		ongoing communications process	Communication Plan to update stakeholders	
Oct - Dec 2020	Conduct an analysis of existing information and knowledge	Review KWP archival documents including grant final reports, interviews, annual reports, photo point monitoring plans, maps etc.	Summary Report to include work completed to date and accomplishments as of the time the final report was submitted	\$5,000
Milestone Goal 2: Evaluate Impact of Current Watershed Practices				
Oct - Dec 2020	Establish a community-based evaluation process	Test process, criteria including draft set of conditions and indicators and technology through initial kilo, observations and documentation in designated project sites	Draft Community-based Ecosystem Assessment Toolkit	\$5,000
Jan – May 2021	Engage key stakeholders in Community-based Ecosystem Assessments	Support interested stakeholders in kilo and use of toolkit to conduct ecosystem assessments in designated project sites	Kilo Database to capture observations and notes from kilo including qualitative and quantitative data points	\$10,000
April - June 2021	Analyze and share data collected from field evaluations	Host an assessment for learning gathering to share information, generate insights, garner feedback, discuss findings and determine next steps	Evaluation Report on Impact of Current Watershed Practices on Ecosystem	\$5,000
Milestone Goal 3: Design and Test a Set of Renewed Watershed Practices				
July - December 2021	Engage diverse Kohala-based audiences in regenerative watershed practices	Develop a set of watershed practices based on evaluation report and test through	Trained ‘āina-based educators (ABE) and stewardship field technicians (SFT) to guide work days with up to 20 participants;	\$5,000

		a series of half-day stewardship work days in the field	Updated Kilo Database	
July - December 2021	Analyze and share data collected from field investigations	Gather data from work days and host an assessment for learning gathering to share information, generate insights, garner feedback, discuss findings and determine next steps	Draft set of watershed practices for improved ecosystem health	\$5,000
Jan – March 2022	Engage diverse Kohala-based audiences in regenerative watershed practices	Update a set of watershed practices based on assessment for learning and test through a series of half-day stewardship work days in the field	Trained ‘āina-based educators (ABE) and stewardship field technicians (SFT) to guide work days with up to 20 participants; Updated Kilo Database	\$5,000
Jan – March 2022	Analyze and share data collected from field investigations	Gather data from work days and host an assessment for learning gathering to share information, generate insights, garner feedback, discuss findings and determine next steps	Recommended set of watershed practices for improved ecosystem health	\$5,000
Milestone Goal 4: Update & Share KWP Management Plan and Project Priorities				
April - May 2022	Revise KWP Management Plan	Update plan to include evaluation report and renewed watershed practices including project priorities	Updated KWP Plan, Practices and Priorities	\$5,000

June 2022	Share Updated Plan (e-version and hardcopy)	Host final assessment for learning gathering to appreciate the learning journey and disseminate the updated report	List of Individuals and Organizations requesting/receiving updated Plan	\$5,000
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Sub-criterion No. C2—Building on Relevant Federal, State, or Regional Planning Efforts

Proposed project activities support and meet the goals of the following Federal, state, and regional water plans:

U.S. Forest Service Landscape Objectives have three themes that align with KWP’s Management Plan including Conserving working forest landscapes, Protecting forest from harm, and Enhancing public benefits from trees and forests. Key objectives that can be met from generational stewardship of watersheds include: 1) identify and conserve high-priority forest ecosystems and landscapes, 2) identify, manage, and reduce threats to rest and ecosystem health, 3) protect and enhance water quality and quantity, 4) protect, conserve and enhance wildlife and fish habitat, 5) connect people to trees and forest.

Hawai‘i’s Nonpoint Source Management Plan developed to meet the USEPA’s Nonpoint Source Management Program. The Plan establishes 5-year goals, objectives, and strategies for reducing and preventing non-point source pollution and restoring and protecting water quality for the benefit of the people and aquatic ecosystems statewide. The State’s goals include Assessment of water quality trends and impaired waters, Planning to develop strategies and watershed-based plans, and Implementation to restore impaired waters and protect high quality waters.

State Forest Action Plan (FAP) objectives of maintaining water quality and watershed functions specifically Water Quality & Quantity (Invasive Species Control, Strategy 2, Community Outreach/Education Strategy 1,4), Forest Health (Invasive Species Strategy 5), Community Outreach/Ed Strategy 1), & Conservation of Native Biodiversity (Native Ecosystems Strategy 1, 2, 3, Community Outreach/Ed Strategy 2).

State of Hawai‘i Water Recharge goal is to increase fresh water capacity by 100 million gallons per day. One strategy of capturing more rainwater in our aquifers is by expanding and actively protecting watershed areas while improving our storm water retention.

State of Hawai‘i Watershed Forests Protection goal is to protect 30% of watershed forests. Approximately 20% of land area in Hawai‘i Islands is identified as priority watersheds (843,000 acres). Priority watersheds are defined as upland native forests that are fenced from non-native hooved animals.

County of Hawai‘i General Plan 2040 has a goal of Managing Streams and Watersheds and states that lands necessary for the protection of watersheds, water sources and water supplies shall be

protected. It also has as policy the practice of watershed protection in furtherance of ahupua‘a principles and the participation in watershed partnerships to identify priority watershed areas and develop watershed management plans and projects.

A Blueprint for Action: Water Security for an Uncertain Future created by The Hawai‘i Fresh Water Initiative in 2013 to bring multiple, diverse parties together to develop a forward-thinking and consensus-building strategy to increase water security for the Hawaiian Islands. An initiative priority includes direct recharge improvement through watershed protection and restoration of key aquifers. Fencing, fire control, and invasive species removal are necessary to protect watershed capture.

South Kohala Coastal Action Plan 2030 is a climate-smart conservation strategy that represents a major new commitment by the South Kohala Coastal Partnership (SKCP). One of the six overarching, climate-smart action strategies is Soil and Watershed Management to reduce sedimentation on reefs and coastal waters. TKC and KWP are both founding members and have worked on projects in the past with SKCP.

E.1.4.Evaluation Criterion D— Department of the Interior Priorities

This Community-based Ecosystem Assessment Project addresses the following two DOI priorities

Creating a conservation stewardship legacy second only to Teddy Roosevelt

In the field of place-based conservation and education, TKC believes that deeper connections to the sources of our ancestral knowledge is essential to advancing learning, including science, technology, engineering and math (STEM) through direct application in today’s environments. This project’s evaluation efforts will blend traditional metrics for STEM learning with TKC’s strategic approach, in an effort to capture the contribution of this project to the shared goal of helping our watersheds thrive – economically, culturally, ecologically, and socially.

Utilizing both Hawaiian and Western sciences, this project identifies best practices to manage land and water resources. As a result the KWP Management Plan can be updated with regenerative watershed practices in response to the need to adapt to changes in the environment

Restoring trust with local communities

As noted, KWP experience past challenges from key stakeholders who felt their voices were not heard or acted upon.

The majority of the concerns were raised by Hawaiian cultural practitioners, native Kohala families who have stewarded the forests for generations, native environmentalists, kumu hula, and Hawaiian cultural non-profits. These members were coming from a Hawaiian worldview based on cycles of living where humans are not separate from their environmental relatives. Hence, there is no word for environment, nature or natural in the Hawai‘i language. The western concept of

ecosystem reflecting the interdependence of all the elements of the natural world including people is an entry point to an even deeper Hawaiian construct of environmental kinship.

By actively engaging these stakeholders through TKC's relationships, this project can produce an updated plan that reflects a more balanced stewardship approach to watershed conservation. The process of using Community-based Ecosystem Assessment toolkits to evaluate the impact of past watershed activities can help to improve dialogue, relationships and accountability among all stakeholders that are affected by the Kohala watersheds.



QUEEN EMMA LAND COMPANY

1301 Punchbowl Street ▪ Honolulu, HI 96813 ▪ (808) 691-5900 ▪ FAX: (808) 691-5946 ▪ www.queens.org

November 11, 2019

Ms. Avra Morgan
Cooperative Watershed Management Program Coordinator
Bureau of Reclamation
Water Resources and Planning Division
P.O. Box 25007
Denver, CO 80225

RE: Support for The Kohala Center's Kohala Watershed Partnership's Proposal for WaterSMART Cooperative Watershed Management Program Phase I Grants

Dear Ms. Morgan:

On behalf of the Queen Emma Land Company (QELC), I am writing to express our strong support for the Kohala Center's Kohala Watershed Partnership's (TKC-KWP) proposal to the USDOJ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program Phase I Grants for FY 2019 funding to update the Kohala Mountain Management Plan. QELC is a founding partner of KWP and a current member of the KWP Executive Committee, and shares its goal of protecting and sustaining the watersheds of the Kohala Mountain region from the summit to sea.

QELC is a non-profit organization established in 1979 to support The Queen's Medical Center and its affiliates (which now includes North Hawaii Community Hospital in Waimea) by managing and enhancing the income generating potential of its lands to ensure that quality health services are provided in perpetuity to native Hawaiians and all of the people of Hawai'i. QELC owns and stewards over 10,000 acres both inside and outside of the KWP management area on Kohala Mountain including high elevation, intact native forest ecosystems and degraded dryland forest ecosystems extending down to the shoreline. We recognize the importance of ongoing management, protection, and restoration work in the Kohala watersheds to improve the health and long-term sustainability of these lands.

QELC fully supports this proposal by TKC-KWP to update the KWP management plan in order to prioritize and guide implementation of vital watershed protection and restoration projects in the Kohala watershed management area. As a committed partner, QELC will commit to participating in the plan update and project implementation to follow.

Please feel free to contact me if there are any questions at 808-691-5936 or by email at knakano@queens.org.

Sincerely,

Kelley Nakano
Manager

Technical Proposal & Evaluation Criteria- 22

The mission of The Queen's Health Systems is to fulfill the intent of Queen Emma and King Kamehameha IV to provide in perpetuity quality health care services to improve the well-being of Native Hawaiians and all of the people of Hawai'i.



**RESOLUTION OF
THE BOARD OF DIRECTORS
OF
THE KOHALA CENTER, INC.**

Adopted: November 7, 2019

RE: Resolution to approve The Kohala Center's application to the USDOJ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (CWMP) Phase I Grants to support the update and enhancement of the Kohala Mountain Watershed Management Plan.

WHEREAS, in 2008, The Kohala Center assumed administration of the Kohala Watershed Partnership Program through a memorandum of understanding with the Kohala Watershed Partnership (KWP), an affiliation of 11 major private landowners and public land managers of Kohala Mountain. Guided by the 2011 Kohala Mountain Watershed Management Plan, the KWP implements comprehensive and sustainable watershed management projects in its 68,000-acre management area that addresses the threats to the watershed, while maintaining its integrity and protecting its economic, sociocultural, and ecological resources.

WHEREAS, the 2011 Kohala Mountain Watershed Management Plan is outdated and requires improvement to include 1) Conducting baseline water quality and quantity studies and native flora and fauna surveys to provide information about the watershed, 2) Analyzing data to identify and prioritize watershed management projects, 3) Identifying Federal, State, local, and traditional Hawaiian best management practices to guide project implementation, and 4) Completing site specific project planning for high priority projects.

WHEREAS, The Board of Directors approves The Kohala Center's application and grant amount request of \$100,000 in funding from USDOJ WaterSMART CWMP Phase I Grants.

WHEREAS, The Board of Directors commits \$20,048 from staff salaries, fringe, and indirect as in-kind contributions to this project.

WHEREAS, The Board of Directors also approves The Kohala Center's administration of USDOJ WaterSMART CWMP Phase I Grants, should grant funds be awarded for 2020. Cheryl Ka'uhane Lupenui is President and Chief Executive Officer of The Kohala Center and as such has full authorization to sign grant documents for the submission of this application.


WHEREAS, The Board of Directors directs project administration to work with USDOJ Bureau of Reclamation program officials to meet established deadlines for entering into a grant or cooperative agreement.

THEREFORE, BE IT RESOLVED that, The Kohala Center, Inc. is authorized by the Board of Directors to apply and administer this proposal application.

11/7/2019

I, VALERIE V. OSSIPPOFF, the Secretary of THE KOHALA CENTER, INC., a Hawaii nonprofit corporation, hereby certify that the foregoing is a full, true and correct copy of a Resolution adopted by the Executive Committee of the Board of Directors which holds all of the powers and authority of the Board of Directors in the intervals between meetings of the Board of The Kohala Center. I further certify that the Resolution has been duly entered in the Minute Book of The Kohala Center, Inc. and that the same is in full force and effect and has not been amended or revoked.

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of November, 2019.


VALERIE V. OSSIPPOFF
Its Secretary

11/7/2019

**THE KOHALA WATERSHED PARTNERSHIP
COMMUNITY-BASED ECOSYSTEM ASSESSMENT PROJECT**

BUDGET PROPOSAL

The total project cost, is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-party contributions that are necessary to complete the project.

Table 1. – Total Project Cost Table

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$100,000.00
Costs to be paid by the applicant	\$0.00
Value of in-kind contributions provided by the applicant	\$20,048.00
TOTAL PROJECT COST	\$120,048.00

Table 2. – Budget Proposal

BUDGET DESCRIPTION	COMPUTATION			Quantity Type	TOTAL COST
	\$/Unit	YR 1 Quantity	YR 2 Quantity		
Personnel Salaries					
Cheryl Ka‘uhane Lupenui, President & CEO, 0.04 FTE	\$120,000 annual salary (\$57.69/hr)	72	72	Hours	\$8,308.00
Shelby Kāhele Nahale-a, Culture-Based Education Manager, 0.05 FTE	\$62,500 annual salary (\$30.05/hr)	96	96	Hours	\$5,768.00
Jake Merkel, Kohala Field Supervisor, 0.05 FTE	\$57,000 annual salary (\$27.40/hr)	96	96	Hours	\$5,260.00
TOTAL PERSONNEL SALARIES					\$19,336.00
Fringe Benefits					
28% fringe benefit rate	\$19,336.00 (full-time personnel salaries)				\$5,414.00
Travel					
N/A					\$0.00
Equipment					
N/A					\$0.00
Supplies and Materials					
Toolkit Production Supplies	\$40/Toolkit	0	50	Toolkits	\$2,000.00
Field Testing Supplies					\$2,500.00

**THE KOHALA WATERSHED PARTNERSHIP
COMMUNITY-BASED ECOSYSTEM ASSESSMENT PROJECT**

Printing Supplies					\$500.00
Contractual/Construction					
Management plan design and mapping	\$60/hr	0	83	Hours	\$5,000.00
KWP coordination	\$50/hr	600	600	Hours	\$60,000.00
Other					
N/A					\$0.00
TOTAL DIRECT COSTS					\$94,750.00
Indirect Costs					
26.7% federally negotiated indirect cost rate agreement	\$94,750.00 (base direct costs)				\$25,298.00
TOTAL ESTIMATED PROJECT COSTS					\$120,048.00

BUDGET NARRATIVE

Personnel Salaries

TKC will use a combination of current personnel and hired third-party consultants to administer the project and update the management plan. We are requesting \$9,668 in USDOJ funds for salary (YR1: \$4,834; YR2: \$4,834) and will contribute \$9,668 as in-kind contributions (YR1: \$4,834; YR2: \$4,834). TKC commits the following personnel to contribute to the project:

Cheryl Ka‘uhane Lupenui, TKC’s President & CEO, 0.04 FTE at \$120,000 annual salary per year. Ms. Lupenui will provide project and personnel supervision, evaluation and reporting, and manage contract and deliverables of consultant to be hired.

Year One:	\$2,077 (USDOJ), \$2,077 (TKC In-kind)
Year Two:	\$2,077 (USDOJ), \$2,077 (TKC In-kind)
USDOJ Funds Total:	\$4,154
TKC In-Kind Total:	\$4,154
Project Total:	\$8,308

Shelby Kāhele Nahale-a, TKC’s Culture-Based Education Manager, 0.05 FTE at \$62,500 annual salary per year. Ms. Nahale-a will assist in establishing a community based evaluation process, field testing, engaging stakeholders, and the development of the Community-Based Ecosystem Assessment Toolkit.

Year One:	\$1,442 (USDOJ), \$1,442 (TKC In-kind)
Year Two:	\$1,442 (USDOJ), \$1,442 (TKC In-kind)
USDOJ Funds Total:	\$2,884
TKC In-Kind Total:	\$2,884

**THE KOHALA WATERSHED PARTNERSHIP
COMMUNITY-BASED ECOSYSTEM ASSESSMENT PROJECT**

Project Total: \$5,768

Jacob Merkel, TKC's Kohala Field Supervisor, 0.05 FTE at \$57,000 annual salary per year. Mr. Merkel will assist in establishing a community based evaluation process, best management practices, field testing, engaging stakeholders, and update of the KWP Management Plan.

Year One: \$1,315 (USDOJ), \$1,315 (TKC In-kind)
Year Two: \$1,315 (USDOJ), \$1,315 (TKC In-kind)

USDOJ Funds Total: \$2,630
TKC In-Kind Total: \$2,630
Project Total: \$5,260

Fringe Benefits

TKC has an approved fringe benefits rate of 28 percent. This calculation is based on benefits provided for temporary disability insurance, workman's compensation insurance, social security, Medicare, state unemployment tax, and health and dental insurance for all full-time employees.

Fringe benefits rate (28%) is applied to \$19,336 in personnel salaries.

Year One: \$1,353.50 (USDOJ), \$1,353.50 (TKC In-kind)
Year Two: \$1,353.50 (USDOJ), \$1,353.50 (TKC In-kind)

USDOJ Funds Total: \$2,707
TKC In-Kind Total: \$2,707
Project Total: \$5,414

Travel

Not applicable.

Equipment

Not applicable.

Supplies and Materials

Materials, design, and printing supplies for toolkits @ 40/kit x 50 kits = \$2,000

Field testing supplies to include water quality and quantity testing materials, field guides, survey ribbon, waterproof journals, and safety gear = \$2,500

Printing supplies including paper, ink, and binding materials = \$500.00

Year One: \$1,2500 (USDOJ), \$0 (TKC In-kind)

**THE KOHALA WATERSHED PARTNERSHIP
COMMUNITY-BASED ECOSYSTEM ASSESSMENT PROJECT**

Year Two:	\$3,750 (USDOJ), \$0 (TKC In-kind)
USDOJ Funds Total:	\$5,000
TKC In-Kind Total:	\$0
Project Total:	\$5,000

Contractual/Construction

TKC will competitively solicit bids and award a contract to a qualified third party consultant to fulfill the role of a part-time KWP Coordinator. The Coordinator will be to facilitate communication and community outreach with key stakeholders including KWP partners and associates and Kohala-based affected stakeholders. The Coordinator will also work with TKC to develop and test a Community-based Ecosystem Assessment Toolkit and to engage members in the process of ongoing kilo (Hawaiian observation and inquiry) and evaluation in order to assess the impact of past watershed activities on the ecosystems in designated project areas. The results of this community-based evaluation process will be documented and incorporated into both the Community-based Ecosystem Assessment Toolkit and the updated KWP Plan and Priorities. TKC expects to compensate the Coordinator at a rate of \$50/hr for 600 hours in year one and year two for a total of 1200 hours and \$60,000 inclusive of general excise taxes and fees.

TKC will seek a third party consultant to serve as a Graphic Designer to design and format content and provide maps, exhibits, and visual aids for the updated management plan. TKC expects to compensate the Designer at a rate of \$60/hr for approximately 83 total hours in year one and \$5,000 inclusive of general excise taxes and fees.

Year One:	\$30,000 (USDOJ), \$0 (TKC In-kind)
Year Two:	\$35,000 (USDOJ), \$0 (TKC In-kind)
USDOJ Funds Total:	\$65,000
TKC In-Kind Total:	\$0
Project Total:	\$65,000

Other

Not applicable.

Indirect Costs

TKC has a federally negotiated cost rate agreement (ICRA) of 26.7 percent.

Indirect cost rate (26.7%) is applied to \$94,750 in total direct costs.

Year One:	\$8,812.50 (USDOJ), \$3,836.50 (TKC In-kind)
Year Two:	\$8,812.50 (USDOJ), \$3,836.50 (TKC In-kind)
USDOJ Funds Total:	\$17,625

**THE KOHALA WATERSHED PARTNERSHIP
COMMUNITY-BASED ECOSYSTEM ASSESSMENT PROJECT**

TKC In-Kind Total: \$7,673
Project Total: \$25,298

Total USDOJ funds requested year one: \$50,000.00
Total USDOJ funds requested year two: \$50,000.00
Total USDOJ funds requested: \$100,000.00

Total TKC In-kind Contributions: \$20,048.00

Total Project Costs: \$120,048.00

FUNDING PLAN

TKC will contribute in-kind contributions in staff salary, fringe, and indirect to support and accomplish project activities as noted and confirmed in the Official Resolution.