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STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

August 21, 2013  
Honolulu, Hawaii

Request to Authorize the Chairperson to Enter into a Joint Funding Agreement with the U.S. Fish & Wildlife Service to Restore the Riparian Corridor along Kahana Stream and Declare Project Exempt from Haw. Rev. Stat. Chap 343, Environmental Impact Statements, Windward O‘ahu, Ko‘olau Loa District

SUMMARY OF REQUEST

The Commission staff requests the Commission on Water Resource Management (“Commission”) authorize the Chairperson to enter into a Joint Funding Agreement with the U.S. Fish & Wildlife Service, Hawaii Fish Habitat Partnership (“FWS”), to restore approximately 7.5 acres along the riparian corridor of Kahana Stream by removing invasive hau (*Hibiscus tiliaceus*, locally referred to as “Hau Bush”) and replanting native species.

Staff also requests that the Commission declare the project exempt from an environmental assessment as the potential effects of the project will have minimal or no negative environmental impacts pursuant to Hawaii Revised Statutes (“Haw. Rev. Stat.”) §343-6.

BACKGROUND

The Kahana Stream watershed is a large valley on the east side of O‘ahu in the Ko‘olau Loa District. Kahana Stream (also known locally as Kahawainui Stream) drains the valley and is comprised of two primary tributaries, Kāwā and Keaniani. Kahana Stream is one of the largest perennial streams on O‘ahu (in terms of discharge) and ranks high among streams statewide for biological diversity, supporting a full complement of native freshwater fish, shrimp, and mollusk.

Kahana Estuary is also an important nursery habitat for marine species. The watershed (approximately 5,300 acres) includes the Ahupua‘a ‘O Kahana State Park (formerly Kahana Valley State Park) and is one of the few publicly owned ahupua‘a in the State. The Park was established as a “living park” to nurture and foster native Hawaiian cultural traditions and

supports thirty-one family residences. It is owned and managed by the Department of Land and Natural Resources (DLNR) Division of State Parks.

Prior to European contact, the ahupua'a of Kahana was extensively farmed. Early Hawaiians managed hau to promote floodplain drainage, protect water-delivery systems, limit encroachment, and use as a valuable resource. Since that time, agricultural activity in the valley has slowly subsided and woody vegetation, predominately hau, has proliferated throughout Kahana's streamside riparian areas, particularly in the lower reaches of the stream (Exhibit 1).

The overabundance of hau along the stream corridor has resulted in significant changes to the stream ecosystem. The thick vegetation obstructs stream flow and reduces open channel width forcing floodwaters out of the banks and on to adjacent areas, promoting scour, erosion of secondary channels, and deepening of the main channel (Exhibits 2, 3, and 4). Physical changes to the stream channel and water flow patterns resulting from hau invasion are negatively altering the migration patterns, habitats, and food sources of native aquatic organisms.

Native and endemic 'o'opu and 'ōpae migrate in and out of the Kahana Stream using flood flows to facilitate movements. Thick vegetation that crowds and obstructs streamflow inhibits both the seaward migration of larvae and the return migration of post larvae and juveniles. Migrating organisms either get lost, stranded in thickets, or do not readily detect diffuse freshwater signatures while in the estuary. Clearing hau to restore the appropriate flow dynamics in the stream channel and recovering native vegetation in the lower reaches is an important step in reducing impacts to these native fish and invertebrates. Increasing the quality and quantity of aquatic habitats in the lower reaches of Kahana Stream by effectively managing riparian vegetation will also encourage small scale and low impact agricultural use opportunities, cultural uses of natural resources, and will increase the populations of fish and invertebrates for subsistence and recreational uses.

Additional project partners include the community group Hōala 'Āina Kūpono Corporation , and DLNR's Division of State Parks, Division of Aquatic Resources, Engineering Division, Division of Forestry and Wildlife, and Office of Conservation and Coastal Lands.

### SCOPE OF WORK

The primary purpose of the project is to improve access of migrating aquatic organisms and the ecological function of Kahana Stream by restoring appropriate water flow to the channel through hau removal (Exhibit 5). This project proposes to restore approximately 7.5 acres of riparian corridor currently dominated by hau to that of a mixed-species riparian forest canopy of native plants. The project will span two years. The first phase (Year 1) will secure required permits and approvals from county, state, and federal regulatory agencies, and begin hau removal. The second phase (Year 2) will monitor and maintain the project site.

Phase-one (Year 1) design and permitting will be aided by The Department of Land and Natural Resources' Engineering Division. The general design of hau removal and disposal will include mechanical methods (e.g., chainsaw, excavator, etc.) for removal, an intermittent period of piled

stacks of hau debris for drying, and final chipping and mulching of dried hau debris for use at the restoration project site and elsewhere within the Park. Professional services for tree removal, chipping, and mulching is expected to be procured through a competitive sealed bids process.

Phase-two (Year 2) maintenance includes plant propagation and out planting of native vegetation in the cleared riparian areas. Community workdays are planned as part of this effort. The Division of Forestry and Wildlife will assist with plant propagation. Project partners, Division of State Parks and Hōala 'Āina Kūpono Corporation will coordinate and oversee all maintenance activities.

On-going estuary investigations and monitoring by the Division of Aquatic Resources will form the basis for the project's pre and post monitoring documentation.

The total cost of this agreement is \$140,000. The Commission's share will be \$50,000. The U.S. Fish & Wildlife Service, Hawaii Fish Habitat Partnership will provide \$70,000. Project partners will provide an "in-kind match" of \$20,000.

### FUNDING

Staff requests the Commission approve \$50,000 for the Joint Funding Agreement with the U.S. Fish & Wildlife Service. Funding will be from the Commission's general fund, special fund, or a combination of both, subject to available funding.

### ENVIRONMENTAL ASSESSMENT (EA)

EA Trigger. Pursuant to Haw. Rev. Stat. § 343-5(a) the proposed action triggers the need for an EA based on the use of State lands and State funds.

EA Exemption. Haw. Rev. Stat. § 343-6 provides that actions that have minimal or no significant effects on the environment are exempt from the preparation of an EA and provides for exempt classes of action (HAR §11-200-8). In accordance with Haw. Rev. Stat. § 343-5(a) and HAR §11-200-8, and the Exemption List reviewed and concurred in by the Environmental Council for the Division of Water and Land Development (precursor to the Commission and Engineering Division) dated September 19, 1984; and the Division of State Parks dated December 4, 1991, the subject project is exempt from the preparation of an EA for the following reasons:

HAR §11-200-8(A)(1): Operations, repairs, or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing;

Division of Water and Land Development exemption item 6: Vegetation clearing from streams. Work under this exemption would be performed by DOWALD or its contractor on improved and unimproved drainage ditches, swales and streams under the DLNR jurisdiction. Work would involve cutting and removing brush, grass and debris and

occasional small trees or bushes to restore channel capacity. The equipment to be used by the contractor or division work crew would include sickles, cane knives, power saw, or tractor with cutting blade attachment. Vegetation and debris would be hauled by truck to an approved sanitary landfill site, or allowed to remain onsite where feasible for use as compost.

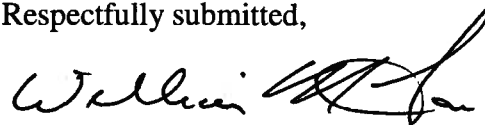
Division of State Parks exemption item 1: Irrigation structure, facilities and waterways – within developed, maintained portions of State Parks.

HAR §11-200-8(A)(4): Minor alterations in the conditions of land, water, or vegetation.

RECOMMENDATIONS

1. Authorize the Chairperson to enter into a Joint Funding Agreement with the U.S. Fish & Wildlife Service to restore approximately 7.5 acres along the riparian corridor of Kahana Stream by removing invasive hau, replant native species, and to approve funding not to exceed \$50,000 to complete the study. Commission funding will be from general or special funds or a combination of both, subject to the availability of funding.
2. Declare that this project will likely have minimal or no significant effect on the environment and is therefore exempt from the preparation of an environmental assessment pursuant to Haw. Rev. Stat. Chap 343 and HAR Chap 11-200(A) (1) and (A) (4).

Respectfully submitted,



WILLIAM M. TAM  
Deputy Director

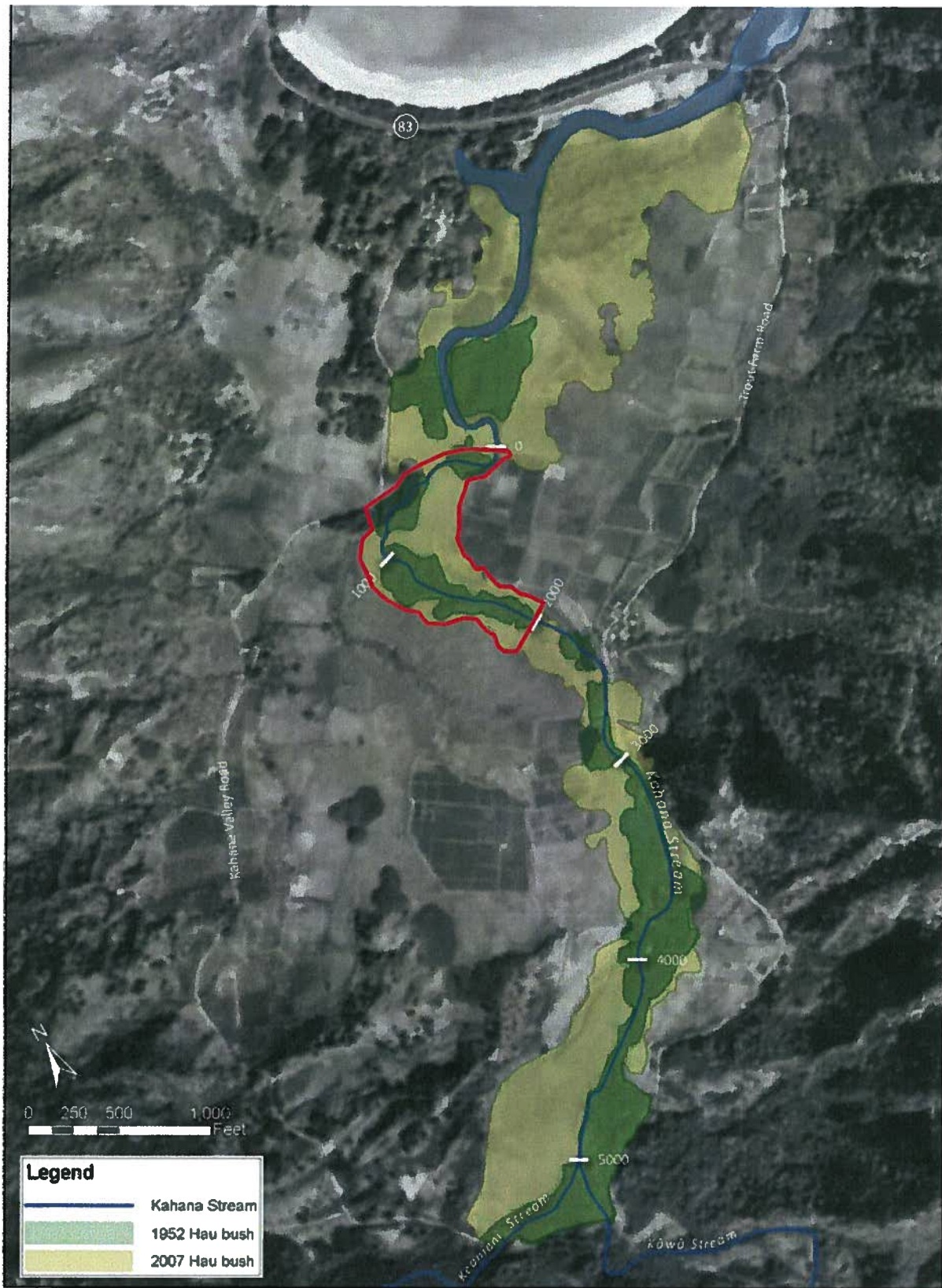
Exhibits:

1. Kahana Valley showing extent of Hau Bush encroachment between 1952 and 2007.
2. Photo of hau thicket stretching across entire stream channel.
3. Photo of hau growing along stream banks.
4. Representation of a typical sectional view of hau encroachment and flows.
5. Representation of a typical sectional view of hau removed and secondary channels filled/abandoned.

APPROVED FOR SUBMITTAL



WILLIAM J. AILA, JR.  
Chairperson



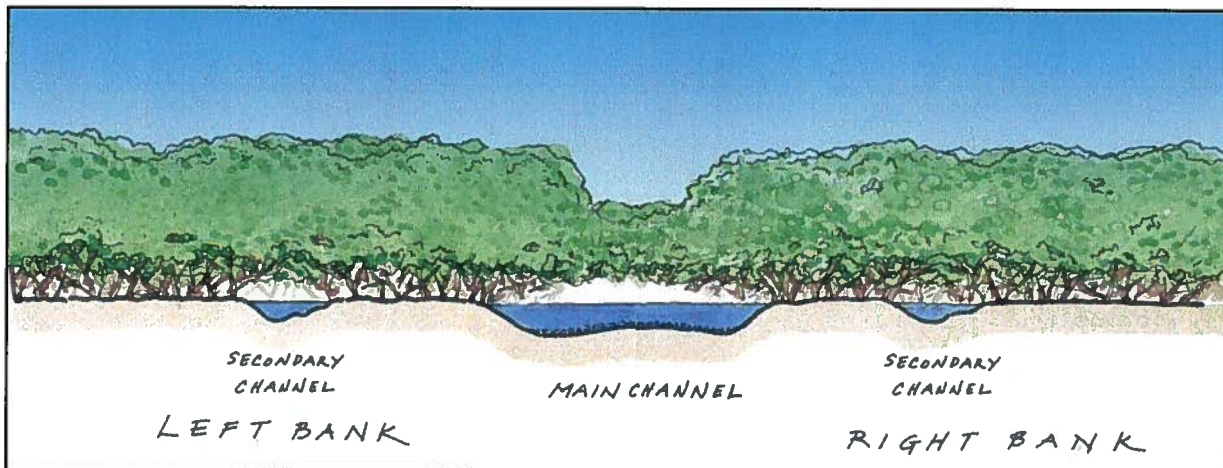
**Exhibit 1:** Kahana Valley showing extent of Hau Bush encroachment between 1952 and 2007.



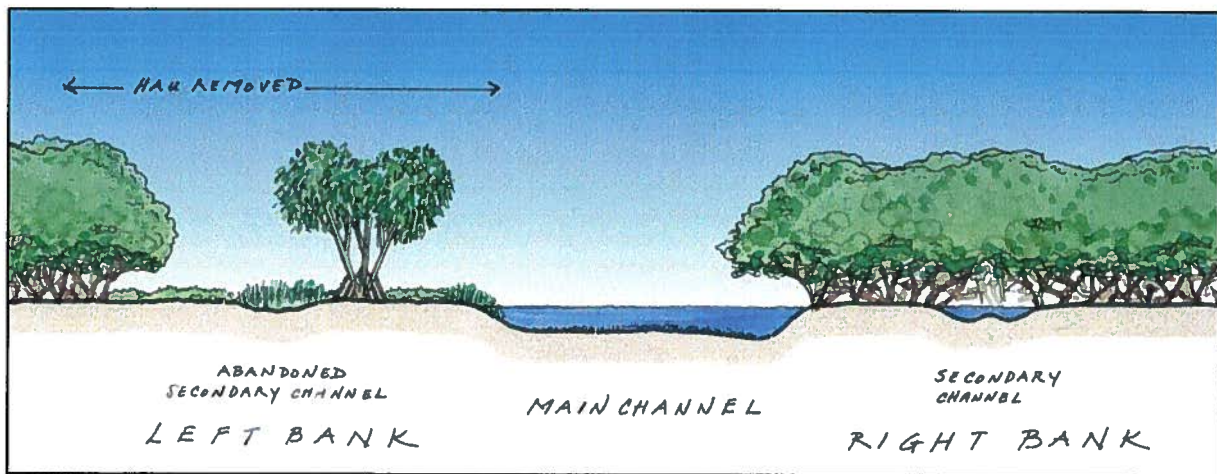
**Exhibit 2.** Kahana Stream near downstream end of proposed project with hau thicket stretching across entire stream channel. (Source: Hawaii Division of Aquatic Resources, Glenn Higashi)



**Exhibit 3.** Upstream view of Kahana Stream estuary with hau growing along both banks (outside proposed project area). (Source: Hawaii Division of Aquatic Resources, Glenn Higashi)



**Exhibit 4.** Typical sectional view of the Kahana Stream showing extent of Hau Bush encroachment and flows spread over a large area. (Source: Inter-Fluve, Inc.)



**Exhibit 5.** Typical sectional view of the Kahana Stream showing hau removal from one side of the stream corridor and secondary channels filled/abandoned. (Source: Inter-Fluve, Inc.)