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Forest Service

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Hawai`i Experimental Tropical Forest Laupahoehoe Construction Project

Pacific Southwest Research Station – Hilo Institute of Pacific Islands Forestry

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Summary

The USDA Forest Service, Pacific Southwest Research Station (PSW) in Hilo, Institute of Pacific Islands Forestry, proposes to construct at Laupahoehoe, Hawai`i, a state-of-the-art, environmentally sensitive research and education facility that would support the vision and objectives of the recently established (2002) Laupahoehoe Unit of the Hawai`i Experimental Tropical Forest (HETF). The facility would be located both on State of Hawai`i lands leased by PSW and on federal lands recently acquired by PSW. The project would provide bunkhouse facilities to accommodate up to 20 visiting scientists or students, classroom space, storage areas, restrooms, and housing for an on-site caretaker. Two action alternatives developed through project scoping and the no action alternative are evaluated in this environmental assessment (EA)

The proposed action (Alternative 3) includes renovation of existing structures on federal land to create sleeping quarters for up to 10 persons, covered outdoor classroom space, storage, and potential on-site caretaker quarters. New structures on the recently acquired federal lands would include a bunkhouse with accommodations for 10 persons, restrooms for visitors and parking for up to 20 vehicles. This site would serve as the research and education headquarters and will be called "the Laupahoehoe Administrative Site (LAS) in this document. New construction occupying 3 acres at the 20 acre leased site on State of Hawai`i lands would include a two-stall vault toilet comfort station, a covered pavilion and parking area for 10 vehicles. This site would be used primarily as a staging area for research and educational trips into the Laupahoehoe Wet Forest Unit of the HETF, and will be called the "Laupahoehoe Field Education Site (LFES)" in this document. No electrical utility connections are proposed at either site. Power for the facilities at the LAS would be generated by a photo-voltaic array with battery storage and generator back up. The facilities proposed for the LFES would not use electrical power.

Access to the LAS would use Spencer Road. Primary access to the HETF would use approximately 0.2 miles of reconstruction and 0.7 miles of newly constructed roadway in existing County right-of-way and on private lands of Kamehameha Schools, and existing gravel roads on Kamehameha Schools and State of Hawai`i lands. Manowaiopae Homestead Road would have limited use as an alternate route with minor repairs made on a 1.0 mile section of road from the junction of Spencer Road to the Kamehameha Schools property line.

This environmental analysis is being conducted in accordance with the National Environmental Policy Act (NEPA) and Chapter 343 of the Hawai`i Revised Statutes (HRS). Implementation of mitigation measures would result in little to no impacts to wildlife or State-listed species and no adverse effects to federally listed species that are known to or may occur in and near the project area. No cultural or historical properties were identified within the project area, thus no impacts are expected. Additionally, this project would be in compliance with all county building regulations and would implement mitigation measures and best management practices related to soils and water to further reduce the potential for any environmental impacts.

Section 1. Purpose and Need

Background

In 1992, the Hawai`i Tropical Forest Recovery Act authorized the establishment of the Hawai`i Experimental Tropical Forest (HETF) to serve as a center for long-term research and a focal point for developing and transferring knowledge and expertise for the management of tropical forests. In 2007, the HETF was formally established. Objectives for the HETF are to: (1) provide lands for conducting research that serves as a basis for the restoration, conservation, and management of forests in Hawai`i and across tropical areas served by the Pacific Southwest Research Station; (2) provide education facilities for the general public and University and Forest Service staffs; and (3) contribute to local, regional, and global long-term environmental monitoring data sets.

The vision of the HETF is a research, demonstration, and educational forest focusing on ecological, economical, and cultural values important to all people of Hawai`i. The experimental forest will provide research opportunities for scientists, as well as learning opportunities for school children who are the future generations of landowners, land managers, and scientists in Hawai`i.

The HETF, established on State of Hawai`i land, on the Island of Hawai`i is currently divided into two units: the Laupahoehoe Wet Forest Unit and the Pu'u Wa'awa'a Dry Forest Unit. The USDA Forest Service, Pacific Southwest Research Station (PSW) in Hilo, Institute of Pacific Islands Forestry works with the State of Hawai`i in the management of the experimental forest. The research and education center facility near the Laupahoehoe Wet Forest Unit proposed in this document supports the vision and helps meet objectives of the HETF. For more information related to the establishment and vision of the HETF see: http://www.hetf.us/.

Purpose and Need for Action

The LAS and the LFES will provide facilities that will enhance the ability of the HETF to meet its full potential for research, education, and demonstration. The setting of the HETF provides a globally unique opportunity for researchers to study ecological gradients from the agricultural zone at low elevations through eight life-zones to an alpine environment at nearly 14,000 feet above sea level. The proposed LAS bunkhouse facilities will provide a research and education base camp for visiting scientists, educators and students close to the HETF. This conveniently located space to meet, study, and teach will bring researchers, educators, students, and others together and encourage the exchange of information and ideas among local residents interested in the HETF. The project will provide facilities that will support HETF research, demonstration, and educational functions serving the entire Pacific Basin. Facilities that meet these purposes are not currently available within a practical distance of the Laupahoehoe Wet Forest Unit of the HETF.

Project Description, Location, and Property Ownership

The proposed facilities would be located in Hawai`i County, approximately 2 miles south-southwest of the town of Laupahoehoe (Figure 1: Project Location Map). In identifying parcels of land, this EA uses Hawai`i Tax Map Key parcel numbers (cited as “TMK parcel #” followed by a unique, nine-digit identifying number). Specifically, the administrative facilities would be located on U. S. Forest Service owned properties (TMK parcels #336006016, #336006082, and #336006014) and the field education site on State-owned land (TMK parcel # 336006046) under lease from the State of Hawai`i (Figure 2: Laupahoehoe Construction Project Property Location Map). All properties are identified as State Land Use Designation “Agricultural” (See Appendix A.)

Existing structures on the LAS would be renovated to meet Federal accessibility requirements, and provide temporary housing accommodations for up to 10 visiting researchers or students, outdoor classroom space and quarters suitable for a permanent on-site care taker. Facilities would be constructed on the LAS to provide temporary housing accommodations for up to another 10 visiting researchers or students, upgraded photo-voltaic arrays with associated storage batteries and backup generators, restrooms, a water catchment, storage, and distribution system, parking for 20 vehicles, and storage. See Figure 3: (Laupahoehoe Administrative Site Schematic) for the approximate locations of existing and proposed facilities. All electric power used on the LAS would be generated on-site by solar capture with a backup generator. No electrical utility connection to the site is proposed.

Facilities proposed for the LFES include an open sided shelter for outdoor classroom use, a two-stall vault toilet, storage, and parking for 10 vehicles. See Figure 4: Laupahoehoe Field Education Site Layout for the approximate location of proposed facilities. The entire developed area within the LFES is anticipated to occupy approximately 3 acres and would be enclosed with fencing to exclude feral animals and cattle from the facilities. At least 95 percent of native trees on the site will be protected and retained. There would be no use of electrical power on the LFES. No electrical utility connection to the LFES is proposed.

The installation of an invasive species vehicle wash station originally was considered for inclusion in this project to reduce the potential that invasive plant species would be transported into the HETF lodged on the undercarriages of vehicles. Alternatives were discussed at public meetings and offered in scoping response letters that included suggestions for various locations of a wash station and the idea of maintaining a number of all terrain vehicles at the HETF boundary that would only be used to access the HETF.

After further study involving the routes of invasive plant species introduction to the area via bird, pig and other animal droppings as well as wind transport, it was determined that a voluntary-use vehicle wash station would have very little added benefit in reducing this threat. Research into the wash station revealed the start up cost would be very high (likely greater than $100,000), followed by high operation and maintenance costs. A more cost effective control measure would be timely control of invasive species along the HETF access route through chemical and mechanical measures. The wash station is no longer included in this project proposal. If it is determined at a future date that a wash station will add a significant benefit in reducing this threat, another analysis would be completed.

Access to the LAS would be via Spencer Road, a Hawai`i County public road. The primary access route from the Administrative Site on Spencer Road to the HETF would continue mauka on Spencer Road for 0.66 miles; then northwesterly on 0.21 miles of reconstruction and 0.42 miles of new construction for a total of 0.63 miles within an existing dedicated County right-of-way; then 0.29 miles of new construction on Kamehameha Schools land, then 1.15 miles on existing private roads on Kamehameha Schools lands to the boundary of the HETF (see Figure 5). This access route would cross the following land parcels after leaving public right-of-way: TMK parcels #336006047 and #336006050, on the Kamehameha Schools land, and TMK parcel #336006046, on State of Hawai`i land. Manowaiopae Homestead Road would have limited use as an auxiliary route with minor repairs made on a 1.0 mile section from the junction of Spencer Road to the Kamehameha Schools property line.

Environmental Assessment Process

This environmental assessment (EA) process is being conducted in accordance with the National Environmental Policy Act (NEPA) and Chapter 343 of the Hawai`i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai`i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai`i.

Decision Framework

The decision to be made is whether or not to complete the project and which access alternative to select. A decision not to complete the project would implement Alternative 1, No Action. A decision to complete the project and continue to access the HETF via Manowaiopae Homestead Road with major improvements would implement Alternative 2. A decision to complete the project and access the HETF via a newly constructed road from Spencer Road with minor repairs on a 1.0- mile segment of Manowaiopae Homestead Road would implement Alternative 3.

Public Involvement and Agency Coordination

The proposed action has been revised several times since plans for the project were first initiated. A brief history of the public involvement and agency coordination process resulting from those revisions follows. In 2008 and 2009 public scoping, including public meetings, agency consultation and a draft EA was completed for a proposal to construct all the facilities within the 20-acre parcel lease. During the time period of the draft EA, the U. S. Forest Service purchased parcels of land near the leased site and revised its proposed action to include locating several facilities on these newly acquired properties. The draft EA was withdrawn, and a new proposed action was put forth in support of the original project purpose and need. In May 2010, PSW mailed a public scoping letter describing the new proposed action to the individuals, governmental organizations and other organizations listed in Appendix B. A public notice was also published in the *Hawai`i Tribune-Herald*. Proposed action and contact information was posted to the HETF internet site: http://www.hetf.us/page/projects_plans. Later in 2010, in response to difficulties in acquiring right-of-way easements for facility access, the proposed action was again revised. On April 3, 2011, PSW mailed a public scoping letter describing this proposed action, posted notice of the proposed action in the *Hawai`i Tribune-Herald* and on the HETF internet site.

As the project purpose and need has not changed, the public comments and agency responses received since the initial public scoping notice in 2009 will be addressed in this EA. See Appendix B for actual letters and comments received during scoping.

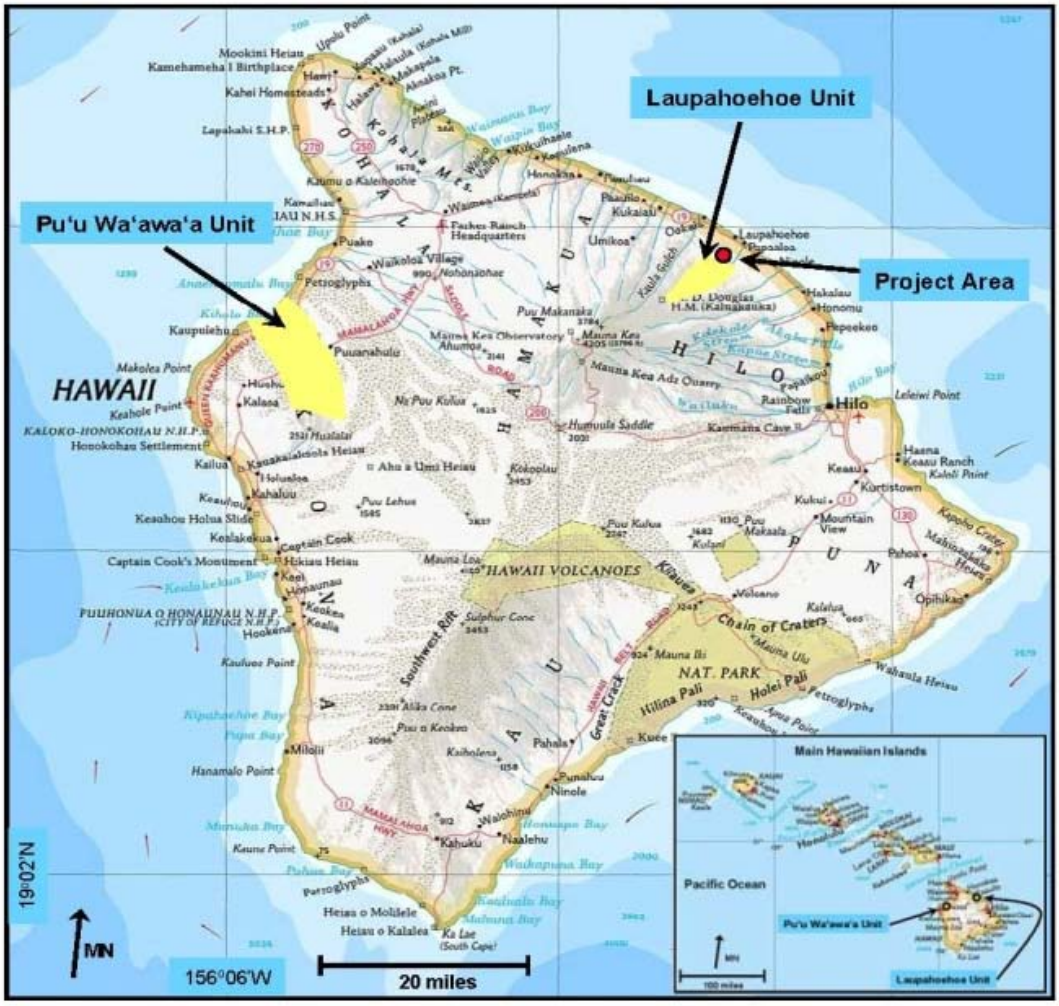

Figure 1: Project Location Map

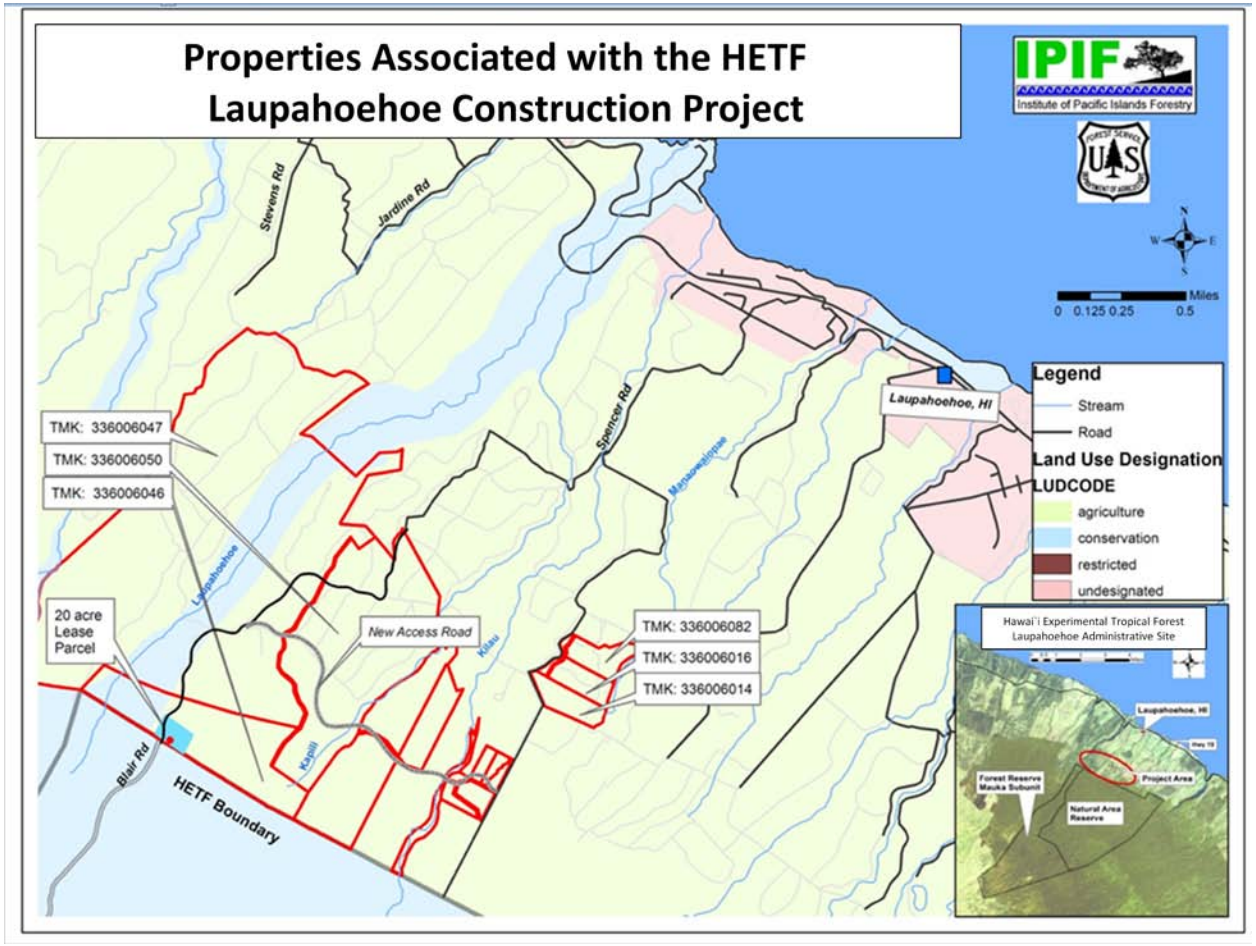

Figure 2: Laupahoehoe Construction Project Property Location Map

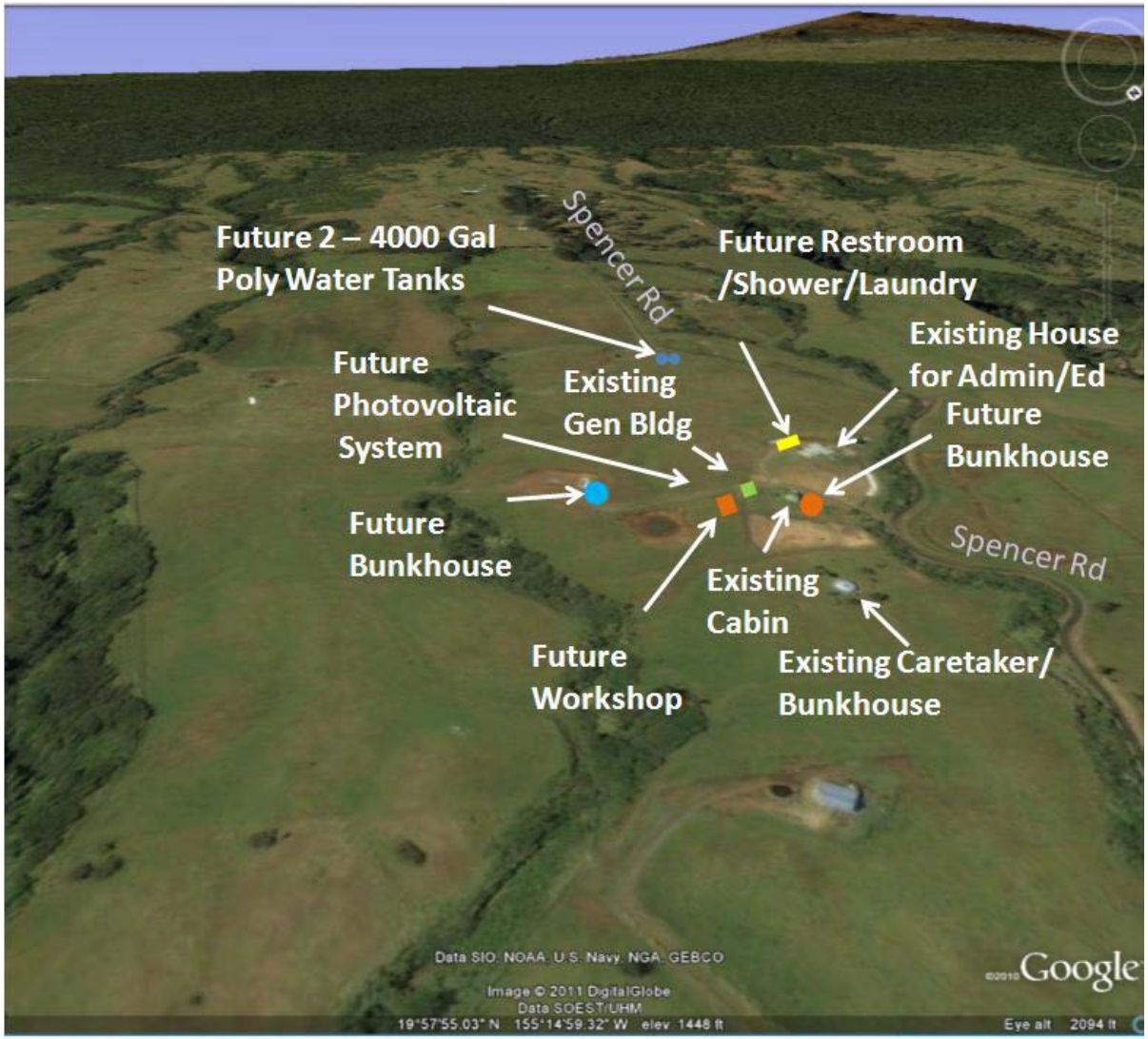

Figure 3: Laupahoehoe Administrative Site Schematic (locations and sizes of future facilities approximate)

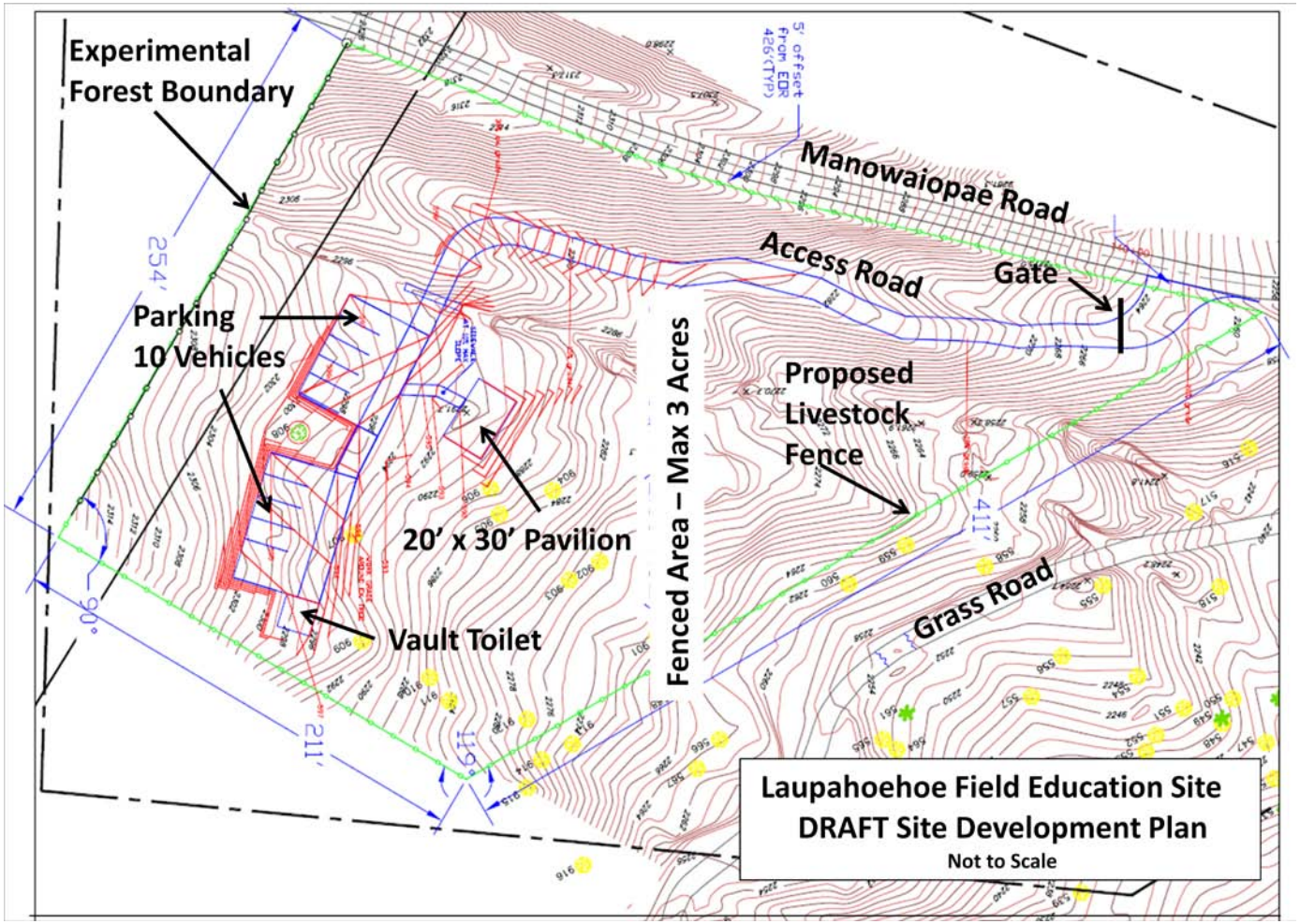

Figure 4: Laupahoehoe Field Education Site Layout

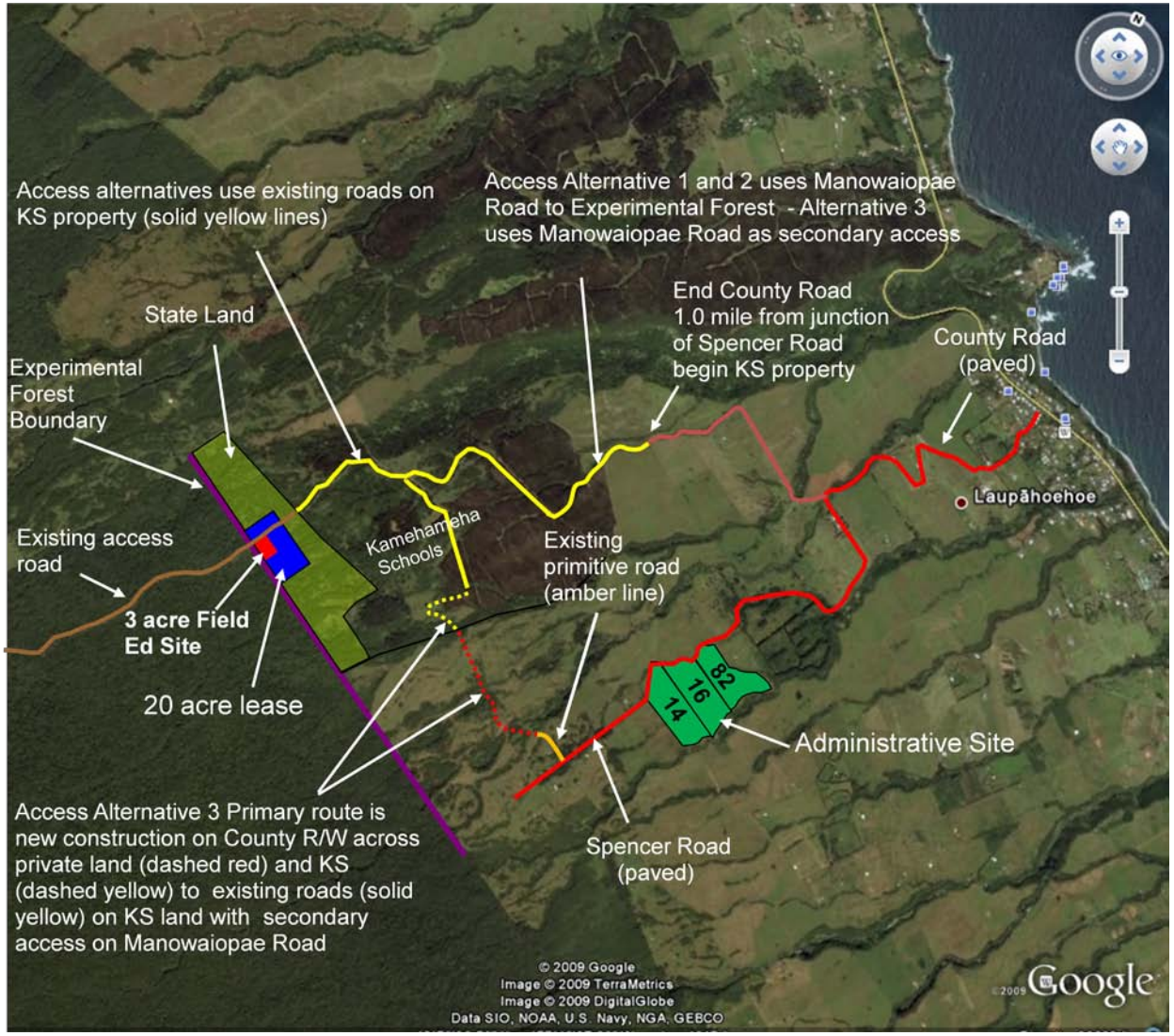

Figure 5: Laupahoehoe Construction Project Proposed Access and Alternative (not to scale)

Issues

During the process of public involvement, agency coordination, and internal scoping, issues associated with the proposed action were brought forward. An issue is a point of concern, debate, or dispute with a proposed action based on some anticipated effect. The Council on Environmental Quality NEPA regulations require this delineation in Sec. 1501.7, "…identify and eliminate from detailed study the issues which are not significant [minor issues] or which have been covered by prior environmental review (Sec. 1506.3)…" Major issues are those with a clear direct or indirect causal relationship from implementing the proposed action. Minor issues are identified as those (1) outside the scope of the proposed action; (2) already decided by law, regulation, Forest Plan, or other higher level decision; (3) irrelevant to the decision to be made; or (4) conjectural and not supported by scientific or factual evidence.

Major Issues

Major issues brought up during internal and external scoping include:

Issue: *Laupahoehoe Construction Project and operation may impact area soils and water quality.*

Ground disturbance associated with facility and new access road construction may foster soil erosion and sedimentation in area streams. Creation of new impervious cover in undeveloped areas may change runoff rates and volumes, changing site hydrology. *Indicator:* Any changes in water quality or sediment transport resulting from the construction and use of the facility and access road would be considered indications of soil and water resource impairment.

Issue: *Laupahoehoe Construction Project and operation may impact native fauna, including listed species.*

Facilities and roads proposed for the Laupahoehoe Construction Project may directly affect native fauna through mortality to, or displacement of, individuals. Indirect effects to native fauna may also result through conversion of habitat to developed areas or fragmentation of habitat by construction of linear facilities such as roads. *Indicator:* Any projected adverse effects to populations of federally listed species of animal or State of Hawai`i species of greatest need resulting from the construction and use of the facility would be considered indications of unacceptable impacts upon native fauna.

Issue: *Laupahoehoe Construction Project may impact native flora, including listed species.*

Facilities and roads proposed for the Laupahoehoe Construction Project may directly affect native flora through clearing. *Indicator:* The area of land proposed to be cleared for development will be documented, as well as the presence of native plants in any such areas.

Issue: *Laupahoehoe Construction Project may impact local scenery.*

Scenic resources are valued in Hawai`i. Construction of Laupahoehoe Construction Project facilities may alter visual character of a locale or block scenic views. *Indicator*: Construction inconsistent with the visual quality of its setting or obstruction of a view plane will be documented and consistency with Hawai`i County scenic standards verified.

Issue: *Construction and operation of the Laupahoehoe Construction Project may alter local air quality.*

Fugitive dust created during construction phase soil disturbance and vehicle or generator emissions may adversely affect local air quality. *Indicator:* Any projected violation of ambient air quality standards established by the State of Hawai`i would be considered adverse impacts on air quality.

Issue: *Construction and operation of the Laupahoehoe Construction Project may result in adverse noise.*

Use of heavy equipment during facility construction or operation of back-up generator at the LAS may result in noise levels that adversely affect neighbors. *Indicator:* Any generation of noise levels exceeding the allowable property boundary noise levels established by the State of Hawai`i Department of Health would be considered an adverse impact.

Issue: *Construction and operation of the Laupahoehoe Construction Project may impact cultural and archaeological resources.*

The project area has a rich history of use by indigenous people of Hawai`i. Site development could be considered an adverse impact and adversely affect cultural artifacts or sites. *Indicators:* The presence of any cultural sites in areas proposed for development.

Minor Issues

The following minor issues were not carried forward in the analysis:

Road maintenance and usage change from current status.

It is expected that road usage will increase slightly from present levels. All existing gates will remain in place and locked and will not be open to the general public. If a new road is built that enters private land, a gate will be installed and locked at the point of entry to prevent trespass. Anticipated uses from research activities would be linked with the type and scope of work being conducted and would likely vary over time based on research objectives. It is anticipated that research scientists and others accessing and using the LAS and LFES would use roads with a frequency of approximately one to two vehicles per day over and above current usage. Educational field trips hosted by PSW staff would involve one or two high-clearance vans transporting visitors to the site about once per week and occasionally on weekends.

Site fencing may impact hunting.

The public was concerned that fencing the 20-acre parcel would impact hunting. The proposed action only proposes fencing around the approximately 3 acre footprint of the LFES for security and protection from cattle and feral pigs. Hunting is not permissible on lands leased from the State of Hawai`i; hence there would be no meaningful impact on recreational hunting.

The project may generate jobs for the local community.

Project construction may provide jobs on a short-term basis; however, creation of jobs for the local community is outside the purpose and need of the project and therefore outside the scope of analysis.

A fleet of vehicles dedicated to HETF entry could reduce introduction of exotic species.

Some members of the public suggested that the Laupahoehoe Construction Project should acquire a fleet of vehicles, including standard 4-wheel-drive passenger vehicles or smaller off-road vehicles,

dedicated for access into the HETF. This was suggested as an alternative to the vehicle wash station and a method of controlling introduction of exotic species of plants and animals to the forest on vehicles. This suggestion has merit, but is complicated by the large number of different agencies and individuals permitted to enter the HETF. Further, it would substantially increase parking needs at the LAS, thus increasing its visual and environmental impact. Operation of U. S. Forest Service vehicles by private individuals or staff of other agencies would also raise issues of agency liability, and would likely not prove feasible. Given the foregoing operational considerations, as well as cost considerations, providing a fleet of vehicles dedicated to HETF entry was not considered further.

Issues Already Considered in the Development of This Proposal

Additional issues brought forth by the public and considered in the development of the proposal included control and treatment of invasive species associated with construction activities, nighttime lighting impacting private landowners and emergency care for visitors.

Invasive Species: Native species would be used for landscaping in and around the area disturbed by construction as a design feature associated with facility design. Treatment of invasive species on State lands along the access road to the HETF is done by the holder of a lease to graze livestock on the parcel. Other private landowners such as Kamehameha Schools also treat invasive species along the access roads (Whitehead 2008).

Nighttime Lighting: Installation of any lighting would comply with county building codes.

Emergency Care: Installation of facilities will comply with all county building requirements related to safety.

Documents Incorporated by Reference

The specialists' reports prepared in support of this document are incorporated into the document by reference. They are available for public review at the PSW Office in Hilo, Hawai`i or on line at http://www.hetf.us/page/projects_plans. These reports are:

1. The Watershed and Soils Report;
2. Wildlife Report;
3. Botanical Survey of Proposed Facilities and Access Roads: Hawai`i Experimental Tropical Forest, Laupahoehoe, Hawai`i;
4. Hilo Palikü–Hilo Of The Upright Cliffs: A Study of Cultural-Historical Resources of Lands in the Laupahoehoe Forest Section, Ahupua‘a of the Waipunalei-Mauluanui Region, North Hilo District, Island of Hawai‘i;
5. Scenery Report;
6. Cultural Resources Site Reconnaissance, 2009; and
7. Cultural Resources Site Reconnaissance, 2010.

Section 2. Alternatives

The following paragraphs describe alternatives for the Laupahoehoe Construction Project including the no-action alternative.

Alternative 1 (No Action)

Under the no-action alternative, no construction of new structures or ground disturbing activities would occur on U. S. Forest Service owned lands. No facilities would be constructed on the 20 acre leased parcel located on State of Hawai`i owned lands, and no road improvements would be implemented.

Research activities associated with the HETF would continue to occur, requiring research scientists to travel to the HETF on a more frequent basis from Hilo or other places of residence to conduct research. Educational program scope would not reach program objectives due to the absence of teaching rooms and supporting facilities.

Alternative 2 (Existing Road Access)

Alternative 2 proposes to develop the facilities associated with the Laupahoehoe Wet Forest Unit. Development would be concentrated primarily into two distinct areas, the LAS, comprised of lands recently acquired by the U. S. Forest Service on Spencer Road (TMK parcels #336006014, #336006016, and #336006082), and the LFES, located on leased State of Hawai`i land (TMK parcel #336006046) adjacent to the northeastern boundary of the Laupahoehoe Wet Forest Unit (see Figure 2). The following actions are proposed for each site (see Figures 3 and 4 for site plans):

LAS

Property TMK Parcel #336006016

- Construction of a 20-vehicle parking lot compliant with the Federal Americans with Disabilities Act (ADA)
- Construction of additional garage/workshop for storage of vehicles and equipment
- Construction of additional lavatory building
- Reconstruction of existing driveway and revision of entrance to driveway at Spencer Road
- Construction of additional dormitory (sleeping quarters for 10 persons, bathrooms, kitchen), and driveway (approximately 12 feet wide by 1,500 feet long - gravel or paved)
- Construction of interior driveways to connect facilities located on this property to facility located on Property 82 (approximately 12 feet wide gravel by 500 feet long – gravel or paved)
- Installation of new or retrofitted solar electric generation array and storage battery building, with back-up generator sufficient to provide necessary electric power for facility
- Installation of improved water catchment, storage and distribution system
- Expansion of existing septic systems to accommodate expanded current and future use
- Landscaping around existing and newly proposed facilities

Property TMK Parcel #336006082

- See new drive way construction described in property 16 above
- Landscaping around existing facilities

- Expansion of existing septic systems to accommodate future use

Property TMK Parcel #336006014

- Maintenance of existing driveways with addition of gravel as needed
- Installation of water storage tanks and water lines connecting them to the facilities on the other parcels.

LFES

Property TMK Parcel #336006046 (20-acre leased site)

The following activities would impact approximately 3 acres or less (footprint):

- Construction of a shelter for outdoor meetings and storage
- Construction of 2-stall vault toilet building
- Construction of an access drive and parking lot for approximately 10 vehicles
- Installation of fencing and entrance gate around above described facilities

Access

LAS Access

Access to the LAS would be via Spencer Road, a Hawai`i County Road that borders the site. This road is adequate for all facility needs in its current condition.

HETF and LFES Access

Sole access to the HETF and LFES would be via Manowiaopae Homestead Road, a Hawai`i County road to the point that it enters the Kamehameha Schools lands and a private road south-southwest, or uphill (mauka), of that point (see Figure 5). Manowaiopae Homestead Road would require some upgrades for regular HETF access, as described below. A 1.0-mile segment of the road between its fork with Spencer Road and the boundary of the Kamehameha Schools property is a paved, public road with a "Road in Limbo" status. Hawai`i County and private landowners who live along this segment of the road cooperatively maintain the road. The next 1.55-mile segment of the road proceeding mauka crosses Kamehameha Schools land and is private. HETF associated traffic would use this private road segment subject to an agreement with Kamehameha Schools. The remaining 0.19-mile segment of the road crosses State of Hawai`i lands between the Kamehameha Schools property and the boundary of the HETF. All existing gates restricting access to the private segment of Manowaiopae Homestead Road would remain.

The project would implement the following upgrades or repairs to the Manowaiopae Homestead Road to facilitate safe access to the HETF and LFES.

The U. S. Forest Service would enter into a share-cost agreement with the County for the upgrades and repairs to the 1.0 mile segment of road described in this alternative. Alternative 2 would patch damaged pavement as needed and provide an initial clearing of vegetation along the roadway to provide safe lines of sight. After the initial clearing, ongoing vegetation management would revert to the County. This alternative would implement repairs to a low-water crossing of Kapili Stream in this segment. The crossing has been undercut by high flows and is periodically inundated during high flows. Proposed repairs may include cutting down through the road surface to install a culvert or other water conveyance, repairing the undercut section, and raising the road surface at the crossing. Final design will determine specific repair measures. This alternative would also include repair of the Kilau Stream bridge to bring it up to current County standards. The 65-foot long treated timber

bridge has a 6 ton load limit due to scour on the bridge footings, minor deterioration in bridge stringers and decking and outdated bridge railings. The County will continue maintenance on this 1.0 mile section of road after project completion.

The next 0.47 mile segment of the road, proceeding mauka, is a single lane, paved road within Kamehameha Schools land. This alternative would provide an initial clearing of vegetation along this segment and patch or repair damaged pavement as needed. The remaining 1.08-mile road segment across the Kamehameha Schools property and the 0.19 mile segment on State of Hawai`i land are single-lane, gravel road. This alternative would provide an initial clearing of vegetation along these segments, improve drainage where necessary, and create some small cuts and fills to reduce grade steepness. These improvements should increase road stability and improve user safety. Table 1 (Proposed Road Improvements) provides a summary of length, improvements needed, and ownership of the roadway for the segments of road proposed to access the HETF and LFES under this alternative.

Based on preliminary cost estimates, reconstruction of the Manowaiopae Homestead Road route under Alternative 2 would cost approximately $1,501,000 or approximately $250,500 more than the cost to the U. S. Forest Service for road improvements under Alternative 3. If the County and private shares for the construction on the County right-of-way portion are included in the cost of Alternative 3, the estimated cost for Alternative 2 is approximately $222,000 less than Alternative 3 (see Table 6, page 46 for preliminary costs).

Table 1: Proposed Road Improvements under Alternative 2

Length in Miles	Name of Segment	Necessary Improvements	Ownership of Roadway/TMK Parcel Number
1.0	Manowaiopae Homestead Road	Repair undercut at Kapili Stream, patch pavement, initial mowing or brushing of roadside vegetation, repair bridge at Kilau Stream	County Right-of-way
0.47	Manowaiopae Homestead Road	Patch pavement, maintain roadside vegetation	Kamehameha Schools TMK #336006056 TMK #336006064 TMK #336006066
1.08	Manowaiopae Homestead Road	Reconstruct and stabilize single lane gravel road, improve drainage as necessary, add small cuts and fills to reduce grade steepness, maintain roadside vegetation	Kamehameha Schools TMK #336006050 TMK #336006047
0.19	Manowaiopae Homestead Road	Reconstruct and stabilize single lane gravel road, improve drainage as necessary, add small cuts and fills to reduce grade steepness, maintain roadside vegetation	State of Hawai`i TMK #336006046

Alternative 3 (Proposed Action)

Alternative 3 proposes to develop facilities and improve access for the Laupahoehoe Wet Forest Unit. Under this alternative the development of facilities would be the same as proposed in Alternative 2. This alternative is differentiated from Alternative 2 by an alternative access.

Facility Sites

The LAS and LFES would be developed as described above for Alternative 2.

Access

LAS Access

Access to the LAS would be via Spencer Road, a Hawai`i County Road that borders the site. This road is adequate for all facility needs in its current condition.

HETF and LFES Access

The proposed action is based on the need for improved safe access to the HETF for research scientists, State employees, and other parties involved in the management and use of the HETF. Comments received from members of the community at public meetings and in written form were considered in formulating this alternative.

The primary access to the HETF under this alternative would continue from the Administrative Site mauka on Spencer Road for 0.66 miles; then northwesterly on 0.21 miles of reconstruction; then 0.42 miles of new construction (for a total of 0.63 miles within an existing dedicated County right-of-way); then 0.29 miles of new construction on Kamehameha Schools land; then 0.96 miles on existing roads on Kamehameha Schools lands; and then 0.19 miles on State land to the boundary of the HETF (see Figure 5). This route from the Administrative Site to the HETF is 1.24 miles shorter than back tracking downhill (makai) to the Manowaiopae Homestead Road and then mauka back to the HETF, as would be required under Alternative 2. This access route would cross the following land parcels after leaving public right-of-way: TMK parcels #336006047 and #336006050, on the Kamehameha Schools land, and TMK parcel #336006046, on State of Hawai`i land.

The U. S. Forest Service's participation in the reconstruction of the 0.21 miles of existing road and 0.42 miles of new construction on the existing County right–of-way would also help facilitate a project that the County of Hawai`i has been unable to implement for many years. The existing segment is a narrow, primitive road with very poor drainage and would be upgraded to match the remaining new construction. The existing road currently provides access to 7 tax lots in 5 ownerships, totaling 27 acres. The new construction would provide new access to 7 tax lots in 6 ownerships, totaling 265 acres.

The County originally surveyed and designed the 0.63 miles of road in 1971, but only the first 0.21 miles were constructed and is a primitive standard. Local landowners report that they have requested the completion of this road since it was designed 40 years ago. During that time however, no funds have been available for construction. The County has offered to provide aggregate for the road if the local landowners contribute construction funding or a portion of the construction work.

Based on preliminary cost estimates, constructing this access alternative would cost the U. S. Forest Service approximately $250,500 less than reconstructing the Manowaiopae Homestead Road route, as proposed in Alternative 2. This cost differential is primarily attributable to the upgrading of the

Kilau Stream bridge under Alternative 2, which would not be necessary with construction of a new access route as proposed under this alternative. The estimated savings also takes into account the fact that the U. S. Forest Service would only pay approximately one half of the cost of construction on the County right-of-way section under this alternative. If the County and private land owner contributions are included in the cost comparison, the overall cost of this route (to all parties) would be approximately $222,000 more than Alternative 2 (see preliminary costs in table 6, page 46).

This access alternative would provide a more direct route from the Administrative Site to HETF than the Manowaiopae Homestead Road alternative (Alternative 2), as well as a safer alignment, gentler grades allowing access by 2 wheel drive vehicles, and access to 256 acres of land in private ownership with no current legal access. The Manowaiopae Homestead Road has several grades in excess of 18 percent with boulders in the roadbed limiting travel to high clearance, 4 wheel drive vehicles.

The road reconstruction and new construction from Spencer Road to the HETF boundary would be a one-lane road with pull outs in level areas to accommodate two-way traffic. Pavement may be used within the County right-of-way segment to be consistent with County standards. On the Kamehameha Schools land, a gravel road surface is proposed. The new road segment would include four intermittent stream crossings, three on the County right-of-way and one on Kamehameha Schools land. Two of the crossings would be accomplished with low water dip crossings or open bottom culvert arches; the other two would use culverts. The approximately 0.96 miles of private road used by this access route, as well as the segment of the Manowaiopae Homestead Road located on State of Hawai`i land, would be reconstructed as a gravel road. The project would manage vegetation along these segments, improve drainage where necessary, and create some small cuts and fills to reduce grade steepness.

This alternative would include a secondary or backup access route via the existing Manowaiopae Homestead Road as shown in Alternatives 1 and 2. This would be a limited access route for occasional use by HETF users in high clearance vehicles traveling directly to the HETF and the LFES. This route would be 1.2 miles shorter from the highway to the HETF and the LFES than the Spencer Road route.

At the mauka end of the pavement, Manowaiopae Homestead Road becomes a 4-wheel drive, high clearance route. As use would be limited, the only proposed activities for this route under Alternative 3 would be the repair of the low water crossing, minor patching and mowing of vegetation on the 1.0-mile section from the junction of Spencer Road to the boundary of Kamehameha Schools Land. Repair of the Kilau Stream Bridge would not be necessary under this alternative as this route would only be used for light administrative traffic, and the bridge is currently rated for light traffic up to 6 tons. Heavy construction equipment used for road reconstruction and facility construction at the LFES as well as sewer pump trucks for pumping the vault toilets to be constructed at the LFES would use the primary access route (Spencer Road), which would have no load restrictions.

Once work is completed on this 1.0 mile section of Manowaiopae Homestead Road under this alternative, the County would continue to maintain it to the improved standard (County letter 2011). The section of Manowaiopae Homestead Road to be repaired provides access to 10 tax lots in 15 ownerships, totaling 105 acres. The U. S. Forest Service would share in the cost of repairs to the 1.0 mile section, but no other federal funding would be spent on the remaining private portions of Manowaiopae Homestead Road. The repairs and maintenance of the 1.0 mile section would improve safety for the limited HETF and LFES administrative traffic and for members of the local community who use the road.

Table 2: Proposed Road Improvements and Construction provides a summary of length, improvements needed, and ownership of the roadway for the segments of road proposed to access the HETF and LFES under this alternative.

Table 2: Proposed Road Improvements and Construction under Alternative 3, the Proposed Action

Length in Miles	Name of Segment	Necessary Improvements	Ownership of Roadway/TMK Parcel Number
Primary Access Route			
0.66	Spencer Road	No improvements needed	County Right-of-way
0.21	Existing Primitive Road	Clear vegetation, widen, improve drainage, add gravel or pavement surface	County Right-of-way
0.42	New Road	New construction, single lane pavement or gravel, two culverts, one dip crossing or open bottom pipe arch	County Right-of-way
0.29	New Road	New construction single lane gravel, one dip crossing or open bottom pipe arch	Kamehameha Schools TMK #336006050
0.51	Existing Private Road	Reconstruct and stabilize single lane gravel road, improve drainage as necessary, add small cuts and fills to reduce steepness, widen clearing where necessary	Kamehameha Schools TMK #336006050 TMK #336006047
0.45	Manowaiopae Homestead Road	Reconstruct and stabilize single lane gravel road, improve drainage as necessary, add small cuts and fills to reduce steepness, widen clearing as necessary	Kamehameha Schools TMK #336006047
0.19	Manowaiopae Homestead Road	Reconstruct and stabilize single lane gravel road, improve drainage as necessary, add small cuts and fills to reduce steepness, widen clearing as necessary	State of Hawai`i TMK #336006046
Secondary Access Route			
1.00	Manowaiopae Homestead Road	From junction of Spencer Road to Kamehameha Schools property line, repair undercut at Kapili Stream, patch pavement, initial mowing or brushing of roadside vegetation	County Right-of-Way
1.74	Manowaiopae Homestead Road	From Kamehameha Schools property line to HETF boundary – no improvements	Kamehameha Schools and State land

Mitigations Specific to Alternatives 2 and 3

Mitigation measures listed in Table 3 would be implemented to reduce possible negative effects from activities proposed.

Table 3: Mitigation Measures for Laupahoehoe Construction Project

Mitigation Measure	Target Species/Habitat/Issue
Wildlife	
To reduce potential disturbance to roosting bats, and breeding birds, no tree removal will occur when lactating or flightless bats or nesting birds are present (April 15–September 1).	*Hawaiian hoary bat* (*Lasiurus cinereus semotus*) Breeding birds
To reduce potential impacts to foraging bats, only smooth wire will be used on the top of any fences constructed.	
A nest survey of the site will be conducted prior to implementation. No activities would be permitted within 1,320 feet of an active Hawaiian hawk nest between April 1 and August 15.	*Hawaiian hawk, (ʻIo)* (*Buteo solitarius*)
To ensure that nesting Hawaiian ducks are not disturbed, any sites proposed for road re-alignment work or culvert replacement will be surveyed to identify active nests for protection.	*Hawaiian duck (Koloa Maoli)* (*Anas wyvilliana*)
Native Vegetation	
Removal of native tree species will be minimized to 95 percent unaffected within the footprint of the facility construction area and disturbed areas will be restored with native plant species.	*Protection of native plants and wildlife*
Invasive Species	
Prior to ground-disturbing activities at facility sites, all contractor equipment will arrive at the work site clean and free of invasive species including plants and animals.	*Protection of native plants and animals and their habitats*
Building materials including sand, gravel, rock and/or mulch for use at the facility sites, will be inspected and certified as invasive species free.	*Protection of native plants and habitats*
Routine treatment of invasive species within Forest Reserve and Natural Area Reserves will be done by State of Hawai`i Department of Land and Natural Resources Division of Forestry and Wildlife. All policies and procedures can be found at: http://www.hawaiiinvasivespecies.org/iscs/biisc/	*Protection of native flora and fauna*
Native plants used for re-vegetation will be treated for Coqui frogs or acquired from a Coqui frog-free nursery or supplier.	*Protection of native flora and fauna*
Hydrology	
Prior to implementation, a Section 404 Permit must be obtained from the U.S. Army Corps of Engineers.	*Compliance with the Clean Water Act Section 404*
Prior to implementation, a National Pollutant Discharge Elimination System (NPDES) Individual Permit must be obtained	*Compliance with Hawai`i Administrative Rules Chapters 11-55*
It is recommended that the construction not take place when heavy rains and high stream flows are likely to occur. The work would not take place when the stream is flowing.	*Reduce risk of sedimentation in streams to protect water quality downstream and provide worker safety*
Heritage and Cultural	
The Hawai`i State Historic Preservation Statute (Chapter 6E), affords protection to historic sites, including traditional cultural properties of	*Cultural and historic resources*

Mitigation Measure	Target Species/Habitat/Issue
ongoing cultural significance. All work will comply with the criteria, standards, and guidelines currently utilized by the DLNR-SHPD for the evaluation and documentation of cultural sites. The Hawai`i Island Representative of DLNR-SHPD will be notified of any findings, when made.	
If any burial remains are discovered, they will be treated on a case-by-case basis in concurrence with Chapter 6E-43 (as amended by Act 306). Final disposition of remains will be determined in consultation with DLNR-SHPD, and Native Hawaiian descendants of the families associated with Laupahoehoe and adjoining lands.	*Burials*
Should evidence of any archaeological or culturally significant sites be encountered during construction, vegetation clearing, or fence construction, work in the immediate vicinity of the findings will be terminated and the Hawai`i Island representative of DLNR-SHPD will be notified.	*Unanticipated discoveries*
Noise	
Whenever construction noise is expected to exceed the Department of Health's (DOH) "maximum permissible" property-line noise levels, contractors will be required to consult with DOH per Title 11, Chapter 46, HAR (Community Noise Control) prior to construction.	*Reduce noise impacts*
Building Design and Personnel Safety	
The U. S. Forest Service, due to the nature of its mission, has a long experience in building facilities in remote locations. Therefore the U. S. Forest Service has developed a number of internal requirements for the safety of its personnel. The U. S. Forest Service Health and Safety Code Handbook (Forest Service Handbook 6709.11) has a number of requirements including the requirement for a Fire Prevention and Emergency Evacuation Plan for all facilities and the plan must be practiced twice a year. Additionally, a Job Hazard Analysis must be created before field work commences. The U. S. Forest Service will comply with Title 29, Code of Federal Regulations (29 CFR), sections 1910.21 – 1910.27, 1910.35 – 1910.38, 1910.106, 1910.109 and 1910.110, 1910.132, 1910.134, 1910.141 and 1910.142, 1910.144, 1910.151, 1910.155, 1910.157, 1910.164 and 1910.165, 1910.176 and 1910.177, 1910.179, 1910.212, 1910.242 and 1910.243, 1910.301 – 1910.303, and 1910.1001.	*Personnel safety, fire prevention, emergency evacuation, job hazard analysis*

Alternatives Considered but Dropped from Further Analysis

Power for Facilities Supplied by Public Utility and Wind Turbine

Any consideration of using wind turbines to generate power at the LAS or LFES was dropped after an analysis of prevailing winds showed that neither location experiences favorable winds for efficient use of wind turbines to generate electricity. Given the potential adverse effects to birds and bats, the use of wind turbines in less than ideal locations was not considered worthwhile.

An analysis of the potential to use solar power with battery storage and a backup generator was completed in January 2011. The analysis determined that installation of electrical transmission lines and purchase of public utility power would have a life-cycle cost similar to installation and maintenance of a solar/battery/generator system capable of meeting facility power needs and a considerably higher initial cost (Sichau 2011). Given public concerns regarding the visual impacts of

overhead electrical transmission lines, the Forest determined to develop on-site electrical power generating capacity.

Access to the HETF and LFES via Existing Road North of LAS

This alternative across TMK#'s 336006030, 336006031, and 336006028 would have provided the most direct road access between the LAS and the HETF and LFES. However, upon examining the availability of legal access, it was determined that a portion of the roadway crossed private lands without a dedicated public right-of-way. This alternative was dropped because of the lack of legal access over the private lands.

Comparison of Alternatives

Table 4 lists only the resources identified within this EA that were considered to have impacts associated with any of the alternatives proposed. Resources not identified in this table were analyzed and no impacts were found related to any alternative.

Table 4: Comparison of Alternatives

Resource	Alternative 1 No Action	Alternative 2 LFES Access via Manowaiopae Homestead Road	Alternative 3 LFES Access via New Road in County ROW and on Kamehameha Schools Lands
Scenery	■No effect.	■No effect to the visual environment along the road, or any effect in the scenic view from the properties up from the road with views to the ocean. ■No effect to visual environment within the eucalyptus plantation. ■Major local, minor regional effect to the visual environment of the LFES	■No effect to the visual environment along Spencer Road, or any effect in the scenic view from the properties up from the road with views to the ocean. ■Major local, minor regional effect to the visual environment of the LFES ■Major, local, minor regional effect to the visual environment along the right-of-way of the newly constructed road. ■No effect to visual environment within the eucalyptus plantation.
Wildlife	■No effect.	■Minor, short term displacement of wildlife species along the access roads during the construction phase. ■Some displacement of species from the facility sites. ■No adverse effect to any Federally or State of Hawai`i listed species.	■Minor, short term displacement of wildlife species along the access roads during the construction phase. ■Some long-term displacement of species from the route of the newly constructed access road. ■Some displacement of species from the facility sites. ■No adverse effect to any federally or State of Hawai`i listed species
Noise	■No effect.	■Moderate, short-term effects from facility construction phase.	■Moderate, short-term effects from facility construction phase.

Section 3. Environmental Setting and Consequences

General Setting

The Laupahoehoe Construction Project study area includes all properties described within the proposed action section. Throughout this EA, reference to the Laupahoehoe Construction Project includes all properties unless noted specifically as the LAS or LFES, or by specific TMK parcel number.

The basic geographic setting of the project area is located at approximately 1,300 to 1500 feet in elevation for TMK parcels # 336006082, #336006016, and #336006014, the LAS, and at approximately 2,200 feet in elevation for TMK parcel #336006046, the LFES. Lands located at elevations lower than 2,000 feet are primarily old cane fields, privately owned with scattered agricultural uses. The 20-acre parcel (TMK #336006046) is bordered by State-owned lands including the boundary of the HETF and is currently grazed by cattle.

Land along Manowaiopae Homestead and Spencer Roads is primarily private and State-owned with scattered residential and agricultural uses.

The current patterns of land settlement and remnant sugarcane on lands below 2,000 feet in elevation in much of the Laupahoehoe region reflect land uses initiated in the mid Nineteenth Century. At that time the lower portions of fourteen ahupua`a (traditional land subdivisions encompassing swaths of land running from the coast to the interior mountains) were sought for sugar plantations. By 1876, a full-scale plantation was incorporated and a mill established (Maly and Maly 2006). The Laupahoehoe Sugar Company and Mill secured fee-simple and lease-hold interests in lands of the Laupahoehoe vicinity. As the plantation developed, lowland forests up to about the 2,000-foot elevation were cleared for cultivation of sugar and for the development of flumes and water resources (Maly and Maly 2006). As a part of the plantation development, and the government's efforts to encourage settlement in the Laupahoehoe area, homestead lots were also established. The lower boundaries of the Forest Reserve lands where the LFES is located mark the edge of the homestead lots. By the late Twentieth Century sugar production on Hawai`i was no longer economically competitive with production in other tropical locations and the sugar plantations closed. Sugar cane remains a persistent, non-native element of the area's flora (for a more detailed discussion of past land use, see Maly and Maly 2006).

Climate, Geology, Soils, and Hydrology

Existing Conditions

The project area is located on the eastern, windward flanks of Mauna Kea. As the trade winds off the Pacific Ocean strike the mountain, moist air is elevated and cooled, resulting in cloudy weather, high rainfall rates and afternoon fog and mist in the area. Average annual rainfall in and around the proposed LAS is about 100-160 inches (http://www.fs.fed.us/psw/ef/hawaii/ http://www.bigisland-bigisland.com/Big-Island-Hawaii-Map.html). The average daily temperature is approximately 74˚ F, with an average minimum of 63˚ F. Geologically, the project site is located on Mauna Kea and the surface consists of basalt lava dated between 4,000 and 14,000 years old. (State of Hawai`i GIS data: http://hawaii.gov/dbedt/gis/).

Within the Laupahoehoe Project area there are four watersheds where project activity would occur: the Kilau Stream Watershed, the Kapili Stream Watershed, the Manowaiopae Stream Watershed, and the Laupahoehoe Stream Watershed. The 2006 State of Hawai`i Water Quality Monitoring and Assessment Report (State of Hawai`i, Department of Health, Environmental Planning Office 2008) was consulted to see if any of the project area streams are impaired based on the State of Hawai`i water quality criteria. The report shows that all of the project area streams meet the water quality standards set forth by the State of Hawai`i.

LFES

The dominant soil type within the approximately 3-acre project site where the outdoor education facilities will be constructed is Kiloa Extremely Stony Muck on topography with 6 to 20 percent slopes. The Kiloa soil series consists of well-drained, thin, extremely stony organic soils over fragmental a`a lava. For a complete description of these soil types see the Watershed and Soils Report.

The facilities for the LFES are to be constructed within an approximately 3-acre parcel of land. According to the professional survey conducted by the U. S. Forest Service, the parcel has slopes between 5 to 15 percent. Slope stability for the site is not an issue and drainage at the site is rapid with no evidence of standing water. Reconnaissance of the LFES facility footprint in October 2008 and November 2010 did not locate any existing wetlands or riparian vegetation.

LAS

The dominant soil types mapped within the LAS are Kaiwiki silty clay loam on topography with 10 to 20 percent slopes; Honokaa silty clay loam, low elevation, on topography with 10 to 20 percent slopes; and Rough Broken Land. The Kaiwiki and Honokaa soil series consist of deep, well-drained soils that formed in material weathered from volcanic ash. Both series occur on uplands (NRCS 2000). The Kaiwiki soils on the LAS occur in two large blocks, one occupies most of this high ground on the eastern portion of the site, occurring on all three TMK parcels. The other occupies high ground on the western side of TMK parcels #336006014 and #336006016, and includes most of the existing and proposed development areas surrounding the larger existing house proposed for conversion to administrative, guesthouse and classroom space. The Honokaa soils on the LAS occur as a single smaller block in the northwest corner of the sites on TMK parcel # 366006082, in the area of the smaller existing house proposed to be converted to a caretaker dwelling. Rough Broken Land is not a soil Series, but rather an association of soils composed of very steep land that is broken by numerous intermittent drainage channels. It occurs as gulches and mountainsides with slopes ranging from 40 to 70 percent (Ikawa, *et al*. 1985). The Rough Broken Land association on the LAS occurs along the Kilau Stream adjacent to Spencer Road on the eastern edge of the site, along Manowaiopae stream at the eastern margin of the site and along a tributary stream to Manowaiopae Stream running north and south through the center of the site. The only facilities proposed in areas of Rough Broken Ground association are existing driveway crossings, which may be rebuilt in place. No new development is proposed in this soil association due to its steepness and the presence of streams.

Access

Alternative 2

The Manowaiopae Homestead Road is the access route to the HETF and LFES under this alternative. The County of Hawai`i and private landowners who reside in the area cooperatively maintain Manowaiopae Homestead Road. The road is paved in the lower portions before becoming a mixture

of pavement and gravel shortly above the Kapili Stream crossing. Road surface width is approximately 10 to 12 feet. Road conditions support standard four-wheel-drive high clearance vehicles. The road showed little to no areas of rill (removal of soil by concentrated water running through little streamlets) or gully erosion. There are areas with past evidence of minor sheet erosion but, overall, the road base was stable and drainage structures were functioning.

Repair of the Kilau Stream bridge crossing is proposed in Alternative 2. The Kilau Stream is a small intermittent stream channel with a boulder and cobble substrate.

Minor road improvement at the Kapili Stream crossing is proposed in Alternative 2. The improvement would provide safer vehicle passage during high water events and eliminate other safety concerns related to the existing road undercut. The Kapili Stream is a 5 to 10-foot wide intermittent stream channel consisting of a boulder and cobble substrate. The vegetation in and around the stream and at the stream crossing site consists primarily of sugarcane (*Saccharum officinale)*, Hilo grass (*Paspalum conjugatum*), vasey grass (*Paspalum urvillei*), and Glenwood grass (*Sacciolepis indica*). The USGS Real Time Water Data for Hawai`i website (http://waterdata.usgs.gov/hi/nwis/rt) shows no past flow data for the Kapili Stream. Eyewitness accounts report that the stream is flashy. Flows approaching 6 to 10 feet above channel bottom elevation have been observed (PSW Staff 2008). The channel is stable, which bodes well for the work proposed for the site.

Access to the LAS under both action alternatives would be via Spencer Road, a Hawai`i County Road. No improvements to Spencer Road should be necessary.

Alternative 3

Access to the HETF and LFES under this alternative would require reconstruction of 0.21 miles of existing road and construction of a new road segment of 0.71 mile in length between Spencer Road and an existing eucalyptus plantation road on Kamehameha Schools land. The soil series mapped for almost the entire length of the roadway is Kaiwiki silty clay loam, topography of 10 to 20 percent slopes. This soil series consists of deep, well-drained soils that formed in material weathered from volcanic ash. The series occurs on uplands (NRCS 2000). There is a small area mapped as Rough Broken Land association where the new road crosses the Kilau Stream. The new road segment crosses four streams, the Kapili Stream, the Kilau Stream and two smaller tributaries to these streams. Each of these streams flows in gulch with stable boulder and cobble substrates. These gulches support some native vegetation, although non-native species predominate. During site reconnaissance in November 2010, a project botanist identified 21 native and 55 non-native plant species along the new road segment right of way.

Alternative 3 would also include the upgrade to the Kapili Stream crossing described above for Alternative 2.

Laws, Regulations, and Policies

Clean Water Act: Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into the waters of the U.S. in dealing with any of the following:

- Deposition (placement) of fill or dredged material in waters of the U.S. or adjacent wetlands.
- Site-development fill for residential, commercial, or recreational developments.
- Construction of revetments, groins, breakwaters, levees, dams, dikes, and weirs.
- Placement of riprap and road fills.

Executive Order 11990, 1977 (Wetlands Management): Requires Federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands. To comply with Executive Order 11990, the Federal agency would coordinate with the ACOE, under section 404 of the Clean Water Act, and mitigate for impacts to wetland habitats.

Executive Order 11988, 1977 (Floodplain Management): Requires all Federal agencies to take actions to reduce the risk of flood loss; restore and preserve the natural and beneficial values in floodplains; and minimize the impacts of floods on human safety, health, and welfare.

Mitigations and Management Recommendations

Mitigation measures are listed in Table 3. The Best Management Practices (BMPs) Manual for Construction Sites in Honolulu 1999 (Department of Environmental Services, City and County of Honolulu 1999) was consulted regarding implementation of BMPs for the project. Specific BMPs as listed in the Watershed and Soils Report are recommended to be implemented with this project. Implementation of these BMPs would insure protection of soil and watershed resources in the Laupahoehoe project area into the future.

Determination of Effects

Alternative 1

Implementation of the no-action alternative would keep existing soil and water resource conditions static. There would be no disturbance to the stream channel and floodplain at the Kapili Stream crossing site. Further, there would be no road maintenance to the Manowaiopae Homestead Road, no disturbance of the proposed roadway of the alternate access to the facility, and no disturbance would occur at the facility footprint site.

Alternative 2

Soils

There would be some impacts to soils at the project footprint sites. There would be a permanent allocation of the soil resource to construct the facilities. Approximately 0.23 acre of existing soils would be converted to impervious surfaces at the LFES and approximately 0.37 acre at the LAS. Temporary construction-phase disturbance would affect a somewhat larger area, although efforts will be made to minimize the overall disturbance footprint. All disturbed areas will be stabilized and screened from adjacent areas by siltation fences to limit construction effects to soils. With HETF lands located in the watersheds above, and State and county lands located just below, it is not expected that major allocations of other soils in the area would occur, making this a very minor overall impact to the soils resource in the area.

There would be minor impacts to soil in the vicinity of the Manowaiopae Homestead Road related to the improvement of the low water crossing of Kapili Stream and to reinforcement of the footings of the Kilau Stream bridge, and the small cuts and fills proposed to reduce grade steepness on road segments on Kamehameha Schools lands. The changes would affect only a very small area of lands already disturbed by construction of the existing road. All soil disturbing activities would include implementation of BMPs to limit the extent and duration of disturbance.

Hydrology and Water Quality

There are no surface waters within the portion of the LFES proposed for facility development. Although the creation of new impervious surfaces on a previously undeveloped site could somewhat alter site runoff and general surface hydrology, storm water management improvements will be designed to result in runoff flows that are similar to the undeveloped condition. Silt fencing is recommended to be in place and regularly inspected throughout the period from initial ground disturbance for development until all disturbed areas have been stabilized with established vegetation. These measures should prevent any impacts to water quality.

On the LAS all development will include measures to protect the two small streams that cross the site. Stabilization of an existing driveway crossing should reduce overall input of sediment at the crossing near Spencer Road. The proposed upgrades to existing facilities should not affect water quality or runoff patterns. Proposed facilities would include storm water management features to ensure that only minor changes in site runoff result from site development. Increasing the capacity of the septic system at the LAS would comply with all county building codes. Guidance from the County of Hawai`i Health Department or the NRCS may be warranted for specific soil types. Following the recommendations of the County of Hawai`i, Department of Health as well as obtaining a septic system permit would fulfill the obligations in HAR, Chapters 11-54 and 11-62.

Improvements to Manowaiopae Homestead Road for access to the LFES should result in little to no impacts to water quality or changes in stream hydrology. There would be minor impacts to the stream channel/floodplain at the Kapili Stream crossing for an upgrade to the existing low water crossing. The stream's flow capacity would not be compromised with this activity. The channel roughness would be changed at this site, but 12 to 15 feet of stream channel is so minor that is would not be detectable at a watershed scale. There would be minor impacts to the Kilau Stream during repair of concrete bridge footings. These repairs would be accomplished during low flows. For these reasons, the project would comply with Executive Order 11998

There is the potential for a flush of sediment during reconstruction of the low water crossing at the Kapili Stream, especially if construction is started and then interrupted by heavy rainfall that would produce a significant flow in the channel. It is recommended that construction occurs when heavy rains and stream flow are not likely. The work should not occur when the stream is flowing. This would reduce the risk of sedimentation to the Kapili Stream and protect water quality downstream. Following recommended mitigation measures and obtaining section 404 approval would protect overall water quality. Road maintenance activities would benefit water quality. Improvements to road drainage on the Manowaiopae Homestead Road would reduce the minor sediment yield currently entering project area streams from the road.

Alternative 3

The effects on soils, hydrology and water quality of the LFES and LAS under this alternative would be the same as those described above for Alternative 2 except that no work would be planned on the Kilau Stream bridge.

Soils

The effects of developing an access route to the LFES and HETF would include disturbance of soil for a reconstructed and new roadbed of approximately 0.92 miles. The total area of disturbance, assuming an overall width of 50 feet, would be approximately 5.6 acres. This is considered a minor impact in the context of the overall project area.

Hydrology and Water Quality

The new road would require construction of four new stream crossings. Similar to the case described above for the repair to the low water crossing of Kapili Stream by the Manowaiopae Homestead Road, there is the potential for a flush of sediment to be released into the streams during the construction of the crossings along the new road, particularly if a high flow event occurs during construction. Work would be scheduled for periods of low flow in the streams, and BMPs would be used to minimize construction phase impacts to water quality. The crossings should not result in any long-term change in stream hydrology beyond the immediate vicinity of the crossings.

Conclusion

Alternatives 2 and 3 are in compliance with all laws, regulations, and policies associated with soil and water resources. Negligible impacts are expected from any of these alternatives because implementation of any action alternative is required to follow applicable Federal and County regulations and policies related to stream channel alteration, drainage, and septic systems. Additionally, implementation of Best Management Practices (BMP's) for construction would further protect resources.

Fauna

Existing Condition

Due its extremely isolated location in the Pacific Ocean, Hawai`i supports a limited diversity of terrestrial wildlife, but has a high number of endemic species, that is, species that occur only on the Hawaiian Islands. There are only two native mammals on Hawai`i, the Hawaiian hoary bat (*Lasiurus cinereus semotu*) and the Hawaiian monk seal (*Monachus schauinslandi*). As the project site is over 3 miles from the coast, impacts to marine species are not anticipated. Hence, the analysis presented will focus on the Hawaiian hoary bat and any bird species potentially affected.

To assess bird diversity in the project area, bird surveys were conducted in October 2008 by the University of Hawai`i. The survey area included approximately 23 acres, including the 20-acre leased site and the Manowaiopae Homestead Road corridor. See the Wildlife Report for survey parameters and results. A total of 17 species were documented during the 2 days of surveying including 4 native/endemic species and 13 nonnative species (see Table 1 in the Wildlife Report). While the lease site contains a mix of open and forested habitat including both native and nonnative vegetation, habitat along the access routes and LAS includes a much larger component of openings and grassland/ agricultural habitat. It is important to note that removal or alteration of native plants has a far greater adverse effect on the habitat of Hawaiian native wildlife than does removal or alteration of nonnative plants. While some native wildlife species, including species of concern such as the Hawaiian hoary bat and Nene, may use nonnative plant habitats for portions of their life-cycles, such habitats are abundant and widespread. Native plant habitats are less abundant, and are often a limiting factor for native wildlife species (see Wildlife Report for a discussion of the importance of native plant habitat). The species descriptions or recovery plans for each of the federally listed wildlife species and State of Hawai`i Species of Greatest Need potentially affected by this project include lack of, or adverse effects to, native habitat among the threats to the species (USFWS 2006, DOFAW 2005a, b, & c).

The disturbance history of the LFES site and vicinity also affects habitat suitability for many species. For example, historically, the federally endangered Hawaiian Honey Creeper (*Oreomystis mana*), Hawai`i `Ākepa, (*Loxops coccineus coccineus*) and `akiapōlā`au (*Hemignathus munroi*) occupied

koa/`ōhi`a forest in this area. However, due to past development described previously and conversion of native forest, in combination with habitat degradation caused by feral ungulates, suitable habitat for these and many other species of native wildlife is now restricted largely to upper elevation habitat (HETF area), which has received less degradation. For more information regarding past occurrences in the area see the Wildlife Report.

Laws Regulations and Policies

The following laws, regulations, and policies apply to wildlife resources associated with all alternatives.

Endangered Species Act of 1973 (ESA): The purpose of the ESA is protection and recovery of imperiled species and the ecosystems upon which they depend. Under provisions of the ESA, Federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions authorized, funded, or carried out by the agencies are not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of their critical habitats.

Migratory Bird Treaty Act (MBTA) of 1918 as implemented subject to Executive Order 13186: The MBTA established an international framework for the protection and conservation of migratory birds. This act makes it illegal, unless permitted by regulations, to "pursue, hunt, take, capture, purchase, deliver for shipment, ship, cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird." Within the NEPA process, effects of proposed actions on migratory birds will be evaluated and actions will consider approaches to identify and minimize take (USDA-FS 2008).

Hawai`i Revised Statutes (HRS) Chapter 344-4; Item 3: Flora and Fauna: This law protects endangered species of indigenous plants and animals, ensures that any introduced species would not result in ecological hazards, and fosters the planting of native vegetation. Any activities proposed must analyze and evaluate effects to endangered species, their critical habitat, and native vegetation.

Hawai`i Administrative Rules Title 13 Department of Land and Natural Resources Subtitle 5: Forestry and Wildlife Part 2: Wildlife Chapter 124: Indigenous Wildlife, Endangered and Threatened Wildlife, and Introduced Wild Birds: These regulations provide the State DLNR, Division of Forestry and Wildlife, direction to conserve, manage, protect, and enhance indigenous wildlife and manage introduced birds. This is accomplished through Hawai`i's Comprehensive Wildlife Conservation Strategy (CWCS), which is used to identify species in the State of greatest conservation need. The CWCS can be accessed at: http://www.state.hi.us/dlnr/dofaw/cwcs/Conservation_need.htm.

Mitigation and Management Recommendations

Mitigation measures are listed in Table 3.

Methodology and Impact Analysis

To determine the scope of analysis, a preliminary evaluation including recent documentation of species occurrence, or the presence of species habitat in or near project area, was conducted for each potentially affected species. Fourteen species were evaluated in detail including federally listed threatened (T) and endangered (E) species, as well as Hawai`i's Species of Greatest Need (SOGN) documented in the last 20 years, or which have suitable habitat on the Laupahoehoe site (Wildlife Report, Table 3).

Determination of effects used a three-step process, including site assessment, wildlife screening, and habitat species assessments, to identify and assess potential impacts to wildlife and wildlife habitat. These processes are outlined in the Wildlife Report.

Determination of Effects

The effects to wildlife in general are described below by alternative. Following this description is a list of effects to federally listed threatened and endangered species and Hawai`i SOGN that could be impacted by proposed alternatives.

Alternative 1

Because there are no activities proposed under this alternative, there will be no direct effects to wildlife. The LFES was chosen because of its unique values and its proximity to HETF. Also, the site is located on lands managed by State of Hawai`i Department of Land and Natural Resources, Division of Forestry and Wildlife, a cooperator with PSW and HETF. Public education and demonstration provided by HETF is a key component of maintaining Hawai`i's native biodiversity (http://www.state.hi.us/dlnr/dofaw/cwcs/what_is.htm), as well as the recovery of many of threatened and endangered species (USFWS 1998; USFWS 1984; USFWS 2004; USFWS 2005; USFWS 2006). Under this alternative, no facilities would be constructed. While another site away from HETF would likely be selected at some point in the near future, selection of this alternative may somewhat delay or reduce educational/demonstration opportunities as compared to the action alternatives.

Because there are no direct or indirect effects, no cumulative effects to wildlife would be anticipated under this alternative.

Alternative 2

LFES: Construction of proposed facilities at the LFES would result in a small loss of predominately nonnative vegetation/habitat. Protection of native trees, in combination with restoration of native vegetation, should improve habitat conditions on portions of the site, and overall there would be little change in habitat due to the proposed activities.

Effects on wildlife include short-term disturbance (one season), avoidance by mobile species of the affected area, such as small mammals and birds, and possible mortality to less mobile species such as soil invertebrates that occupy the understory (grasses and shrubs) on the areas actually disturbed. Mortality of young and eggs of any cavity or tree roosting or nesting species would be greatly reduced or eliminated with implementation of the mitigation measure to protect breeding birds and flightless bats that prevents any tree removal during much of the breeding season (April 15 through September 1). As a result, effects to these species would consist largely of short-term (one season) avoidance. Also, because only a small portion of the site (a subset of the 3 acre development site) would be affected and 95 percent of the native trees unaffected, there would be adequate suitable habitat for all wildlife that use the area. Therefore, any direct and indirect effects are of limited extent and insignificant.

Ungulate-proof fencing is proposed to enclose approximately 3 acres at the LFES. The effects to wildlife of fence installation would include short-term disturbance of mobile species and/or possible mortality to less mobile species affected by clearing the fence line (approximately 0.25 acres affected). Mortality-related impacts would be minimized through implementation of the mitigation measure described above prohibiting tree removal from April 15 through September 1. The fence could present a hazard to wildlife that may potentially strike it or become entangled in it. However, the use of smooth, barbless wire on the upper portion of the fence is proposed to mitigate this impact.

To ensure that this mitigation measure is effective, the fence line will monitored for a period of 3 years, and appropriate additional mitigation measures implemented if necessary.

The fence would exclude cattle and feral ungulates from the LFES. This would benefit project efforts to restore native vegetation on disturbed areas. Although only a small area (up to 1.5 acres) would be affected by the re-vegetation within the fence, it would be the first time in over 100 years that the site would not be grazed. Consequently native herbaceous and woody vegetation could become re-established and provide habitat for native birds. Small native plant demonstration gardens within the fenced area are expected to be developed for educational purposes.

In summary, although some adverse affects associated with fence construction are possible, fencing out nonnative ungulates is recognized as a key wildlife restoration effort (USFWS 2006). Fencing, in combination with the educational component associated with the site, would be expected to provide long-term benefits to wildlife.

LAS: Construction of the proposed facilities at the LAS would result in conversion of less than 4 acres of existing vegetation to developed areas, including buildings, a solar panel array, driveways, and a parking area. Virtually all of the area to be altered supports nonnative vegetation/habitat. Abundant areas of similar habitat exist on areas of the LAS site not proposed to be disturbed and throughout the project vicinity. The noise and activity associated with construction may displace some mobile species that use LAS site, and some mortality to non-mobile species may result from construction. Wildlife would also be permanently displaced from the small area to be developed on the LAS. However, given the existing condition of the site, no effect to any federally or State listed species should occur. The direct and indirect effects to native wildlife from construction and operation of the LAS are considered to negligible.

Access: Although disturbance-related effects to wildlife, such as avoidance of the area by mobile species and some mortality to small, non-mobile species, would occur during construction, these would be limited to the construction period (a few months). Under this alternative, all access routes will use existing roads. As wildlife should be acclimated to use on the road, effects would be minor (short term) and localized.

Alternative 3

Effects to wildlife from facility use and development at the LFES and the LAS would be the same for this alternative as described above for Alternative 2.

Access: A total of 2.07 miles of road work are proposed under this alternative including 1.36 miles of road improvement on existing roads and 0.71 miles of new road construction. Effects to wildlife from the improvement of existing roads (1.36 miles) would be the same as described under Alternative 2 and would consist of largely short-term behavioral avoidance, although some long-term effects would occur along the road right-of-way due to maintenance of vegetation.

New road construction would involve clearing of vegetation and establishment of a roadbed on 0.71 miles, or approximately 5.6 acres. Of the lands proposed for clearing, most would involve non-native herbaceous vegetation or shrubs with little or no native tree removal. However, some native trees are present at stream crossings. Although removal of native trees would be avoided to the extent possible, some losses would likely be unavoidable. Also the road will be a narrow, single lane road and thus should not result in fragmentation of the forest canopy. The canopy over the road would largely be maintained.

Effects of proposed new road construction on wildlife include short-term avoidance during construction as well as possible mortality due to removal of vegetation. However, because of the small amount of native vegetation affected and considering that any tree removal will occur outside the breeding season for most native birds, the potential for mortality would be greatly reduced. Also there are no significant fragmentation related effects due to the narrow nature of the road and the fact that the lands affected support primarily non-native herbaceous vegetation.

Summary of Impacts to Federally Listed Species and Hawai`i Species of Greatest Needs

Impacts to individual species are analyzed in the Wildlife Report. Determination of impacts combines methodology of impact analysis as described previously with mitigation measures outlined in Table 3. Based on analysis presented in the wildlife report, there would be no effects or impacts from any alternative to the endangered Hawai`i crow; ‘alalā (*Corvus hawaiiensis)* or the following Hawai`i Species of Greatest Concern: short-eared owl, Pueo, (*Asio flammeus sanwichensis*); Hawai`i 'elepaio (*Chasiempis sanwichensis sandwichensi*); and Hawai`i thrush, ‘Oma’o, (*Myadestes obscurus*). Table 5 summarizes the alternative effects determination for these Federally listed or Hawai`i Species of Greatest Needs: Hawaiian hoary bat; Hawaiian hawk; Hawaiian duck; Hawaiian goose, Nēnē; ‘Apapane; ‘I’iwi; and Hawai`i ‘Amakihi.

Table 5: Impacts to Federally Listed Threatened and Endangered Species and Hawai`i Species of Greatest Need

Species	Alternative 1	Alternative 2	Alternative 3
Threatened (T) and Endangered (E) Species			
Hawaiian hoary bat (E) *Lasiurus cinereus semotus*	NE	NLAA	NLAA
Hawaiian hawk; (‘Io) (E) *Buteo solitarius*	NE	NLAA	NLAA
Newell's Shearwater (‘A’o) (T) *Puffinus auricularis*	NE	NLAA	NLAA
Hawaiian Petrel (‘Ua’u) (E) *Pterodroma phaeopygia Sandwichensis*	NE	NLAA	NLAA
Hawaiian duck; (Koloa Maoli) (E) *Anas wyvilliana*	NE	NLAA	NLAA
Hawaiian goose (Nēnē) (E) *Branta sandvicensis*	NE	NLAA	NLAA
Hawai'i Creeper (E) *Oreomystis mana*	NE	NLAA	NLAA
Hawai`i Species of Greatest Need			
'Apapane *Himatione sanguinea sanguinea*	NE	NEP	NEP
'I'iwi *Vestiaria coccinea*	NE	NEP	NEP
Hawai`i 'Amakihi *Hemignathus virens virens*	NE	NEP	NEP

NE – No Effect
NLAA – May Affect, Not Likely to Adversely Affect
LAA – May Affect, Likely to Adversely Affect

Cumulative Effects

Alternative 1:

Anticipated cumulative effects were evaluated by looking at effects of activities that occur within 0.25 mile of the LAS, LFES, or access road corridors. This distance was chosen as appropriate to include the habitats of moderately mobile wildlife species not likely to able to avoid affected areas. Anticipated changes in land use and future activities (next 2 to 5 years) within the analysis area are summarized in the "Cumulative Effects" section of this document and discussed in the Wildlife Report. Because there will be few changes in existing use or habitat conditions, and considering the small size and localized nature of the activities anticipated in the future, there are no measurable cumulative effects to wildlife or wildlife habitat anticipated under Alternative 1.

Alternatives 2 and 3

Cumulative effects under Alternatives 2 and 3 include activities described under Alternative 1 and direct and indirect effects described above under these alternatives. Activities proposed under the action alternatives would affect habitat on up to a 3-acre area at the LFES and a larger area of the LAS, as well as along the access roads. Based on the analysis of direct and indirect effects, implementation of Alternatives 2 and 3 would not measurably contribute to any other past, current, or reasonably foreseeable future activity that would result in effects to wildlife.

Conclusion

Alternatives 2 and 3 comply with all Federal and State laws, regulations, and policies associated with wildlife including consultation with the USFWS. Mitigation measures have been developed to reduce impacts to wildlife including federally listed species. Alternatives 2 and 3, with implementation of mitigation measures, would result in little or no impacts to wildlife or State listed species, and no adverse effects to federally listed species.

Flora

Existing Condition

Native plant abundance and diversity in the project area is considerably lower than in the adjacent forest reserve due to past agricultural use. No species of plants listed as Threatened or Endangered under the federal Endangered Species Act are known to occur in the project area. In addition, no plants listed by the State of Hawai`i as species of special concern occur in the project area. See the *Botanical Survey of Proposed Facilities and Access Roads: Hawai`i Experimental Tropical Forest, Laupāhoehoe, Hawai`i* for additional information about specific species occurrences.

The State of Hawai`i parcel that includes the LFES has been subject to grazing by domestic livestock for at least 30 years and by feral ungulates for at least 100 years. The lands below, or downhill from (makai) the State of Hawai`i parcel include a plantation of the non-native eucalyptus tree (*Eucalyptus grandis*), and further makai most of the landscape was cultivated in sugar cane between the late Nineteenth and late Twentieth Centuries.

The vegetation along Manowaiopae Homestead Road (Alternative 2 access to the HETF and LFES) is mostly open pasture with introduced grasses dominating the understory. Native and nonnative

canopy and sub-canopy trees are scattered throughout. A portion of each access route runs through a stand of planted *Eucalyptus grandis*.

Vegetation along Spencer Road and the proposed new road alignments (Alternative 3 access to the HETF and LFES) is similar to that along Manowaiopae Homestead Road, open pasture dominated by introduced grasses with scattered native and nonnative shrubs and trees. The new road proposed to join existing eucalyptus plantation roads on Kamehameha Schools lands to Spencer Road crosses grazed pastures dominated by non-native grasses in upland areas. The route crosses four stream gulches that are dominated by non-native trees, but include an admixture of native trees, tree-ferns and scattered epiphytes ("air plants" that receive nutrients and moisture from the air and rain, and typically grow on tree limbs and logs). Nearly all the native plants found on the LAS were growing in the gullies.

The vegetation within the LFES is a mosaic of scattered native trees (*Metrosideros polymorpha, Pisonia umbellifera* and *Acacia koa*) with thickets of nonnative trees (*Toona ciliata, Grevillea robusta, Psidium cattleianum* and *Ficus macrophylla*). Open areas are dominated by pasture grasses. The area encompassing the LFES has been grazed by domestic cattle for the past 30 years. The LFES is also located within NRCS Statewide important Farmlands classification.

Vegetation within the 55-acre LAS is dominated by introduced grasses planted on all the level areas that were formerly cultivated in sugar cane. The only native plants on the level areas of the LAS are a few scattered ohi`a trees and kilau fern (*Pteridium aquilinum*). The area had been used as both grazing land and residential properties since the sugar cane cultivation ceased in the late 1980s or early 1990s. There are scattered exotic trees and shrubs planted as ornamentals. The riparian gullies through the site support some ohi`a growing above a dense understory of strawberry guava (*Psidium cattleianum*), common guava (*P. guajana*), rose apple (*Syzygium jambos*), Coster's curse (*Clidemia hirta*), and other exotic plants.

Laws, Regulations, and Policies

The following laws, regulations, and policies apply to botanical resources associated with all alternatives.

Endangered Species Act of 1973 (16 U.S.C. 1531-1544): The law requires Federal agencies, in consultation with the USFWS to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

Executive Order 13112: This order, in combination with other acts (http://ceq.hss.doe.gov/nepa/regs/eos/eo13112.html), prevents the introduction of invasive species and provides for their control; and minimizes the economic, ecological, and human health impacts that invasive species cause.

Hawai`i Revised Statutes (HRS) Chapter 344-4; Item 3: Flora and Fauna: (1) Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard; and (2) foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.

Farmland Protection Policy Act (FPPA), 1981 (P.L. 97-98): The purpose of the FPPA (7 U.S.C. 4201 et seq) is to minimize the role Federal programs have in the conversion of farmland to nonagricultural uses and to ensure that Federal programs are administered in a manner that will be compatible with

State, local, and private programs and policies to protect farmland. The FPPA directs Federal agencies to identify the adverse effects of their programs on farmland preservation; to consider alternative actions; and to assure that Federal programs are compatible with State, local, and private policies to protect farmland.

Mitigations and Management Recommendations

Mitigation measures for invasive species and native vegetation are described in Table 3 of this document. Management recommendations include preservation of 95 percent of the native trees on development sites and preservation of native *Pisonia umbellifera* trees to the fullest extent possible.

Methodology and Impact Analysis

Pre-field review of the project area was conducted to determine occurrences of federally and State-listed species and habitats. Field surveys were conducted by Hawai`i Division of Forestry and Wildlife district botanist on October 13, 2008 and four site visits by a consulting botanist in September through November 2010. No threatened, endangered, or rare plant species or habitats were identified within the area. For a complete review of existing conditions, survey parameters, and species identified during the survey see the botanical assessment and Botany Report. A Farmland Conversion Impact Analysis (AD-1006) was completed for the project area. The proposed conversion associated with all action alternatives is consistent with FPPA 7USC4201, and based on the site assessment criteria, is below levels considered to be detrimental or that would contribute to unnecessary and irreversible conversion of farmland to non-agricultural uses.

Determination of Effects

Alternative 1

As no alteration of vegetation is proposed, there would be no direct, indirect, or cumulative impacts to any federally listed plant species or rare plants.

Alternative 2

No direct, indirect, or cumulative impacts to federally listed plant species or rare plant species would occur from the activities proposed in this alternative, because no such habitat or plant species were identified. Mitigation measures associated with invasive species, in addition to re-vegetation with native species after construction, would likely create additional native plant habitat. Although no federally or state listed rare plant species occur in the project area, native trees will be protected in site development as described above in the Fauna section to conserve habitat value.

Alternative 3

No direct, indirect, or cumulative impacts to federally listed plant species or rare plant species would occur from the activities proposed in this alternative, because no such habitat or plant species were identified. Mitigation measures associated with invasive species, in addition to re-vegetation with native species after construction, would likely create additional native plant habitat. The new road segment proposed to access the HETF and LFES under this alternative crosses gullies that support a greater abundance and diversity of native plants than does the access route proposed under Alternative 2. None of the plant species that would be affected are federally or State listed as rare species. Although no federally or state listed rare plant species occur in the project area, native trees will be protected in site development as described above in the fauna section to conserve habitat value.

Conclusion

All alternatives are in compliance with laws, regulations, and policies associated with botanical resources. No impacts are expected to federally listed or State rare species, because none were identified during field surveys. Mitigation measures including those associated with invasive species and re-vegetation with native species would result in beneficial impacts to the area.

Scenery

Existing Condition

Landscape Character Description. Landscape character represents distinct attributes of landform, vegetation, surface water features, and cultural features that exist in the landscape. In the largest context of place, the Hawaiian Islands are considered unique. The extreme isolation of the islands produced, through evolution and specialization, a remarkable collection of species found nowhere else on the planet. These natural treasures are integral elements of the biological and cultural heritage of the Hawaiian Islands and their people.

The project area described within the EA constitutes the 20-acre LFES, the 55-acre LAS, and two alternative access routes along the Manowaiopae Homestead Road and Spencer Road/proposed new road corridors. From the scenic perspective the project site for the center lies on the lower northeasterly facing flank of Mauna Kea, mauka of the Hamakua coastline in the District of North Hilo. The project site is bounded by the town of Laupahoehoe and the Pacific Ocean to the northeast and Laupahoehoe Gulch on the north. The summit of Mauna Kea rises approximately 13,800 feet in elevation to the southwest of the site, although views of the mountain are obstructed by vegetation, topography, or both. Lava rock extrusions and overland flows create interesting texture and color in the landscape; the lava is gray to black when recent, and shades of brown on exposed and weathered surfaces. For a complete discussion of the unique landscape characteristics that comprise this broader analysis area see the Scenery Report.

The landscape down slope from the proposed site through which the two alternative access routes pass is abandoned sugar cane plantation land. When this land was actively used for agriculture, the landscape appeared as rural/farming. Now the landscape has transformed into a patchwork of remnant sugar cane, pastures, and meadows, with several riparian drainages and a stand of eucalyptus trees remaining from a previous commercial timber operation. Both Manowaiopae Homestead and Spencer Roads wind along the slope. Toward Laupahoehoe, the roads are bordered by scattered Hawaiian-style houses on acreage lots, surrounded by a variety of vegetation types. The style known as Hawaiian plantation architecture has become a signature style for Hawai`i and is the most recognizable Hawaiian style featuring low-profile wood frames, vertical plank siding, and large porticos (lanais). Roofs are distinguishable parts of Hawaiian plantation structures, wide-hipped or bell-cast with eaves that are deep bracketed. When viewed against the natural Hawaiian environment, Hawaiian plantation structures blend easily with their surroundings. The style gets its name from the sugar and pineapple plantations which employed the design for laborer homesteads.

From many points along the access roads there are sweepingly dramatic views of the ocean where not obstructed by high grasses and eucalyptus trees. From this elevation, it is possible to watch weather fronts move in across the ocean and observe ocean vessels along their route in between islands. Ocean views, while common on all islands, are always highly valued and on the Big Island tend to increase financial value of property. The Hamakua Coast, from near Waipio Valley to Hilo Bay, is comprised of a sea cliff 100 to 300 feet high. This scenic element, while highly valued and extremely

important to the area's character, is below the viewing plane and cannot be seen from either the proposed access routes or the facility sites.

Seen Area Integrity of the Access Roads and Proposed Sites: Both alternative road alignments either occupy or pass through private land. Only the short road segment on the State lease parcel is on public land. The beginning of the project at the wooden bridge is at the very edge of the residential development of the town of Laupahoehoe. Residential buildings are typical of local architecture. The road itself is the viewing plane from which the narrow corridor is observed, views of the surrounding fields and out to the ocean occur intermittently, but the vegetation at the lower elevations and through the eucalyptus plantation creates a "hall" type of view. The road winds considerably creating a sinuous feeling as the viewer passes through. As the road reaches the project site it opens on to more forested landscape, one more open than the natural forest because it is maintained and used as pasture. The last structure on the Manowaiopae Homestead Road is 1.5 mile mauka from the bridge; fencing, gates and occasional rusting equipment left from the cane plantation dot the corridor. Cows stand and walk on the road, as do wild pigs occasionally, and birds can be seen all along. The valued view from the road and adjacent properties is north and sometimes northeast to the ocean. The views from the Spencer Road access alternative are similar to those from Manowaiopae Homestead Road, as the roads roughly parallel one another and are mostly less than 1 mile apart. The view from the new road proposed to access the HETF from the mauka end of Spencer Road is of grazed pasture with scattered trees. The long view from this area includes the valued view of the ocean.

The LFES is also pasture, and thus more open than the forest unit—the wall of thick vegetation along the Laupahoehoe forest unit boundary is visually evident, and the more open views of meadows with individual and clumps of trees is a main characteristic of the site. Herds of cows stand and move across the site because a watering pond is in the south quadrant; often the ground is disturbed by the cows or wild pigs. Internal views on the site are of ohi`a and pisonia trees, guava, shrubs and grass grazed to a few inches. It is possible to see out to the ocean from several points within the 20 acres; the view is limited and at a distance, but on a clear day an amazing spot of periwinkle blue. The terrain slopes moderately toward the north/northeast with two small drainages that are rutted with lava protruding along the edges, but the outcrops are not features because they are covered by vegetation and common in this landscape. The valued view is the native vegetation.

The LAS is former sugar cane plantation land now supporting dense stands of non-native grasses. The 55-acre site is very sparsely developed, with two modest dwellings and a few outbuildings of differing sizes. The valued view from the LAS is the Pacific Ocean to the north and northeast. The Hamakua Coast, while extremely important to the area's scenic character, is below the viewing plane and cannot be seen from any part of the project area.

Laws Regulations and Policies

The following laws, regulations, and polices apply to scenic resources associated with all alternatives.

*Hawai`i Administrative Rules title 11, Dept of Health, chapter 200, sub chapter 6, line (b) item 12:* The State of Hawai`i's planning directions state an action will have a significant effect if it "substantially affects scenic vistas and viewpoints identified in state or county plans or studies." Therefore the Hawai`i County regulations identifying and guiding scenery management are important to this evaluation.

*Hawai`i County General Plan*: The Hawai`i County General Plan states in Chapter 7-Natural Beauty: "Natural beauty is a multifaceted resource. It is an aesthetic resource experienced by human perceptions. It is an economic resource, as evidenced by the scale of resort development and by

visitor-related activities. Real property values further substantiate the economic value of Hawai`i's dramatic beauty." The introduction to Chapter 7 also cautions that Hawai`i's natural beauty is: "fragile and although often enhanced by man can easily be adversely affected. Measures must be taken to insure its protection, both now and in the future, for the enjoyment of Hawai`i's residents and visitors." General plan items that relate to evaluation of action alternatives include:

- 7.2 Goals: (b) Protect scenic vistas and view planes from becoming obstructed.
- 7.3 Policies: (b) Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations. (e) Develop standard criteria for natural and scenic beauty as part of design plans.
- 7.4 Standards: (b) Coastline areas of striking contrast, e.g., Laupahoehoe Point.
- 7.5 Districts, North Hilo: "One of the most outstanding areas of natural beauty in North Hilo is Laupahoehoe Point. The point juts out calmly, ending in a rugged coastline with pounding surf in either direction along the coast are views of the high cliffs. The deep gulches with silvery green Kukui trees contrasting with the darker green vegetation along the highway are also points of natural beauty."
- Kilau Gulch and Laupahoehoe Gulch are listed in North Hilo District as "Natural Beauty Sites." Laupahoehoe Gulch forms the northerly boundary of the project area, whereas Kilau Gulch runs through the project area.

Forest Service Scenery Management Direction: This does not officially apply because the land is not part of the National Forest System; however, because the U. S. Forest Service is a cooperating partner in HETF, and owns the LAS parcels, the Forest Service Scenery Management System (SMS) has been applied as a descriptive and organizational scheme for the project evaluation. The land management partner, State of Hawai`i, Department of Land and Natural Resources, Division of Forestry and Wildlife, does not typically evaluate and manage scenery, but incorporates county rulings when appropriate.

Mitigation and Management Recommendations

Public scoping identified concerns regarding management of this project. In response to those concerns the following management recommendations would be implemented. When trees are removed from the LFES, it is important to avoid dragging boles over road banks. Landscape contours changed by tree removal or construction should be restored to natural shape, and disturbed areas should be reclaimed by planting or seeding with native plants. Residue or slash should be removed from the building site and grounds; although some plant material can be crushed and spread so that it appears to be natural ground cover. Buildings should follow the locally accepted plantation architectural style and use carefully muted and blended colors, textures, and forms.

Methodology and Impact Analysis

The evaluation relies on field studies and photography from inventoried viewpoints and other views of the project area, as well as consideration of public preferences for scenic quality. Scenery is valued by the State, County, and the local community, and is important to the HETF.

Analysis Issue: Natural landscape appearance without obstructions or anomalies

Indicators: (1) Natural appearing scenery, (2) intrusion of visual anomalies, and (3) changes to existing roadsides and forest landscape.

Type of Impact:

Adverse: Activities that lead to the temporary intrusions in to the scenery, or long-term change in scenic integrity of the vista; and/or temporary presence of mechanical equipment in a localized area.

*Beneficial***:** Activities that enhance the scenic experience including opening of vistas and opportunities for enhancement to the scenery by increasing native vegetation.

For a complete description of intensity, context, and duration of impacts that include the terms *negligible, minor, moderate* and *major, regional, local*, *long term* and *short term*, see the Scenery Report.

Determination of Effects

Alternative 1

The no-action alternative would result in no discernable change to the visual resource and little perceived change for the future. The existing road corridors would remain in their present condition with no improvements and the proposed facility sites would not change.

Alternative 2

LFES: A covered pavilion, restroom building, and small parking lot proposed to be developed on 3 acres at the 20-acre leased site would change the appearance in the foreground from forested pasture and native tropical forest to that of rural development. The desired scenic character for the project area includes two elements: the blending of built structure into the forest surrounding so as not to diminish the natural aesthetic and to use an architecture style fitting into the Laupahoehoe (Lava Leaf) place, including the nearby rural community. The proposed buildings would follow the locally accepted and encouraged plantation architectural style and would use carefully muted, blending colors, textures and forms. The development would thus be suitable for the locale and relate visually to the town. This area has a very limited viewing audience: a few ranchers and hunters, and the research scientists. In the future, access would remain limited. The majority of viewers would be the scientists, researchers, educators and their audiences using the structures.

The effect is long term, local, and major to the immediate foreground. Middle and far ground views have no effect because the vegetation and topography screen the site from view. There are similar built environments nearby (2 to 4 miles). Although the change to the appearance of the site would be major, the importance of this change is mitigated by its context. The LFES is remote and visually screened from viewers beyond its immediate vicinity. Very few people are likely to view the site other than those specifically coming to use the site's facilities. The regional effect to scenery of developing the LFES would thus be minor. Revegetation with native plants, removal of invasive species at the site, and limiting the removal of large trees would be a beneficial, long-term effect to scenery.

LAS: Multiple buildings, a parking lot, internal driveways, water tanks and photovoltaic arrays are proposed for this site. Other than the parking lot, the proposed facilities are all consistent with the rural development that exists on the site and in the area. The proposed buildings (a bunkhouse, restroom facility, and garage/workshop) would follow the locally accepted and encouraged plantation architectural style, and would use size and color similar to existing buildings on the site. The overall construction proposed for the LAS, while representing an increase in site development, would be visually consistent with the scattered residential developments in the area. Site buildings would be visible to travelers on Spencer Road, although screened by existing trees, tall grass and terrain.

Individuals at some points makai of the site would also be able to see the buildings, but the buildings would not stand out visually from other buildings in the larger context.

Manowaiopae Homestead Road Access: Improvements to the road surface would be beneficial, but negligible in regard to scenery because the appearance of the road would not change in view of the common observer and the road is not part of the scenic view. The low water crossing would be a beneficial, long-term effect—the added safety features of water depth indicators and a safer road bed would be seen by motorists as improvements. The proposed repairs to the Kilau Stream bridge would change the appearance of the road to only a minor extent.

Cumulative scenic quality is within the seen area of the proposed development sites and the road corridor. Past, ongoing, and future activities associated with this project are outlined in the "Cumulative Effects" section of this document. Based on these activities, there would be no cumulative effects to the foreground, middle ground, or far ground views from this alternative combined with those actions. Any actions regarding vegetative management resembling natural condition for this land adjacent to the forest unit would be beneficial, long term, and regional.

Alternative 3

The effects of this alternative upon the LFES, LAS, and Manowaiopae Homestead Road would be consistent with the effects cited for Alternative 2, except that the bridge upgrade would not be performed under this alternative

HETF and LFES Access: No improvements to the existing Spencer Road are proposed. The new road proposed to join Spencer Road and an existing private road on the Kamehameha Schools property would be built to a single lane standard consistent with other low use roads in the area. This road would alter the natural appearing scenery of the new road alignment for approximately 0.7 mile. This effect would be a major adverse impact to scenery along the roadway. The regional intensity of this effect would be minor, however, as the road would be visually screened from view by vegetation and terrain to all but travelers on the actual roadway.

Cumulative scenic quality is within the seen area of the proposed development sites and the road corridor. Past, ongoing, and future activities associated with this project are outlined in the "Cumulative Effects" section of this document. Based on these activities, there would be no cumulative effects to the foreground, middle ground, or far ground views from this alternative combined with those actions. Any actions regarding vegetative management resembling natural condition for this land adjacent to the forest unit would be beneficial, long term, and regional.

Conclusion

Both action alternatives comply with all the State and County rules, plans, and Federal direction set forth for scenery management. No areas considered natural beauty sites within the Hawai`i County General Plan, would be adversely affected by any of the proposed activities. Some locally major effects to scenery would occur from implementing Alternatives 2 and 3, but they would be minor in a regional context.

Air Quality

Existing Condition

Air pollution on the Big Island is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that persistently blankets the north

and south Kona areas. Depending on wind directions, the Hilo area can also experience some vog conditions. The existing trade winds in and near the Laupahoehoe area provide excellent air movement. This, coupled with low density of population in the area, results in very good air quality.

Laws, Regulations, and Policies

The following laws, regulations, and polices apply to air quality resources associated with all alternatives.

Hawai`i Administrative Rules, Chapter 59 Code of Federal Regulations, Title 40, Part 50

Determination of Effects and Conclusion

Equipment associated with construction and road improvement activities as outlined in Alternatives 2 and 3 is not expected to exceed State ambient air quality standards (HAR 59, Title 40 Part 50) and would not have any measurable direct or indirect effects on air quality. No other impacts to air quality should result from implementation of either action alternative.

Noise

Existing Condition

Noise levels at the proposed LFES center are minimal. The only unnatural sounds discernible are caused by vehicles that drive by the area infrequently to access HETF. All gates to the area are locked and access to the area is limited to State and Federal employees and individuals holding permits to conduct research in the HETF.

Noise levels at the proposed LAS are low. Passing vehicles on Spencer Road are audible, but the road is lightly traveled. The nearest neighboring home is approximately 500 feet from the nearest point on the LAS, and considerably further from the developed portion of the site.

Laws, Regulations, and Policies

The following laws, regulations, and polices apply to noise associated with all alternatives:

State of Hawai`i Department of Health, Title 11, Chapter 46, HAR (Community Noise Control)

Mitigations and Management Recommendations

Whenever construction noise is expected to exceed the Department of Health's (DOH) "maximum permissible" property-line noise levels, contractors will be required to consult with DOH per Title 11, Chapter 46, HAR (Community Noise Control) prior to construction.

Determination of Effects

Alternative 1

No new construction or any other noise producing activities would occur under this alternative, so no noise-related effects should result.

Alternative 2

Construction Phase: Activities associated with this project such as road work, trenching, and use of heavy equipment during construction would likely increase noise levels in localized areas for short

periods of time. These activities may occur at different times during the construction phase of the project. During these short-duration periods it is possible that noise levels from equipment such as jackhammers, pile drivers, and chain saws may reach noise levels of 120 decibels. Approved community noise permit or variance would be obtained as required by the Hawai`i State Department of Health (http://hawaii.gov/health/environmental/environmental/noise/noisesection/). DOH would then review the proposed activity, location, equipment, project purpose, and timetable in order to decide whether a permit is necessary and what conditions and mitigation measures, such as restriction of equipment type, maintenance requirements, restricted hours, and portable noise barriers, would be necessary. Moderate, short-term noise effects would be likely to result from the construction phase.

Operation Phase, LFES: This facility would host small group assemblies and interpretative lectures. There would be no electrical power on-site, and activities would produce low levels of noise. It is not considered likely that noises generated on-site would be audible at the nearest residences. Overall noise effects would be local and negligible.

Operation Phase, LAS: Noise generated from the operation of a diesel generator is estimated to be between 60 to 75 decibels (Swienton 2009). This noise level is comparable to busy traffic, a dishwasher, or a vacuum cleaner (ASHA 2009). Sounds louder than 80 decibels are considered potentially dangerous; however, the amount of noise and the length of time of exposure determine the amount of damage. Noise from operation of a generator would not impact private landowners nearby as the generator would be located within a building to reduce decibel level. The nearest residence is more than 500 feet from the property boundary and more than twice that distance from the location of the generator. There is no record of complaints of excessive noise from the existing generator operation which has been operated sporadically over the past 4 years. It is important to note that the generator would operate only during periods of unusually high electrical power demand at the LAS or prolonged periods of cloudy weather, as the solar electric facilities proposed will provide most of the electrical power projected to be used at the facility. Noise effects would be local and moderate.

Access: It is anticipated that research scientists accessing LAS, LFES, and HETF would use the road with a frequency of approximately one to two vehicles per day above current levels of road usage. Educational use in the form of field trips hosted by PSW staff is anticipated to be one or two high clearance vans transporting visitors to the site occasionally on weekends and eventually reaching one educational visit per week. Noise levels associated with vehicle traffic accessing LAS and HETF are not expected to exceed State of Hawai`i Department of Health, Title 11, Chapter 46 HAR Community Noise Control levels. Intermittent moderate noise effects would occur along the Manowaiopae Homestead Road access route.

Alternative 3

The noise effects of Alternative 3 should be equivalent to those of Alternative 2, except that construction and access noise impacts would also occur along the Spencer Road and newly constructed road access route.

Conclusion

Noise associated with construction activities proposed in both action alternatives is expected to be minor and short term. If noise levels exceed DOH permitted levels, a community noise permit or variance would be obtained from the DOH to reduce any potential short-term impacts. All other noise generating equipment associated with the LAS (for any alternative) would not exceed DOH standards.

Hazardous Substances

Existing Condition

LFES: According to the archeological report (Heritage Report) there is a 1963 automobile that was likely left on the property on or about 1969. It is possible that there were hazardous substances associated with the dumping of this vehicle such as a battery, oil, or gasoline. Recent site visits did not indicate presence of any other hazardous materials.

LAS: Prior to the purchase of the three properties (TMK parcels #336006016, #336006082, and #336006014) that constitute this site, the PSW contracted a Phase I site investigation to identify any hazardous materials on the properties. This investigation (the report is available in the project record) included review of land use records, interviews of persons knowledgeable of the properties' history, site visits by an environmental professional experienced in field identification of hazardous materials, and chemical analysis of site soils for hazardous chemicals that may have been used in sugar cane cultivation. The investigation did not identify any contamination of the properties.

Laws, Regulations, and Policies

The following laws, regulations, and policies apply to hazardous substances:

Comprehensive Environmental Response Compensation, and Liabilities Act (CERCLA). This Federal law, enacted in 1980, commonly called "Superfund," created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Section 120 of CERCLA established due diligence procedures for hazardous materials screening prior to land purchase.

Hawai`i Department of Health, Hazard Evaluation and Emergency Response, *Screening For Environmental Hazards at Sites With Contaminated Soil and Groundwater*, (Summer 2008). This technical report provides guidance on action levels for a variety of environmental contaminants.

Determination of Effects and Conclusion

The history of use at the project sites, as well as direct investigation of the LAS, suggests no hazardous materials contamination. Development and use of all aspects of the Laupahoehoe Construction Project should thus pose no problems associated with exposure to hazardous materials during construction or long-term use of the facility under either of the action alternatives.

Socioeconomic and Cultural

Cultural and Archaeological Resources

Existing conditions from a cultural and archeological resource standpoint are similar to those discussed in the "Flora" section of this report.

Laws, Regulations, and Policies

The following laws, regulations, and polices apply to heritage, cultural, and historic resources associated with all alternatives.

- This analysis is in conformance with regulations of the National Historic Preservation Act (NHPA), 1966, as amended (P.L. 89-665, 80 Stat. 915); the National Environmental Protection Act (1969); Archaeological Resources Protection Act of 1979 (ARPA); Native American Grave Protection and Repatriation Act (1990: P.L. 101-601); and American Indian Religious Freedom Act (1978: P.L. 95-341).

- Forest Service Manual 2360.1 outlines the applicable laws, regulations, and Executive orders complied with during this analysis. Although written for, and primarily applicable to National Forest System lands, these laws, regulations, Executive orders, and stipulations will be considered for Laupahoehoe Construction Project alternatives as well. Plans or protection measures developed in the future would apply. The regulations also incorporate elements from NEPA. NHPA and its implementing regulations require Federal agencies to consider the effects of their undertakings on historic properties. Protection of Historic and Cultural Properties, 36 CFR 800, outlines the set of procedures established by the NHPA that Federal agencies follow before implementing an action that may affect historic properties. The term "historic properties" refer to cultural properties as those that have been listed or determined eligible for the National Register of Historic Places (NRHP).

Methodology and Impact Analysis

The methodology includes two basic approaches of analyses. The first method included a cultural-historic resources study, prepared by Kumu Pono Associates (Maly and Maly 2006). This document references the ethnographical and historic uses of the region, and identifies several historic, ethnographic, and archaeological site types and features that may be found in the proposed project area. In the collection of native and historical accounts, Kumu Pono Associates notes that the lands of the Laupahoehoe forest region were frequently mentioned in several prominent traditions. Significantly, the importance of the Laupahoehoe region koa forests, mountain bird habitats, and the traditional trails which connected the lowlands with the mountain lands and neighboring districts, are frequently referenced in traditions and historical accounts.

The research conducted as a part of the study is consistent with Federal and State laws and guidelines for such studies. Among the pertinent laws and guidelines are the NHPA; the Advisory Council on Historic Preservation's "Guidelines for Consideration of Traditional Cultural Values in Historic Preservation Review" (ACHP 1985); National Register Bulletin 38, "Guidelines for Evaluating and Documenting Traditional Cultural Properties" (Parker and King 1990); the Hawai`i State Historic Preservation Statue (Chapter 6E), which affords protection to historic sites, including traditional cultural properties of on-going cultural significance; the criteria, standards, and guidelines currently utilized by the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) for the evaluation and documentation of cultural sites (cf. Title 13, Sub-Title 13:275-8; 276:5 – 2003); and the November 1997 guidelines for cultural impact assessment studies, adopted by the Office of Environmental Quality Control (which also facilitate the standardized approach to compliance with Act 50 amending HRS Chapter 343; April 26, 2000) (Maly and Maly 2008).

As a part of research conducted over the last 10 years on the mountain lands of the Hilo and Hämäkua region, the authors have investigated a wide range of archival-historical literature, referencing both native Hawaiian language and English texts; and conducted field visits and interviews with elder kama'äina (native and long-time residents) known to be knowledgeable about the history, residency, and land use on the 'äina mauna (mountain lands), of which the proposed Laupahoehoe HETF is a part. The narratives cited in this study provide readers with access to a rich and diverse collection of

cultural-historical accounts for these lands, situated on the ko‘olau (windward) side of the island of Hawai`i (Maly and Maly 2008).

No cultural concerns or issues specific to the proposal were identified by the Kumu Pono Associates study. The project area was primarily used in a way that would not leave an archaeological record, such as harvesting trees or collecting flora and fauna. Other uses that have the potential to leave an archaeological record include, but are not limited to, well-worn and/or maintained trails, shrines, or burials.

The second method included a records search and field inventory of the project area in an attempt to locate potential archaeological features or properties. The State Historic Preservation Department (SHPD) of Hawai`i (Hilo Office) was consulted August 14, 2008, and November 17, 2008 (Donham 2008). Basic methodologies and professional credentials were reviewed.

A pre-field review of the LFES area was conducted in the Hilo SHPD office on December 4, 2008, to determine whether previous studies or cultural and historic properties were known for the area. No previous archaeological studies had been conducted within the project area or surrounding vicinity. The cultural and historical research report by Kumu Pono Associates was discussed and determined to be more than adequate to meet the Native Hawaiian organizations consultation requirements of 36 CFR Part 800. A discussion of expected/potential resource or property types occurred (Donham 2008, *personal communication*). In addition, the SHPD provided TEAMS archaeologists with several copies of report formats and State of Hawai`i guidelines.

Intensive archaeological surveys were conducted December 5 through 8, 2008. As a result of these investigations, one potentially historic property was identified at the low water crossing of Kapili Stream. This consisted of an approximately 15.5 foot high by approximately 51 foot wide semi-circular retaining wall. In further consultation with the Hilo SHPD (Donham 2008, *personal communication*), it was determined that the retaining wall was probably constructed during the 1970s, and is not considered historically significant. As a result, no cultural or historic properties were identified within the area. For a complete review of existing conditions, survey parameters, and species identified during the survey see the Archaeological Assessment and Cultural-Historical Reports (Maly and Maly 2006).

Determination of Effects

For all alternatives, no direct, indirect or cumulative impacts to historic or cultural properties would occur from any of the proposed actions, due to the fact that no cultural or historical properties were identified. Incorporation of the mitigation measures would reduce impacts from project activities in the case inadvertent discoveries were made during project activities.

Conclusion

All alternatives are in compliance with laws, regulations, and policies associated with heritage and cultural resources. No impacts are expected because no historical or cultural properties were identified. Mitigation measures, as outlined in Hawai`i State Historic Preservation Statute (Chapter 6E), including those associated with findings during construction, would further protect unidentified resources.

Socioeconomic Characteristics

Existing Condition

There are a few single family residences along the Manowaiopae Homestead Road and Spencer Road. The nearest residence to the proposed LFES is approximately 2 miles. The nearest residence to the LAS is approximately 500 feet from the site boundary.

Determination of Effects and Conclusions

Temporary overnight stays by research scientists as described in Alternatives 2 and 3 would not lead to significant shifts in demographic characteristics or demands on public services in the area. Some increases in revenue to local business in the town of Laupahoehoe may occur as visitors to the HETF may stop to shop. Some short-term employment opportunities could occur to residents of Hilo, and Hawai`i County, for facility construction activities. No long-term local employment opportunities are expected from the construction of the Laupahoehoe Construction Project except for a caretaker.

Infrastructure

Roadway Access

Existing Condition

Current access to the HETF and the future site of the LFES is along the Manowaiopae Homestead Road. Sections of this road are owned and maintained by County and private owners. Also see Soils and Hydrology Report and the Climate, Geology, Soils and Hydrology existing condition sections of this document.

Roadway Construction Costs

Table 6 displays the estimated costs of roadway access improvements necessary to implement each of the action alternatives analyzed. These costs are rough, preliminary estimates for the purpose of comparing alternatives. More accurate, site specific costs cannot be determined until site specific survey and designs are completed.

Table 6: HETF Access Alternatives, Preliminary Cost Estimates (Carlson 2011)

Alternative 2, Proposed Route from LAS to HETF via Manowaiopae Homestead Road			
Miles	**Description**	**Cost/mile**	**Total**
1.23	Spencer Road - County - no improvements needed	n/a	n/a
1.00	Manowaiopae Homestead Road - paved - repair bridge/low water crossing, brush, patch	n/a	$1,200,000
0.47	Kamehameha School R/W - paved - minor patching/brushing	100,000	47,000
0.63	Kamehameha School R/W - gravel - reconstruction	200,000	126,000
0.45	Kamehameha School R/W - gravel - reconstruction	200,000	90,000
0.19	State R/W - gravel - reconstruction	200,000	38,000
2.73	**Total cost to U. S. Forest Service under Alternative 2**		**$1,501,000**
Alternative 3, Proposed Route from LAS to HETF via New Road on County Right of Way			
Miles	**Description**	**Cost/mile**	**Total**
0.66	Spencer Road - County - no improvements needed	n/a	n/a
0.63	County R/W - new construction - paved (U. S. Forest Service will pay 1/2 share)	$1,500,000	$945,000
0.29	Kamehameha School R/W - gravel - new construction	1,200,000	348,000
0.51	Kamehameha School R/W - gravel - reconstruction	200,000	102,000
0.45	Kamehameha School R/W - gravel - reconstruction	200,000	90,000
0.19	State R/W - gravel - reconstruction	200,000	38,000
1.0	Manowaiopae Homestead Road - Paved, Repair low water crossing, brush, and patch	n/a	200,000
3.73	**Total cost to all parties**		**$1,723,000**
	Total cost to U. S. Forest Service under Alternative 3 (U. S. Forest Service pays ½ share new construction on County R/W)		**$1,250,500**

Determination of Effects

It is expected that road usage will increase slightly from present use. Under Alternative 2 there would be a minor increase in traffic on the Manowaiopae Homestead Road and Spencer Road. All existing gates would remain in place and locked and would not be open to the general public. Under

Alternative 3, the slight increase in traffic would only affect Spencer Road and there would be a decrease in use of the Manowaiopae Homestead Road due to very limited HETF traffic. Anticipated uses from research activities would be linked with the type and scope of work being conducted and would likely vary over time. It is anticipated that research scientists accessing and using the LAS, LFES and the HETF would use Spencer Road and the newly developed road with a frequency of an additional one to two vehicles per day. Educational use in the form of field trips hosted by PSW staff is anticipated to be one or two high clearance vans transporting visitors to the site occasionally on weekends and eventually reaching one educational visit per week.

Facility Costs

Existing Condition

During the scoping process, the economic feasibility of generating necessary electrical power on-site was considered to be a major issue brought forward in analysis. Estimates for costs for various combinations of power sources are outlined in Table 7.

Table 7: Thirty-Year Life Cycle Costs for Various Options for the Laupahoehoe Administrative Site (Sichau 8/24/10)

Option	Description	Initial Cost	Annual Cost	Estimated Life	Life Cycle Costs
1	Existing Generator	$21,180	$10,500	15yrs. Generator 6yrs. Batteries	$721,382
2	Commercial Power & Existing Generator	$417,000	$6,547	20yrs. Generator	$564,568
3	Existing Generator/ Solar/Batteries	$35,980	$25,635	Varies	$691,297
4	Commercial Power/ Existing Generator/ Solar/Batteries	$461,980	$7,729	Varies	$712,836

Determination of Effects and Conclusions

The high initial costs of Options 2 and 4 are related to the cost of construction of electrical transmission lines to the site. Based on these cost analysis, Option 2 has the lowest life-cycle cost. Option 3 is the next lowest cost alternative and was selected due to the PSW commitment to using renewable energy sources and avoiding the scenic and socioeconomic effects associated with installation of electrical transmission lines. Option 3 was thus the only option considered for the two action alternatives.

Section 4. Cumulative Impacts

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR 1508.7). Table 8 lists the past, present, and reasonably foreseeable future actions in and near the project area. Most activities listed within this table have been long standing existing activities within the area. Reasonably and foreseeable future actions include research projects proposed by the U. S. Forest Service to occur within the HETF as funding sources become available. These research activities would be subject to additional environmental analysis as directed by NEPA and HRS 343.

Direct and indirect effects of greater than negligible intensity would result from implementing the action alternatives for this project to wildlife, scenery and noise, as is summarized in Table 4 and Section 3, above. This section discusses the overall, or cumulative, effects. The spatial boundary for cumulative effects includes all road corridors used for access, the U. S. Forest Service properties on Spencer Road and the 20 acre leased site plus an approximate 0.25 mile buffer surrounding all access routes and properties included in the proposed project. The rationale for this boundary is based on a reasonable distance of scenic impacts to persons living near by and wildlife in and near the proposed facility site. The temporal boundary includes the projects listed in Table 8 and anticipated projects that may occur within the next 2 to 5 years.

Table 8: Past, Present and Foreseeable Future Actions Near the Laupahoehoe Project Area

Agency or Ownership	Past and Ongoing Activities	Future Activities
Private	Biological inventories and invasive weed treatments along road corridor.	Invasive weed treatments along road corridor (Whitehead 2008)
State	Grazing within and around the proposed project area and for the past 30 years.	Continued grazing within 17 acres of the 20 acre leased area and surrounding vicinity
State	Federally listed plant protection within the HETF adjacent to the project area including protection fencing, out-plantings, and seed and propagule collection. Invasive species weed control and outreach and educational trips also occur within the HETF.	Same as past and ongoing activities
USFWS	The Hakalau Forest National Wildlife Refuge is near the project area (southeast of the site) and adjacent to the HETF. USFWS frequently does restoration work using volunteers. Road access to their areas uses alternative routes, and does not use any roads evaluated in this project. Typical volunteer usage is approximately 10 to 12 people/weekend year-round (Glynn 2009).	Same as past and ongoing activities
USDA-FS	On-going research and management activities within the HETF as outlined in the Establishment Record and the State of Hawai`i Permit to Use State Lands.	Installation of stream gauges in Kaiwilahilahi, the Haakoa, and Kaawalii Streams in the Laupahoehoe Unit at approximately 2,000 feet elevation. Installation of weather station adjacent to Blair Road at 3,500–4,000 feet elevation

Alternative 1

No measurable effects to any of the resources analyzed would be anticipated to result from implementing the no action alternative in combination with other past, present, and reasonably foreseeable future actions likely to occur in the project vicinity.

Alternative 2

No measurable cumulative effects would be anticipated from implementing this alternative beyond the direct and indirect effects described in Section 3, above.

Alternative 3

No measurable cumulative effects would be anticipated from implementing this alternative beyond the direct and indirect effects described in Section 3, above.

Section 5. Required Permits and Approvals

The following permits and approvals would be required:

- Section 404 permit dealing with the placement of road fill into the Kapili Stream must be obtained from the U.S. Army Corps of Engineers.

- State of Hawai`i, Department of Health, National Pollutant Discharge Elimination System (NPDES) Permit. http://hawaii.gov/health/environmental/water/cleanwater/wqsmaps/forms/index.html

- Under 40 USC 3312 – Sec. 3312, the Federal Government is exempt from obtaining building permits from local jurisdictions except for permits for wastewater treatment. PSW will follow the International Building Code, State and County building codes to the greatest extent possible and will offer plans to the County of Hawaii for review and comment.

- Informal consultation with USFWS and Determination of Not Likely to Adversely Affect (NLAA).

- Final Approval of Direct Lease from State of Hawai`i, Department of Land and Natural Resources, Land Division to United States of America, Department of Agriculture of 20 acres, more or less, for Research, Educational, and Housing Facilities Purposes at Laupahoehoe, Hawai`i, Tax Map Key: (3) 3-6-6: portion of 46.

- During the construction phase no vehicles and/or loads onto the State highway are expected to exceed the provisions of Chapter 291 Sections 34, 35, and 36. However, if vehicles and/or loads exceed these provisions, all contractors would be required to obtain these approved special permits prior to commencement of work.

Section 6. Determination for Chapter 343 of the Hawai`i Revised Statutes

Based on analysis of the anticipated impacts, A Finding of No Significant Impact (FONSI) is determined for the Laupahoehoe Construction Project. The following findings and reasons follow Chapter 343 of the Hawai`i Revised Statutes along with it implementing regulations, Title 11, Chapter 200 of the Hawai`i Administrative Rules, which is the basis of the environmental impact process in the State of Hawai`i. A separate Decision Notice and FONSI will be prepared as a separate document in accordance with NEPA.

Findings and Reasons

Chapter 11-200-12, Hawai`i Administrative Rules, outlines those factors agencies must consider when determining whether an action has significant effects:

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.

For all alternatives, no direct, indirect, or cumulative impacts to historic or cultural properties would occur from any of the proposed activities, due to the fact that no cultural or historical properties were identified. Incorporation of the mitigation measures would reduce impacts from project activities in the case inadvertent discoveries were made during project activities.

2) Curtails the range of beneficial uses of the environment.

The objectives of establishment of the HETF are to provide lands for conducting research that serves as bases for the restoration, conservation, and management of forests in Hawai`i; to provide education facilities for the general public and university and U. S. Forest Service staffs; and to serve as a site providing local, regional, and global long-term environmental monitoring data. Establishment of facilities as described in Alternative 3, near the HETF boundary, would provide beneficial uses of the environment, because it provides a platform for education in addition to facilities for research scientists conducting research nearby.

3) Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

The proposed action is consistent with the environmental policies established in Chapter 344, Hawai`i Revised Statutes (HRS) and contributes to the conservation of threatened and endangered species, as covered by Chapter 195D, HRS. It is also consistent with Section 4 of the County of Hawai`i General Plan (2005), which sets goals and policies for maintaining environmental quality.

4) Substantially affects the economic or social welfare of the community or state.

The proposed action (Alternative 3) will not adversely affect the economic or social welfare of the community or state.

5) Substantially affects public health.

The proposed action (Alternative 3) is not anticipated to substantially affect public health. The proposed action may have a positive impact on public health by protecting native forests.

6) Involves substantial secondary impacts, such as population changes or effects on public facilities.

The proposed action (Alternative 3) is not anticipated to result in any substantial secondary impacts, such as population changes or effects on public facilities.

7) Involves a substantial degradation of environmental quality.

The proposed action (Alternative 3) would have minor impacts on the environment. Environmental quality is being regulated by permits to avoid environmental degradation, and thus, the proposed action would not contribute to environmental degradation of environmental quality.

8) Is individually limited but cumulatively has considerable effect upon environment or involves a commitment for larger actions.

The Laupahoehoe Administrative Site, the Laupahoehoe Field Education Site and the associated HETF lands will serve as a platform for long-term research and a focal point for developing and transferring knowledge and expertise for the management of tropical forests. Objectives for the HETF are to: (1) provide lands for conducting research that serves as bases for the restoration, conservation, and management of forests in Hawai`i and across tropical areas served by the Pacific Southwest Research Station; (2) provide education facilities for the general public and University and U. S. Forest Service staffs; and (3) serve as a site providing local, regional, and global long-term environmental monitoring data. Although future research will be proposed within the HETF to attain mission goals, specific activities are unknown at this time and subject to funding availability. All newly proposed projects within HETF would require additional environmental analysis and review. Therefore, the proposed action would not cumulatively have a considerable effect on the environment nor involve a commitment for larger actions.

9) Substantially affects a rare, threatened or endangered species, or its habitat.

Although there are rare, threatened or endangered species and habitats in and near the project area, implementation of mitigation measures associated with the proposed action would result in little or no impacts to wildlife or State-listed species, and no adverse effects to federally listed species.

10) Detrimentally affects air or water quality or ambient noise levels.

The proposed action will have no detrimental effects on air quality, water quality, or noise levels. The area is remote, and construction noise will be localized and temporary.

11) Affects to or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

Although the areas proposed for the LAS and LFES are located in an area with volcanic and seismic risk, the entire Island of Hawai`i shares this risk. No floodplains, tsunami zones, beaches, erosion-prone areas, geologically hazardous lands, estuaries or coastal waters are involved. The proposed action would involve constructing roads across fresh water streams, but suitable mitigation measures would be implemented to avoid adverse effects to those streams.

12) Substantially affects scenic vistas and view planes identified in county or State plans or studies.

Although there are areas near the project that are considered scenic vistas, they are not visible from the project site. The project site is not noted for its natural beauty in the Hawai`i County General Plan.

13) Requires substantial energy consumption.

Construction of the Laupahoehoe Construction Project would require some additional energy consumption for operation of construction equipment. Operation of the Laupahoehoe Construction Project, as proposed, would not require any consumption of energy produced off-site, as all electrical power would be generated on-site, primarily through the use of a photovoltaic array.

For the reasons above, the proposed action will not have any significant effect in the context of Chapter 343, Hawai`i Revised Statues and section 11-200-12 of the State Administrative Rules.

Section 7. Laupahoehoe Construction Project Interdisciplinary Team (IDT) Members

Marti Dodds	*Project Coordinator; Public Scoping and Involvement and Comments, Scenery*
Julie Laufmann	*IDT Leader and Project Manager; Botany, Social, Economic*
John Slown	*IDT Leader and Project Manager*
Jerry Carlson	*Project Engineer*
Scott Reitz	*Wildlife*
Robert Nykamp	*Heritage and Cultural*
Eric Pope	*Heritage and Cultural*
Chad Hermandorfer	*Geology, Soils, Hydrology*
Charles Warren	*Roads*
Thomas Cole	*Geographic Information Systems*
Melissa Dean	*Project Coordinator*

References

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Appendix A. Supplemental Maps

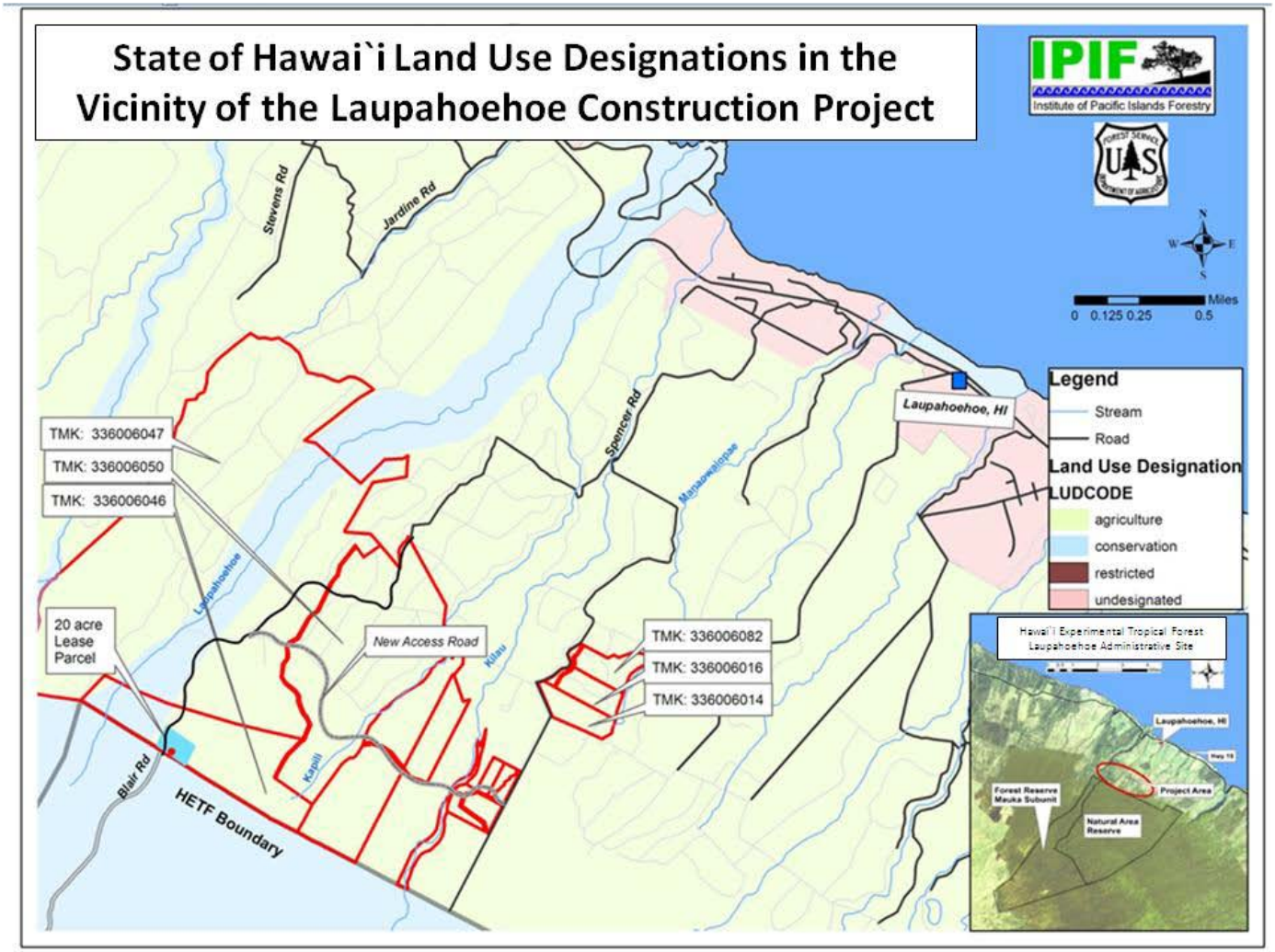


Figure 1. State of Hawai`i Land Use Designations (derived from Hawai`i State-wide GIS Program 05/2010 http://hawaii.gov/dbedt/gis/)

Appendix B. List of Agencies and Persons Consulted

Note: For a complete list of mailing addressed, see the project record.

Federal Agencies and Individuals

U.S. Department of Transportation, FHWA

U.S. Fish & Wildlife Service

U.S. Fish & Wildlife Service, Hakalau

U.S. Representative, N. Abercrombie

U.S. Representative, M. Hirono

U.S. Senate, D. Akaka

U.S. Senate, D. Inouye

USDA-Natural Resources Conservation Service, L. Yamamoto

USDA-Natural Resources Conservation Service, D. Clausnitzer

USGS-PIERC, P. Banko

USGS-BRD, J. Jacobi

State Agencies and Individuals

Hawai`i Island Burial Council c/o DLNR, State Historic Preservation Division

Department of Agriculture

Land Use Commission Department of Business, Economic Development & Tourism

Office of Planning, Department of Business, Economic Development & Tourism

Department of Defense

Department of Education, Hilo District

Department of Health

Department of Transportation

Department of Transportation, Highways Division

Department of Hawaiian Homelands, L. Chinn

Department of Hawaiian Homelands, District Supervisor

DLNR, Division of Aquatic Resources

DLNR, Division of Conservation and Resources Enforcement

DLNR, Division of Forestry & Wildlife

DLNR, Land Division

DLNR, Office of Conservation and Coastal Lands

DLNR, State Historic Preservation Division, Hawai`i Island Office

DLNR, State Parks

DOFAW, N. Agorastos, C. Chang, I. Cole, P. Conry, R. Hauff, I. Kawashima, R. Kennedy, C. Ogura

Hawai`i Natural Heritage Program

Natural Area Reserve Commission

Office of Environmental Quality Control

State House, J. Chang

State House, D. Takamine

State of HI, L. Lingle (Governor)

State Senate, R. Kokobun

State Senate, L. Inouye

State of Hawai`i, S.Whalen

State of Hawai`i, (Department of Agriculture) R. Ishisaka

State of Hawai`i, J. Aiona, Lt. Governor

County Agencies and Individuals

Hawai`i County Department of Parks and Recreation,	P. Engelhart
Planing Dept	C.Yuen, Daryn Arai
Hawai`i County Council	D. Yagong, P. Hoffman, J. Yoshimoto
R & D	M. Hopkins
Dept of Public Works	B. McClure, Warren Lee
Mayor	H. Kim, Billy Kenoi
Hawai Police Department	L. Mahuna
Hawai`i Fire Department	D. Oliviera

University of Hawai`i

L. Hallacher, Biology Dept, UH Hilo

K. Silva, Hawai`i Studies

S. Nagata Office of Mauna Kea Management

S. Ziegler-Chong PACRC

D. Lovell RCUH

J.B. Friday CTAHR

S. Miyasaka CTHAR

D. Price Bilogy Dept UH Hilo

B. Steiner CAFNRM

Other University and Colleges

L. Brezinsky, Hawai`i Community College

G. Asner, Stanford University

P. Vitousek, Stanford University

Public Utilities

Hawaiian Electric Light Company (HELCO)

Associations/Businesses/Clubs/Other and Individuals

Big Island Gun Club, J. O'Keefe

Hawai`i Forest Industry Association, H. Gallo, M. Robinson

Edith Kanaka'ole Foundation, K. Kanahele-Frias

Forest Solutions, G. Cellier, N. Koch

Hawai`i Audubon Society

Hawai`i Conservation Association, D. Spooner

Hawai`i Hunting Advisory Council, S. Araujo

Hawai`i Island Economic Development Board

Hawaiian Civic Club of Hilo

Kamehameha Schools, P. Simmons, B. Rosehill

Kumu Pono Associates, K. Maly

Big Island Invasive Species Council (BIISC), J. Leialoha

CGAPS, C. Martin

Parker Ranch Hunt Club, R. Hoeflinger

Pig Hunters of Hawai`i, T. Medeiros, Sr

50's Highway Fountain Café, C. Ignacio

Sierra Club, Moku Loa Group

The Nature Conservancy, S. Case, M. Fox, R. Shallenberger

TREE Center Hawai`i, C. Schumann

Hilo Bay Watershed Advisory Group

KAHEA

Land Trust, J. Stenbro

Na Pua No'eau, D. Sing

National Ecological Observatory Network (NEON), J. Bolyard

OHA, B. Lindsey, L. Ruddle

Laupahoehoe Civic Club, W. Victor

Kukui'ohiwai, H. Springer

HEAR

Laupahoehoe Train Museum, L. Barton

Private Landowner/Lessee/Community Member

Parker Ranch, B. Beaudet

J. Steinman

J. Bralin

S. Sanderson

J. Braun

N. Tergeoglan

D. Bryan

J. Bridgeman

D. DeVries

B. Doneux

K. Dougherty

T. Gloor

D. Henry

C. Kornet

R. Culbertson

T. Ekno

E. Hokama

R. Patey

D. Warren

R. Summer

J. Dias

P. Jose

H. Jose

K Jose

S. Jose

C. Spencer

G. Spencer

J. and M. McCall

P. Dobson,

E. Yap Trust

S. Kaava

T. Carpenter

T. Ekno

M. Malani

R. Bolick

G. Gadd

M. Crosson

H. Young

D. Chang

K. Clarkson

L. Husagawa

3BINN, LLC

Appendix C. Public Comments Received During April and May 2011 Scoping Period

Note: Comment letters begin on the following page; scoping issues are addressed in the text of the Draft Environmental Assessment

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:
2011-TA-0246

MAY 0 3 2011

received via USPS

Ms. Melissa K. Dean
USDA Forest Service
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Subject: Technical Assistance on the Forest Service Research and Education Center at Laupahoehoe, Hawaii

Dear Ms. Dean:

The U.S. Fish and Wildlife Service received your letter on April 4, 2011, requesting our review of the proposed Forest Service Research and Education Center at Laupahoehoe, Hawaii. The proposed project includes: interior upgrades to existing facilities; developing an invasive species vehicle wash station; and construction of a driveway access, additional dormitory, an open-sided shelter for outdoor education activities, toilet facilities, a storage building, a small parking lot, on-site solar electric generation with back-up generator, water holding tanks and buried distribution lines and fencing. This response is in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended [16 U.S.C. 1531 *et seq.*].

We have reviewed the project information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program and the Hawaii GAP Program. The federally-endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) and Hawaiian hawk (*Buteo solitarius*) have been observed in the vicinity of the proposed project. Additionally, the endangered Hawaiian dark-rumped petrel (*Pterodroma sandwichensis*) and the threatened Newell's shearwater (*Puffinus auricularis*), may fly through the project area on their way from the sea to mountain breeding areas. There is no federally designated critical habitat in the project footprint. We recommend you address potential project impacts to the listed species discussed below, and include measures to minimize impacts to these resources in your environmental review process.

TAKE PRIDE® IN AMERICA

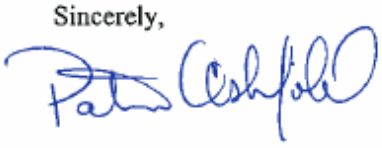
Hawaiian hoary bats roost in both exotic and native woody vegetation and leave their young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the bat-breeding season (May to August), there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet tall should not be removed or trimmed during the bat-birthing and pup-rearing season (May 15 through August 15). Hawaiian hoary bats have been observed impaled on barbed wire fences on the island of Hawaii. To avoid this mortality, we recommend fencing materials that do not include barbs (e.g. hog-wire fencing). However, if pigs are a problem in your area, then a strand of barbed wire can be installed at the bottom of the fence to help deter pigs from entering an exclosure.

Hawaiian hawks nest in both exotic and native woody vegetation. To avoid impacts to Hawaiian hawks, we recommend not clearing any brush or trees, or using heavy equipment within 300 feet of potential nesting sites during their breeding season (March through September). If you are unable to avoid clearing vegetation or using heavy equipment during these months, we recommend you conduct surveys for nests prior to any clearing activity. Please contact our office for survey methodology and recommendations for avoiding impacts to nesting hawks.

In Hawaii, seabirds fly at night and are attracted to artificially-lighted areas. They end up circling a light source until they become disoriented and eventually "fallout" due to exhaustion or collision with adjacent objects such as utility lines, guy-wires, or towers. Once grounded, they are vulnerable to attack from non-native predators or they are frequently hit by vehicles along roadways. Any increase in the use of nighttime lighting, particularly during each year's peak fallout period (September 15 through December 15), could result in additional seabird injury or mortality. Impacts to seabirds can be minimized by shielding outdoor lights associated with the project to the maximum extent possible and providing all project staff and residents with information about seabird fallout. In addition, we recommend the use of motion detectors to further reduce nighttime illumination.

We appreciate the opportunity to provide technical assistance in your environmental review process for this project. Implementation of these recommendations does not alleviate your responsibilities pursuant to the ESA if a listed species may be affected by the proposed action. If you have any questions regarding this letter, please contact Dr. Jeff Zimpfer, Fish and Wildlife Biologist, Consultation and Habitat Conservation Planning Program (phone: 808-792-9431; email: jeff_zimpfer@fws.gov).

Sincerely,



for Loyal Mehrhoff
Field Supervisor

William P. Kenoi
Mayor

Darryl J. Oliveira
Fire Chief

Glen P. I. Honda
Deputy Fire Chief

County of Hawai'i
HAWAI'I FIRE DEPARTMENT
25 Aupuni Street • Suite 2501 • Hilo, Hawai'i 96720
(808) 932-2900 • Fax (808) 932-2928

April 5, 2011

Ms. Melissa K. Dean
HETF Coordinator
USDA Forest Service
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo, Hawai'i 96720

SUBJECT: LAUPAHOEHOE FACILITY CONSTRUCTION PROJECT
HAWAI'I EXPERIMENTAL TROPICAL FOREST

Thank you for the opportunity to respond. In regards to the above-mentioned project, the Fire Department's concerns would be that the site chosen would meet the requirements of:

Fire apparatus access roads shall be in accordance with UFC Section 10.207:

"**Fire Apparatus Access Roads**

"**Sec. 10.207.** (a) **General.** Fire apparatus access roads shall be provided and maintained in accordance with the provisions of this section.

"(b) **Where Required.** Fire apparatus access roads shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from fire department vehicle access as measured by an unobstructed route around the exterior of the building.

"**EXCEPTIONS:** 1. When buildings are completely protected with an approved automatic fire sprinkler system, the provisions of this section may be modified.

"2. When access roadways cannot be installed due to topography, waterways, nonnegotiable grades or other similar conditions, the chief may require additional fire protection as specified in Section 10.301 (b).

Hawai'i County is an Equal Opportunity Provider and Employer.

"3. When there are not more than two Group R, Division 3 or Group M Occupancies, the requirements of this section may be modified, provided, in the opinion of the chief, fire-fighting or rescue operations would not be impaired.

"More than one fire apparatus road may be required when it is determined by the chief that access by a single road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

"For high-piled combustible storage, see Section 81.109.

"(c) **Width.** The unobstructed width of a fire apparatus access road shall meet the requirements of the appropriate county jurisdiction.

"(d) **Vertical Clearance.** Fire apparatus access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

"**EXCEPTION:** Upon approval vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.

"(e) **Permissible Modifications.** Vertical clearances or widths required by this section may be increased when, in the opinion of the chief, vertical clearances or widths are not adequate to provide fire apparatus access.

"(f) **Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities." (20 tons)

"(g) **Turning Radius.** The turning radius of a fire apparatus access road shall be as approved by the chief." (45 feet)

"(h) **Turnarounds.** All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

"(i) **Bridges.** When a bridge is required to be used as access under this section, it shall be constructed and maintained in accordance with the applicable sections of the Building Code and using designed live loading sufficient to carry the imposed loads of fire apparatus.

"(j) **Grade.** The gradient for a fire apparatus access road shall not exceed the maximum approved by the chief." (15%)

"(k) **Obstruction.** The required width of any fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances established under this section shall be maintained at all times.

"(l) **Signs.** When required by the fire chief, approved signs or other approved notices shall be provided and maintained for fire apparatus access roads to identify such roads and prohibit the obstruction thereof or both."

Water supply shall be in accordance with UFC Section 10.301(c):

"(c) **Water Supply.** An approved water supply capable of supplying required fire flow for fire protection shall be provided to all premises upon which buildings or portions of buildings are hereafter constructed, in accordance with the respective county water requirements. There shall be provided, when required by the chief, on-site fire hydrants and mains capable of supplying the required fire flow.

"Water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow.

"The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be protected as set forth by the respective county water requirements. All hydrants shall be accessible to the fire department apparatus by roadways meeting the requirements of Section 10.207.

DARRYL OLIVEIRA
Fire Chief

TG:lpc

"John A McCall" <mccalljohn@comcast.net>
04/17/2011 05:04 AM

To <hawaiiexperimentaltropicalforest@fs.fed.us>
cc
bcc
Subject Laupahoehoe Unit access road alternatives (comments)

History: This message has been forwarded.

Melissa K Dean
HETF Coordinator
USDA Forest Service
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo HI 96720

Melissa:

We would like to comment on the proposals that have been made for providing access to the education and research staging site for the Laupahoehoe Unit of the Hawaii Experimental Tropical Forest.

My wife is from a Japanese family that originally moved to Honokaa in the 1800's. In the hope of someday moving back to Hawaii, we bought a parcel of land along the proposed Access Alternative 1. We purchased the land because of the incredible beauty of the area, and we have not regretted the decision for one moment, particularly as we learn about the many native species in the area. We have always been concerned with the preservation and protection of endangered and native species, and when the location of the Laupahoehoe Unit of the HETF was announced, we were thrilled. It is an incredible thing to have such a center of excellence for the study of native Hawaiian habitats so close to our land.

We strongly urge the approval of Access Alternative 1. This alternative would have the advantage of avoiding the purchase or lease of private land, and would also avoid the cost, delay, and environmental impact of new road construction. Kamehameha Schools would benefit from the use of their existing roads. We are committed to doing whatever we can to support the efforts of the HETF, and would be overjoyed to know that we did something to help promote the project. We are convinced that research and education are the keys to the protection of natural environments around the world, and we can think of no more fragile an area than Hawaii itself.

Please give our recommendation to approve Access Alternative 1 serious consideration. We are always available for further comments, clarification, or help.

Sincerely,

John A McCall MD
Marla Y McCall
2680 Hearthside Way
Roseville CA 95747
(916) 474-5451

"Marla Y McCall"
<marlakyo@comcast.net>
04/04/2011 04:36 AM

To <hawaiiexperimentaltropicalforest@fs.fed.us>
cc
bcc
Subject Laupahoehoe Construction Project comments

History: This message has been forwarded.

Aloha Melissa,

I am a fourth generation Japanese American descendant of cane worker immigrants to the Hamakua coast. My husband and I purchased our parcel in Laupahoehoe a number of years ago with the intention of building our house as soon as we are able and plan to live in Laupahoehoe in the future into our dotage!

I was pleased to review your plans and feel that option number one to use and improve the existing road is the most ecologically sensitive as well as practical option. Since I am a land owner on Manowaiopae Homestead Road I would welcome the improvements to the low area by the culvert which is long overdue for repair from a simple safety standpoint. The idea of improved lines of sight and turnouts is also great as the rare meeting of oncoming traffic on that road is quite frightening as it presently stands. If you want to address resistance to this plan from the few that live "on the hill" as we call it, those issues would best be addressed I think with the assurance that the improvements would not come with a thundering hoard of increased traffic, excessive noise, and not environmentally-friendly activities. I plan to do my best to lobby my neighbors to see the benefits of option one. I also think that emergency medical access would be greatly improved to the entire area with the improvements listed in option one which would benefit all persons involved with the project and the local residents, most of whom would be considered senior citizens, with my husband and I being the youngest of the " locals." It would also seem to be the best cost saving option which is a best practice in times of limited resources. I look forward to the evolution of your project to benefit the world in forest conservation. When we are able, to we plan to work on forest restoration and wildlife corridor on our property as well.

Mahalo for your very thoughtful and comprehensive letter to us and the invitation for input.

Yours Sincerely,

Marla McCall, MSN APRN-BC
Psychiatric Nurse Practitioner

Diana Ostermann
<dianaost09@gmail.com>
04/14/2011 03:56 AM

To hawaiiexperimentaltropicalforest@fs.fed.us
cc Jerry W Carlson <jwcarlson@fs.fed.us>
bcc
Subject Laupahoehoe road project

History: This message has been forwarded.

Melissa;

My husband and I own some of the property adjacent to the proposed new road, TMK's 336006-028, 051, 052, 053, 054. I have been in contact with Jerry Carlson over the past several months to understand the proposed project and the implications for our property. We received the letter and map from Deanna Stouder and I want you to know we fully support the construction of the new road labelled 'Access Alternative 2' on the map. We are willing to contribute financially to this project. We have been in contact with Margaret Wille, the attorney for one of the other affected property owners on this matter. I plan to be in Hawaii the week of May 16th and plan to meet with Jerry Carlson to discuss the project further. He has offered to take me on a tour of the facilities both in Hilo and Laupahoehoe, so I may get to meet you in person then. I also intend to meet with Ms. Wille and any other property owners who are interested in supporting this project.

Separately, I have commented to Jerry that my husband and I intend to plant more trees on the upper part of our property, adjacent to the proposed road. We intend to plant native Hawaiian trees. Jerry suggested that there might be an opportunity to work cooperatively with the scientists from the Forest Service to facilitate that. I would welcome that.

If you need any additional information, you can either email me at this address or call me (Eastern Time Zone) on 269-637-3183.

Sincerely,
Diana Ostermann

William P. Kenoi
Mayor

Harry S. Kubojiri
Police Chief

Paul K. Ferreira
Deputy Police Chief

County of Hawai'i
POLICE DEPARTMENT
349 Kapiolani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-8865

April 6, 2011

Ms. Melissa K. Dean
HETF Coordinator
Institute of Pacific Island Forestry
Pacific Southwest Research Station at Hilo
USDA Forest Service
60 Nowelo Street
Hilo, Hawaii 96720

Dear Ms. Dean:

SUBJECT: USDA LAUPAHOEHOE UNIT OF THE HAWAII EXPERIMENTAL TROPICAL FOREST; LAUPAHOEHOE FACILITY CONSTRUCTION PROJECT UPDATED PROPOSAL

Staff, upon reviewing the provided updated documents dated March 28, 2011, does not anticipate any significant impact to traffic and/or public safety concerns.

Although we have no comments to offer at this time, we would like the opportunity to review future documents as this project progresses.

Thank you for allowing us the opportunity to comment.

If you have any questions, please contact Captain Mitchell Kanehailua, Commander of the North Hilo and Hamakua Districts, at 775-7533.

Sincerely,

SAMUEL THOMAS
ACTING ASSISTANT POLICE CHIEF
AREA I OPERATIONS BUREAU

MK

"Hawai'i County is an Equal Opportunity Provider and Employer"

Trevina Wang
<trevi_wang@yahoo.com>
04/16/2011 01:27 PM

To hawaiiexperimentaltropicalforest@fs.fed.us
cc John Kelso <pecorinoromano@hotmail.com>
bcc
Subject Laupahoehoe research station road safety suggestions

History: This message has been forwarded.

Dear Ms. Dean,
I am a property owner with a vacation residence at 36-902 Spencer Rd mauka to your future HQ site for the Research Center. We welcome this important addition to the Laupahoehoe area. Having driven on Spencer road very frequently we would like to bring to your attention that Spencer Rd and to a lesser extent Manowaiopae Rd have several turns/corners with very reduced sight lines. With the current volume of local traffic this is not a significant hazard. Locals know where to swing wide and slow down and yet every now and then there are some close calls. Increased traffic, especially with people who are not familiar with the road increases the need for improved sight lines on some of these corners. The guardrail improvements are a significant help but we fear a head on collision at some of the more blind corners. These corners can be improved without re-alignment if modest grading is done to re-establish sight lines at the severe turns. We suggest some removal of dirt that obscures the sight line at all of these blind turns. Specifically, there are several corners that have poor sight lines that could be improved with dirt removal from the side of the road. The first is about 200 yds past the mushroom farm near a power pole at 19deg 58' 51.83"N, 155deg 14' 27.73"W. The rest are makai of TMK 36006082 and near the area that is locally referred to as the old mac nut orchard (approximately between 19deg58' 02.16"N,155deg 14' 54.92"W and 19deg 58' 13.77"N, 155deg 14' 37.44") in areas that the county has recently installed new guard rails. As minor issue we would also suggest that Spencer Rd be properly signed at the split between Manowaiopae Rd near the white bridge.
In addition, we would prefer "Access Alternative 1" as it does not require new roads and stream crossings.
Lets keep everyone safe and make this a success!
Sincerely,
David Hasenstab, Ph.D.
Trevina Wang
206-890-2335
2122 Second Ave N
Seattle, WA 98109

MARGARET WILLE
Attorney at Law
65-1316 Lihipali Road
Kamuela Hawaii 96743
Tel: 808-854- 6931 Fax: 808-887-1489
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April 25, 2011

Melissa K. Dean, HETF Coordinator [by email and US Postal Service]
USDA Forest Service,
Pacific Southwest Research Station at Hilo,
Institute of Pacific Island Forestry,
60 Nowelo Street, Hilo, Hawaii 96720
hawaiiexperimentaltropicalforest@fs.fed.us.

Re: Proposed Project Facilities To Be Located on Lot 46 and Need for Agreement with Those Holding a Long Term Pasture Lease on Lot 46

Dear Ms. Dean:

In response to your March 28, 2011 scoping letter soliciting public comments, I am writing to you as the attorney for Peter Jose and Richard Jose (hereafter referred to as "the Joses"), who have a long term pasture lease on Lot 46. They, along with their cousins, Harry and Kelly are the owners of the abutting parcel, Lot 45. (Note: All references to lot numbers are to County of Hawaii TMK designations within the 3-06-006 district).

BACKGROUND: The Joses have a long-term state pasture lease on Lot 46 in its entirety. Initially HETF approached the Joses to work out a cooperative plan so that HETF could obtain a direct lease from the state (rather than a sublease from the Joses). The HETF representatives explained their intention was lease only a few acres on lot 46 along the forest reserve boundary. Given the limited nature of this request, the Joses responded they would not oppose that proposed direct lease from the State to HETF. (The implication here is that those several acres would be withdrawn from the Joses' lease.) The Joses did ask that they be consulted in advance on the HETF's proposed configuration of this small cut-out lot. HETF's representative agreed to this request.

Subsequently the Joses learned that instead HETF had requested a 20-acre parcel from the State and had located that 20 acre parcel smack in the middle of Lot 46, inclusive of the area in which they had spent tens of thousands of dollars improving and including the pond location they had improved to provide a source of water. Interference with their access to this water source would disrupt their entire ranch operations. They also learned that the proposed facilities site was now planned to

be located in the middle area of this 20-acre parcel and not along the Forest Reserve Boundary. The proposed location would effectively block their access from one side of the lot to the other. Obviously the Joses were very upset by these proposed changes and that they had not been consulted in advance – as had been promised.

HETF representatives later explained that at the time they sought to carve out a section of Lot 46, they were told by the County Planning Department that the smallest carve out possible would be 20 acres. HETF then assured the Joses they were not intending to use the remainder of the 20-acre parcel and that the Joses would be able to continue use of the remainder for their pasture operations without interference. [The Planning Department has since stated that requiring a minimum 20 acre carve out was an error].

Given this sequence of events, the Joses naturally are want more than a verbal assurance that HETF will not interfere with their cattle operations on the remainder of the 20 acre parcel.

CURRENT STATUS: As shown in the scoping letter map, HETF has now relocated the proposed Lot 46 facilities to a location along the Forest Boundary, the logical location. The Joses appreciate this revision and have no problem with the current design plan for this site. They are also supportive of the educational and scientific plans for this staging site and the related use of the Forest Reserve.

REQUEST: The Joses request a written agreement regarding their right to use the remainder of the 20-acre parcel for their ranch operations without interference. Without such a written agreement any new administrator of the project could unilaterally terminate the Joses' right to continue use of this portion of the 20 acre parcel and could block access to the two sides of the lot.

Respectfully submitted,

/s/

Margaret Wille, attorney for Richard and Peter Jose

MARGARET WILLE
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Melissa K. Dean, HETF Coordinator
USDA Forest Service,
Pacific Southwest Research Station at Hilo,
Institute of Pacific Island Forestry,
60 Nowelo Street, Hilo, Hawaii 96720
hawaiiexperimentaltropicalforest@fs.fed.us
(by email and USPS)

April 25, 2011

Re: Road Access Route

Dear Ms. Dean:

In response to your March 28, 2011 scoping letter soliciting public comments, I am writing to you as the attorney for Peter Jose, Richard Jose, Harry Jose, and Kelly Jose (hereafter referred to as "the Joses"). The Joses are the owners of a parcel abutting the Laupahoehoe Homestead Government Road corridor, Lot 45. (Note: All references to lot numbers are to County of Hawaii TMK designations within the 3-06-006 district).

POSITION: The Laupahoehoe Homestead Government Road Is the Preferable Access Route from HETF's planned headquarters on Spencer Road to its proposed HETF's staging site on Lot 46. (This letter specifically addresses the question of which access route should be selected.)

1. **Logical Route**: HETF has purchased parcels 82 and 16 located on Spencer Road not far from LHGR entrance, and once completed would provide direct and convenient access to the planned HETF Staging Site. References to HETF's "Staging Site" refer to the facilities planned to be constructed on Lot 46. Given the topography and grade this route will be easy and pleasant, with inspiring views.

Access by way of LHGR would be mostly on public roadway, whereas access by way of the Manowaiopae Route would be mostly on private gated lands. An access route that is largely on public roads, where the road construction and legal costs would most benefit the public, is an important reason supporting access via LHGR.

In contrast, the route down Spencer Road from the project headquarters near the top of Spencer Road and then back up along Manowaiopae Road, and then up a lengthy stretch of private property much of which is leased to Kelly Jose under long term cattle pasture leases and through eucalyptus plantation operations, will be like

a long detour, readily affected by flood rains, with additional cattle gates. Over and above these logistical concerns about the use of the Manowaiopae alternative route, there may be legal issues relating to the use and alignment of the public portion of this route (such as where the surveyed location of the road is not the same as the actual location of the roadbed).

The "intangible" benefits of selecting the LHGR alternative may seem negligible on paper. However, for those who will be employed by HETF for an extended period of time, traveling daily between the project headquarters and its staging site, the superiority of the shorter/quicker/more pleasant /less conflicting access route via LHGR cannot be overstated.

From the end of LHGR several different routes in the final leg of the road were identified – including one across the Joses property directly on to Lot 46 where the staging area is located. Each of these "final leg" locations is do-able and acceptable to the Joses.

Absolute Ideal Plan: If finances permit, the best access plan would be to use the LHGR on a day-to-day basis, but maintain the Manowaiopae Road route sufficiently to have as an emergency "back up" and to afford access until the LHGR is completed. From a "disaster preparedness" perspective, having a single access route out from the staging site, regardless of the route selected, would not be the optimal choice. The best precaution to take in view of "not so likely – but possible" emergencies, such as from a forest fire, would be to have LHGR as the principal access route and the Manowaiopae route as the back-up route.

2. **Neighbors/Neighborhood**: HETF should appreciate the value of building good neighbor relations with its closest neighboring property owners. Working on the completion of LHGR with its close neighbors is a way to build good neighbor relations – with those owning and leasing the major parcels situated between HETF's headquarters and its Lot 46 staging site – such as the Joses (Lot 45) the Ostermanns (Lots 51, 52, and 53) and the Hendersons (lot 44)

In particular building a good working relationship with the Joses is important given that HETF's planned staging site is located on the State lot 46 which in its entirely is under a long term pasture lease to Richard and Peter Jose. Moreover, besides being knowledgeable about road building and construction generally, the Joses are knowledgeable about the area ecosystems including changes in plant species growth in the area and other environmental issues of importance to HETF's research.

The Jose and Henderson lots are of particular importance because they "buffer" the tropical forest, since they abut the forest reserve. The Ostermann lots, immediately adjacent thereto, are also within the conceptual "buffer" area. Diana Ostermann has expressed a particular interest in supporting HETF activities on their property. Differences between the cleared lots, and between the significant differences in

elevations on these several properties, should be of interest to potential HETF experimental projects.

3. **Substantial Contribution Committed by Abutting Landowners:** All of the lot owners on the unbuilt portion of LHGR have stated they will make a significant in-kind and or monetary contribution to the cost of construction of this road.

The Joses have already been contributing suggestions to the design and construction plans of the road way and have offered to contribute the labor portion of clearing and initial cutting of the road bed, the specifics of which to be determined between the Joses and HETF representatives. The Joses also own some equipment that could be used in the clearing and road construction. Peter Jose, a former member of a fire department, is available to assist in coordination with HETF. Richard Jose can operate all needed equipment, and Harry, Kelly, and Peter are all able to operate some equipment and vehicles needed. Richard Jose is an employee at the County Public Works Department very experienced in road construction. Harry Jose is employed by major contractor. The timing of their assistance would need to be worked out to adjust to their employment obligations. The Joses are also willing to allow a "T" turn-around for emergency vehicle at the end of the public road to protrude into their lot if needed.

Both of the other immediate property owners, Henderson and Ostermann have expressed a willingness to contribute substantial funds. In light of the location and number of their lots, my suggestion is that a formula be worked out based on the following maximum valuation: Henderson 1X, Joses 2X, and Ostermann 3X. Assuming the road would be paved, the maximum valuation of X could be up to $40,000. These contributions would be credited towards the County's share of the road costs.

4. **The Laupahoehoe Homestead Government Road Is A High Priority County "Road in Limbo" and Therefore If HETF Seeks to Partner with the County, Selection of LHGR Is Appropriate:** The County of Hawaii has already made a verbal "handshake" commitment to the Joses to provide and haul the road material for construction of the LHGR (at a 2008 meeting with Public Works Director Warren Lee, Councilmember Dominic Yagong, who is now chairman of the County Council, my clients, and myself). This agreement was reached prior to any involvement with HETF, based on the County unfulfilled previous commitment to construct LHGR.

Laupahoehoe Homestead Government Road has been officially identified as a "road in limbo" - as is identified on the County's Public Works website and in a letter to the Joses. The County's current "road in limbo" policy is to partner with landowners along identified roads in limbo, in order to, at minimum, provide reasonable access for emergency vehicles. A copy of the County's "Roads in Limbo Policy Development" Statement is attached. A road previously promised by Federal, State, and County government officials should be at the top of this "road in limbo" list.

5. **Added Benefits for the County Should be Considered:** The Forest Service has identified a number of road construction and bridge crossing techniques that would be used on this LHGR construction, which techniques are not currently used by the County. Exposure to these techniques would be beneficial on other future County road projects -- in terms of minimizing costs, environmental impacts, and time delays. For example, the HETF staff has identified the possible use of an "open bottom pipe arch" crossing at the Kalua stream (with its significantly lower price tag than the stream crossing construction customarily used by the County). It is also my hope and expectation that HETF will assist in the design work and permit drafting, so as to substantially reduce the cost and timing of obtaining the necessary governmental approvals. Construction of LHGR would certainly be in the interest of the County from an economic budgetary perspective – and in line with the Mayor's priority to move construction projects forward as quickly as possible to improve the island economy.

As a sister governmental entity, such benefits to the local government involved should be taken into account.

6. Low volume Road Design Appropriate: The Joses are amenable to whatever road design is agreeable to HETF and the County, however a "low volume" road design is suggested such as a 12-foot wide roadbed with appropriately spaced turn-offs. The forestry service has established design models for such road projects. Reducing the size of the road, from general road standards in this location is appropriate given the expected level of usage. The obvious benefits to such road design is not just lower cost, but because of the decreased environmental impact. To put the principle simply: less hardscape means less run-off and erosion and less environmental warming-- which concerns should not be minimized in this fragile island ecosystem. The County has approved similar road variance requests under similar circumstances. Either a gravel or a paved road are acceptable, however over the long run, a paved road is preferable for ease of maintenance.

7. The Right Thing to Do: It was the federal government that first promised that the LHGR would be build – with federal (territorial government) funds – to those purchasing parcels in this federal territorial government Laupahoehoe Homestead subdivision. Whereas the federal government may not be legally required to choose the LHGR for its access route, it is certainly the right thing to do.

Respectfully submitted,
/s/
Margaret Wille, attorney for the Joses

cc: Warren Lee, Director of Pubic Works (by email only)

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April 25, 2011

Melissa K. Dean, HETF Coordinator [by email and US Postal Service]
USDA Forest Service,
Pacific Southwest Research Station at Hilo,
Institute of Pacific Island Forestry,
60 Nowelo Street, Hilo, Hawaii 96720
hawaiiexperimentaltropicalforest@fs.fed.us.

Re: Comments – Nature of Experiments/Transparency of Projects Requesting Approval and Requirement of Pubic Disclosure of Outcomes

Dear Ms. Dean:

I am making these comments on behalf of myself as a concerned resident, not on behalf of any client.

1. Supportive of Commitment to Engage Local Schools: I would you're your educational commitment enables students of all age groups from around the County to participate in and suggest education projects. The Island of Hawaii is a center for many scientific endeavors, and this federal project should advance those interests in our county schools.

2 Interactive Website: I suggest a HETF priority should be an interactive modal on your website. This set up would allow for transparency of HETF projects. The public could offer comments on posting of proposed experiments, periodic reports on the experiments, and reports on the outcome of the experiments and suggestions for further research topics.

3. Host Culture Focus: Promote understanding of Hawaiian cultural concepts to address climate and ecosystem related issues. I am glad to see there is a commitment to understanding some of the Hawaiian cultural concepts as relate to the overarching project objectives.... such as the ahupua'a system of resource management – and the critical interrelationship between the various ecosystems on the island (starting with the most basic concept that what happens in the forest reserve affects all of the watershed between there and the coastal waters and reef).

4. Public Trust Doctrine and Precautionary Principle. I suggest the HETF project

embrace the "Public Trust" doctrine which is contained in the Hawaii Constitution (Chapter 11 Section 1) and in the County Charter. Hawaii County Charter, Section 13-29, "Conservation of Natural and Cultural Resources" provides:

> For the benefit of present and future generations, the county shall conserve and protect Hawai'i's natural beauty and all natural and cultural resources, including but not limited to land, water, air, minerals, energy sources, wahi pana, surf spots, historic sites, and historic structures, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the county. All public natural and cultural resources are held in trust by the county for the benefit of the people.

The "precautionary principle" mandates government decision making based more on the principle of managing our human resource within the than the more myopic view of simply managing natural resources for current human needs. As explained in the South Kohala Community Development Plan:

> The precautionary principle requires long-term vision and mandates that government entities favor caution and conservation in any case in which information is uncertain. The burden of proving that the resource is adequate and that its proposed use is consistent with the sustainable health of the ecosystem falls on the party proposing to use the resource.

Perhaps this analytical framework seems too conceptual or too vague to apply to the HETF, but I commit that it is very relevant.

For example I encourage you not to permit experiments involving the use of genetically modified organisms or toxic herbicides. The promoters of such organisms and herbicides readily provide products at no cost for experimental use, despite the long-term impact --such as permanently altering the ecosystem.

Another example is if a party seeking to use this arena for an experiment requests that the information and results be kept secret so that party can obtain a proprietary patent. The proposal should be rejected, as contrary to the public interest. Transparency should be the watchword.

5. A More Sophisticated Approach to the "Invasive Species" Issue: Currently there are several well-intentioned groups on the island that consider any "later arriving" species as detrimental and harmful per se (meaning any species that arrived after 1778). They promote an "open season" on all such "later arriving" plant, bird, and other species. That simplistic approach is very naïve. For example some of these folks are promoting extermination of certain plants and trees that are beneficial to certain endangered species (such as the banana poka and the endangered i'iwi bird), as well eradication of certain trees important to the shoreline ecosystem in light of rising sea levels (such as mangroves and possibly kiave trees). In other countries, mangroves are protected in shore area

resource sanctuaries, whereas here they are being killed using very toxic herbicides even where no other vegetation is present.

6. Military warfare experiments should be prohibited: While all the representations to the public indicate that all experiments will be for peaceful uses, it would be good to clarify that this area of Hawaii will not be used for military experiments, such as for biological warfare. I am aware of biological warfare experiments that were compromised and as a result toxic organisms were released into the local area. I would like to take that possibility off of my list of concerns.

Overall I am very supportive of your project and hope to keep myself informed of your endeavors.

Respectfully submitted,

/s/

Margaret Wille, a concerned resident

NEIL ABERCROMBIE
GOVERNOR

MAJOR GENERAL DARRYLL D. M. WONG
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE

PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

April 14, 2011

Ms. Melissa K. Dean
HETF Coordinator, USDA Forest Service
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Ms. Dean:

This letter is in response to Ms. Deanna Stouder's March 28, 2011, invitation to participate in the planning of a research and education center proposed by the USDA Forest Service, Pacific Southwest Research Station, for the Laupahoehoe area on the island of Hawaii.

We are interested in the USDA's proposal to construct facilities that expand the Hawaii Experimental Tropical Forest in support of its Laupahoehoe Unit. We agree that a successful project will take into consideration the potential impacts on people and the environment, as noted in our October 6, 2008, and April 9, 2009, comments on the Environmental Assessment for the project.

Due to ongoing commitments, we are unable to actively participate in the planning and research phase of the project. However, we strongly recommend that plans for continuity of essential services be considered and that appropriate mitigation measures be taken during the planning and the design phase of any new construction, as mitigation prevents loss of life and minimizes loss of property. Generally, the cost of integrating mitigation measures during construction is approximately one-third the cost of post-construction retrofit. Based on funds availability and project eligibility, pre- or post-disaster grant funds could be used to offset mitigation costs.

Please keep us informed as existing plans are updated and as new plans are completed. We look forward to copies of final project reports when they are available.

If you have any questions, please contact me at 808-733-4301.

Sincerely,

EDWARD T. TEIXEIRA
Vice Director of Civil Defense

Rick Holasek
<rick.holasek@nova-sol.com>

04/19/2011 10:21 AM

To Melissa K Dean <mkdean@fs.fed.us>
cc
bcc
Subject RE: Scoping comments for Laupahoehoe Project

Mel,

Thanks for the note.
One other though I had re the forestry facility in Laupahoehoe. Since there is a significant increase in traffic (which will only become greater) due to the facility, you might want to investigate one of the sharp turns on the way up the hill just after passing the mushroom factory. This turn is blind and has a power pole on the outside bend of the sharp turn in the road. Installation of a large parabolic mirror on that pole would do a lot for safety of cars and other traffic on the road up and should be installed as a safety measure before someone gets hurt and the lawsuits start.

Just a thought.

Rick

Rick E. Holasek
President and CEO
Innovative Technical Solutions, Inc (dba NovaSol)
1001 Bishop Street
Suite 2950
Honolulu, HI 96813
Office: (808) 441-3666
Fax: (808) 441-3601

From: Melissa K Dean [mailto:mkdean@fs.fed.us]
Sent: Thursday, April 14, 2011 10:40 AM
To: Rick Holasek
Subject: Scoping comments for Laupahoehoe Project

Hi Rick,

Nice talking with you on the phone. For record keeping purposes, please send me your thoughts via email.

Thanks, Mel

- - - -
Mel Dean
HETF Coordinator - http://www.hetf.us/
Institute of Pacific Islands Forestry
Pacific Southwest Research Station
USDA Forest Service
60 Nowelo St.

Melissa K. Dean, HETF Coordinator

My Family and I completely support the construction of the Laupahoehoe Homestead Government Road (LHGR) from the end of the existing portion to the HETF site.

In 1948 my father (Harry Jose) and his brother (Richard Jose) purchased lot 45 (TMK 3-6-006-045) located on the surveyed but yet unbuilt Laupahoehoe Homestead Government Road. At that time the federal territorial government promised those purchasing lots in this Homestead subdivision access on this to be constructed road. Before the road was constructed, Hawaii became a State and the federal government was no longer in the picture. Since that time, Harry and Richard struggled with the County and State to provide the promised access. The roadway project was started in 1972 but never completed. Monies for the construction of the road have been promised repeatedly and have lapsed or for some reason or another not come through. All of the neighboring property owners, Mr. Martin and Mr. Choy Hee as well as my father and uncle have since passed away with out any success. The Martin and Choy Hee properties have new owners and thanks to our attorney, they have now joined us in the efforts to get the Laupahoehoe Homestead Government Road completed.

Once Hawaii became a State, responsibility for these federal homesteads shifted back and forth between the State and the County. Now these roads are under the authority of the County, or at least if they have been determined to be a "road in limbo". It is my understanding that the LHGR is classified as a "road in limbo", meaning that County is responsible for the road, and that the first priority for roads in limbo is to provide a minimum level of service. It is also supposed to be for providing access for emergency and fire vehicles. If this road was completed it would allow for an alternative access to or from the proposed field education site. Currently there is one way in and one way out.

Members of our family have met with the County on many different occasions to discuss the access issues but promises to get the road built have never materialized. Most recently in 2009, the Director of Public Works Warren Lee agreed to provide us with the materials to construct the road, including hauling of that material to the road site, if we provide manpower. Given our limited finances, proceeding with this plan would take many years, and the County has now threatened to back out of its commitment to haul the road material at no cost. The amount of time and energy our families have put in to get this far has been ridiculous not to mention the amount of money it is costing us in attorneys fees for something that the State and County promised started and never finished.

Lot 45 is now owned jointly by myself, my brother Harry, and my cousins Richard and Peter Jose. Based on our trust that all of these promises would result in the road being constructed, I and other members of my family have invested heavily in the surrounding area for ranch operations.

My family and I lease approximately 500 acres of property completely surrounding our fee simple property which right now is our only means of access. If those leases were to be lost we would be completely land locked OUT of our property.

We also currently have a long term lease with Kamehameha Schools Bishop Estate which one of the proposed alternative routes will go directly through the middle of. To date we have had numerous problems with the State and Federal HETF vehicles and the traffic they bring and the disruption to our herd of cows as well as litter through the pastures and gates being left opened or unlocked. The use of the LHGR would eliminate the traffic through the middle of our pastures and eliminate the stress on our cattle. Use of this route other than as a back-up (secondary) access route is totally inappropriate and conflicts with our pasture operations. Our understanding of our lease with Kamehameha Schools, as its long term lessee, is that we would have a say as to what entities or persons are given the right to routinely use the road through our pastures. Kamehameha Schools has says it will no longer agree to that policy and states that it can override our refusal to permit access to HETF. A continuing legal dispute on this point would be very disruptive of our relationship with Kamehemeha Schools, especially since my wife is an employee of Kamehameha Schools.

We have two young boys who need space to run and play and for their hobbies and love for animals. Our intention was to build our home there on our lot that my father has left to me. I hope that it will be a possibility in my lifetime since it wasn't in his.

Thank you for your time and consideration.

Kelly Jose
on behalf of myself, my wife Chandra, and our family.

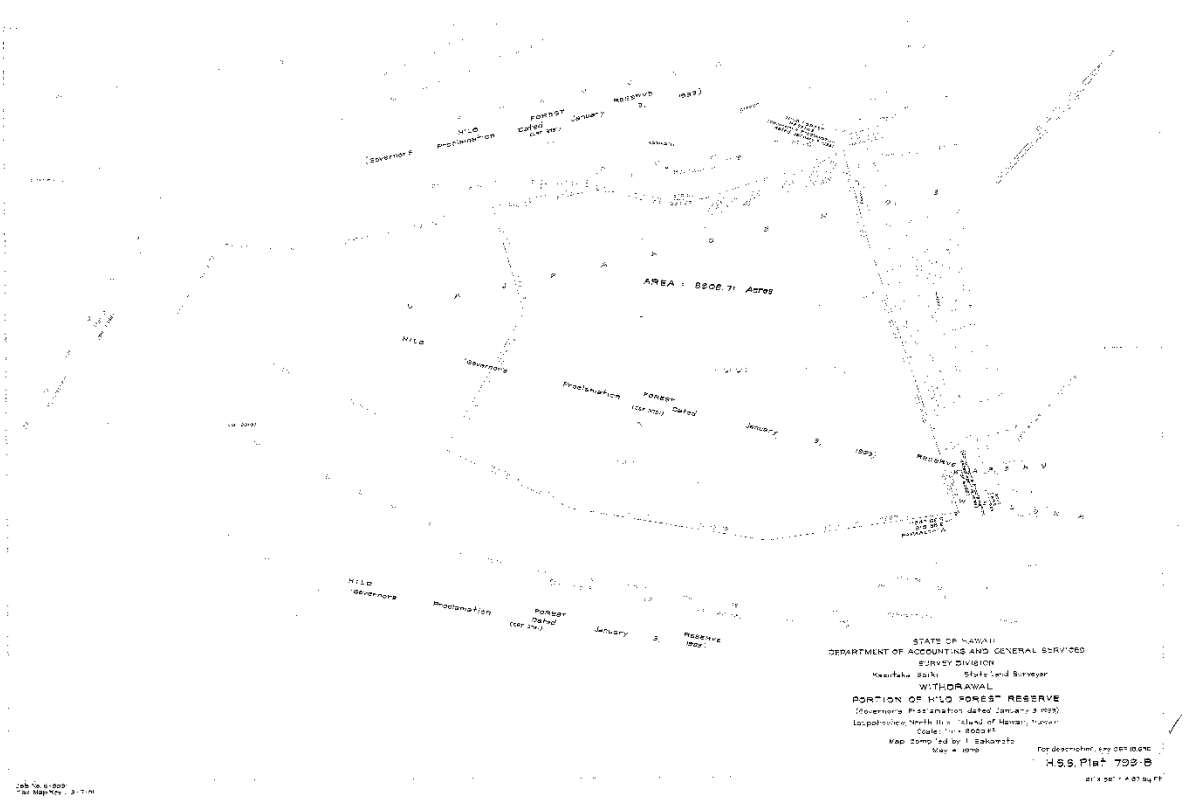
cc: Margaret Wille, Attorney at Law

Deborah Chang
<hkulaiwi@yahoo.com>
05/02/2011 08:06 AM
Please respond to
Deborah Chang
<hkulaiwi@yahoo.com>

To Melissa K Dean <mkdean@fs.fed.us>
cc
bcc
Subject USDA Draft EA

Aloha Melissa,
Today I will be mailing the original letter & map attachment to you and the people being copied. For the record, this letter is a personal one from me and not connected to any other group or project I may be working with at this time.
Thanks,


Debbie USDA Draft EA 5_11.pdf HTSPlat0799-B_ Waipunalei Trail.tif


AREA : 8206.71 Acres
STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
SURVEY DIVISION
State Land Surveyor
WITHDRAWAL
PORTION OF HILO FOREST RESERVE
H.S.S. Plat 793-B

- **Access Alternatives: 1) Improvement of Current Roadways and 2) Construction of New Roadway:**

YOUR OPENING STATEMENT SAYS THAT "LINE OF SIGHT AND ROAD STEEPNESS" LED YOU TO INVESTIGATE ACCESS ALTERNATIVES. MAINTAINING LINES OF SIGHT IS THE SAME FOR BOTH ALTERNATIVES BECAUSE OF THE VEGETATION.

REGARDING STEEPNESS, THE ROAD GRADIENT ACCORDING TO THE USGS TOPOGRAPHIC MAP(S) IS BASICALLY THE SAME FOR BOTH SPENCER ROAD AND MANOWAIOPAE HOMESTEAD ROAD. THE SLOPE TRAVERSAL OF THE KS PROPERTY (ALT #2) IS THE SAME AS THE SLOPE TRAVERSAL OF THE EXISTING ROAD. (ALT #1.)

ALT #1 HAS A BRIDGE AND A LOW WATER CROSSING THAT NEED IMPROVEMENT PLUS IMPROVING TURNOUTS.

ALT #2 HAS A LOW WATER AND WILL NEED TWO CULVERTS, TURNOUTS, A NEW ROAD TO BE BUILT PLUS CUTS AND FILLS ON KS AND STATE LAND.

THE COST OF A NEW ROAD (ALT #2) IS MUCH HIGHER THAN THE COST OF IMPROVING AN EXISTING ROAD (ALT #1) THE SAVINGS WOULD GO A LONG WAY TOWARDS IMPROVEMENTS AT THE RESEARCH & EDUCATION CENTER AND FIELD STAGING SITE.

WE ALSO FEEL THAT MANOWAIOPAE HOMESTEAD ROAD (ALT #1) WOULD CONTINUED TO BE USED BY FOREST SERVICE PERSONNEL BECAUSE IT IS A MORE DIRECT ROUTE TO THE FIELD EDUCATION SITE AND WOULD REQUIRE LESS GATES TO PASS THROUGH.

UNDER BENEFITS TO THE COMMUNITY IS STATES ONE BENEFIT IS ROAD IMPROVEMENT & SAFETY. HOW IS THE COMMUNITY GOING TO BENEFIT FROM ALT. #2 WHEN ONLY FOREST SERVICE PERSONNEL USE THAT ROAD. IF ALT. #1 WAS COMPLETED, HOMEOWNERS, RANCHERS, HUNTERS LOGGERS AND THE COMMUNITY AT LARGE WOULD BENEFIT.

- **Vehicle Wash Station:**

HAVE YOU EXPLORED ALTERNATIVE SYSTEMS SUCH AS A GRAVITY FED SYSTEM WITH A BOOSTER PUMP? POSSIBLY HAVING A MINOR VEHICLE WASH SYSTEM AT THE RESEARCH & EDUCATION CENTER AND A MAJOR VEHICLE WASH STATION AT THE LAUPAHOEHOE SCHOOL FOR THE TIMES OF TEN VEHICLES GOING TO THE STAGING SITE.

- **Additional Comments:**

THE PROPOSAL MAP SHOWING THE OWNERSHIP OF THE VARIOUS ROADS IS NOT ACCURATE. THERE IS NO U IN THE COUNTY ROAD (MANOWAIOPAE HOMESTEAD ROAD) JUST UNDER THE ARROW INDICATOR. THE ROAD PROCEEDS STRAIGHT UP AFTER MAKING THE LEFT TURN UP THE MOUNTAIN BETWEEN 750± FT. ELEVATION & 850± FT. ELEVATION

Please submit comments to: Melissa K. Dean, HETF Coordinator, USDA Forest Service, Pacific Southwest Research Station at Hilo, Institute of Pacific Island Forestry, 60 Nowelo Street, Hilo, Hawaii 96720, Phone: (808) 854-2651 or by email at: hawaiiexperimentaltropicalforest@fs.fed.us

To: Melissa K. Dear
HETF Coordinator

April 18, 2011

From: Harry A. Jose
P.O. Box 1440
Honokaa, HI 96727

Dear Melissa K. Dear,

I'm writing in regards to the construction of a county access road of which leads to the the Jose property TMK# (3) 3-4-6: por. 45 located in Laupahoehoe and boundary with the State Forest Reserve. This property has been within our family for over 50 years and we have had no access to this area. Therefore, our only access to our section of this area have been through an individuals private owner. Should that private lands ever get sold to another party, we will have no access to our portion of the Jose land. Therefore, it is very important to us that we have the county access right-of-way road leading to our property completed.

Sincerely Yours,

Harry A. Jose
&
Georgiana L. Kealoha-Jose

Dominic Yagong
Council Member
District of Hāmākua

Phone: (808) 961-8538
Fax: (808) 961-8912
Email: dyagong@co.hawaii.hi.us

HAWAI'I COUNTY COUNCIL
County of Hawai'i
Hawai'i County Building
25 Aupuni Street
Hilo, Hawai'i 96720

April 27, 2011

Melissa K. Dean, HETF Coordinator
USDA Forest Service,
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forest,
60 Nowelo Street, Hilo Hawai'i 96720

Dear Ms. Dean;

Thank you for providing me the opportunity to respond and comment on the USDA Forest Service, Pacific Southwest Research Station (PSW). As you may know, this newly proposed Laupāhoehoe headquarters as well as the Experimental Forest is in my district, and I am very excited for our community to be the host to this new, state of the art educational center and headquarters.

I do, however, have some comments in regards to accessing the headquarter facilities. According to your letter, access will be one of two options; via Manowaipae Road or Manowaipae Road, Spencer Road and the undeveloped Lapahoehoe Homestead Government Road (LHGR). I propose the latter option is the preferable access route from the planned headquarters on Spencer Road to the proposed staging site on Lot 46.

First and foremost, access from the headquarters on Spencer Road to staging area via (LHGR) would be mostly on a public roadway. Access through Manowaipae Road would be mostly on private gated lands, which are currently used as cattle pasture. I feel that it makes infinitely more sense to use public funds to improve a public roadway rather than a private one.

Accessing the Experimental Forest and Staging site from the proposed HQ on Spencer Road via LHGR would be direct and convenient once the road is completed. It would save future HEFT employees from going back down Spencer Rd and up Manowaipae which would save a lot on fuel cost and most importantly time.

Furthermore, I have been working with residents in the area for quite some time in regards to improving LHGR. I believe that we have a wonderful opportunity to create a partnership with residents, the HETF and the County to improve this public roadway. As noted by the letter sent by Margaret Wille dated April 22, she outlines the extent of the participation that the residents

are willing to contribute to get this roadway completed. I truly believe that a partnership with the experimental facility's neighbors is in the best interest of the community and the governmental entities involved. Selecting this roadway option will provide us with a win-win for everyone involved and as the district representative; I strongly recommend collaboration with the community. It has been a long and difficult issue for the Joses, Hendersons and Ostermanns and we have an opportunity to correct a promise that went unfulfilled for the past 60 years.

Thank you for your consideration on this matter, and if you have any further questions, please feel free to contact my office at 808-961-8538.

Warmest Aloha,

Dominic Yagong
Council Member, District 1
Hawai'i County Council

DY/bc

Mellissa K. Dean, HEFT Coordinator.

I am writing in support of constructing the Laupahoehoe homestead government road from Spencer road to the HEFT staging area. Completion of the roadway is long overdue. Our families, the Jose, Martin, and Choy Hee families have tried for years to get the road completed. Since our fathers purchased the property in 1948 they have struggled with access. A road was promised many times but never completed. The first increment was finally constructed in 1972, which ends at Kilau stream. The second increment was funded, but work was never done in 1994. All of the original landowners have since passed away. The Martin And Choy Hee properties have since been sold and have new owners.

We recently have been working with the county to get construction done. We, along with the new surrounding property owners have committed to assist in the construction, and the county already has committed to provide materials.

The new road would benefit HEFT personnel as well as the surrounding landowners. Personnel would save considerable commuting time from the new research center to the forest area. The new road would greatly enhance safety by providing an additional route in the area in an emergency. It would also be able to accommodate all types of vehicles including fire, rescue, and heavy construction vehicles that are limited by the current 6 ton wooden bridge at Kilau stream.

Setting aside research only vehicles that travel basically from the research center to the NAR would also considerably reduce the introduction of invasive species that are not already in the area. Theses vehicles could range from four wheel drive vans to atvs, which would have less impact on the environment. Traveling directly on the shorter Laupahoehoe homestead government road would decrease their exposure to invasive species and possibly decrease the frequency of required washings, thus saving valuable resources.

We urge you to consider this route. Working together we can accomplish this.

Peter and Toni Jose
Ph. 7750960 tonijose@hawaiiantel.net

I Richard Jose and family are writing this letter in response to the construction of the LHGR access road. For 64 years the Jose family has been working with the state and county government agencies in trying to construct an access road to our property. In 1972 the state and county working together, they were able to secure monies to start construction of the road, a total of 1, 300 feet was then constructed since then the Jose family has met with the state and county and then again money was appropriated to construct the remaining 2,250 feet of road but due to contractors pulling out of the project the state and county was unable to award the contract to the next low bidder.
Since then the Jose family has offered to construct the roadway if the county would provide the materials for the road. After meeting numerous times with county officials who promised to provide the materials, but yet have to produce and give the ok to start construction of the road in limbo.

We are still very much committed to construct the road and hopefully we may accomplish this by working with our neighbors and HETF agency.

Sincerely,
Richard A. J. Jose and family,

Public Comment – Laupahoehoe Research and Education Center

Pi'i Laeha
Po Box 133, Laupahoehoe, HI 96764
piiL@hawaiiantel.net

May 3, 2011

Please send me a copy of the completed EA draft.

- Bunk House: who can stay here? Will it be only for people doing studies in this forest and not an extension of convenient scientist housing?
- Access of forest and site should be used by legit education groups and not extended to "eco-tourist" type business.
- Approve use of solar/ alternative energy w/ backup generator, but also to create, design and use of a complete 'green' facility … possible research/ student project.
- Mandatory "forest orientation" class that all users complete.

- The Field Education site facility should have a more traditional Hawaiian design using natural materials where every possible…open hale style.

- Preferred is Access Alt. 2, above the center site.
- Should keep wooden bridge at the current 6-ton limit to reduce heavy equipment/ trucks traffic.

- Vehicle wash station should be at the research center site.
- Use of separate, designated clean vehicles that go up to forest from center, visiting cars stay parked at center (no washing)

Mahalo,
Pi'i

Public Comment Form

Your name Dorothy Maggi/Mark Snyder Date 4/29/2011

Mailing Address PO Box 254 laupahoehoe, HI 96764

Telephone* _____ E-mail* maggisnyder06@yahoo.com
(* optional)

☑ check here if you would like a copy of the draft EA sent to your address when it is completed.

☑ check here if you did not already receive a letter from us and would like to be included in future mailings.

The USDA Forest Service, Pacific Southwest Research Station (PSW), would like to invite your participation in the planning of a research and education center in the Laupahoehoe area. PSW is proposing to conduct activities outlined in the Scoping Letter. Headers for the activities are provided below, but please see the Scoping letter for details relating to the project.

Please tell us what you think about:

- Research & Education Center Facility Modifications, Upgrades and New Construction:

  Sounds reasonable.

- Construction activities at Field Education (Staging) Site on State Land near HETF Entrance:

  No comment.

- Roadway:

As a property owner along Spencer Rd, I am in favor of Alt.#1 - "improvement of Current roadways". The road is all ready in place, and the improvements would benefit the community as well as HETF employees & visitors.

- Vehicle Wash Station:

No Comment.

- Additional Comments:

Please submit comments to: Melissa K. Dean, HETF Coordinator, USDA Forest Service, Pacific Southwest Research Station at Hilo, Institute of Pacific Island Forestry, 60 Nowelo Street, Hilo, Hawaii 96720, Phone: (808) 854-2651 or by email at: hawaiiexperimentaltropicalforest@fs.fed.us

Public Comment Form

Your name SCOT SANDERSON Date 4/30/11

Mailing Address P.O. Bx 59 NINOLE HI 96773

Telephone* 963-5282 E-mail* _____
(* optional)

☑ check here if you would like a copy of the draft EA sent to your address when it is completed.

☐ check here if you did not already receive a letter from us and would like to be included in future mailings.

The USDA Forest Service, Pacific Southwest Research Station (PSW), would like to invite your participation in the planning of a research and education center in the Laupahoehoe area. PSW is proposing to conduct activities outlined in the Scoping Letter. Headers for the activities are provided below, but please see the Scoping letter for details relating to the project.

Please tell us what you think about:

- Research & Education Center Facility Modifications, Upgrades and New Construction:

I HOPE THE FACILITY AND GROUNDS COULD BE USED SOMEDAY AS AN EXTENSION OF THE FOREST ITSELF.

- Construction activities at Field Education (Staging) Site on State Land near HETF Entrance:

- Access Alternatives: 1) Improvement of Current Roadways and 2) Construction of New Roadway:

ALT 1 MAKES THE MOST SENSE SINCE IT WILL NOT CREATE ANY NEW CORRIDORS INTO THE FOREST FOR INVASIVE SPECIES TO MIGRATE ON. IT WILL ALSO REDUCE THE FOREST FRAGMENTATION POTENTIAL THAT A NEW ROADWAY WOULD CREATE.

- Vehicle Wash Station:

I BELIEVE THE BEST LOCATION FOR THE WASH STATION WOULD BE AT THE RESEARCH & EDUCATION CENTER USING A DEDICATED POWER GENERATOR. I THINK AN ON SITE FACILITY CAN BE BETTER MONITERED AND MAINTAINED.

- Additional Comments:

THANKS FOR A WELL THOUGHT THRU PROPOSAL

Please submit comments to: Melissa K. Dean, HETF Coordinator, USDA Forest Service, Pacific Southwest Research Station at Hilo, Institute of Pacific Island Forestry, 60 Nowelo Street, Hilo, Hawaii 96720, Phone: (808) 854-2651 or by email at: hawaiiexperimentaltropicalforest@fs.fed.us

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 3, 2011

Ms. Melissa K. Dean
HETF Coordinator
USDA Forest Service
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Ms. Dean:

Subject: Proposed Laupahoehoe Facility Construction Project

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Engineering Division, Division of Aquatic Resources, Land Division-Hawaii District, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 4, 2011

'11 APR 05 PM 02:48 ENGINEERING

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__ Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__ Div. of State Parks
x Commission on Water Resource Management
__ Office of Conservation & Coastal Lands
x Land Division –Hawaii District
x Historic Preservation

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Proposed Laupahoehoe Facility Construction Project
LOCATION: Island of Hawaii
APPLICANT: USDA Forest Service, Pacific Southwest Research Station

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 1, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

RECEIVED
LAND DIVISION
2011 MAY -2 P 5:

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Date: 5/2/11

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Charlene Unoki
Ref.: LaupahoehoeConsFacility
Hawaii.511

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in an area of Minimal Tsunami Inundation. The National Flood Insurance Program does not have any regulations for developments within the Minimal Tsunami Inundation areas.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Carter Romero at (808) 961-8943 of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Ms. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.

( ) The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional comments : _____

( ) Other: _____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: _____

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

RECEIVED
LAND DIVISION
2011 APR 13 A 10:05

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2011 APR -6 P 12:04

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

RECEIVED
LAND DIVISION
HILO, HAWAII

April 4, 2011

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division – Hawaii District
x Historic Preservation

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Proposed Laupahoehoe Facility Construction Project
LOCATION: Island of Hawaii
APPLICANT: USDA Forest Service, Pacific Southwest Research Station

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 1, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed:
Date: 4/12/11

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

AMV
RN

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

DAR 3766

April 4, 2011

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division –Hawaii District
x Historic Preservation

RECEIVED
APR 5 2011
AQUATIC RESOURCES

RECEIVED
LAND DIVISION
2011 APR 19 A 9:29
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Proposed Laupahoehoe Facility Construction Project
LOCATION: Island of Hawaii
APPLICANT: USDA Forest Service, Pacific Southwest Research Station

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 1, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed:
Date: 14 APR 2011

RECEIVED
2011 APR 11 PM 12:11
DIV OF AQUATIC RESOURCES
HILO, HAWAII

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 16, 2011

Ms. Melissa K. Dean
HETF Coordinator
USDA Forest Service
Pacific Southwest Research Station at Hilo
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Ms. Dean:

Subject: Proposed Laupahoehoe Facility Construction Project

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to Division of Forestry & Wildlife for their review and comment.

The Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

Charlene Unoki
Assistant Administrator

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

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

FOR Section

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 4, 2011

MEMORANDUM

RECEIVED
LAND DIVISION
2011 MAY 16 P 3:01
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
_Office of Conservation & Coastal Lands
x Land Division – Hawaii District
x Historic Preservation

FROM: Charlene Unoki, Assistant Administrator
SUBJECT: Proposed Laupahoehoe Facility Construction Project
LOCATION: Island of Hawaii
APPLICANT: USDA Forest Service, Pacific Southwest Research Station

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 1, 2011.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(√) We have no comments.
( ) Comments are attached.

Signed: Paul J Conry
Date: 5/13/11

zestes Estes
<zestes@msn.com>
05/04/2011 10:44 PM

To <mkdean@fs.fed.us>
cc
bcc
Subject Dear - Melissa K. Dean, HETF Coordinator of USDA Forest Service, My name is Zion Estes This is what I personally hope and expect to be included into the Forrest Service plan for this site in Laupahoehoe...

Dear - Melissa K. Dean, HETF Coordinator of USDA Forest Service,

My name is Zion Estes and I attended your presentation and meeting about the Experimental Forest and appreciate the effort and time you are spending to converse with public members who care. This is what I personally hope and expect to be included into the Forrest Service plan for this site that affects all of our lives, and land for future generations. There is no monetary value that can replace some of the last standing forests and resources here and across the World. At no price should we sell the rights to government, individuals, or companies to abuse natural resources and land anymore. We pray this won't be the case for this site, everyone including our selves will be held responsible for our actions that will affect the future generations.

1. There shall be Zero tolerance absolutely no use of Genetically Modified anything including Biological agents for tests, genocide, research or for war will not be allowed or conducted in the designated Forest areas planned for this site.

2. Under the State Of Hawaii Public Trust doctrine all public shall maintain at all times full access to this site and all records shall be fully disclosed and transparent on an open collaborative interactive GIS website with monitoring systems. If you need assistance developing a powerful website platform and GIS tracking system, we would be happy to do assist you.

3. Forestry Service shall model after nature and not against it.

4. Forestry shall make the site available to any citizen or organization enabling them the right to conduct native reforestation and gardens which in turn support the local community and the interest of the masses and tax payers.

5. Create an open collaborative platform of community citizens and organizations where we can vote and decide on operations and decisions being made at the site.

6. Military will have limited control over the area in a time of war while still allowing full access to public and no access for war research or games.

7. Model a unified approach to dealing with many water, forest, and food issues that are strictly Organic and 100% Chemical Free.

8. Ban any financial support or chemicals from any and all chemical companies.

10. Manage the Forrest site with higher ethical and moral values than have been done in the past.

11. With all your soul and consciousness do not support chemicals, GMO's, and toxic deadly weapons that are ruining our land, and planet. Stand up with the people who care against the one's who don't care or understand. If you or they don't fully understand the magnitude of your responsibility then learn how damaging GMO's and chemicals really are. GMO's spread wide famine and disease and GMO's

break the DNA chain.

PLEASE READ THE RESEARCH ABOUT GMO'S BELOW OUR NATION IS IN A DIRE SITUATION PLEASE STAND UP WITH US BEFORE ITS TO LATE...

Thanks for your heart felt consideration, Sincerely Zion Estes

Watch Exclusive Video Interview wth Dr. Huber

Halt the planting of Monsanto's Roundup Ready alfalfa & sugar beets!

Tell President Obama to instruct the USDA to immediately ban Monsanto's GMO alfalfa and sugar beets from being planted until independent peer reviewed safety testing can be conducted.

Tell President Obama & Secretary Vilsack to halt the planting of Monsanto's GMO alfalfa and sugar beets.

Dear Zion,
On January 17, 2011, Dr. Don Huber, an internationally-recognized plant pathologist and Professor Emeritus at Purdue University, sent a private letter to U.S. Agriculture Secretary Tom Vilsack warning him of a serious problem facing U.S. agriculture. This letter, marked "CONFIDENTIAL and URGENT", warned Secretary Vilsack of a previously unknown pathogen, "new to science" that "should be treated as an emergency". [1]
Huber's letter discussed the new pathogen in the most dire terms, saying that the findings of this **team of top scientists had already discovered a link between the new pathogen and the steady rise of plant diseases in Roundup Ready corn and soybean crops** and in association with **high rates of infertility and spontaneous abortion rates of 45% of cattle and dairy herds** consuming feed that had been treated with the number one selling weed killer Roundup.[2]

Huber warned Secretary Vilsack that the discovery of the new pathogen was "highly sensitive information that could result in a collapse of U.S. soy and corn export markets and significant disruption of domestic food and feed supplies."

On Feb 4th we saw Dr. Huber speak to a room of 200 commodity corn and soybean farmers in Des Moines, Iowa about the problems of Roundup that they were seeing in their fields. When the letter leaked on the internet, we decided to investigate and Dr. Huber agreed to go on camera to let the American people know about this real threat to our food supply.
Watch Dr. Huber explain the science and find out why he was so concerned about the approval of GMO alfalfa:

http://action.fooddemocracynow.org/go/371?akid=314.172974.x_1Uff&t=7
Huber warned Secretary Vilsack that the discovery of the new pathogen was "highly sensitive information that could result in a collapse of U.S. soy and corn export markets and significant disruption of domestic food and feed supplies."
In the letter, Huber requested assistance from the USDA and other federal agencies to help complete these scientific findings and urged Secretary Vilsack to delay the approval of any more genetically engineered Roundup Ready crops. **The USDA chose to ignore this warning, and less than three weeks later, approved two new GMO crops, including Monsanto's Roundup Ready GMO alfalfa (the primary grazing feed for US meat and dairy cows) and sugar beets.**[4]
Earlier this spring, Food Democracy Now! caught up with Dr. Huber to investigate these new findings and uncover the latest science behind this threat to our food supply. We were greatly alarmed by what we learned and appreciated Dr. Huber's courage in coming forward to warn the Obama administration about this credible and serious threat to the livelihoods of farmers, animal livestock and our global food supply.

It's planting season *now*. If these new Roundup Ready GMO alfalfa seeds go in the ground, there will be little hope of preventing contamination of all alfalfa, as scientists and experts have warned. This puts the number one forage crop at risk, placing the majority of America's food supply, livestock, and ultimately our families' health at risk.

We have drafted a letter to President Obama and Sec. Vilsack asking them to suspend the sale and planting of Monstanto's Roundup Ready GMO alfalfa and sugar beet seeds until further research can be done. Will you sign on?
Sign the letter:

http://action.fooddemocracynow.org/go/370?akid=314.172974.x_1Uff&t=9
If we can get 50,000 co-signers, we'll fly out to DC ourselves and deliver the letter. We'll show Secretary Vilsack photos of affected plants and livestock, and ask him directly how he can justify letting planting go ahead while these serious questions are unanswered.

And if we can raise just $2,000 for travel, we'll fly an affected farmer out with us, so Secretary Vilsack has to look him in the eye and explain to him the decision to approve more Roundup Ready crops in light of the stark concerns with plant diseases and livestock infertility that have already caused farmers serious economic harm.
Pitch in $25 here to help fly an affected farmer out to Washington DC:
http://fdn.actionkit.com/go/372?akid=314.172974.x_1Uff&t=12
This immediate crisis around Roundup Ready GMO alfalfa and sugar beet seeds, while alarming, is an opportunity for us, working together, to **hold the Obama Administration accountable for not putting the safety of America's farms and families ahead of Monsanto's corporate interest.**
This can be an important step toward the long-term goal of reforming US agriculture policy so it favors building a sustainable food system that protects our natural environment, sustains farmers and nourishes families.
We are committed to this fight now, more than ever - please join us. Together, our voices will create the future we need.
Thank you for participating in food democracy-
Dave, Lisa and the Food Democracy Now! Team

Sources:

1."Senior Plant Pathologist Warns Secretary Vilsack of Discovery of New Organism, Threat to U.S. Agriculture", Food Democracy Now! February 27, 2011.
http://action.fooddemocracynow.org/go/365?akid=314.172974.x_1Uff&t=14
2. "Monsanto - Statement About Alleged Plant Pathogen Potentially Associated with Roundup Ready Crops", Monsanto, February 22, 2011.
3."Scientist Warns of Safety of Monsanto's Roundup", Reuters, February 24, 2011.
http://action.fooddemocracynow.org/go/368?akid=314.172974.x_1Uff&t=16
4. "U.S. Approves Genetically Modified Alfalfa", *New York Times*, January 27, 2011.
http://action.fooddemocracynow.org/go/366?akid=314.172974.x_1Uff&t=18

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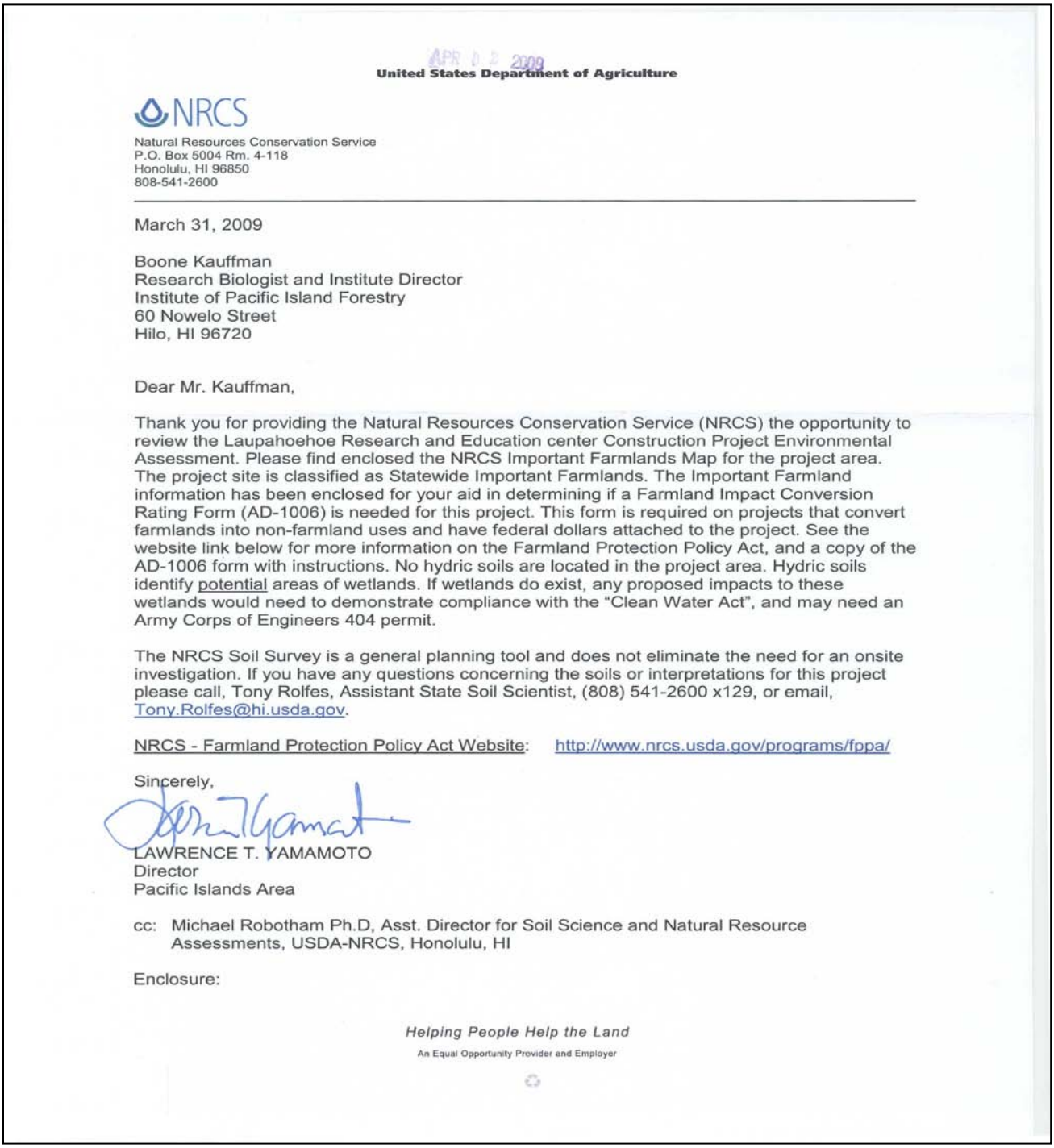
Appendix D. Public Comments and Agency Responses on Draft EA Released in 2009.

Note: Comment letters begin on the following page; responses to comments begin on page 161.



APR 0 2 2009

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
P.O. Box 5004 Rm. 4-118
Honolulu, HI 96850
808-541-2600

March 31, 2009

Boone Kauffman
Research Biologist and Institute Director
Institute of Pacific Island Forestry
60 Nowelo Street
Hilo, HI 96720

Dear Mr. Kauffman,

Thank you for providing the Natural Resources Conservation Service (NRCS) the opportunity to review the Laupahoehoe Research and Education center Construction Project Environmental Assessment. Please find enclosed the NRCS Important Farmlands Map for the project area. The project site is classified as Statewide Important Farmlands. The Important Farmland information has been enclosed for your aid in determining if a Farmland Impact Conversion Rating Form (AD-1006) is needed for this project. This form is required on projects that convert farmlands into non-farmland uses and have federal dollars attached to the project. See the website link below for more information on the Farmland Protection Policy Act, and a copy of the AD-1006 form with instructions. No hydric soils are located in the project area. Hydric soils identify potential areas of wetlands. If wetlands do exist, any proposed impacts to these wetlands would need to demonstrate compliance with the "Clean Water Act", and may need an Army Corps of Engineers 404 permit.

The NRCS Soil Survey is a general planning tool and does not eliminate the need for an onsite investigation. If you have any questions concerning the soils or interpretations for this project please call, Tony Rolfes, Assistant State Soil Scientist, (808) 541-2600 x129, or email, Tony.Rolfes@hi.usda.gov.

NRCS - Farmland Protection Policy Act Website: http://www.nrcs.usda.gov/programs/fppa/

Sincerely,

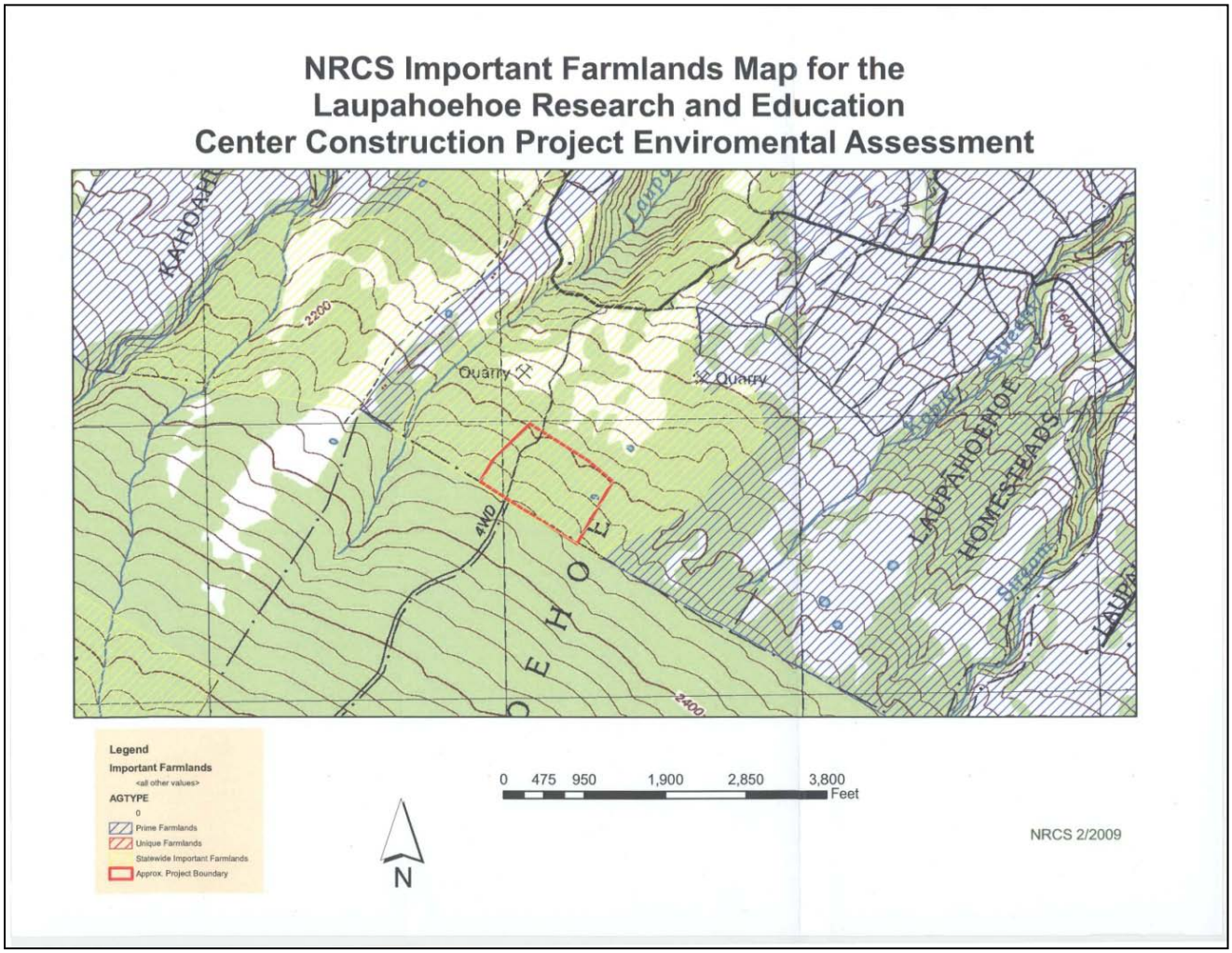
LAWRENCE T. YAMAMOTO
Director
Pacific Islands Area

cc: Michael Robotham Ph.D, Asst. Director for Soil Science and Natural Resource Assessments, USDA-NRCS, Honolulu, HI

Enclosure:

Helping People Help the Land

An Equal Opportunity Provider and Employer


NRCS Important Farmlands Map for the
Laupahoehoe Research and Education
Center Construction Project Enviromental Assessment
KAHOAH
2200
Quarry
Quarry
4WD
LAUPAHOEHOE
HOMESTEADS
2400
Legend
Important Farmlands
<all other values>
AGTYPE
0
Prime Farmlands
Unique Farmlands
Statewide Important Farmlands
Approx. Project Boundary
N
0 475 950 1,900 2,850 3,800
Feet
NRCS 2/2009

APR 17 2009

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 15, 2009

Mr. J. Boone Kauffman, Ph.D.
Institute of Pacific islands Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Mr. Kauffman:

Subject: Draft Environmental Assessment for Hawaii Experimental Tropical Forest Laupahoehoe Research and Education Center Construction Project

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Engineering Division, Commission on Water Resource Management, Land Division-Hawaii District, Division of Aquatic Resources, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

for Morris M. Atta
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

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

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LAND DIVISION
HILO, HAWAII

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

AQUATIC RESOURCES: 2185

DIRECTOR	
COMM. FISH.	
AQ RES/ENV	
AQ REC	
PLANNER	
STAFF SVCS	
RCUH/UH	
STATISTICS	
AFRC/FED AID	
EDUCATION	
SECRETARY	
OFFICE SVCS	X
TECH ASST	
Return to:	
No. Copies	
Copies to:	
Due Date:	

RN

March 25, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division –Hawaii District

FROM: for Morris M. Atta
SUBJECT: Draft environmental assessment for Hawaii Experimental Tropical Forest Laupahoehoe Research and Education Center Construction Project
LOCATION: Laupahoehoe, Hawaii, TMK: (3) 3-6-6:portion 46
APPLICANT: USDA, Forest Service

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 15, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

(✓) We have no objections.
( ) We have no comments.
( ) Comments are attached.

Signed:
Date: 08 April 2009

RECEIVED
MAR 30 2009
AQUATIC RESOURCES

LINDA LINGLE
GOVERNOR OF HAWAII

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

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DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 25, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division –Hawaii District

FROM: Morris M. Atta
SUBJECT: Draft environmental assessment for Hawaii Experimental Tropical Forest Laupahoehoe Research and Education Center Construction Project
LOCATION: Laupahoehoe, Hawaii, TMK: (3) 3-6-6:portion 46
APPLICANT: USDA, Forest Service

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 15, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed:
Date: 4/2/09

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Morris Atta
REF: DEA for Hawaii Experimental Tropical Forest Laupahoehoe Research & Education Center Construction Project
Hawaii.001

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in an area of minimal tsunami inundation. The National Flood Insurance Program does not have any regulations for developments within this area.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

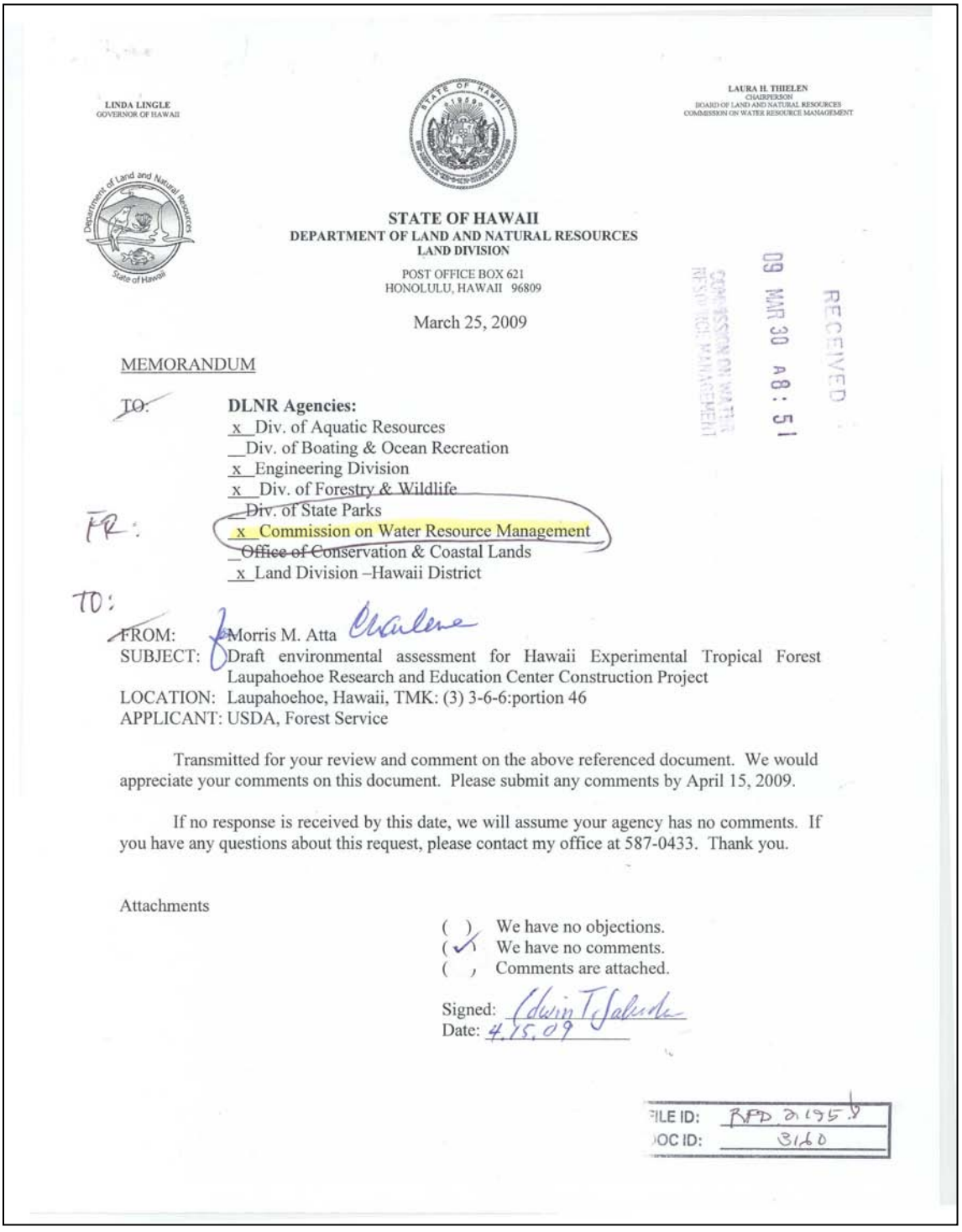
( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: _____
for ERIC T. HIRANO, CHIEF ENGINEER

Date: 7/2/09



LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
09 MAR 30 A8:51
COMMISSION ON WATER RESOURCE MANAGEMENT

March 25, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division –Hawaii District

FR:

TO:

FROM: Morris M. Atta
SUBJECT: Draft environmental assessment for Hawaii Experimental Tropical Forest Laupahoehoe Research and Education Center Construction Project
LOCATION: Laupahoehoe, Hawaii, TMK: (3) 3-6-6:portion 46
APPLICANT: USDA, Forest Service

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 15, 2009.

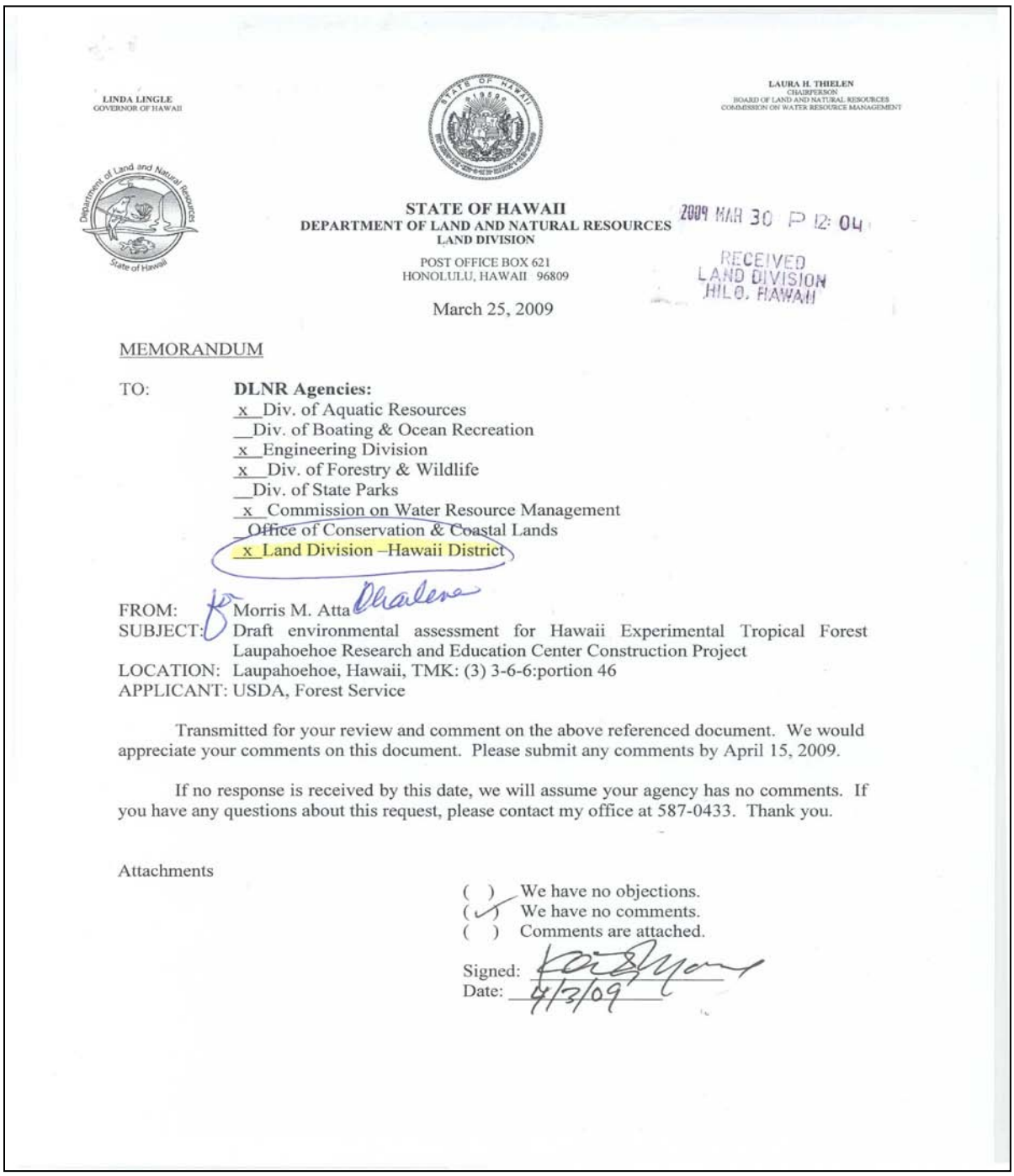
If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: Edwin T. Sakuda
Date: 4.15.09

FILE ID: RPD 2195.9
DOC ID: 3160



LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2009 MAR 30 P 12: 04

RECEIVED
LAND DIVISION
HILO, HAWAII

March 25, 2009

MEMORANDUM

TO: **DLNR Agencies:**
x Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division –Hawaii District

FROM: Morris M. Atta
SUBJECT: Draft environmental assessment for Hawaii Experimental Tropical Forest Laupahoehoe Research and Education Center Construction Project
LOCATION: Laupahoehoe, Hawaii, TMK: (3) 3-6-6:portion 46
APPLICANT: USDA, Forest Service

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by April 15, 2009.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed:
Date: 4/3/09

APR 0 8 2009

LINDA LINGLE
GOVERNOR

MAJOR GENERAL ROBERT G. F. LEE
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE

PHONE (808) 733-4300
FAX (808) 733-4287

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

April 6, 2009

Mr. J. Boone Kauffman
Research Biologist and Institute Director
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Mr. Kauffman:

Thank you for this opportunity to comment on the Laupahoehoe Research and Education Center Construction Project Environmental Assessment (EA) which was developed for the proposed construction of a research and education center and facilities for the Laupahoehoe Unit of the Hawaii Experimental Tropical Forest, to be located in Northeast Hawaii, in the area of Laupahoehoe.

Alternative Five, as proposed for the development of housing, caretaker and administrative units, teaching and meeting rooms, utility storage, rooftop water collection systems and a parking area increases the population who will be at risk from wildfire and potential flood risk. The use of locked-gate access points may adversely affect emergency ingress and egress, and evacuation. Because of the remote location of the proposed development, an Emergency Alert System (EAS) and/or weather monitor should be incorporated into the design of the proposed development.

Mitigation measures and plans for continuity of essential services should also be considered in planning and the design phase of any new construction, as mitigation prevents loss of life and minimizes loss of property. Generally, the cost of integrating mitigation measures during construction is approximately one-third the cost of post-construction retrofit. Based on funds availability and project eligibility, pre- or post-disaster grant funds could be used to offset mitigation costs.

Any further development plans, including commercial as well as residential, should be forwarded to State Civil Defense for recommended placement of warning infrastructure. For questions regarding hazard mitigation, please call Mr. Larry Kanda at 733-4300, extension 550.

Sincerely,

EDWARD T. TEIXEIRA
Vice Director of Civil Defense

APR 22 2009

LINDA LINGLE
GOVERNOR OF HAWAII

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

RUSSELL Y. TSUJI
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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LAND
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:AB

Correspondence: HA 09-181

APR 21 2009

Boone Kauffman
Laupāhoehoe Research Center Project EA
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, Hawai'i 96720

SUBJECT: Request for Comments on the Laupāhoehoe Research and Education Center Construction Project Environmental Assessment

Dear Mr. Kauffman:

The Office of Conservation and Coastal Lands (OCCL) has reviewed the Environmental Assessment (EA) for the Laupāhoehoe Research and Education Center Construction Project located on land 3.7 miles south-southwest of the town of Laupāhoehoe, on the Island of Hawai'i.

According to your report, the facilities will be located on state-owned land, identified by TMK: (3) 3-6-006:046, under the A-20 County zoned district. However, OCCL notes that the subject parcel is dual zoned, located in the State Land Use Agricultural District and the State Land Use Conservation District, General subzone.

OCCL notes that the EA did not include a map delineating the dual zoning of the subject parcel or where the facilities will be located in relation to the State Land Use districts. Please provide a map or figure illustrating where the proposed facilities are located within the parcel in relation to the State Land Use district boundaries.

Any proposed land use(s) that occur in the Conservation District by the Applicant needs to be an identified land use, pursuant to Section 13-5-25, Hawai'i Administrative Rules (HAR), and may require a Conservation District Use Application (CDUA).

Should you have any questions, please contact Audrey Barker of our Office at (808) 587-0316.

Sincerely,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI
JIRO A. SUMADA

IN REPLY REFER TO:

STP 8.3226

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

April 22, 2009

Mr. Marti Dodds
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Mr. Dodds:

Subject: Laupahoehoe Research and Education Center, Hawaii Experimental Tropical Forest Draft Environmental Assessment (DEA)

Thank you for providing the subject project for the State Department of Transportation's (DOT) review and comments.

DOT understands the proposed project involves the construction of sleeping quarter facilities to house up to 20 persons, a storage area and a caretaker residence on a 1-3 acre parcel. The project site is accessed from Manowaiopae Homestead Road and located approximately three miles south of Mamalahoa Highway.

The DOT Highways Division Planning Branch, telephone number (808) 587- 1830, submits the following comments.

1. The movement of vehicles and/or loads onto the State highway shall not exceed the provisions of Chapter 291, Sections 34, 35 and 36, Hawaii Revised Statutes as amended, without an approved special permit from the State Highways Hawaii District Office;

2. The applicant shall be responsible for reconstruction and repair of any damage to the existing pavement or structures within the State right-of-way;

3. A permit is required for work within the State highway right of way; and

4. The tax map key number for the site should be included in the text in Section 1, preferably under the Project Description, Location, and Property Ownership subsection.

Mr. Marti Dodds STP 8.3226
Page 2
April 22, 2009

If there are any other questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 587-2356.

Very truly yours,

Francis Paul Keeno

for BRENNON T. MORIOKA, PH.D., P.E.
Director of Transportation

APR 28 2009

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EPO-09-053

April 22, 2009

Mr. Boone Kauffman, Director
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, Hawaii 96720

Dear Mr. Kauffman:

SUBJECT: Draft Environmental Assessment for Laupahoehoe Research and Education Center Construction Project
Hilo, Island of Hawaii, Hawaii

Thank you for allowing us to review and comment on the subject application. The application was routed to the various branches of the Environmental Health Administration. We have the following Clean Water Branch and General comments.

Clean Water Branch

The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater into State surface waters (HAR, Chapter 11-55). This includes discharges of storm water associated with construction activities (excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, storage areas, etc.) that result in the disturbance of one (1) acre or more of total land area. The total land area includes a contiguous area where multiple, separate, and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

   For discharges of storm water associated with construction activities into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form. The NOI must be submitted 30 calendar days before the start of construction activities. The NOI form may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

3. For types of wastewater not listed in Item 2 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. Class 1 waters include, but is not limited to, all State waters in natural reserves, preserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under chapter 195, Hawaii Revised Statutes (HRS), or similar reserves for the protection of aquatic life established under chapter 195, HRS. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

4. You must also submit a copy of the NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

5. The DOH-CWB acknowledges that a Section 404 Permit will be obtained from the Honolulu Engineer District (HED) of the U.S. Army Corps of Engineers (COE) for the proposed work at the Kapili Stream crossing. Pursuant to the Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations, Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

6. Page 6 of the DEA indicates that the facility design includes the installation of a permanent wash station for vehicles and personnel. Please clarify if the wash water effluent will discharge to State waters. Also, clarify how the wash water effluent will be handled.

7. The DEA refers to a septic system and leach bed. It is recommended that the DOH, Wastewater Branch is contacted to ensure compliance with HAR, Chapter 11-62.

8. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation

If you have any questions, please visit our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at 586-4309.

General

We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

If there are any questions about these comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Sincerely,

KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
CWB
EH-Hawaii

APR 2 0 2009

Mauka and Makai Access Committee (MAMA)
P.O. Box 1396
Honoka`a, HI 96727

April 16, 2009

Mr. Boone Kauffman
Laupahoehoe Research and Education Center Construction Project EA
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, HI 96720

Dear Mr. Kauffman,

Subject: Laupahoehoe Research and Education Center Construction Project EA

We note that the geographic scope of the proposed facility lease includes the present road access into the Laupahoehoe Forest Reserve, to what is commonly called Blair Road. The USFS, then, will effectively control forest reserve access through the Blair Road alignment, the most logical public access into the forest reserve. This raises the concern about public access to the area.

· The public's interest in accessing the Laupahoehoe FR via Blair Road is known by both Land Management and DOFAW. DOFAW agency correspondence as far back as 1971 recognizes the public's interest in recreational use. There have been past discussions (including a field trip in 2005) with DOFAW about public pedestrian access to the FR, to include the possibility of a parking area near the present Blair Road gate.

· There is, in the present lease (S-5320), a reservation for public access to the Laupahoehoe FR. While not presently acted on, it exists, in recognition of the need.

· Documentation accompanying the 2006 proposal to the Board of Land and Natural Resources to establish the experimental forest states that "access to the forest will not be prohibited."

Given the public-agency dialogue to date regarding public access through Blair road, how will the USFS address the public's interest in accessing the FR through that Blair Road alignment? While there is no public access at this time, the matter will continue to be pursued by a public constituency. The issue is not going away.

In light of the public's interest in accessing the Laupahoehoe FR, and the control that the proposed facility will have over the Blair Road, the EA should address public access alternatives into the forest reserve. Further, there should be, in the USFS lease, a reservation for public access, to include parking.

Sincerely yours,

Karen Clarkson

Karen B. Clarkson, Chair

Mauka Makai Access Committee

P.O. Box 1396

Honokaa, HI 96727

cc: Senator Dwight Takamine

cc: Representative Mark Nakashima

cc: Councilman Dominic Yagong

cc: Roger Imoto

APR 2 0 2009

Michael Crosson
P.O. Box 12
Honoka`a, HI 96727

April 16, 2009

Mr. Boone Kauffman
Laupahoehoe Research and Education Center Construction Project EA
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, HI 96720

Dear Mr. Kauffman,

Subject: Laupahoehoe Research and Education Center Construction Project EA

The following comments are offered:

Public access to the Laupahoehoe Forest Reserve is inadequately addressed in the Draft EA.

While no public access currently exists via the road that would lead to the proposed Laupahoehoe Research and Education Center (LREC), this is not due to a lack of interest on the part of the community to gain access into the forest reserve. Currently, the only public access available in the area is (Spencer Trail). It is impassable with horses and nearly impassable for hiking.

Nearby, the County owns a homestead road and right-of-way that runs up to the State parcel where the research center will be constructed (TMK: 3-6-6-46). Immediately above this parcel are the forest reserve and the beginning of Blair Road. Sometime before 1956, the sugar company constructed the road that is now being used for access to the proposed LREC and Blair Road; the actual location of the county road is unclear. The sugar company road is presently used for access and is proposed to be the access to the LREC and continue to be the access to Blair Road. Do any portions of the current road correspond to the original homestead road? Has the County been consulted as the owner of the homestead road?

It is illegal to block or obstruct a government road or right of way. A gate or fence currently obstructs the homestead road. This gate may or may not be on the government road because while the right-of-way to the State parcel has been established, the true legal alignment has not. If the true legal alignment were to be determined, then the private landowner could be asked if they would be receptive to having the current road alignment satisfy the government's claim. If the government could use its own road, there would be no need to satisfy the private landowner's concerns regarding liability insurance, indemnification and whatever else might arise.

This is a good time to determine the true alignment and acquire clear title to the access road. It would benefit the communities and the researchers for many years to come. Acquiring clear title to the road would make it easier to accommodate some form of public access.

The Draft EA's treatment of public access bears little or no resemblance to the proposal that was presented to the Board of Land and Natural Resources on Feb 24, 2006.

When the proposal to establish the experimental forest was submitted to the DLNR board on February 24, 2006 public access issues were treated favorably. The submittal stated "It has good road access for both scientists and the public", "with improvements this could provide access for all potential users of the forest", "Access to the forest will not be prohibited", "there are no plans to limit activities such as hunting or gathering within boundaries of the experimental forest", "will the public be excluded? No." and, "There exists an existing road that extends the length of the proposed forest."

However, now the EA states: "All existing gates will remain in place and locked and will not be open to the general public."

What happened in the process that the current EA statement is so changed from the intent of the original proposal in February 2006?

A reservation for public access to the Laupahoehoe Forest Reserve exists in the General Lease No. S-5320.

In 1995, the consent to the assignment of S-5320 is subject to "a reservation of the State of Hawaii of public access at a future date through the property which is the subject of General Lease No. S-5320 to the mauka public forest …

What is the status of that reservation in light of this proposal to expand the use of the road?

Recreational use of Blair Road has been favorably considered even before its construction

It is noted in the EA on page HiHETF116a-117:

"The following notes, from the Department of Land and Natural Resources, dated March 12, 1971, document a hearing...and also document construction and purposes of the Blair Road...

The Division for several years has had plans to construct a road through Laupahoehoe with C.I.P. funds for timber harvesting, administration and recreational use. This was consistent with the plan of the North Hilo community which recommended a road for local recreational use..."

To summarize, Blair road is an excellent access to a beautiful forest.

There is nothing else like it. It's a beautiful hike on a nice road. The government owns an access up to the Blair Road. It has long been an intent of the government for this road to be used for recreational purposes. Please include provisions for public access to this special area.

Sincerely,

Michael Crosson

Cc: Senator Dwight Takamine
Representative Mark Nakashima
Councilman Dominic Yagong

APR 2 2 2009

Deborah L. Chang
P.O. Box 202
Pa`auilo, HI 96776
April 21, 2009

Dr. Boone Kauffman
Director
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, HI 96720

Dear Dr. Kauffman:

SUBJECT: Laupahoehoe Research and Education Center Construction Project
Draft Environmental Assessment (DEA)

The Final EA needs to include a discussion about public access alternatives into the Laupāhoehoe Forest Reserve via Blair Road.

The above-referenced DEA does not adequately recognize and address the long-standing, sporadic efforts by the public to secure public access via Blair Road into the Laupāhoehoe Forest Reserve. Since the area to be leased to the Hawaii Experimental Tropical Forest Facility (HETF) in Laupāhoehoe encompasses the Blair Road entry into the forest reserve, it appears that the USFS will be in the position of controlling forest reserve access through Blair Road. The EA needs to address public access alternatives into this important, publicly owned resource and specifically how controlled public access might be accommodated via Blair Road. For the record, I am not suggesting uncontrolled, 24-hour/day, 7 days/week public access. There are other possible arrangements that would constitute a shared use of the publicly owned forest reserve with the public without sacrificing the objectives of the Natural Area Reserves System and the USFS Experimental Forest research. The state lease with HETF should include reservations for the future accommodation of controlled pedestrian (and possibly equestrian) public access, including a small parking area outside of the Blair Road gate.

Public access into the Laupāhoehoe Forest Reserve via Blair Road is not a new proposition.

- The DEA includes, "*A Study of Cultural-Historical Resources of Lands in the Laupāhoehoe Forest Section*" by Kumu Pono Associates, LLC. That study describes the discussions that occurred in the 1970s when logging of *koa* in this area by Blair Ltd. was permitted by the state and resulted in the creation of "Blair Road." The Division of Forestry and Wildlife (DOFAW) is stated to have had "plans to construct a road through Laupahoehoe with C.I.P. funds for timber harvesting, administration and *recreational* use. This was consistent with the plan of the North Hilo community which recommended a road for local recreational use." (emphasis

added). The area was sufficiently important to the state's hunting program that an inventory and monitoring of pig populations was undertaken to determine the effects of tree harvesting on the state's wildlife hunting resources.

- State General Lease No. S-5320 (TMK: 3-6-6:46) includes a "Consent" which states that the lease is subject to "1) a reservation of the STATE OF HAWAII of public access at a future date through the property which is the subject of General Lease No. S-5320 to the mauka public forest and natural area reserves at a location to be jointly determined by the Assignees and the STATE OF HAWAII's Division of Forestry and Wildlife; and 2) the STATE OF HAWAII's right to use Blair Road, which traverses the property which is the subject of General Lease No. S-5320, for official business." Although approved by the BLNR in 1995, the state has done nothing to exercise this reservation of public access. Now that a portion of that original lease is planned for HETF, this is a good time to exercise that reservation.
- In 2004 - 2006 the Mauka and Makai Access Committee (MAMA) communicated its interest in public access to Blair Road and the forest reserve in several meetings and correspondence with Land Division and DOFAW. MAMA was advised that DOFAW would discuss the public's long-standing access interests with the USFS, the affected state lessees and Kamehameha Schools, owner of parcel 50 through which a portion of the access road crosses.
- The staff submittal to the BLNR of February 24, 2006 which requests Board approval to proceed with the establishment of HETF acknowledges the public's interests in accessing this area. Page 5 states, "While the public may be excluded around small areas of particularly sensitive research projects or for human safety issues, there are no plans to limit activities such as hunting or gathering within boundaries of the experimental forest. The experimental forest will provide new opportunities for people to learn about and appreciate Hawaiian forests." Also, Governor Linda Lingle's "Report of Findings for the Establishment of the Hawai`i Experimental Tropical Forest: Suggested Sites and Infrastructure Needs" dated January 1, 2006, states, "Providing public access for forest research, demonstration, and education is of paramount importance. Increased access and many new opportunities will be created." (p. 5).

In summary:

1. Considering the well-documented past and more recent attempts to open up this area to some form of public access, the final environmental assessment needs to fully address how public access into the Laupāhoehoe Forest Reserve could be accommodated via Blair Road.
2. The lease of state land to the USFS for its Research and Education Center should include a reservation for future public access through the subject property, including a public parking area just outside of the gate at the lower boundary of the forest reserve.

2 of 3

I support research and conservation activities in this very special public property. I believe that the area can and should be shared with the public in a manner that will be in keeping with conservation and educational goals. The question is not "why" should there be public access opportunities but rather "how" can they be provided in a controlled manner.

Mahalo for your consideration of my concerns,

Deborah L. Chang

xc: Roger Imoto, DOFAW
BLNR Members
Senator Dwight Takamine
Representative Mark Nakashima
Councilman Dominic Yagong

3 of 3

APR 21 2009 (Hand Delivered to Veronica Moreland

Driving up Manowaiopae Homestead Road from the main road, one can not help but notice the difference in how the aesthetics change once you have traveled beyond the existing utility poles. The road takes a different character, genuine country road with incredible vistas.

I can appreciate the Forest Service for acknowledging the unique quality of this landscape in offering Alternative 5. Burying the power lines where they traverse the slope would definitely make it easier to accept the other above ground utility power lines. The existing trees would help "mask" the poles and lines. We are currently in the process of building a home above the county road where the lines would be buried so we are greatly relieved that our beautiful views won't be spoiled. We realize that burying the lines is expensive and burying them completely is out of the question. But there is still one of the other alternatives that could void the above concerns and still be a cost savings.

In Home Power magazine #128, Jan. 2009, there is a section on "Reality-Check Your Off-Grid Dream, Is Utility Connection A Better Bet ? " For a high end 5 kWh solar system, their estimate is approx. $60,000. This would be for a typical (yet energy conservative) home. If the Forest Service is planning housing for twenty people at times, then doing a quick math it seem that for $ 300,000. a solar powered system could be easily built. (A family of 4, divided into 20 people times $ 60K. equals $300,000.) Unless there are other power requirements that haven't been mentioned to used at the facility then it would seem to make sense economically to go with a good off-grid system costing half of what it would cost run power lines to the facility. Not to mention the monthly bill. Wouldn't the money be better spent on programs or on the facility itself? What kind of research was done to bring to the Forest Service to the conclusion that a photovoltaic system wouldn't supply the necessary electricity it was cost prohibitive ? We are looking at a payback for our own PV system of twenty years. The Forest Service is looking at never breaking even with Alternative 5 or any alternative that uses grid-tied power. In these difficult financial times wouldn't it be prudent for all government agencies to spend money wisely ?

Your plans call for a full time caretaker. If the facility has it's own PV system it would require monitoring and minimal maintenance. Operations that could easily be done by the caretaker. The control systems available now have greatly improved, making the job of managing your power system that much easier. The State of Hawaii's Clean Energy Initiative aims to meet 40% energy needs through renewable energy sources by 2030. Here is opportunity for the Forest Service to be a leader, not only in the development of a international recognized research facility, but also in how the facility is operated.

4-21-09

Mr. Boone Kaufman
Hawaii Experimental Tropical Forest
60 Nowelo St.
Hilo, Hi 96720.

APR 2 2 2009

04/20/09

Dear Dr. Boone,

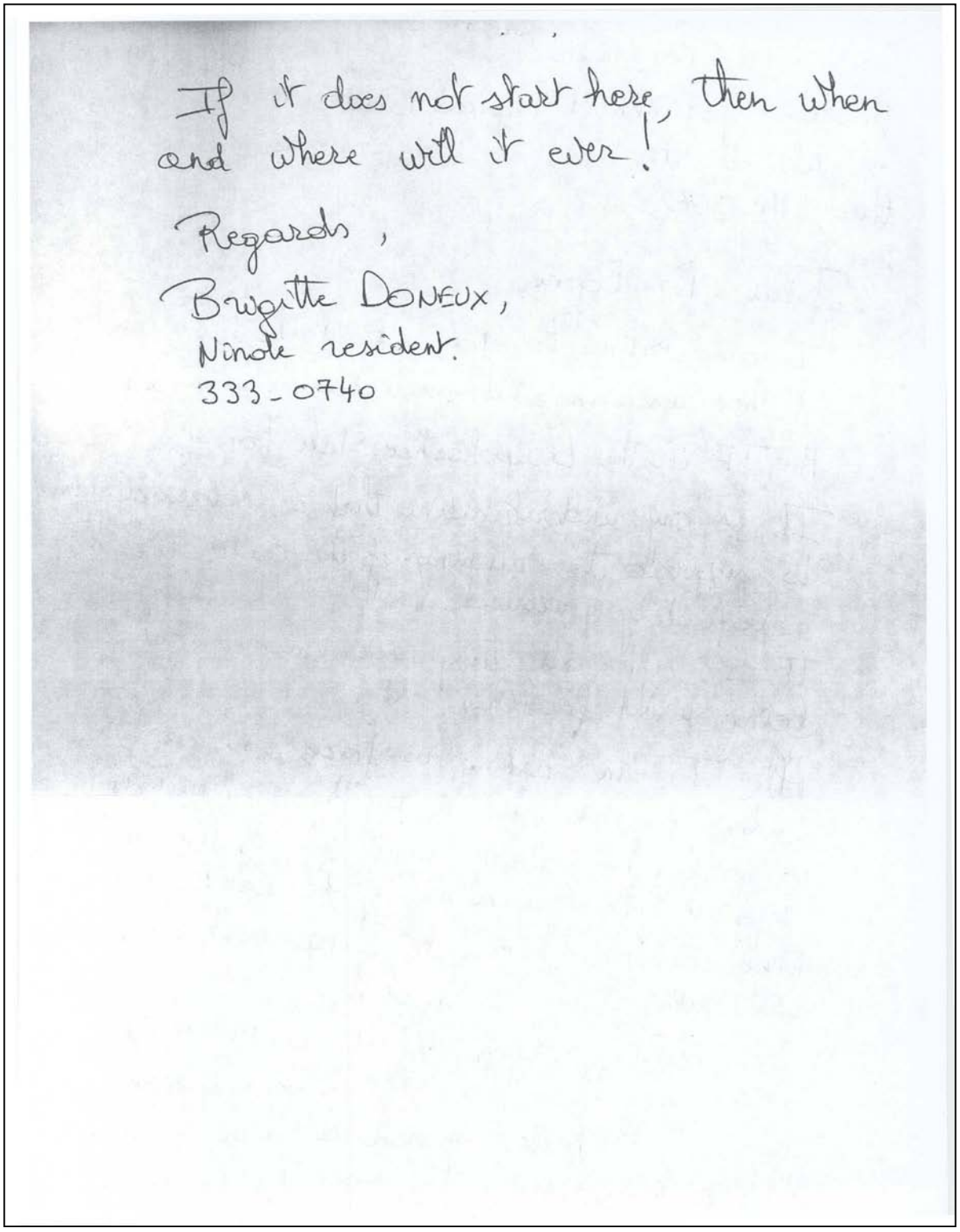
I am writing to you about the building of the research and education center by HETF in the Laupahoehoe State Forest.

It is my understanding that a solar system to support the running of the center was not adequately pursued.

It is, after all taxpayers money that is being used for this.

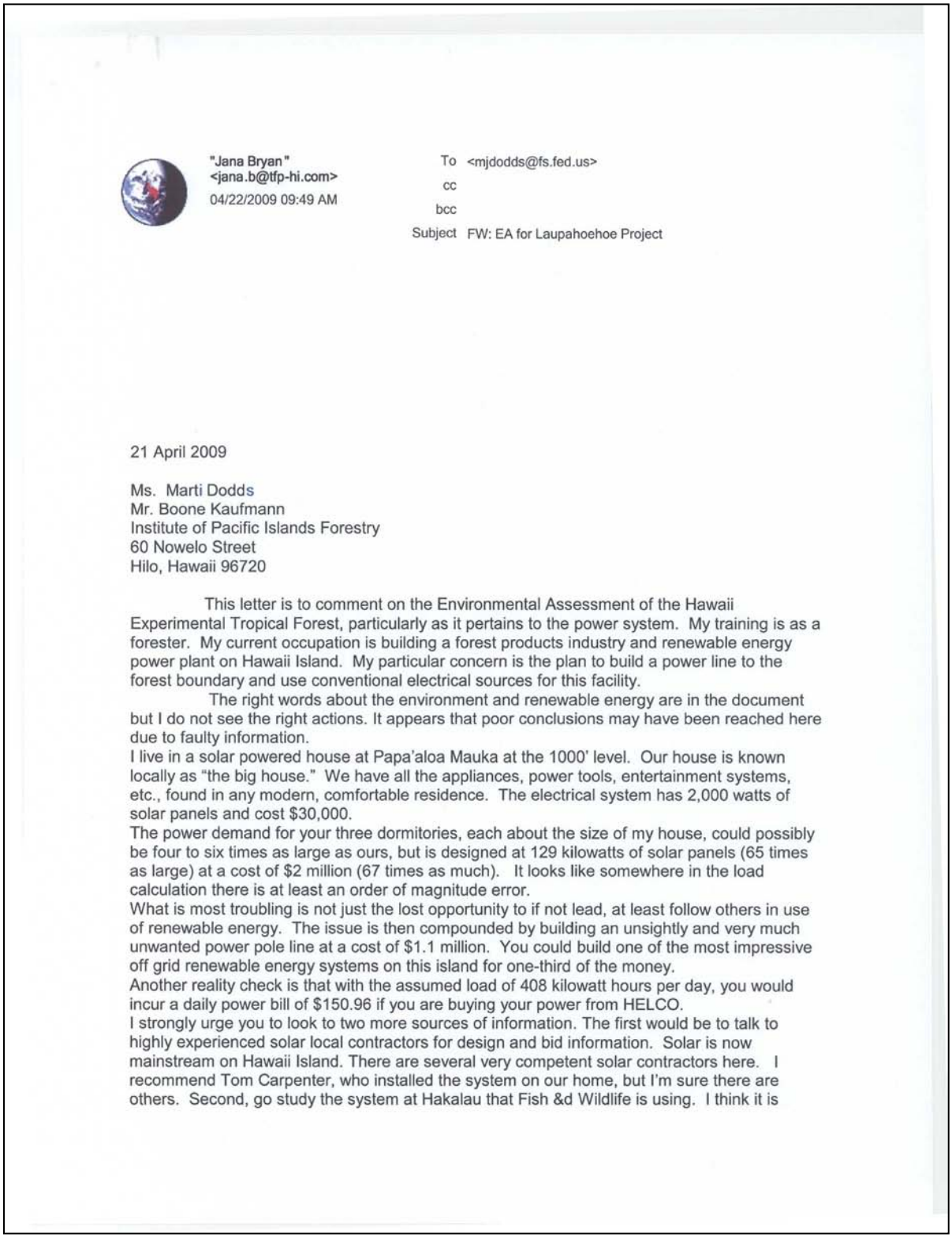
All I am asking is ~~for~~ one or two solar experts chosen by the community, to evaluate what kind of system would support the running of the center and then do a thorough financial comparison with an electric system.

One of the purpose of the center is to analyze the effects of global warming, so what better message than to use alternative power to run the center.



If it does not start here, then when and where will it ever!

Regards,
Brigitte DONEUX,
Ninole resident.
333-0740



"Jana Bryan"
<jana.b@tfp-hi.com>
04/22/2009 09:49 AM

To <mjdodds@fs.fed.us>
cc
bcc
Subject FW: EA for Laupahoehoe Project

21 April 2009

Ms. Marti Dodds
Mr. Boone Kaufmann
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, Hawaii 96720

This letter is to comment on the Environmental Assessment of the Hawaii Experimental Tropical Forest, particularly as it pertains to the power system. My training is as a forester. My current occupation is building a forest products industry and renewable energy power plant on Hawaii Island. My particular concern is the plan to build a power line to the forest boundary and use conventional electrical sources for this facility.

The right words about the environment and renewable energy are in the document but I do not see the right actions. It appears that poor conclusions may have been reached here due to faulty information.

I live in a solar powered house at Papa'aloa Mauka at the 1000' level. Our house is known locally as "the big house." We have all the appliances, power tools, entertainment systems, etc., found in any modern, comfortable residence. The electrical system has 2,000 watts of solar panels and cost $30,000.

The power demand for your three dormitories, each about the size of my house, could possibly be four to six times as large as ours, but is designed at 129 kilowatts of solar panels (65 times as large) at a cost of $2 million (67 times as much). It looks like somewhere in the load calculation there is at least an order of magnitude error.

What is most troubling is not just the lost opportunity to if not lead, at least follow others in use of renewable energy. The issue is then compounded by building an unsightly and very much unwanted power pole line at a cost of $1.1 million. You could build one of the most impressive off grid renewable energy systems on this island for one-third of the money.

Another reality check is that with the assumed load of 408 kilowatt hours per day, you would incur a daily power bill of $150.96 if you are buying your power from HELCO.

I strongly urge you to look to two more sources of information. The first would be to talk to highly experienced solar local contractors for design and bid information. Solar is now mainstream on Hawaii Island. There are several very competent solar contractors here. I recommend Tom Carpenter, who installed the system on our home, but I'm sure there are others. Second, go study the system at Hakalau that Fish &d Wildlife is using. I think it is

bigger than anything you need, but a great source of information and built at a small fraction of the proposed cost of your power line.
Finally, if you really cannot find a way to give up the idea of building a power line up the mountain I would ask you to change your thinking about the need for this location for the facility. The old Forest Service compound concept, which was designed to solve the issue of being located hours away from suitable housing, is unnecessary in any event. Laupahoehoe is 15 minutes away. There is a lovely building in Laupahoehoe known as the Old Hospital which would look great with a Forest Service shield on the front, and could probably be purchased for less than the price of your power line. There is always another way.
Thank you for allowing me the opportunity to comment.

Don Bryan
President & CEO
Tradewinds Forest Products
Tradewinds Renewable Energy
P O Box 43
O'okala, Hawaii 96774
808 962-6803
donbryan@tfp-hi.com

APR 14 2009

April 12, 2009

Mr. Boone Kaufman
HETF
60 Nowelo St.
Hilo, Hi 96720

Dear Boone,

I am disturbed by the HETF proposal to erect power poles along Manowaiopae Homestead Rd through Blair Rd to the forest. I see this action as having a significant environmental impact at a time of great ecological sensitivity.

I would like to see a specific breakdown of the solar costs rather than having them dismissed as 'financially not feasible and outside the scope of the project.' Several people familiar with solar dispute that conclusion, particularly in light of the $5-6 million it is costing the public to run power up there. I requested that you consider bids from local solar contractors back in September. Why were calls from a local contractor not returned?

I urge you to reconsider this projects energy source, perhaps reconfiguring the power demands in a way that is more responsive to the global warming challenges of the 21st century.

With care and respect for our aina.
Kimball Dougherty

APR 2 0 2009

April 16, 2009

[redacted]

Dear Boone, This is a follow up to my earlier letter re energy for the Research and Education Center in the Laupahoehoe State Forest.

I think the EA should not be accepted because your team arbitrarily and without public comment, dismissed the use of solar energy as outside the scope of the project.

I would like to see an EIS for this project that would include a rigorous exploration and objective evaluation of the environmental benefits and costs of solar, propane and grid energy.

Triggers for an EIS include:

1. the use of public lands and funds

2. the construction of helicopter facilities

3. the substantial energy consumption required for this project

4. the impact on scenic views and planes.

It is my understanding that you are required by law to make a good faith effort to bring to light environmental concerns and to explore the question of whether there are other ways to carry out the project which are less damaging to the environment. There is public pressure in support of such an exploration. I am anticipating your cooperation.

Thank you for your attention, Boone.

Sincerely,

Kimball Dougherty

Kimball Dougherty

Page 1

David Henry
PO Box 482
Laupahoehoe, HI 96764

4-22-09

J. Boone Kauffman, Director
Institute of Pacific Islands Forestry
60 Nowelo St
Hilo, HI 96720

RE: Laupahoehoe Research and Education Center Construction Project Environmental Assessment (EA)

Mr. Kauffman,

I am a resident of Laupahoehoe and live on the lower part Manowaiopae Homestead Rd. at about 500' elevation. I have watched your online video presentation on HETF and fully support the mission of IPIF and the HETF. I look forward to touring the new facility when it's completed and perhaps attending an educational course when they become available.

I have also reviewed the EA and I am specifically concerned about a statement at the top of page seven (7) *Facility Power by Solar and Wind Only: Preliminary analysis conducted by the design team determined adequate power could not be provided by these sources alone or in combination. (Swienton 2009).*

After a thorough review of the nine page document representing the Alternative Energy calculations (Swienton 2009) I called Daniel Swienton on Thursday April 16th and we had an informative 45 minute conversation. I prefaced my conversation with him by stating I was in complete support of the stated goals of the HETF and I only wanted to make sure they have the best facility possible with the least expense to the taxpayer. As a semi-retired solar professional from Northern California I could accurately analyze his calculations and point out the many errors in his analysis. As an engineer Mr Swienton was very receptive to my clearer understanding of the correct way to estimate energy requirements for off-grid solar. The fact that I am connected to the same HELCO line that would be extended to HETF allowed me to explain the quality and reliability of local grid power. What follows is a summary of the problems with the current analysis and some information from my conversation with Mr. Swienton.

1. Per Mr Swienton, the estimate for a thirty year life cycle costs for running HELCO power would be ~ $1M. A 4-5% power cost inflation rate was used.

2. Power requirement estimates are flawed in many ways and these errors vastly increase perceived cost.

a) On page 1/9 the watts/sq ft method used to estimate energy needs calculates maximum power demand to determine circuit requirements in grid-connected buildings. This is not the same as daily kilowatt/hour (kWh) usage which is typically a much lower number.

b) On page 3/9 Battery Sizing grossly over-estimates energy usage because of the erroneous calculations on page 1/9 and incorrectly identifies total requirement as watts/day not watt-hours/day.

To correct these errors a thorough off-grid Load Analysis needs to be done. This typically includes a list of equipment to be used and it's daily/monthly energy consumption. Another helpful tool would be analyzing an energy bill from a similar existing facility. I realize you're not necessarily aware of all the equipment that may be utilized but educated guesses will typically get you within 10-20% of future reality, your current estimates are probably 400 % higher than reality.

3. The battery equipment costs and normal life cycles are also incorrect.

a) Battery bank cost is grossly over estimated because of the incorrect load requirements calculations noted above. This translates to inflated storage requirements requiring a huge battery bank.

b) Battery type and life cycle are incorrect. A large, heavy duty flooded battery specifically designed for PV systems would be cheaper per amp-hour and last 10+ years with correct management practices. Many telecomm sites use these and get up to a 20-year lifecycle. The estimate of a three year lifecycle is short even considering the type of sealed battery specified.

4. Solar panel requirement and cost is grossly over estimated for three reasons.

a) On page 6/9 the daily watts (which should be expressed as watt-hours) is divided by the watts/solar panel ignoring the fact that they would be collecting energy for 6 hours/day (per document estimates) not 1 hr/day. This caused the solar panel cost to be $2,190,951 not $365, 158.

b) The inflated power requirement also inflates the need for PV modules. This of course drives up the cost estimate.

c) The cost of $1109 for a 205 watt PV module is a retail cost and at least 20% higher than you would pay in a project of this size.

4. Another problem with using HELCO is the quality of the power. I live on Manowaiopae Homestead Rd. and get my power from the same line that would be extended 3 miles to the project site. I explained to Mr. Swienton that I have frequent daily brownouts with dimming lights, etc. I also have short blackouts every month or two that require resetting clocks on microwaves, etc. He was concerned this would effect the scientific equipment. I explained that with today's state of the art inverters the quality of sine wave delivered is better than grid power. You would also be fixing your energy costs because PV modules don't raise their prices every year. Another possible advantage to using an off-grid solar system is the potential for redundancy. By designing the system using two smaller systems instead of one large one you could have emergency back-up.

5. One of the rules of thumb used in off-grid solar system design is that any project a ½ mile or more from the power line will experience a cost savings by using solar. The Laupahoehoe HETF project is ~ 3miles from existing power, that's 6 times greater than the usual rule of thumb. I told Mr. Swienton I was confident that a very high quality off-grid solar system with generator backup could be supplied for less than 1/2 the cost of running HELCO power up the road. That's a savings of $500,000! He agreed that no private enterprise would run power that far and that he needed to take another look at the alternative energy option.

6. The state of Hawaii has set some ambitious goals for reducing our dependence on imported fossil fuels and running your new facility on HELCO power instead of solar flies in the face of this goal. A renewable energy system could be an additional educational component to the facility and demonstrate your commitment to sustainability. Unfortunately the option of adding a grid-tied solar system to HELCO power would essentially replace some of the battery component of an off grid system with the power grid. This would be even more costly since you're buying most of the solar system and paying for HELCO. This also has the appearance of "greenwashing" to make running power poles up the road more palatable.

Conclusions

a) The EA's analysis of alternative energy is very seriously flawed and has a significant impact on project cost by incomplete and/or inaccurate analysis of energy system requirements. The analysis needs to be re-done with assistance of an experienced solar professional.

b) Running power poles up the road would have a significant impact on the view shed for upper Manowaiopae Homestead Road property owners.

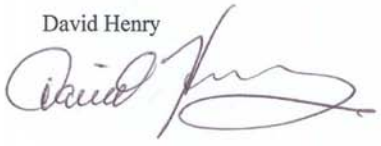
c) If HETF pays for the installation of HELCO power up Manowaiopae Homestead Road this will have a significant impact on the neighborhood character by facilitating the availability of power to properties that didn't have access before. This will significantly alter the types of people that will want to live there and the types of homes that may be built.

d) The use of an off-grid solar system to power the proposed facility would eliminate the impacts caused by extending HELCO power poles three miles up the road and reduce the overall cost of the project.

Feel free to contact me regarding the above or with any other questions involving alternative energy. I am an experienced solar system designer who has been involved with many projects, large and small, including solar for vineyards, wineries, residences, commercial buildings and municipalities. I also have had my own solar systems, one on my personal residence and a 35kW system on my 8000 sq ft store. I have acted in the past as a consultant to government projects during the design and RFP development phase.

Sincerely,

David Henry



Marti J Dodds/R3/USDAFS
04/28/2009 03:51 PM

To Julie Laufman/WO/USDAFS@FSNOTES
cc
bcc
Subject David Henry Comment 2

Marti J. Dodds, ASLA
Landscape Architect
Recreation Solutions Enterprise Team

mjdodds@fs.fed.us

Current Assignment:
Project Manager
Hawaii Experimental Tropical Forest
Institute of Pacific Islands Forestry
60 Nowelo St.
Hilo, Hawaii 96720
(808) 933-8121 Ex. 151

Permanent Office:
P.O.Box 9035
500 US Hwy. 89 - Bldg. 70
Prescott, AZ 86313
(928) 443-8280

—— Forwarded by Marti J Dodds/R3/USDAFS on 04/28/2009 11:50 AM ——

David Henry <dhenry@sonic.net>
04/17/2009 12:01 PM

To Marti J Dodds <mjdodds@fs.fed.us>
cc
Subject Re: Laupahoehoe Research and Education Center

Marti

Here is a note that I put together re: Alternative Energy and HETF. This has already been shared with some local citizens interested in the project. I really appreciated Mr Swienton's willingness to discuss this and learn some of the nuances of off-grid solar system design.

After a thorough review of the nine page document representing the Alternative Energy calculations (Swienton 2009) I called Daniel Swienton yesterday and we had an informative 45 minute conversation. I prefaced my conversation with him by stating I was in complete support of the stated goals of the HETF and I only wanted to make sure they have the best facility possible with the least expense to the taxpayer. As a semi-retired solar professional from Northern California I could accurately analyze their calculations and point out the many errors in their analysis. As an engineer Mr Swienton was very receptive to my clearer understanding of the correct way to estimate energy requirements for off-grid solar. The fact that I am connected to the same HELCO line that would be extended to HETF allowed me to explain the quality and reliability of local grid power. What follows is a summary of the problems with the current analysis and some information from my conversation with Mr. Swienton. This is essential a draft of the letter I will be submitting.

1. Per Mr Swienton, their estimate for a thirty year life cycle costs for running HELCO power would be ~ $1M. They used a 4-5% power cost inflation rate.

2. Power requirement estimates are flawed in many ways and these errors vastly increase perceived cost.
-On page 1/9 the watts/sq ft method used to estimate energy needs calculates maximum power demand to determine circuit requirements in grid connected buildings.
- On page 3/9 Battery Sizing grossly over-estimates energy usage and incorrectly identifies total requirement as watts/day not watt-hours/day.

A thorough off-grid Load Analysis needs to be done to correct this. This would include a list of equipment to be used and it's daily/monthly energy consumption. Another helpful tool would be analyzing an energy bill from a similar existing facility.

3. The solar equipment costs and normal life cycles are also incorrect.
- Battery bank cost is grossly over estimated because of the incorrect load requirements calculations.
- Battery type and life cycle are incorrect. A large, heavy duty flooded battery specifically designed for PV systems would be cheaper per amp-hour and last 10+ years with correct management practices. They estimated replacing batteries every three years based on the type of battery they spec'd.
- Solar panel requirement is grossly over estimated for three reasons.
a) on page 6/9 the daily watts (s/b watt-hours) is divided by the watts/solar panel ignoring the fact that they would be collecting energy for 6 hours/day (per their document) not 1 hr/day. This caused their solar panel cost to be $2,190,951 not $365, 158.
b) The inflated power requirement inflates the need for PV modules.
c) The cost of $1109 for a 205 watt PV module is a retail cost and at least 20% higher than you would pay in a project of this size.

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5. I told Mr Swienton I was confident that a very high quality off-grid system with generator backup could be supplied for less than 1/2 the cost of running HELCO power up the road. That's a savings of $500,000! He agreed that no private enterprise would run power that far and that he needed to take another look at the alternative energy option.

Feel free to contact me regarding the above or with any other questions involving alternative energy.

Sunny REgards,
David

David Henry
PO Box 482
Laupahoehoe, HI 96764
808-962-6169 ph & fax

707-338-9125 mbl
dhenry@sonic.net
On Apr 13, 2009, at 9:49 AM, Marti J Dodds wrote:

To: Mr. David Henry

Thank you for your call Mr. Henry, here is the information for you..

Daniel Swienton
U. S. Department of Agriculture - Forest Service
Pacific Southwest Research Station
Facilities & Engineering Services Group Leader
800 Buchanan Street
Albany, CA 94710
510/559-6494

Marti J. Dodds, ASLA
Landscape Architect
Recreation Solutions Enterprise Team

mjdodds@fs.fed.us

Current Assignment:
Project Manager
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Permanent Office:
P.O.Box 9035
500 US Hwy. 89 - Bldg. 70
Prescott, AZ 86313
(928) 443-8280<HETF Alternative Power.doc><Alternate Power Requiremts.pdf>

Mr. Boone Kaufman
[redacted]
Hawaii Experimental Tropical Forest
60 Nowelo St.
Hilo, Hi 96720

APR 2 8 2009

April 20, 2009

Aloha Mr. Kaufman,

I am writing to you in regards to the HETF proposal to erect power poles along Manowaiopae Amstd Rd. About 3 years ago power poles were erected from Nobu Takeuchi's place (taro farm on Honokaa side of the road) to their present end. Those of us that were already living here using alternative power (mostly solar) were very dismayed at our inability to prevent this. These poles were bankrolled primarily by absentee landlords, one of whom sold his land as soon as he knew the poles were coming up, the other has never actually hooked up and lives on Oahu. So those of us who actually live here get to look at poles, some of which are not even being used.

I walk up and down this road at least 3-4 times a week and having known the road prior to poles, I can honestly tell you it makes a big difference in how the road ~~it~~ feels. So much of the island corridor that we all use is inundated with wires, it was always a wonderful feeling to come up our road and see clear, so to speak. So that's the visual and feel (for lack of a better word) aspect of placing power poles where they weren't before and I believe this qualifies as an environmental impact.

Then there is the aspect of generating your own electricity. How much more exciting and exemplary to be demonstrating to the researchers, educators, and students that you are powering your facility in the most ecologically conscious manner possible, including conservation, as

opposed to the status quo of running power poles and not really having to think about how much power you use or how you get it. I can assure you, having lived "off the grid" for about 20 years that you become very conscious and aware of power usage. I think you have to agree that this is something we all have to do if we are even going to begin to curb the effects of global warming. We are all responsible, so yes, again, I think relying on Helco will definitely have an environmental impact.

Finally, from the information I've been able to gather, some of your figures regarding the feasibility of solar power, appear to be erroneous. So please, I urge you to reconsider this option.

Mahalo for your time,

Nicole Tergeoglou
P.O. Box 35
Laupahoehoe, Hi 96764

Darrin De Vries
<drdv@hotmail.com>
04/24/2009 06:01 PM

To <hawaii_experimental_tropical_forest@fs.fed.us>
cc
bcc
Subject Laupahoehoe EA

To whom it may concern, it has come to my attention that you plan to run power poles up the mountain to the proposed education center. This location is an off the grid agricultural community that has purposely distanced itself from wasteful power companies in order to live more earth friendly sustainable lives. There would be significant impact on this environment if this plan were to be allowed. I believe a simple and less expensive alternative would be shelters, catchment, composting toilet, and solar if electricity is needed. If anyone needs a lab they can go to the university or the new lab at the Laupahoehoe highschool just three miles away. If one truly wants to study and learn from the forest they should immerse themselves in it, maybe sleep in a tent, not separate from it in a costly enclosure. I am also concerned about the traffic this will create on our road and the invasion of coqui frogs, which we work hard as a community to keep out. The Hamakua community has a commitment to sustainable agriculture far away from GMO's, pesticides, and herbicides. As a community we will have the final say on how this project is executed, not an overpriced bloated bureaucracy. Thank you for your consideration, Darrin De Vries.

April 24, 2009

Boone Kauffman
Laupahoehoe Research and Education Center
Construction Project Environmental Assessment
Institute of Pacific Islands Forestry
60 Nowelo Street
Hilo, HI 96720

Dear Mr. Kauffman,

I am very interested in the HETF Research and Education Center, proposed for construction at the Lauaphoehoe Forest site. As a biologist, I can see that such a project could offer the region and the state valuable opportunities to better understand the dynamics of the ecosystem, as well as a location for teaching biological concepts to the public.

I support the planning for such a project. I do, however, have some concerns about it's construction and maintenance, and their effects on the environment, both local and island-wide. They include the following general areas of issue:

1. Has the potential for non-carbon based electrical power sources been adequately researched? What percentage of the power requirements of the facility are slated to be met by alternative power sources? Has the new technology in wind generators, avoiding the use of long-armed blades, been considered? Has the cost of maintaining overhead power lines (mowing and constant pruning of branches) been factored into the projected cost of an on-grid system?

   The negative impacts of carbon-based power systems are not felt at the site of power use, but heavily impact regions far from the site of usage, and out of scope of the local impact statement. Thus, in the twenty-first century, it is our obligation to recognize this fact and act responsibly, particularly in the case of an environmental station, with the mandate of researching and educating on that very subject.

2. Noise impacts mentioned in the report do not take into account the level of use on the road that a successful education program would bring. More than a weekly high clearance van would be needed to bring school children to the site in any meaningful capacity.

A possible helicopter pad was mentioned with regard to parking lot construction. If helicopters are to be involved, impacts are inevitable. Air surveillance of the ecosystem will be (and is already) part of the NEON project. How will you be affiliated with that project? How heavy is air traffic proposed to be?

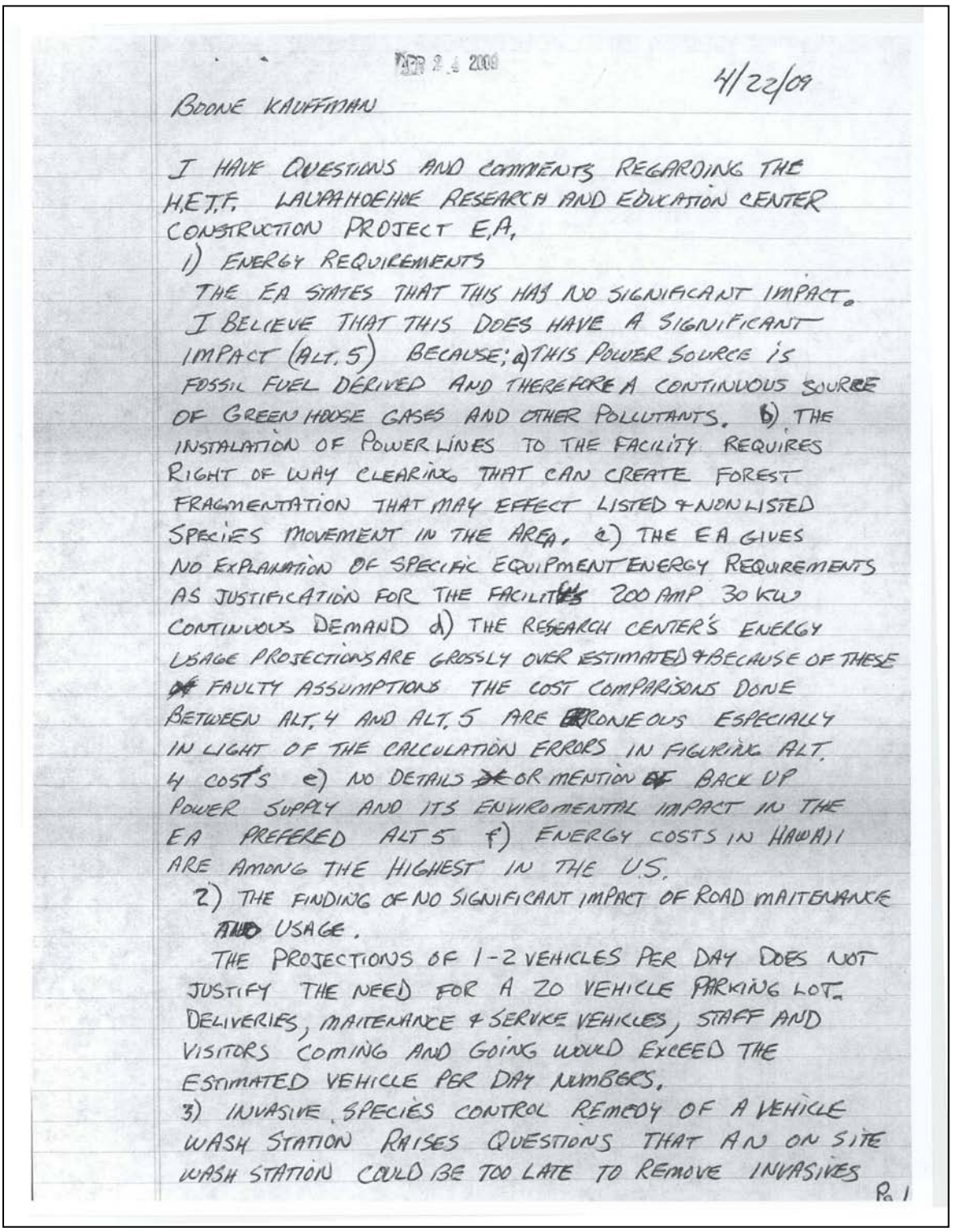
3. With that last question in mind, I would ask whether there is some proposed "commitment for larger actions"? How will you be associated with NEON, and its impacts and funding?

I would hope that my concerns, some of which I read have been voiced by others, willl be taken under consideration, most effectively in the form of a Environmental Impact Statement to cover a more detailed study of the effects of proposed construction.

I thank you for your attention to these issues.

Sincerely,

Christine Kornet
P.O. Box 40
Papa'aloa, HI 96780



APR 2 4 2009

4/22/09

BOONE KAUFFMAN

I HAVE QUESTIONS AND COMMENTS REGARDING THE H.E.T.F. LAUPAHOEHOE RESEARCH AND EDUCATION CENTER CONSTRUCTION PROJECT E.A.

1) ENERGY REQUIREMENTS

THE EA STATES THAT THIS HAS NO SIGNIFICANT IMPACT. I BELIEVE THAT THIS DOES HAVE A SIGNIFICANT IMPACT (ALT. 5) BECAUSE; a) THIS POWER SOURCE IS FOSSIL FUEL DERIVED AND THEREFORE A CONTINUOUS SOURCE OF GREENHOUSE GASES AND OTHER POLLUTANTS. b) THE INSTALATION OF POWER LINES TO THE FACILITY REQUIRES RIGHT OF WAY CLEARING THAT CAN CREATE FOREST FRAGMENTATION THAT MAY EFFECT LISTED & NON LISTED SPECIES MOVEMENT IN THE AREA. c) THE EA GIVES NO EXPLANATION OF SPECIFIC EQUIPMENT ENERGY REQUIREMENTS AS JUSTIFICATION FOR THE FACILITIES 200 AMP 30 KW CONTINUOUS DEMAND d) THE RESEARCH CENTER'S ENERGY USAGE PROJECTIONS ARE GROSSLY OVER ESTIMATED & BECAUSE OF THESE FAULTY ASSUMPTIONS THE COST COMPARISONS DONE BETWEEN ALT. 4 AND ALT. 5 ARE ERRONEOUS ESPECIALLY IN LIGHT OF THE CALCULATION ERRORS IN FIGURING ALT. 4 COSTS e) NO DETAILS OR MENTION OF BACK UP POWER SUPPLY AND ITS ENVIROMENTAL IMPACT IN THE EA PREFERED ALT 5 f) ENERGY COSTS IN HAWAII ARE AMONG THE HIGHEST IN THE U.S.

2) THE FINDING OF NO SIGNIFICANT IMPACT OF ROAD MAITENANCE AND USAGE.

THE PROJECTIONS OF 1-2 VEHICLES PER DAY DOES NOT JUSTIFY THE NEED FOR A 20 VEHICLE PARKING LOT. DELIVERIES, MAITENANCE & SERVICE VEHICLES, STAFF AND VISITORS COMING AND GOING WOULD EXCEED THE ESTIMATED VEHICLE PER DAY NUMBERS.

3) INVASIVE SPECIES CONTROL REMEDY OF A VEHICLE WASH STATION RAISES QUESTIONS THAT AN ON SITE WASH STATION COULD BE TOO LATE TO REMOVE INVASIVES

Pg 1

Pg 2

IF THEY HAVE ALREADY FALLEN OFF THE VEHICLE.
ADEQUATE TREATMENT OF WASTE WATER FROM THE STATION IS NOT DETAILED OR DESCRIBED
4) THE 2 DAY FIELD STUDY DOES NOT TAKE INTO ACCOUNT SEASONAL MIGRATION PATTERNS THAT COULD CAUSE THE PROJECT TO HAVE SIGNIFICANT IMPACT OF NON-LISTED SPECIES OR LISTED SPECIES DETERMINED TO HAVE NO SIGNIFICANT IMPACT IN THE EA.
5) SOCIO ECONOMIC CHARACTERISTICS AND CUMULATIVE IMPACTS OF THE PROJECT DO NOT ADDRESS FUTURE DEVELOPEMENT BOTH ON SITE OR ON PRIVATE LANDS BELOW THE PROJECT SITE THAT WOULD BE ENABLED BY THE INSTALATION OF POWER LINES.

THE PROJECT EA HAS BEEN DONE IN A WAY THAT SEEMS TO ASSUME APPROVAL WITHOUT INCLUDING SPECIFIC DETAILS OF THE FACILITY'S DESIGN, FUNCTION AND NEED. EXTERNAL PUBLIC CONCERNS RAISED DURING THE SCOPING PERIOD WERE ADDRESSED TO INDIVIDUAL COMMENTS WITHOUT GIVING AN OPPORTUNITY FOR PUBLIC INVOLVEMENT IN CREATING WORKABLE SOLUTIONS AND ALTERNATIVES. IT SEEMS THAT THIS PROJECT IS BEING PUSHED FORWARD IN A "WE KNOW BEST" MANOR, THAT DISEMPOWERS THE PUBLIC.

FOR THESE MANY REASONS I REQUEST THAT AN ENVIROMENTAL IMPACT STATEMENT IS DONE FOR THIS PROJECT

SINCERELY

Scot Sanderson

SCOT SANDERSON
PO BOX 59
MINOLE, HI 96773

Joel Bridgman
<vaastu@mac.com>
04/25/2009 11:18 AM

To Hawaii_Experimental_Tropical_Forest@fs.fed.us
cc boonekauffman@fs.fed.us
bcc
Subject Laupahoehoe EA

Dear Mr. Kauffman,
I am a resident of the town of Ninole. This is a small town quite similar to Laupahoehoe, and is just a few miles south.
I became aware of your proposal to build the research facility only recently from another concerned neighbor.
I would like to ask that the environmental assessment go through another round of review as it has some serious flaws. As a member of the local community and the HHCDC, I can not take your proposal seriously until it is done again in a more professional manner.
I am referring to the whole EA. which I have in my possession as a hard copy. This document, in general, shows a curious disregard for the community in which it intends to "plop" itself down into. This indicates to me, that the planners are not thinking about this project realistically which is my more general concern.
To be more specific, I was shocked to read the calculation of a Mr. Weisenman regarding a potential solar system. His calculations are WAY OFF!
It is not clear to me whether he was looking to have a 30KW solar array or that the energy requirements of the research center would need approximately 30KW/per day. I have been off the grid quite successfully for 3 years now. I have a 1.5KW array which this winter (a very dark and wet winter) has consistently put out 2-3 Kw's of power each day which is not always enough. On these days, I have to run a generator for approximately 1/2- 1 hour.
And...from this I have no power bill. This is quite satisfying, financially, as well as, reducing my "carbon footprint" significantly.
Based on the faulty calculations for the solar energy requirements, I would strongly suggest that the EA. be revised.

This is a primary concern but there are others; The miscalculations of the solar energy requirements then trigger a response, to get the power from the local utility, Helco. This begins a whole chain of events. Power poles for several miles, with some portions place underground.
I recently had an estimate to underground a 500 foot section of powerlines only to find that it is in the neighborhood of 100$/per foot. This is because of the requirements of Helco for concrete, extra wires, and access ports etc. It will be very expensive, and the trenching and concrete will be a big mess and a significant project in and of itself. If the undergrounding is undertaken between February and May or so there will be significant erosion simply from that.
Specific erosion control measures will need to be undertaken for the properties below the trenching.
The power lines arriving to an area that previously had no power, will immediately trigger other issues. From that point on there is the very likely possibility that new development will follow. This will make parcels of land up in that area fair game for houses and other kinds of development. This is rather ironic, given that the research facility is supposedly grounded in ecological and forest preservation issues.

Another concern for me is the mention of the washing station. This is important to reduce the potential for bringing in invasive species to the sensitive forests above. However without a more detailed description of how this facility would work I am left imagining the area right around the washing station to be the beginning of new infestations. For instance;
A worker arrives with his truck from Hawaiian Paradise Park, on the truck there are several Coqui frogs. The washing station attendant washes them off and they hop off into the bushes. Voila the coquis have arrived to Hakalau Reserve. The research center instead of preserving the forest has now become a part of the destruction of the forest. This is how the frogs came to my neighborhood over here in Ninole. The workers brought them in and they infested an area adjacent to a gate, where the workers would stop to open the gate. There is a very real possibility that simply by increasing the traffic into the forest from the Laupahoehoe gate that more invasive species will gain entry.
This could also be true anywhere along the way up to the site. How will that be addressed???
This must be included in your next EA. otherwise you are fooling yourselves.

These are my main concerns at this point. I hope you will take the EA. to the next level, and consider these points carefully, I would like for your project to be successful, but it will only be so if your group takes these matters seriously, and so far I am not seeing this.

PS. I must at least just throw out the possibility that you reconsider the WHOLE PLAN. You must be aware that the Laupahoehoe school is struggling to figure out what to do with their facilities, as attendance of the school has dropped so low. Can you form a partnership with the school and take over a portion of the school for the research facility, and then perhaps have a scaled back facility up at the top? This may meet your needs but in a better and CHEAPER way, and also be a significant benefit to the Laupahoehoe community.

Thank you for your consideration,

Joel Bridgman
PO. Box 52
Ninole Hi, 96773
510-495-4650

Trevor Gloor
<tgloor2000@yahoo.com>
04/26/2009 08:36 AM
Please respond to
tgloor2000@yahoo.com

To Hawaii_experimental_tropical_forest@fs.fed.us
cc
bcc
Subject Laupahoehoe EA

(Hello, you may receive duplicates of this letter since I had trouble sending. Thanks)

> Ms. Dodds advised me to send this email regarding the
> proposed research station above Laupahoehoe. I believe that
> the use of alternative energy (solar/wind/water) would be to
> the benefit of the project, the environment and the people
> of Laupahoehoe, as well as the state.
>
> Ms. Dodds said she had gotten other comments such as the
> ones I was making, but that you were moving ahead with plans
> to put in power poles/lines to energize the project from
> HELCOs grid, following the advice of an engineer. He/she
> determined that alternative power couldn't provide
> enough energy for the facility. I pointed out the field
> station at the Hakalau reserve which is run entirely off
> grid.
>
> Gov. Linda Lingle made a state priority to advance
> renewable energy sources. Although the tropical wood project
> is federal, I'm sure there is plenty of like support in
> our current president's agenda. I feel this is an
> inspiring opportunity. We are in a time of change. We can
> all benefit from rapidly refined energy technology. Hawaii
> can be a showcase, having so much solar and wind available.
> Even if back-up generators are required at times, they would
> be of far less impact than miles of power poles and a
> primarily fossil-fuel-powered grid system that loses energy
> through transmission.
>
> And finally, the mauka regions of North Hilo and the
> Hamakua are still nearly pristine regarding visual pollution
> from utility poles/lines. Why would we support developments
> that would mar the beauty of this environment? Please get
> opinions from alternative energy professionals who can
> provide educated perspectives and realistic cost analyses,
> before approving a development that would likely change the
> face of the land forever.
>
> Thank you,
> Trevor Gloor
> P.O. Box 38
> Papa'aloa, HI 96780

Response to Comment Letters (although this appendix includes only comments received in response to the 2009 Draft EA, Forest Service responses have been updated to include the modified proposed action and alternatives analyzed in the current, 2011 Draft EA):

TOPIC: **State-wide Important Farmlands**

Commenter: L. Yamamoto, Director, Pacific Island Area, Natural Resources Conservation Service

Comment: "The project site is classified as Statewide Important Farmlands. The Important Farmland information has been enclosed for your aid in determining if a Farmland Impact Conversion Rating Form (AD-1006) is needed for this project" "If wetlands do exist any proposed impacts to these wetlands would need to demonstrate compliance with the Clean Water Act and may need and Army Corps of Engineers 404 permit"

Response: An AD1006 Form has been completed in cooperation with NRCS. The proposed conversion is consistent with FPPA7YSC4201 and based on assessment is below levels considered to be detrimental of would contribute to unnecessary and irreversible conversion of farmland to non-agricultural uses. A The Section 404 permit dealing with the placement of road fill into the Kapili stream and all other proposed stream crossings will be obtained from the U.S. Army Corps of Engineers. No wetlands exist within the area proposed to for facility development.

TOPIC: **Support of Center**

***Commenter*:** N. Koch, Forest Solutions

Comment: Your proposed project, in my view, simply fixed up an existing access, runs some electric lines and builds a couple of structures to administer a research program. This is something that any landowner would want to do if they wanted to run some sort of agricultural operation. While this will cause a bit of noise and inconvenience over the short term, the gains can be large, particularly for the health of the forest in the long term.

Response: Thank you for your support of our project. Mitigation measures as outlined in the environmental assessment will minimize impacts from noise.

TOPIC: **Emergency Alert System**

Commenter: E. Teixeira, Vice Director of Civil Defense, State of Hawaii, Department of Defense

Comment: "Alternative Five, as proposed for the development of housing, caretaker and administrative units, teaching and meeting rooms, utility storage, rooftop water collection systems and a parking area increases the population who will be at risk from wildfire and potential flood risk. The use of locked-gate access points may adversely affect emergency ingress and egress and evacuation. Because of the remote location of the proposed development, an Emergency Alert System (EAS) and/or weather monitor should be incorporated into the design of the proposed development. Mitigation measures and plans for continuity of essential service should also be

considered in planning and the design phase of nay new construction as mitigation prevents loss of life and minimizes loss of property"

Response: The Forest Service due to the nature of its mission has a long experience in building facilities in remote locations. Therefore the Forest Service has developed a number of internal requirements for the safety of its personnel. The Forest Service Health and Safety Code Handbook (Forest Service Handbook 6709.11) have a number of requirements including the requirement for a Fire Prevention and Emergency Evacuation Plan for all facilities and the plan must be practiced twice a year. Additionally a Job Hazard Analysis must be created before field work commences. The Forest Service will comply with Title 29, Code of Federal Regulations (29 CFR), sections 1910.21 – 1910.27, 1910.35 – 1910.38, 1910.106, 1910.109 and 1910.110, 1910.132, 1910.134, 1910.141 and 1910.142, 1910.144, 1910.151, 1910.155, 1910.157, 1910.164 and 1910.165, 1910.176 and 1910.177, 1910.179, 1910.212, 1910.242 and 1910.243, 1910.301 – 1910.303, and 1910.1001.

TOPIC: **CDUA Permit Requirements**

Commenter: S. Lemmo, Administrator, Office of Conservation and Coastal Lands, State of Hawaii, Department of Land and Natural Resources

Comment: 'According to your report, the facilities will be located on state-owner lands, identified by TMK (3) 3-6-006:046, under the A-20 County zones district. However, OCCL notes that the subject parcel is dual zones, located in the State Land Use Agricultural District and the State Land Use Conservation District General subzone. Please provide a map of figure illustrating where the proposed facilities are located within the parcel in relation to the State Land Use district boundaries. Any proposed land uses(s) that occur in the Conservation District by the Applicant needs to be an indentified land use, pursuant to Section 13-5-25 Hawaii Administrative Rules, and may require a Conservation District Use Application (CDUA).

Response: PSW has responded to your request and provided maps that identify the dual zoning associated with this parcel. Official response from your office (6/30/2009) stating that the area where the Research and Education Center is to be located in outside the jurisdiction of the Office of Conservation and Coastal Lands and therefore, no CDUA permit is required can be found in the Administrative Record.

TOPIC: **Activities within State Highway Right of Ways**

Commenter: F. Keeno for B. Morioka, State of Hawaii, Department of Transportation

Comment: "The movement of vehicles and/or loads onto the State highway shall not exceed the provisions of Chapter 291, Sections 34, 35, and 36 Hawaii Revised Statutes as amended, without an approved special permit from the State Highways Hawaii District Office; The applicant shall be responsible for reconstruction and repair of any damage to the existing pavement or structure within the State right-of-way; A permit is required for work within the State highway right of way; and a tax map key number for the site should be included in the text in Section 1."

Response: During the construction phase no vehicles and/or loads onto the State highway are expected to exceed the provisions of Chapter 291 Sections 34, 35, and 36. If vehicles and/or loads

exceed these provisions, all contractors would be required to obtain permits for movement of vehicles and/or loads onto the State highway as outlined in HRS Chapter 291, Sections 34, 35, and 36 prior to commencement of work. This language has been added in the final EA in the Required Permits and Approvals section. No work is being proposed within the State highway right of way; therefore no permit will be required. Tax map key numbers have been added within the project description section of the final EA.

TOPIC: **Water Issues**

Commenter: K. Sunada, Manager, Environmental Planning Office, State of Hawaii, Department of Health

Comment: "The Department of Health (DOH), Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at

http://www.hawaii.gov /health! environmental env-planning/landuse/CWB-standardcomment. pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

    a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

    b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

    c. Water quality criteria (HAR Sections 11-54-4 through 11-54-8).

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater into State surface waters (HAR, Chapter 11-55). This includes discharges of storm water associated with construction activities (excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, storage areas, etc.) that result in the disturbance of one (1) acre or more of total land area. The total land area includes a contiguous area where multiple, separate, and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities. For discharges of storm water associated with construction activities into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOl) form. The NOl must be submitted 30 calendar days before the start of construction activities. The NOl form may be picked up at our office or downloaded from our website at http://www.hawaii. gov/health! environmental/water/ cleanwater/forms/ genlindex.html.

3. For types of wastewater not listed in Item 2 above or wastewater discharging into Class 1 or Class AA waters, you may need an NPDES individual permit. Class 1 waters include, but is

not limited to, all State waters in natural reserves, preserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under chapter 195, Hawaii Revised Statutes (HRS), or similar reserves for the protection of aquatic life established under chapter 195, HRS. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://www .hawaii. gov/health! environmental/water/ cleanwater/forms/indiv- index.html.

4. You must also submit a copy of the NOl or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOl or NPDES permit application, as applicable.

5. The DOH-CWB acknowledges that a Section 404 Permit will be obtained from the Honolulu Engineer District (HED) of the U.S. Army Corps of Engineers (COE) for the proposed work at the Kapili Stream crossing. Pursuant to the Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(I), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters ..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations, Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

6. Page 6 of the DEA indicates that the facility design includes the installation of a permanent wash station for vehicles and personnel. Please clarify if the wash water effluent will discharge to State waters. Also, clarify how the wash water effluent will be handled.

7. The DEA refers to a septic system and leach bed. It is recommended that the DOH, Wastewater Branch is contacted to ensure compliance with HAR, Chapter 11-62.

8. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation

Response: Current Water Quality Situation within the LHH Project Area: The 2006 State of Hawaii Water Quality Monitoring and Assessment Report (Hawaii State Department of Health, Environmental Planning Office 2008) was consulted to see if any of the project area streams are impaired based on the State of Hawaii water quality criteria. The report shows that all of the project area streams are meeting the water quality standards set forth by the State of Hawaii.

Water Quality: Water quality concerns exist at the Kapili Stream Crossing and the facilities construction site. There is the potential for a flush of sediment during construction of the low water crossing at the Kapili stream. This potential exists if construction is started and, then, interrupted by heavy rainfall that would produce a significant flow in the channel. It is recommended that the construction take place when heavy rains and stream-flow is not likely. The work should not take place when the stream is flowing. This would reduce the risk of sedimentation to the Kapili stream

and protect water quality downstream. Following recommended mitigation measures and obtaining a Section 404 would protect overall water quality.

Proper installation of the septic system at the LAS is important. According to the NRCS soils database, the Kaiwiki silty clay loam soil is not ideal for septic system placement due to the slow water movement in the soil and steepness of the area. A leech bed site must be selected where proper filtration of the effluent can occur. If this is not achievable, mitigations or alternatives may be necessary. Guidance from the County of Hawaii Health Department or the NRCS may be warranted. Following the recommendations of the County of Hawaii, Department of Health as well as obtaining a septic system permit would fulfill the obligations in HAR, Chapters 11-54 and 11-62.

Construction activities for the Laupahoehoe Construction Project facilities would not impact water quality in terms of sediment. Silt fencing is recommended around the construction site during construction and until the site has re-vegetated, but whatever sediment does leave would be filtered out before reaching project area stream channels. Following mitigation measures and Construction Site BMPs as well as obtaining a NPDES permit would protect water quality and fulfill the obligations of HAR, Chapters 11-54 and 11-55. Refer to the specialists report.

The permanent wash station for vehicles and personnel has been dropped from the facility plans and is no longer anticipated to be constructed.

The State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), has evaluated the project and has concurred that no impacts would occur from the preferred alternative.

TOPIC: **Public Access**

Commenter: K. Clarkson, Mauka Makai Access Committee

Comment: We note that the geographic scope of the proposed facility lease includes the present road access into the Laupahoehoe Forest Reserve, to what is commonly called Blair Road. The USFS, then, will effectively control forest reserve access through the Blair Road alignment, the most logical public access into the forest reserve. This raises the concern about public access to the area.

The public's interest in accessing the Laupahoehoe FR via Blair Road is known by both Land Management and DOFAW. DOFAW agency correspondence as far back as 1971 recognizes the public's interest in recreational use. There have been past discussions (including a field trip in 2005) with DOFAW about public pedestrian access to the FR, to include the possibility of a parking area near the present Blair Road gate.

There is, in the present lease (S-5320), a reservation for public access to the Laupahoehoe FR. While not presently acted on, it exists, in recognition of the need.

Documentation accompanying the 2006 proposal to the Board of Land and Natural Resources to establish the experimental forest states that "access to the forest will not be prohibited.”Given the public-agency dialogue to date regarding public access through Blair road, how will the USFS address the public's interest in accessing the FR through that Blair Road alignment?

While there is no public access at this time, the matter will continue to be pursued by a public constituency. The issue is not going away.

In light of the public's interest in accessing the Laupahoehoe FR, and the control that the proposed facility will have over the Blair Road, the EA should address public access alternatives into the forest reserve. Further, there should be, in the USFS lease, a reservation for public access, to include parking.

Commenter: M. Crosson

Comment:

Public access to the Laupahoehoe Forest Reserve is inadequately addressed in the Draft EA.

While no public access currently exists via the road that would lead to the proposed Laupahoehoe Research and Education Center (LREC), this is not due to a lack of interest on the part of the community to gain access into the forest reserve. Currently, the only public access available in the area is (Spencer Trail). It is impassable with horses and nearly impassable for hiking.

Nearby, the County owns a homestead road and right-of-way that runs up to the State parcel where the research center will be constructed (TMK: 3-6-6-46). Immediately above this parcel are the forest reserve and the beginning of Blair Road. Sometime before 1956, the sugar company constructed the road that is now being used for access to the proposed LREC and Blair Road; the actual location of the county road is unclear. The sugar company road is presently used for access and is proposed to be the access to the LREC and continue to be the access to Blair Road. Do any portions of the current road correspond to the original homestead road? Has the County been consulted as the owner of the homestead road?

It is illegal to block or obstruct a government road or right of way. A gate or fence currently obstructs the homestead road. This gate mayor may not be on the government road because while the right-of way to the State parcel has been established, the true legal alignment has not. If the true legal alignment were to be determined, then the private landowner could be asked if they would be receptive to having the current road alignment satisfy the government's claim. If the government could use its own road, there would be no need to satisfy the private landowner's concerns regarding liability insurance, indemnification and whatever else might arise.

This is a good time to determine the true alignment and acquire clear title to the access road. It would benefit the communities and the researchers for many years to come. Acquiring clear title to the road would make it easier to accommodate some form of public access.

The Draft EA 's treatment or public access bears little or no resemblance to the proposal that was presented to the Board or Land and Natural Resources on Feb 24, 2006.

When the proposal to establish the experimental forest was submitted to the DLNR board on February 24, 2006 public access issues were treated favorably. The submittal stated "It has good road access for both scientists and the public", "with improvements this could provide access for all potential users of the forest", "Access to the forest will not be prohibited", "there are no plans to limit activities such as hunting or gathering within boundaries of the experimental forest", "will the public be excluded? No." and, "There exists an existing road that extends the length of the proposed forest."

However, now the EA states: "All existing gates will remain in place and locked and will not be open to the general public."

What happened in the process that the current EA statement is so changed from the intent of the original proposal in February 2006?

A reservation (or public access to the Laupahoehoe Forest Reserve exists in the General Lease No. S-5320.

In 1995, the consent to the assignment of S-5320 is subject to "a reservation of the State of Hawaii of public access at a future date through the property which is the subject of General Lease No. S-5320 to the mauka public forest ...

What is the status of that reservation in light of this proposal to expand the use of the road?

Recreational use of Blair Road has been favorably considered even before its construction

It is noted in the EA on page HIHETF 116a-117:

"The following notes, from the Department of Land and Natural Resources, dated March 12, 1971,document a hearing ...and also document construction and purposes of the Blair Road ...

The Division for several years has had plans to construct a road through Laupahoehoe with C.I.P. funds for timber harvesting, administration and recreational use. This was consistent with the plan of the North Hilo community which recommended a road for local recreational use ..."

Commenter: D. Chang

Comment: The Final EA needs to include a discussion about public access alternatives into the Laupahoehoe Forest Reserve via Blair Road.

The above-referenced DEA does not adequately recognize and address the longstanding,

sporadic efforts by the public to secure public access via Blair Road into the Laupahoehoe Forest Reserve. Since the area to be leased to the Hawaii Experimental

Tropical Forest Facility (HETF) in Laupahoehoe encompasses the Blair Road entry into the forest reserve; it appears that the USFS will be in the position of controlling forest reserve access through Blair Road. The EA needs to address public access alternatives into this important, publicly owned resource and specifically how controlled public access might be accommodated via Blair Road. For the record, I am not suggesting uncontrolled, 24-hour/day, 7 days/week public access. There are other possible arrangements that would constitute a shared use of the publicly owned forest reserve with the public without sacrificing the objectives of the Natural Area Reserves System and the USFS Experimental Forest research. The state lease with HETF should include reservations for the future accommodation of controlled pedestrian (and possibly equestrian) public access, including a small parking area outside of the Blair Road gate.

Public access into the Laupahoehoe Forest Reserve via Blair Road is not a new proposition.

• The DEA includes, "A Study of Cultural-Historical Resources of Lands in the Laupahoehoe Forest Section" by Kumu Pono Associates, LLC. That study describes the discussions that occurred in the 1970s when logging of koa in this area by Blair Ltd. was permitted by the state and resulted in the creation of "Blair

Road." The Division of Forestry and Wildlife (DOFAW) is stated to have had "plans to construct a road through Laupahoehoe with C.I.P. funds for timber harvesting, administration and recreational use. This was consistent with the plan of the North Hilo community which recommended a road for local recreational use." (emphasis added). The area was sufficiently important to the state's hunting program that an inventory and monitoring of pig populations was undertaken to determine the effects of tree harvesting on the state's wildlife hunting resources.

• State General Lease No. S-5320 (TMK: 3-6-6:46) includes a "Consent" which states that the lease is subject to "1) a reservation of the STATE OF HAWAII of public access at a future date through the property which is the subject of General Lease No. S-5320 to the mauka public forest and natural area reserves at a location to be jointly determined by the Assignees and the STATE OF HAWAII's Division of Forestry and Wildlife; and 2) the STATE OF HAWAII's right to use Blair Road, which traverses the property which is the subject of General Lease No. S-5320, for official business." Although approved by the BLNR in 1995, the state has done nothing to exercise this reservation of public access. Now that a portion of that original lease is planned for HETF, this is a good time to exercise that reservation.

• In 2004 - 2006 the Mauka and Makai Access Committee (MAMA) communicated its interest in public access to Blair Road and the forest reserve in several meetings and correspondence with Land Division and DOFAW. MAMA was advised that DOFAW would discuss the public's long-standing access interests with the USFS, the affected state lessees and Kamehameha Schools, owner of parcel 50 through which a portion of the access road crosses.

• The staff submittal to the BLNR of February 24, 2006 which requests Board approval to proceed with the establishment of HETF acknowledges the public's interests in accessing this area. Page 5 states, "While the public may be excluded around small areas of particularly sensitive research projects or for human safety issues, there are no plans to limit activities such as hunting or gathering within boundaries of the experimental forest. The experimental forest will provide new opportunities for people to learn about and appreciate Hawaiian forests." Also, Governor Linda Lingle's "Report of Findings for the Establishment of the Hawai'i Experimental Tropical Forest: Suggested Sites and Infrastructure Needs" dated January 1, 2006, states, "Providing public access for forest research, demonstration, and education is of paramount importance. Increased access and many new opportunities will be created." (p. 5).

In summary:

1. Considering the well-documented past and more recent attempts to open up this area to some form of public access, the final environmental assessment needs to fully address how public access into the Laupahoehoe Forest Reserve could be accommodated via Blair Road.

2. The lease of state land to the USFS for its Research and Education Center should include a reservation for future public access through the subject property, including a public parking area just outside of the gate at the lower boundary of the forest reserve.

I support research and conservation activities in this very special public property. I believe that the area can and should be shared with the public in a manner that will be in keeping with conservation and educational goals. The question is not "why" should there be public access opportunities but rather "how" can they be provided in a controlled manner.

Response: Several comments requested that we provide for public access to the Laupahoehoe Forest Reserve. The purpose of this project is analyze the effects of installation of a research and education

facility including road and utility access in order to construct and use research facilities for use by the government and its contractors and cooperators, not by the general public. Importantly, both alternative access routes traverse parcels of privately owned land, and the cooperation of those landowners is in part predicated on the road not being open to the general public. Given that public access is not required in order to achieve the objectives of this project changing existing public access to the Laupahoehoe Forest Reserve and use of the road is outside the scope of the proposed action.

TOPIC: **Alternate Location should have been considered.**

Commenter: J. Bryan,

Comment: **"**Finally, if you really cannot find a way to give up the idea of building a power line up the mountain I would ask you to change your thinking about the need for this location for the facility. The old Forest Service compound concept, which was designed to solve the issue of being located hours away from suitable housing, is unnecessary in any event. Laupahoehoe is 15 minutes away. There is a lovely building in Laupahoehoe known as the Old Hospital which would look great with a Forest Service shield on the front, and could probably be purchased for less than the price of your power line. There is always another way."

Commenter: D. DeVries

Comment: If anyone needs a lab they can go to the university or the new lab at the Laupahoehoe high school just three miles away.

Commenter: J. Bridgeman

Comment: "You must be aware that the Laupahoehoe School is struggling to figure out what to do with their facilities, as attendance of the school has dropped so low. Can you form a partnership with the school and take over a portion of the school for the research facility and then perhaps have a scaled back facility up at the top? This may meet your needs but in a better and cheaper way, as well as a significant benefit to the Laupahoehoe community."

Response: Preliminary project planning considered two sites. The proposed site was chosen due to direct accessibility and logistic advantage for an administration of research and education program for HETF.

TOPIC: **Significant Impacts related to connection to public utility power grid**

Several comments on the 2009 Draft EA expressed concerns regarding impact of using public utility generated electrical power at the Laupahoehoe Construction Project. Comments addressed the level of detail used in analysis of potential renewable power sources, the visual impact of over-head electric transmission lines, habitat fragmentation impacts of overhead electric transmission lines, impacts to neighborhood character of overhead electric lines, and erosion impacts related to buried electric transmission lines.

Response: The project, as currently proposed, would rely on an on-site photo-voltaic array and backup generator for all electricity, and include no off-site electrical connections.

TOPIC: **Center's activities will increase invasive species (Coqui frogs) in the area**

Commenter: D. DeVries

Comment: "I am concerned about the traffic this will create on our road and the invasion of coqui frogs, which we work hard as a community to keep out."

Commenter: S. Sanderson

Comment: "A vehicle wash station raises questions that an on-site wash station could be too late to remove invasives if they have already fallen off the vehicle. Adequate treatment of wastewater from the station is not detailed of described."

Commenter: J. Bridgman

Comment: "Another concern for me is the mention of the washing station. This is important to reduce the potential for bringing in invasive species to the sensitive forests above. However without a more detailed description of how this facility would work I am left imagining the area right around the washing station to be the beginning of new infestations."

Response: Mitigation measures proposed with this project require all contractor equipment will arrive at the work site clean and free of invasive species including plants and animals prior to any construction activity. Additionally, all building materials including sand, gravel, rock and/or mulch for use at the facility site, it will be inspected and certified as invasive species free. Any native plants used for re-vegetation will be treated for coqui frogs or acquired from a coqui frog-free nursery or supplier. These mitigation measures are in addition to routine treatment of invasive species within Forest Reserve and Natural Area Reserves conducted by State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife. All policies and procedures can be found at: http://www.hawaiiinvasivespecies.org/iscs/biisc/.

The permanent invasive species wash station has been dropped from the proposed project.

PSW staff anticipates that research scientists and others accessing and using the research and education center would use roads with a frequency of approximately one to two vehicles per day. The proposed educational program envisioned by PSW staff include field trips hosted by staff and would involve one or two high clearance vans transporting visitors to the site once per week and occasionally on weekends. Increases in road use and the associated potential for establishment of invasive species would likely be relative low.

TOPIC: **Noise**

Commenter: C. Kornet

Comment: "Noise impacts mentioned in the report do not take into account the level of use on the road that a successful education program would bring. More than a weekly high clearance van would be needed to bring school children to the site in any meaningful capacity."

Response: PSW staff anticipates that research scientists and others accessing and using the research and education center would use roads with a frequency of approximately one to two vehicles per day. The proposed educational program envisioned by PSW staff include field trips hosted by staff and

would involve one or two high clearance vans transporting visitors to the site once per week and occasionally on weekends. Noise levels associated with vehicle traffic accessing the research and education center are not expected to exceed State of Hawaii Department of Health, Title 11, Chapter 46 HAR Community Noise Control levels. If noise levels exceed levels permitted during construction activities, a community noise permit or variance would be obtains as required by the Hawaii State Department of Health.

TOPIC: **Helicopter Pad**

Commenter: C. Kornet

Comment: "A possible helicopter pad was mentioned with regard to parking lot construction. If helicopters are to be involved, impacts are inevitable. Air surveillance of the ecosystem will be (and is already) part of the NEON project. How will you be affiliated with that project? How heavy is air traffic proposed to be?"

Response: The parking lot, as currently proposed, would be too small to serve as an emergency helicopter landing area. If future research projects within the HETF propose helicopter use for surveillance or other research activities, additional environmental analysis would be evaluated on a case by case basis.

TOPIC: **Commitment for Larger Actions**

Commenter: C. Kornet

Comment: "How will you be associated with NEON and its impacts and funding?"

Response: The National Ecological Observatory Network (NEON) is being developed by the ecological research community as a tool that would allow scientists to analyze, understand, and forecast the nature and pace of biological change at scales ranging from local to continental see: http://www.neoninc.org/. The National Science Foundation is in the initial stages of developing a draft Environmental Assessment which would include installing research towers within lands of HETF. None of these towers would be located in the Laupahoehoe Wet Forest Unit of the HETF. The proposed towers would thus be several miles distant from the Laupahoehoe Construction Project location and in general outside the spatial boundary of the analysis of any of the action alternatives related to this project.

Research scientists at PSW as well as other research scientists around the globe would be using data generated from NEON towers to provide critical data gaps to various research hypotheses. NEON, Inc. is an independent 501(c)3 corporation created to manage large-scale ecological observing systems and experiments on behalf of the scientific community. NEON is a specific NSF-funded large facility project managed by NEON, Inc., which operates the NEON Project Office on behalf of the NSF. No direct funding from NEON or NSF is earmarked for any of the action alternative

proposed in this EA. Funding for research activities allocated from NEON or NSF in support of the Research and Education Facility is outside the scope of this project.

TOPIC: **Vehicle usage**

Commenter: S. Sanderson

Comment: "Projection of 1-2 vehicles per day doe not justify the need for a 20 vehicle parking lot. Deliveries, maintenance and service vehicles, staff and visitors coming and going would exceed the estimated vehicle per day numbers"

Response: The projection of 1-2 vehicles a day is an average. It is possible that some days there will be more usage than others. As currently proposed, the LFES would only include parking space for 10 vehicles. Visiting scientists conducting work within the HETF would likely be staying at the facility for a number of days/weeks and only occasionally using the road. The parking lot will also be used to park vehicles/equipment used for research purposes within HETF.

TOPIC: **Seasonal Migration Patterns not adequately analyzed**

Commenter: S. Sanderson

Comment: " A 2 day field study does not take into account seasonal migration patters that could cause the project to have significant impact of non-listed species of listed species.

Response: This comment is noted. While the commentor indicates that a 2-day field study is inadequate to assess potential impacts, as described on page 9 of the wildlife report, (Wildlife report) sources of information used in the wildlife analysis included; 1) a list of species from the USFWS that occur at or near the project area (USFWS 2008), 2) bird survey information from species documented in or near the natural area reserve (NAR 2008), 3) Hawaiian hoary bat surveys (USGS 2007) conducted by the USGS in the Laupahoehoe Natural Area Reserve and 4) bird surveys (2-day) conducted by the University of Hawaii (UH 2008). Additionally the wildlife analysis evaluated potential impacts to federally listed species, as well as all Hawaii State species of Greatest Conservation Need (Wildlife Report p. 45). Collectively these species were evaluated in order to assess potential impact to species most "at risk", or species with potential viability considerations, as well as to ensure that native biodiversity is maintained.

Anticipated effects discussed include potential direct effects to individuals, as well as changes in habitat conditions that would affect use of the area by wildlife during both the breeding and non-breeding (including seasonal use) seasons. Additionally project design features (wildlife report pp 35-36) are included to reduce or minimize direct impacts year-round. So while the commentor indicates that significant impacts to listed and non-listed species could occur, he does not say what those significant impacts are. As a result and based on the analysis provided in the EA, wildlife report and Biological Assessment (Administrative Record), particularly the small amount of habitat affected, maintenance of native vegetation and with implementation of PDF's to reduce direct impacts, there are no significant impacts anticipated to any listed, or non-listed wildlife species under any alternative.

TOPIC: **Public Involvement and Participation**

Commenter: S. Sanderson

Comment: " …The project EA has been done in a way that seems to assume approval without including specific details of the facility's design, function and need. External public concerns raised during the scoping period were addressed to individual comments without giving an opportunity for public involvement in creating workable solutions and alternatives. It seems that this project is being pushed forward in a "we know best" manor that dis-empowers the public. I request that an environmental impact statement is done for this project.

Commenter: K. Dougherty

Comment: "I think the EA should not be accepted because your team arbitrarily and without public comment, dismissed the use of solar energy as outside the scope of the project."

Response: Public scoping for this project included: public meetings held at the Laupahoehoe High School on April 20, 2011, and September 10, 2008. Notification of the public about these meetings was accomplished by a public service radio announcement (pacificradiogroup), a public notice in the Hawaii Tribune Herald (4/22011 and 9/6/2008), flyers placed in public locations in Flyers were posted along the Hamakua coast near the project area at Laupahoehoe (5 locations), Paaulio (1 location), and Honoka'a (2 locations). Additionally letters requesting public input during the planning process were sent to persons and agencies listed in Appendix A of the Environmental Assessment. Notification of availability of the draft Environmental Assessment included a public notice in the Hawaii Tribune Herald, publication of availability of the draft EA in The Environmental Notice, a free publication by the State of Hawaii, Office of Environmental Quality Control, letters of draft EA availability to agencies and persons listed in Appendix A of the draft Environmental Assessment as well as persons who attended the public meeting requesting notification of draft EA availability. PSW staff also attended two Hilo-Hamakua Community Development Corporation meetings as invited guests on April 21, 2009 and May 21, 2009 at the Laupahoehoe School. Public involvement and participation requirements are in compliance with Environmental Assessment and Environmental Impact rules and regulations (HRS 343 and NEPA).