

**State and Private Forestry
FY 2010 Western Competitive
Resource Allocation
Single-State Project Proposal**

Filename	
hi_waianae.doc	
Administration Information	
Dollar Amount Requested:	\$290,000
Matching Share:	\$340,000

Applicant Information	
1	State Forestry Agency: Division of Forestry and Wildlife
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Project Information				
2	Descriptive Title of Project:	Waianae Kai Forest Reserve Watershed Protection and Reforestation Project		
	Names of Partnering Agencies / Organizations:	Honolulu Board of Water Supply (HBWS); University of Hawaii; Mohala I Ka Wai/Kaala Farms; Waianae High School; Oahu Invasive Species Committee; Oahu Plant Extinction Program (OPEP); US Fish and Wildlife Service; US Army Environmental Division; US Forest Service Institute of Pacific Islands Forestry.		
	State(s):	Hawaii	Congressional Districts:	2
	Counties:	Honolulu	Forest Service Regions:	Pacific Southwest, Region 5

Total Leverage								
Please specify each 3 rd party contributor (partnering organizations and agencies, including other Federal) and the dollar value of each contribution. Please DO NOT show grant requested funds in this table.								
3	Contributors: (Please specify by name)	HBWS	OPEP	Kaala Farms				TOTAL
	Value of Contributions:	\$30,000	\$10,000	\$10,000	\$0	\$0	\$0	\$50,000

Project Budget					
	Grant Share (\$ requested)	Applicant	Non-Federal Contributors	TOTAL	
		Cash ¹	In-Kind ²		
4	Personnel / Labor:	\$0.00	\$170,000.00	\$50,000.00	\$220,000
	Fringe Benefits:	\$0.00	\$45,000.00	\$0.00	\$45,000
	Travel:	\$0.00	\$0.00	\$0.00	\$ 0
	Equipment:	\$40,000.00	\$0.00	\$0.00	\$40,000
	Supplies:	\$50,000.00	\$75,000.00	\$0.00	\$125,000
	Contractual:	\$190,000.00	\$0.00	\$0.00	\$190,000
	Construction:	\$10,000.00	\$0.00	\$0.00	\$10,000
	Other:	\$0.00	\$0.00	\$0	\$ 0
	Indirect Costs:	\$0	\$0	\$0	\$ 0
	TOTAL:	\$290,000	\$290,000	\$50,000	\$630,000

Project Duration	
5	What is the duration of this project? <input type="checkbox"/> One Year <input type="checkbox"/> Two Years <input checked="" type="checkbox"/> Three Years

National Relevance	
6	Conserve Working Forest Landscapes <input checked="" type="checkbox"/> Protect Forests From Harm <input checked="" type="checkbox"/> Enhance Public Benefits From Trees and Forests <input checked="" type="checkbox"/>

Project Description	
7	<p>Maximum 5500 Characters Including Spaces – Clearly summarize the proposed project, including goals, objectives, measurable outputs, outcomes, and how grant funds will be used towards successful completion of the project.</p> <p>Watershed Assessment: The proposed project will begin with a watershed assessment to quantify the existing condition of the 5,950 acre Waianae Valley Watershed including identification of high priority forest ecosystems and landscapes, threats to the watershed forests, and ways to enhance public benefits. This assessment will focus on fire threat, vegetation structure, hydrology and sediment transport. Though the entire watershed will be assessed so that we can measure off-site benefits of management actions, the focus will be in areas containing and directly connected to the 2,300 acre Waianae Kai Forest Reserve. This watershed assessment and other plans, including the existing watershed plan developed by the Honolulu Board of Water Supply will guide action plan development.</p> <p>The watershed assessment will include the following:</p> <ul style="list-style-type: none"> • Fine-scale vegetation map (native and introduced species); • Stream channel and watershed maps; • Locations of existing roads and trails; • FLAMAP model to estimate fire risk across the project area;

¹ ‘Cash’ is the value of any qualifying match the applicant pays for such as cash, staff time, supplies, or equipment.

² ‘In-Kind’ is the value of any qualifying match contributed by a non-federal 3rd party contributor such as donated time, supplies, or equipment.

- Distributed Hydrology Soil Vegetation model calibrating stream flows to current conditions of vegetation, soils, and climate;
- Ground truth analysis of current conditions and identification of limiting factors;

Action Plan:

Following completion of the watershed assessment, an action plan will be developed to enable selection of site-specific management actions. The action plan will identify “anchor points” for fence-line construction, fuel break construction, reforestation units, and development of education and outreach activities that will raise awareness of watershed issues and resource impacts of wildfire activity and engage the community in understanding and supporting this project. Combined with an Environmental Assessment and cultural resources survey, the action plan will identify needed actions for resource protection and management.

Site Specific Project Development and Implementation:

Specific management actions will be developed and implemented during this phase of the project, expected to include the following:

Watershed and sensitive site protection from feral animals/livestock:

- Repair and/or replacement of the existing forest reserve fence-line and fencing of select sensitive areas with 5 strand barb wire fence,
- Removal of livestock and feral goats from the watershed lands via a variety of animal control methods, and
- Reforestation of fire and grazing damaged lands along the forest margins with native and non-invasive tree and shrub species.

Forestry harvest and plantings:

- Harvest of mature and/or hazard *Grevelia robusta* in select areas;
- Planting of commercially valuable forestry hardwood trees in approximately 25 acres to enhance the long-term economic viability of the Forest Reserve.

Restoration of upland native forest area:

- Weed control in approximately 40 acres of high priority native dominated forest.

Fuel breaks:

- Installation and maintenance of fuel breaks along 2 mi. of road (approximately 29 ac. on down hill side of rd.) including: mowing, plowing, herbicide application, or controlled burning of select invasive species (such as *Panicum maximum*, and *Leucaena leucocephala*).
- Installation and maintenance of green breaks along 2 mi. of road (approximately 29 ac. on uphill side of rd.) including: invasive weed control, irrigation system installation, tree planting, and fertilizing.
- Support ongoing green belt fire resistant research in collaboration with University of Hawaii at Manoa.
- Construction and maintenance of roads and/or fuel breaks to access the site and control fire spread (approximately 10 ac. of fuel break and 2.5 mi. of rd.).

Community Involvement/Education:

- Develop program with local schools and community groups to involve students and members of the community in protection and reforestation actions.

	<p>Maximum 1250 Characters Including Spaces</p> <p>This project will integrate with the National Fire Plan objectives of determining community wildland fire risks. The outcomes will provide a watershed scale assessment of fire behavior, and identify specific areas where fire risk is high within the wildland-urban interface. It will include elements of urban and community forestry, invasive plant control, listed species protection, watershed management, and forest products.</p> <p>As part of this approach we will identify current and historic water quality and quantity issues. This area is an important source of fresh water for the Honolulu Board of Water Supply, however, the stream is currently EPA 303d listed as water quality limited for sediment, nutrients and trash. In addition, a marine managed area at the base of this watershed is of particular importance for fisheries management but is currently listed for impaired waters for Chlorophyll A (algal growth) and Total Nitrogen (nutrients). Treatment opportunities evaluated will be designed to mitigate runoff that contribute to these impairments. This approach has potential value for projects beyond the scope of this application aimed at addressing water quality issues and future forest restoration needs.</p>
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9	Collaboration
	<p>Maximum 1250 Characters Including Spaces</p> <p>The Waianae Kai Forest Reserve is already the focus of many groups interested in seeing the area restored and managed. The Honolulu Board of Water Supply, University of Hawaii Botany Department, Mohala I Ka Wai/Kaala Farms, Waianae High School, Oahu Invasive Species Committee, Oahu Plant Extinction Program, US Fish and Wildlife Service, and US Army Environmental Division are currently working together to protect rare native resources in the Forest Reserve and are interested in expanding and integrating watershed restoration and management efforts. This project will stimulate and expand this ongoing effort and foster community involvement in protection, restoration and management of the forests in this area.</p> <p>In addition, DOFAW is spearheading the creation of a Waianae Watershed Partnership that will integrate State, Federal, County and private entities with the common goal of watershed protection. These projects will be closely coordinated in order to maximize efforts. Funding secured for the creation of a Waianae Watershed Partnership will be matched against this grant and will use this project as a springboard for the partnership.</p>

10	Leverage
	<p>Maximum 1250 Characters Including Spaces</p> <p>This will be a multi-partner project, with multiple funding sources from outside the State and Forest Service. ESA obligations to offset training impacts to listed species requires the US Army Environmental Division to manage threats to endangered species in the Waianae Kai Forest Reserve (fire, weeds, ungulates, outplanting, fencing). Although this Federal funding is not used as match for this grant, the Army spends approximately \$20,000 per year on actions within the Waianae Kai Forest Reserve. The Oahu Plant Extinction prevention Program will continue to protect two species of plants on the brink of extinction in the area. University of Hawaii researchers will investigate grass-fuel models and riparian buffer management. The Honolulu Board of Water Supply will continue to work on rehabilitating a site that recently burned as well as maintain access roads and infrastructure. Community and school group involvement will increase media exposure, and this pro-active community-based project will be welcomed by law-makers in the district.</p>

11	Meaningful Scale
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	<p>Maximum 1250 Characters Including Spaces</p> <p>The watershed-level framework provides a scale that incorporates a suite of resources in an environment that is hydrologically connected. For example, upland forest restoration will increase water table benefits in lower areas. Treatments, land-uses, and resource enhancement can be planned and evaluated at this scale to ensure resource management is not implemented on a "patchwork" basis, rather that it is implemented and evaluated on the basis of connectivity to resources. Effects of vegetation and/or road treatments will be evaluated at scales that provide understanding of beneficial or potentially adverse effects on related resources in the watershed, including the potential for forest enhancement projects lower in the watershed. In addition, this project will increase the capacity of this area to provide valuable ecosystem services/products (carbon, water, habitat for plant and animal biodiversity).</p> <p>The Waianae Kai Forest Reserve is appropriately scaled for the intended outcomes. The are is large enough to develop meaningful designs, but discrete enough to demonstrate tangible results</p>
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12	Sphere of Influence
	<p>Maximum 1250 Characters Including Spaces</p> <p>This approach has been applied in the Pacific Northwest for over 10 years, and is the foundation for management of natural resources. The watershed analysis approach can be applied anywhere in the world; the success lies in identification of limiting factors affecting key resources in the watershed context. Forest management, water resources, fire risk, community development, fisheries, wildlife, cultural heritage resources, and agricultural uses are all factor that apply to the watershed analysis approach. This framework ensures treatmentsare applies with respect to watershed-level processes, and that the connectivity of treatments enhances, and does not degrade, other resources in the watershed.</p> <p>Breaking grass/fire/forest degredation cycles in a tropical environment has broad application throughout Hawaii and the tropical Pacific. Reforestation utilizing a multi-species shaded canopy approach has not been attempted in these dry leeward areas, but has the potential to be a powerful tool for watershed restoration. The Honolulu Board of Water Supply is interested in implementing the treatments developed at Waianae Kai to reduce the threat of fire in neighboring Makaha Valley.</p>

13	Sustainability of Outcomes
	<p>Maximum 1250 Characters Including Spaces</p> <p>Within the watershed, the outcomes will provide a framework for identifying other priority projects for resources enhancement, restoration, or sustainable management. Limiting factors beyond the scope of this project can be identified using this process and framework. The outcomes will provide a "working document" for future planning in the watershed, and assist the State and our partners in streamlining decision making for implementing additional restoration treatments on the ground. This project will provide critical start up funding to install infrastructure the State will utilize, maintain, and incorporate into the ongoing Forest Reserve management planning efforts. Forest Reserve Management plans cover a term of 20 years, are adaotive and will be reevaluated every five years.</p> <p>Beyond the target area, this watershed approach can be viewed as a model for application in all watersheds within Hawaii and the Pacific, in the same manner it has been used throughout the Pacific Northwest.</p>