ENVIRONMENTAL ASSESSMENT

AND FINDING OF NO SIGNIFICANT IMPACT

FOR THE

PROPOSED NEW PERIMETER SECURITY FENCE AND APPURTENANCES

AT

FIELD STATION KUNIA, OAHU, HAWAII

September 2018

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Finding of No Significant Impact for the Proposed New Security Fence and Appurtenances at Field Station Kunia, Oahu, Hawaii

AUTHORITY

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321-4347) (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR parts 1500-1508), and the Final Rule on Environmental Analysis of Army Actions (32 CFR Part 651), the United States Army Garrison, Hawaii (USAG-HI) gives notice that an Environmental Assessment (EA) has been prepared for the proposed new perimeter security fence and appurtenances at Field Station Kunia (FSK), Oahu, Hawaii.

PROPOSED ACTION AND ALTERNATIVES CONSIDERED

USAG-HI proposes to construct and operate a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting FSK. The EA evaluates the environmental impacts of the Proposed Action. The no-action alternative is also addressed.

The Proposed Action is the construction and operation of a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting FSK. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The proposed facilities would be constructed in accordance with all applicable laws.

In addition to the Proposed Action, USAG HI analyzed a no-action alternative. Under the no-action alternative, USAG-HI would not construct a new perimeter security fence and appurtenances at FSK, and the ATFP requirements for the topside infrastructure at FSK would not be met. The topside infrastructure at FSK and the operations that it supports would be vulnerable to potential threats. Both the preferred alternative and the no-action alternative are evaluated in the EA.

Finding of No Significant Impact for the Proposed New Security Fence and Appurtenances at Field Station Kunia, Oahu, Hawaii

SUMMARY OF ENVIRONMENTAL ANALYSIS

Based on the analysis contained in the EA, USAG-HI has determined that implementation of the preferred alternative would result in impacts that are less than significant. The implementation of best management practices and other measures will avoid and/or minimize potential impacts to air quality, water resources, biological resources, and hazardous and toxic substances. The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, would have less than significant cumulative impact.

USAG-HI completed informal consultation under Section 7 of the Endangered Species Act with the United States Fish and Wildlife Service (USFWS). On December 1, 2015, USAG-HI sent a letter to inform USFWS of their determination that the Proposed Action may affect, but would not be likely to adversely affect the Hawaiian hoary bat, Lasiurus cinereus semotus. At that time the proposed fence included a Y-outrigger with 6 strands of barbed wire. Further discussions with USFWS staff identified that the initial fence configuration would adversely affect the Hawaiian hoary bat due to potential entanglement with the six strands of barbed wire. To avoid a potential adverse effect to Hawaiian hoary bats, USAG-HI adjusted the proposed fence to include only a single outrigger with three strands of barbed wire. On September 23, 2016, USAG-HI sent a letter to inform the USFWS of this change to the proposed action, and to request concurrence with their finding that the Proposed Action may affect but would not be likely to affect the Hawaiian hoary bat. The USFWS notified USAG-HI of their concurrence with the determination via a letter dated October 25, 2016.

USAG-HI conducted consultation under Section 106 of the National Historic Preservation Act with the Hawaii State Historic Preservation Officer (SHPO). On February 24, 2017, USAG-HI sent a letter to inform the SHPO of their determination that there are no historic properties present in the area and the Proposed Action will result in no historic properties affected. The SHPO notified the Army of their concurrence with the determination via a letter dated May 8, 2017.

USAG-HI assessed reasonably foreseeable direct, indirect and cumulative effects on Hawaii's defined coastal zone and reviewed relevant management programs of the Hawaii Coastal Zone Management Program (HCZMP) in accordance with the Coastal Zone Management Act (CZMA) of 1972. USAG-HI found that the proposed new perimeter security fence and appurtenances are consistent to the maximum extent practicable with the enforceable policies of the HCZMP. USAG-HI sent a Coastal Zone Consistency Determination Letter to the State of Hawaii Office of Planning HCZMP on March 27, 2018, and the Office of Planning responded with a letter of concurrence on May 11, 2018.

Finding of No Significant Impact
for the Proposed New Security Fence and Appurtenances at
Field Station Kunia, Oahu, Hawaii

PUBLIC REVIEW AND COMMENT

The EA and draft Finding of No Significant Impact (FNSI) were made available for a 30-day public review and comment period on August 8, 2018, with the publication of a Notice of Availability (NOA) in the Honolulu Star-Advertiser. The NOA was also sent to the State of Hawaii's Office of Environmental Quality Control for publication in The Environmental Notice. An electronic copy of the EA and Draft FNSI was made available for download at http://www.garrison.hawaii.army.mil/NEPA/NEPA.htm and hard copies were also made available for public review at the Hawaii State Library in Honolulu and the Wahiawa Public Library.

During the 30-day public comment period, no comments were received.

FINDING

Based on careful review of the EA, I have concluded that implementation of the Proposed Action would not have a significant impact on the quality of the human or natural environment. Therefore, an environmental impact statement is not required and will not be prepared.

This **Finding of No Significant Impact** has therefore been prepared and is submitted to document environmental review and evaluation in compliance with NEPA.

28 SEPTEMBER 2018

Thomas J. Barrett
Colonel, U.S. Army
Commanding

Date

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ENVIRONMENTAL ASSESSMENT
AND DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR THE
PROPOSED NEW PERIMETER SECURITY FENCE AND APPURTENANCES
AT FIELD STATION KUNIA, OAHU, HAWAII
AUGUST 2018

REVIEWED BY:

5 July 2018

Lisa Graham — Date
NEPA Program Manager
Directorate of Public Works
U.S. Army Garrison, Hawaii

SUBMITTED BY PROPONENT:

5 JUL 18

Rhonda L. Suzuki — Date
Environmental Division Chief
Directorate of Public Works
U.S. Army Garrison, Hawaii

APPROVED BY:

19 July 2018

Thomas J. Barrett — Date
Colonel, U.S. Army
Commanding
U.S. Army Garrison, Hawaii

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) has been prepared in accordance with Title 32 of the *Code of Federal Regulations* Part 651 (Environmental Effects of Army Actions), and the National Environmental Policy Act (NEPA). The United States Department of the Army (Army) is the project proponent. The EA analyzes the environmental impacts of the Proposed Action and No Action Alternatives. The purpose of this EA is to inform Army decision makers and the public of the potential environmental impacts of the Proposed Action and No Action Alternatives.

Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide adequate Anti-Terrorism Force Protection (ATFP) for the topside infrastructure and the personnel and equipment located in subsurface structures at Field Station Kunia (FSK). The proposed new perimeter security fence and appurtenances would provide the required level of security to protect these assets and would provide secure emergency evacuation routes for personnel and equipment located in the subsurface structures.

The need for the Proposed Action is to establish a safe and secure perimeter around the topside infrastructure and emergency evacuation routes at FSK. A secure perimeter is required to enhance the protection of personnel and equipment in the subsurface structures, and to ensure that the topside infrastructure is able to support operations at FSK.

Summary of the Proposed Action and Alternatives

The Proposed Action is the construction and operation of a new perimeter security fence and appurtenances to provide required ATFP setbacks to infrastructure supporting FSK. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; and, the routing of electrical, and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The proposed facilities would be constructed in accordance with all applicable laws.

The Proposed Action would be located at FSK, to the south of U.S. Army Garrison, Hawaii (USAG-HI) Schofield Barracks in Central Oahu. The proposed new security fence and appurtenances would be constructed on three Tax Map Key (TMK) parcels and one right-of-way referred to as Exclusion 40. The TMK parcels are owned by Island Palm Communities LLC (TMK 9-2-005:022), the State of Hawaii (TMK 9-4-012:003), and the Federal Government (TMK 9-4-012:006). The former Campbell Estate conveyed Exclusion 40 to the Territory of Hawaii for a federal highway project in 1935. The Island Palm Communities-owned lands are subject to federal property interests provided by Easements 103 and 104. The State of Hawaii-owned lands are subject to federal property interests provided by Executive Order (EO) 1301. Easements 103 and 104, and EO 1301 provide the Federal Government with rights to the exclusive use of the subsurface of these parcels and the right to incidental use of the surface of the parcels to support their subsurface use. The description of real estate interests in this document is not authoritative, but is provided to allow for an analysis of environmental impacts to the extent necessary.

Under the No Action Alternative, USAG-HI would not construct a new perimeter security fence and appurtenances at FSK, and the ATFP requirements for the topside infrastructure at FSK would not be

met. The topside infrastructure at FSK and the operations that it supports would be vulnerable to potential threats.

The Army also considered other alternatives that, upon analysis, did not meet the purpose and need for the Proposed Action or satisfy the screening criteria and thus were eliminated from further evaluation.

List of Permits and Approvals

The Proposed Action would require the permits and approvals in Table ES-1, including informal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA), the State Historic Preservation Division under Section 106 of the National Historic Preservation Act (NHPA), and the Coastal Zone Management (CZM) Program in accordance with the Coastal Zone Management Act (CZMA).

Table ES-1 List of Potential Permits, Approvals, and Required Consultations

Oversight Agency	Permit, Approval, or Consultation
Hawaii State Historic Preservation Officer (SHPO)	Section 106 consultation for properties listed or eligible for the National Register of Historic Places (NRHP) pursuant to the NHPA 1966 (Public Law 89-665; 16 U.S.C. §470 et seq.); 36 CFR 800 (Protection of Historic Properties)
United States Fish and Wildlife Service (USFWS)	Section 7 consultation for threatened and endangered species or critical habitat pursuant to the ESA of 1973 (Public Law 93-205; 16 USC §1531 et seq.)
Hawaii Department of Health, State of Hawaii	National Pollutant Discharge Elimination System (NPDES) Permit for construction-related stormwater discharge for land disturbance equal or greater than 1-acre pursuant to the Clean Water Act of 1972 (33 U.S.C. 121 et seq.)
CZM Program, State of Hawaii	Coastal Zone Consistency Determination, pursuant to the CZMA of 1972 (as amended) (16 USC §1451 et seq.).

Affected Environment and Environmental Consequences

Resource areas evaluated in the EA include air quality; water resources; biological resources; historic, cultural, and archaeological resources; visual resources; land use; traffic; solid waste; toxic and hazardous substances; and socioeconomics.

The severity of environmental impacts is characterized as significant, less than significant, no impact, or beneficial. There could be adverse and beneficial impacts to the same resource. The environmental consequences of the Proposed Action and No Action Alternative, discussed in the resource sections in Section 3, are summarized in Table ES-2.

Consistency with Land Use Policies, Plans, and Controls

The proposed new perimeter security fence and appurtenances is subject to two types of land use controls. One type is applicable to portions of the project on Army land (on-post); the other governs elements of the proposed project that are not on Army-owned land (off-post). The Proposed Action was reviewed and found to be consistent with applicable federal, state, and local land use plans, policies, and controls.

Table ES-2. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Proposed Action Alternative*
Air quality	None	Less than significant impacts
Water Resources	None	Less than significant impacts
Biological resources	None	Less than significant impacts and beneficial impacts
Historical, cultural, and archaeological resources	None	No impact
Visual resources	None	Less than significant impacts
Land use	None	Less than significant impacts
Traffic	None	Short-term less than significant impacts
Toxic and hazardous substance	None	Less than significant impacts
Socio-economics	None	Beneficial impacts

Mitigation Measures and Best Management Practices

Impacts would be less than significant for all resources, so no mitigation measures are proposed. No activities outside compliance with existing regulations, permits, and plans would be required. Best management practices and design measures that would minimize potential impacts would be implemented for the following resources: air quality, water resources, biological resources, and hazardous and toxic substances.

Cumulative Impacts

On-post, past, present, and reasonably foreseeable future actions include various Army growth and force structure realignment projects that would involve construction and operation of new facilities in support of changing training scenarios and operational requirements. Off-post, past, present, and reasonably foreseeable future actions include additional development of Central Oahu as a residential area to serve Oahu's growing population. Off-post development would occur in accordance with land use and development plans that promote conservation of Hawaii's unique natural and cultural resources. These actions themselves would have impacts ranging from beneficial to significant adverse. Overall, the Proposed Action's contribution to cumulative impacts would be minor, and in combination with past, present, and reasonably foreseeable future actions, would be less than significant.

Unresolved Issues

No unresolved issues associated with implementing the Proposed Action have been identified.

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Environmental Assessment

Proposed New Security Fence and Appurtenances

Field Station Kunia, Oahu, Hawaii

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Abbreviations and Acronyms

Acronym	Definition
Army	United States Department of the Army
APZ	Accident Potential Zone
AQCR	Air Quality Control Region
ATFP	Anti-Terrorism Force Protection
BMP	best management practice
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COSCP	Central Oahu Sustainable Communities Plan
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DOT	Hawaii Department of Transportation
DBEDT	Hawaii Department of Business, Economic Development and Tourism
DLNR	Hawaii Department of Land and Natural Resources
DNL	Day-night average sound level
EA	Environmental Assessment
ECP	Environmental Condition of Property
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EPA	U.S. Environmental Protection Agency
EO	Executive Order
ESA	Endangered Species Act
FNSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FSK	Field Station Kunia
HMMP	Hazardous Materials Management Plan
HRS	Hawaii Revised Statutes
IAL	Important Agricultural Lands
KRSOC	Kunia Regional Security Operations Center
KWA	Kunia Water Association
LOS	Level of service
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	notice of availability
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OEQC	Office of Environmental Quality Control
OR&L	Oahu Railway and Land Company
PA/SI	Programmatic Agreement/Site Investigation
PCB	polychlorinated biphenyls
RCRA	Resource, Conservation, and Recovery Act
ROI	region of influence
SHPO	State Historic Preservation Officer
SVOC	semi volatile organic compounds
SWPPP	Stormwater Pollution Prevention Plan
TMK	Tax Map Key
TSCA	Toxic Substances Control Act
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USACE-POH	U.S. Army Corps of Engineers, Honolulu District
USAG-HI	U.S. Army Garrison-Hawaii
USFWS	U.S. Fish and Wildlife Service

1.0 Purpose of and Need for the Proposed Action

1.1 Introduction

The United States Army Garrison-Hawaii (USAG-HI) proposes to construct a new perimeter security fence and appurtenances at Field Station Kunia (FSK), Oahu, Hawaii. The Proposed Action is the construction and operation of a new perimeter security fence and appurtenances to provide required setbacks to infrastructure supporting FSK. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; and, the routing of electrical, and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The proposed facilities would be constructed in accordance with all applicable laws.

The proposed new security fence and appurtenances would be constructed on three Tax Map Key (TMK) parcels and one right-of-way referred to as Exclusion 40. The TMK parcels are owned by Island Palm Communities LLC (TMK 9-2-005:022), the State of Hawaii (TMK 9-4-012:003), and the Federal Government (TMK 9-4-012:006). The former Campbell Estate conveyed Exclusion 40 to the Territory of Hawaii for a federal highway project in 1935. The Island Palm Communities-owned lands are subject to federal property interests provided by Easements 103 and 104. The State of Hawaii-owned lands are subject to federal property interests provided by Executive Order (EO) 1301. Easements 103 and 104, and EO 1301 provide the Federal Government with rights to the exclusive use of the subsurface of these parcels and the right to incidental use of the surface of the parcels to support their subsurface use. The description of real estate interests in this document is not authoritative, but is provided to allow for an analysis of environmental impacts to the extent necessary.

Table 1-1 List of TMK Parcels, Ownership, and Federal Property Interest

TMK Parcel	TMK Acres	Ownership	Existing Use	Federal Property Interest	Federal Property Interest Acres
9-2-005: 022	2,405.0	Island Palms Communities LLC	Agriculture	Easement 103 and 104	Easement 103: 9.5 Easement 104: 1.5
9-4-012: 003	78.3	State of Hawaii	Topside infrastructure, access roads, and vacant land	EO 1301, subject portion of parcel is identified as Tract WFE 4.	42.7
Exclusion 40	n/a	State of Hawaii	Access Road	EO 1301, subject portion of right-of-way is identified as Tract WFE 5.	1.5
9-4-012: 006	2.3	Federal Government	Topside Infrastructure	Owned by Federal Government	2.1
Total	2,485.6				57.3

USAG-HI has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) [42 United States Code (U.S.C.) §§ 4321 to 4370 (f)] and NEPA regulations [Title 40 of the Code of Federal Regulations (CFR) Parts 1500-1508], along with Council on Environmental Quality (CEQ) implementing regulations and 32 CFR Part 651, Environmental Analysis of Army Actions. The information contained in this EA will be reviewed and considered by the United States (U.S.) Department of the Army (Army) prior to the final decision on how to proceed with the implementation of the Proposed Action, if at all, and to determine whether a Finding of No Significant Impact (FNSI) is appropriate or whether a Notice of Intent to prepare an environmental impact statement (EIS) should be issued.

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide adequate Anti-Terrorism Force Protection for the topside infrastructure and the personnel and equipment located in subsurface structures at FSK. The proposed new perimeter security fence and appurtenances would provide the required level of security to protect these assets and would provide secure emergency evacuation routes for personnel and equipment located in the subsurface structures.

The need for the Proposed Action is to establish a safe and secure perimeter around the topside infrastructure and emergency evacuation routes at FSK. A secure perimeter is required to enhance the protection of personnel and equipment in the subsurface structures, and to ensure that the topside infrastructure is able to support operations at FSK.

1.3 Project Location

FSK is located in Central Oahu approximately one mile south of the Lyman Gate at Schofield Barracks (Figure 1-1). FSK is bordered on the north by Schofield Barracks, to the east by Kunia Road, and to the south by agricultural fields.

1.4 Scope of Environmental Analysis

This EA includes an analysis of potential environmental impacts associated with the proposed construction of a new perimeter security fence and appurtenances at FSK. The resource areas analyzed in this EA include:

- Air Quality
- Biological Resources
- Visual Resources
- Traffic
- Socioeconomics
- Water Resources
- Historical, Cultural, and Archaeological Resources
- Land Use
- Toxic and Hazardous Substances

The potential impacts to the following resource area are considered to be negligible or non-existent so they were not analyzed in detail in this EA:

- Noise Environment
- Climate Change and Greenhouse Gas Emissions
- Solid Waste
- Topography and Soils
- Public Health and Safety
- Utility Systems

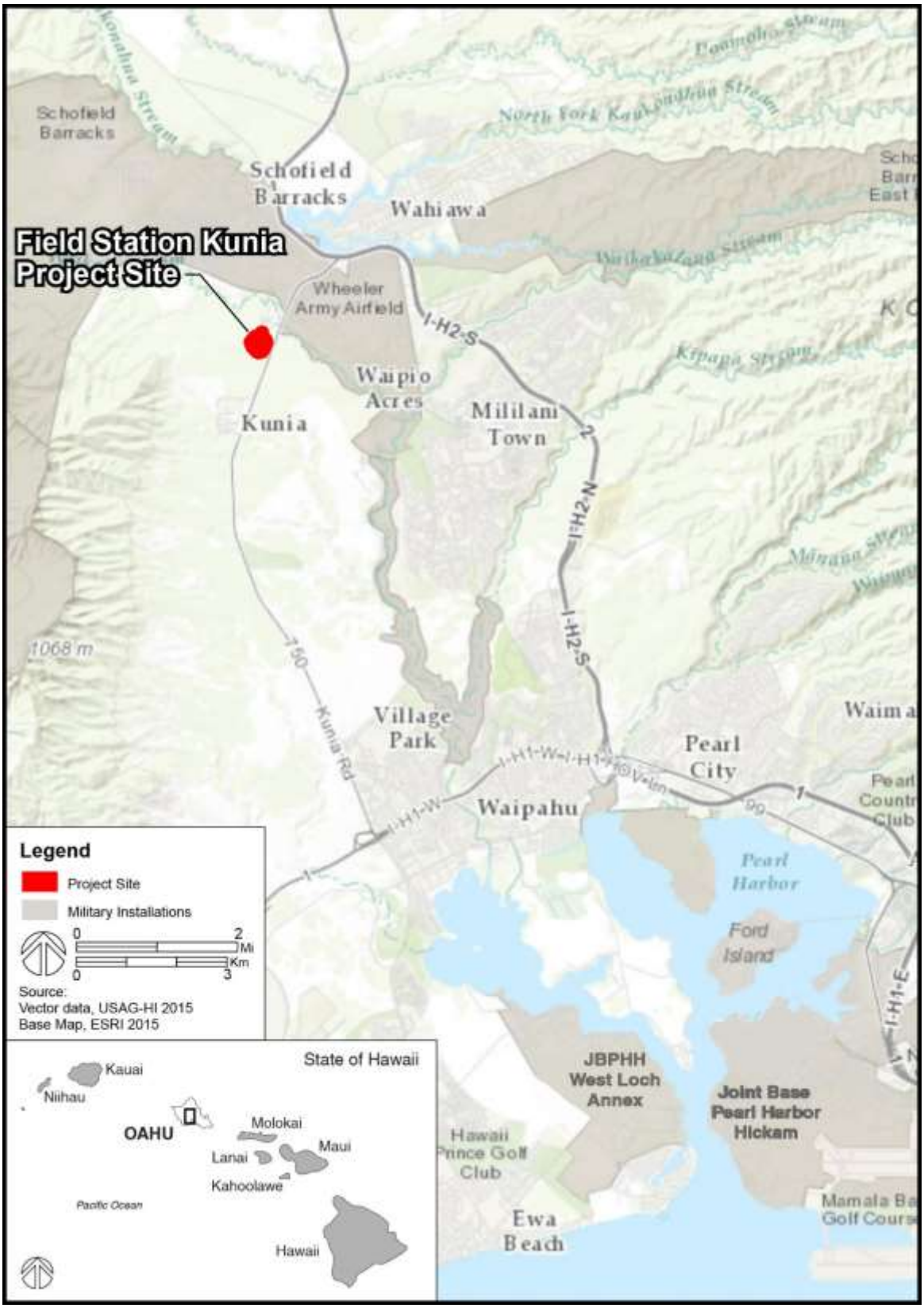

Figure 1-1 Project Location Map

1.5 Agency Coordination and Permit Requirements

As part of the NEPA compliance process, USAG-HI has engaged in coordination, consultation, and permitting with regulatory agencies to ensure that all applicable laws, rules, regulations, and policies have been satisfied with respect to the Proposed Action. Potential permits, approvals, and consultation requirements for the project include but are not limited to those listed in Table 1-2.

Table 1-2 List of Potential Permits, Approvals, and Required Consultations

Oversight Agency	Permit, Approval, or Consultation
Hawaii State Historic Preservation Officer (SHPO)	Section 106 consultation for properties listed or eligible for the National Register of Historic Places (NRHP) pursuant to the National Historic Preservation Act (NHPA) of 1966 (Public Law 89-665; 16 U.S.C. §470 et seq.); 36 CFR 800 (Protection of Historic Properties). The Section 106 consultation also affords the SHPO the opportunity to comment on the Proposed Action.
United States Fish and Wildlife Service (USFWS)	Section 7 consultation for threatened and endangered species or critical habitat pursuant to the Endangered Species Act (ESA) of 1973 (Public Law 93-205; 16 USC §1531 et seq.)
Hawaii Department of Health, State of Hawaii	National Pollutant Discharge Elimination System (NPDES) Permit for construction-related stormwater discharge for land disturbance equal or greater than one acre pursuant to the Clean Water Act of 1972 (33 U.S.C. 121 et seq.)
State of Hawaii Coastal Zone Management Program (HCZMP)	Coastal Zone Consistency Determination, pursuant to the Coastal Zone Management Act (CZMA) of 1972 (as amended) (16 USC §1451 et seq.).

1.6 Public Participation

In accordance with Army policies and instruction for implementing NEPA, the EA must be made readily available to the public for review. This distribution must be planned to ensure that all appropriate entities and stakeholders have easy access to the material. A notice of availability (NOA) of the EA and Draft FNSI will be published in the newspaper of mass circulation and other means announcing a 30-day public review and comment period for the EA and Draft FNSI, including these local publications:

- Honolulu Star-Advertiser
- State of Hawaii Office of Environmental Quality Control's (OEQC's) The Environmental Notice

Electronic copies of the EA and Draft FNSI will be available for download through an internet address published in the NOA, and hard copies will be made available in appropriate public libraries. Comments can be emailed to usaghi.pao.comrel@us.army.mil or mailed to the Environmental Division, Directorate of Public Works, United States Army Garrison, Hawaii, 947 Wright Avenue, Wheeler Army Airfield, Schofield Barracks, Hawaii 96857-5013. After the close of the public review period, the Army will carefully assess the comments, and reach a decision on whether to issue a FNSI or to proceed with a Notice of Intent to prepare an EIS.

2.0 Description of the Proposed Action and Alternatives

2.1 Proposed Action

The Proposed Action is the construction and operation of a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting FSK. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The proposed facilities would be constructed in accordance with all applicable laws.

2.1.1 Perimeter Security Fence

The proposed perimeter security fence would encompass the topside infrastructure at FSK as well as the safety buffer distances required by ATFP standards. The proposed fence line would enclose an area of approximately 16.2 acres (Figure 2-1). The proposed security fence has been designed to meet the minimum safety buffers required by ATFP standards. Therefore, it represents the smallest feasible project footprint that would still meet the purpose and need for the Proposed Action. The fence would also be required to meet ATFP standards for structural integrity including the Department of Defense's K12 ram barrier protection specifications. An image of a typical K12-rated fence is provided in Figure 2-2. The new security fence would be approximately eight feet tall affixed with a single outrigger holding three strands of barbed wire for a total height of nine feet. The total length of the fence would be approximately 3,900 feet or 0.74 miles.

Security lighting and intrusion detection devices would be located along and within the proposed new perimeter fence. All lighting would be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on protected species. To support the lighting and intrusion detection devices, electrical and telecommunications lines would be routed along and within the proposed security fence.

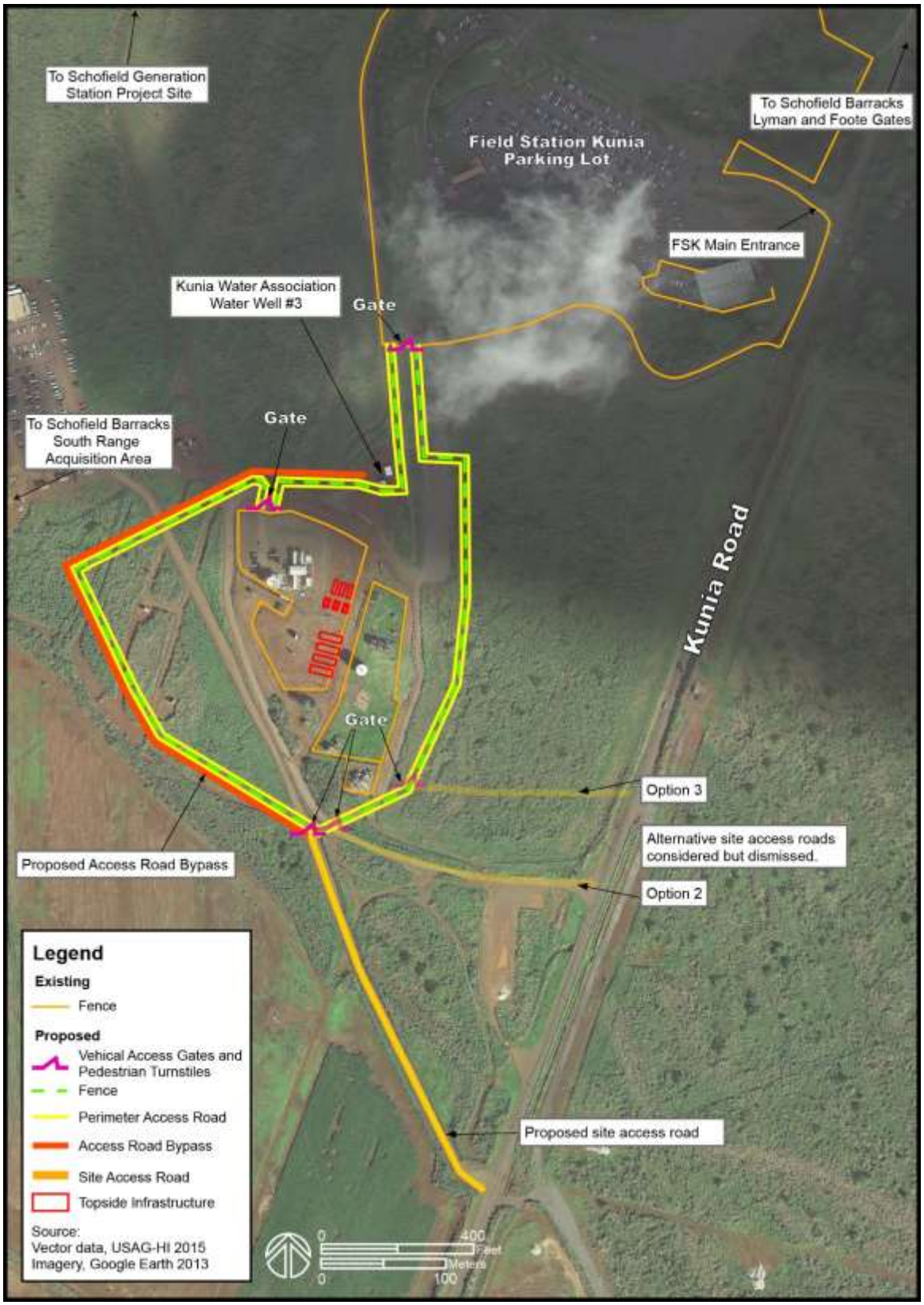

Figure 2-1 Project Site Map

Figure 2-2 Typical Security Fence

2.1.2 Site Access

Access to the site would be provided by an existing access road located on the Island Palm Communities-owned parcel (TMK 9-2-005:022). The Army currently has an existing right-of-entry agreement to use the road for access to the South Range for construction purposes. A similar right-of-entry agreement for construction purposes and permanent easements for access associated with maintenance and operations of the FSK topside infrastructure would be secured from Island Palm Communities. The access road would connect from the south edge of the proposed fence line to an existing intersection with Kunia Road approximately 1,000 feet to the south southeast. Perimeter access roads would be constructed along the interior and the exterior of the new security fence to provide vehicular access for security patrols. The new site access roads would be approximately 15 feet wide and would be constructed to the same standards as the existing unpaved dirt access roads in the project area.

Due to ATFP setback requirements, the proposed fence line would close off the existing access road for the Schofield Barracks South Range, Schofield Generation Station, and the Kunia Water Association (KWA) water well #3 along the northern edge of the proposed fence line (Figure 2-1). In order to provide continuous access to these sites, an access road bypass would be constructed along the western edge of the proposed fence line prior to the construction of the fence line. This bypass road would be located adjacent to the fence's exterior access roadway on land owned by Island Palm Communities. It would be approximately 30 feet wide and would be constructed to the same standards as the existing access road, which is a dirt roadway.

Two new vehicular access gates would be provided in the proposed fence line. One gate would be located where the proposed access road would pass through the fence line. The second would be located on the north side of the fence line to the west of the KWA Well #3 (Figure 2-1). A third, existing access gate, would provide access into the secure area at the north end of the site where the proposed fence line meets an existing FSK fence line.

2.1.3 Site Preparation and Construction Activities

During site preparation, surface vegetation in the fence line corridor would be cleared and grubbed (e.g. roots and stumps extracted). Ground disturbance during construction would include the excavation of post holes for the new security fence and gates, trenching for underground electrical and telecommunications cables, and miscellaneous civil works (e.g., access roads and drainage). Best management practices (BMP) for soil erosion and sedimentation control would be implemented in accordance with a project-specific drainage and erosion control plans which would comply with applicable NPDES requirements for construction-related activities.

During construction, materials would be transported to the project sites by truck, where they would be stored, assembled (as necessary), and moved into place. Temporary construction laydown areas for materials, equipment, and parking would be provided at the project site or on adjacent Army property. Prior to construction, site boundaries or limits of disturbance would be surveyed and staked to identify areas where construction activities would occur. Dust barriers would be erected around active construction areas to minimize the effects of fugitive dust on adjacent land uses in the area.

2.2 Screening Factors

NEPA's implementing regulations provide guidance on the consideration of alternatives to a federally Proposed Action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and meet the purpose and need require detailed analysis.

In addition to the statements of the Proposed Action's purpose and need in Section 1, the Army established the following criteria to aid in identifying viable alternatives that could meet those needs.

Compliance with federal property interests (EO 1301 and Easements 103 and 104)

The project must comply with the existing federal property interests in the project area. Federal property interests in the project vicinity cover portions of three TMK parcels and Exclusion 40. The TMK parcels are owned by Island Palm Communities LLC (TMK 9-2-005:022), the State of Hawaii (TMK 9-4-012:003), and the Federal Government (TMK 9-4-012:006). The former Campbell Estate conveyed Exclusion 40 to the Territory of Hawaii for a federal highway project in 1935.The federal property interests for the Island Palm Communities-owned lands are provided by easements 103 and 104. The federal property interests for the State of Hawaii-owned lands are provided by EO 1301. Easements 103 and 104, and EO 1301 provide the Federal Government with rights to the exclusive use of the subsurface of these parcels and the right to incidental use of the surface of the parcels in support their subsurface use.

Safe vehicular access to the site

The project must provide safe vehicular access to the project site and the topside infrastructure which it would protect. Kunia Road serves as the only major thoroughfare in the project vicinity, and therefore, vehicular access to the site must be provided via an intersection at Kunia Road.

Figure 2-3 TMK Parcels and Easements Map

2.3 No Action Alternative

The No Action Alternative, prescribed by the CEQ, provides a basis for the affected environment and serves as a benchmark against which the Proposed Action can be evaluated. Under the No Action Alternative, USAG-HI would not construct a new perimeter security fence and appurtenances at FSK, and the ATFP requirements for the topside infrastructure at FSK would not be met. The topside infrastructure at FSK and the operations that it supports would be vulnerable to potential threats.

2.4 Alternatives Considered but not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward for detailed analysis in this EA as they did not meet the purpose and need for the project and satisfy the reasonable alternative screening factors presented in Section 2.2.

2.4.1 Larger Perimeter Security Fence and Appurtenances

Under this alternative, the proposed perimeter security fence and appurtenances would have been constructed along the perimeter of the federal property interests in the project vicinity. The proposed security fence would be constructed beyond the minimum ATFP setbacks, and it would result in a much larger project footprint than the Proposed Action Alternative. This alternative would meet the purpose and need for the Proposed Action, but would unnecessarily result in a much longer fence that encumbers a greater footprint than what is required to meet ATFP requirements. This alternative would be much more costly than the Proposed Action and would have a greater impact on adjacent land uses. It is not further evaluated.

2.4.2 Proposed New Perimeter Security Fence and Appurtenances with Alternative Access Route Option 2

Under this alternative, the proposed perimeter security fence and appurtenances would be constructed in nearly the same design as the Proposed Action Alternative. The one difference would be that a vehicular access route (Option 2) would be located to the north of the access route identified in the Proposed Action Alternative, and to the south of the Option 3 access route (Figure 2-1). The Option 2 access route would utilize an existing informal access route and intersection with Kunia Road. However, the Option 2 Route would be located on State of Hawaii owned land outside of the area covered by EO 1301. This alternative would require the acquisition of additional federal property interests in the project vicinity, and is not further evaluated.

2.4.3 Proposed New Perimeter Security Fence and Appurtenances with Alternative Access Route Option 3

Under this alternative, the proposed perimeter security fence and appurtenances would be constructed in nearly the same design as the Proposed Action Alternative. The one difference would be that a new vehicular access route (Option 3) would be constructed to the north of the access route identified in the Proposed Action Alternative (Figure 2-1). The Option 3 access route would be located within EO 1301, and would allow for a shorter and more direct access route from Kunia Road. However, Option 3 would require the construction of an entirely new road and the associated intersection with Kunia Road. At the proposed intersection with Kunia Road, there is a significant drop in elevation as Kunia Road is in cut along this section of the roadway. Significant grading would be required to construct the access road to the same elevation as Kunia Road, and further grading would be required to establish required intersection sight distances. Also, to maintain safe operations, the Hawaii State Department of

Transportation (DOT) prefers to keep minimum spacing at intervals of 1,320 feet (1/4 mile). The Option 2 intersection is approximately 1,000 feet north of the existing intersection, which is less than DOT's preferred spacing. This alternative requires significant ground disturbance, does not provide for safe vehicular access to the site, and is not further evaluated.

2.5 Summary of Potential Impacts to Resource Areas

The effects that the Proposed Action and No Action Alternatives would have on various facets of the natural and man-made environment is summarized in Table 2-1. Potential impacts associated with the construction and operational phase are covered separately when warranted.

Table 2-1 Summary of Potential Impacts to Resource Areas

Resource Area	No Action Alternative	Proposed Action Alternative
Air Quality	None	Construction. Short-term, less than significant impacts from fugitive dust and construction vehicle emissions. BMPs would limit the effects of fugitive dust. Operation. Less than significant impacts associated with the greenhouse gas emissions produced from power generated for fence line appurtenances (e.g., lighting, intrusion detection devices.)
Water Resources	None	Construction. Short-term, less than significant impacts to surface runoff water quality from construction related ground disturbance and vegetation removal. BMPs would avoid or limit any potential impacts. Operation. Less than significant impacts to surface runoff water quantity from soil compaction and vegetation removal. BMPs would avoid or limit any potential impacts.
Biological Resources	None	Construction. Short-term, less than significant impacts from vegetation removal and potential displacement of protected species to adjacent suitable habitat. Construction of the Proposed Action is not likely to adversely affect any state or federally listed species or Migratory Bird Treaty Act (MBTA) species. BMPs would avoid and/or limit any potential impacts to protected species. Operation. The Proposed Action would not be likely to adversely affect any state or federally listed species or MBTA species. Adverse effects are possible but unlikely to Hawaiian Hoary Bats from potential barbed-wire fence strikes. BMPs would ensure that barbed-wire fences are monitored for any protected species impacts, and Section 7 would be reinitiated if any protected wildlife is impacted. All lighting will be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on migratory birds.

Historic, Cultural, and Archaeological Resources	None	None
Visual Resources	None	Construction. Short-term, less than significant impacts would be caused by the visibility of construction equipment, materials, and activities at the project site. Operation. Long-term less than significant impacts would be caused by the visibility of the Proposed Action from Kunia Road. The Proposed Action would affect only the very northern extent, approximately 0.2 miles of a 3.6 mile stretch, of the publicly important views of the Waianae Range from Kunia Road. The Proposed Action would not appreciably increase the visual impact of the existing security fences and topside infrastructure at FSK, so the impacts would be less than significant.
Land Use	None	Construction and Operation. Less than significant impacts associated with the Proposed Action's closing of approximately 8.5 acres of previously utilized agricultural land. However, this land has been fallow since the closure of the pineapple plantation, and it represents only 0.3% of the available agricultural land in Kunia.
Traffic	None	Construction. Short-term, less than significant impacts caused by construction vehicles and day-labor traffic. Operation. None
Toxic and Hazardous Substances	None	Construction. Short-term, less than significant impacts from potential releases associated with construction-related hazardous materials and substances (e.g., petroleum, oil, etc.), and potentially contaminated soils (e.g., IR Site A, Pineapple Field Fuel Box). BMPs would be implemented to ensure that these substances and soils would be managed properly. Operation. Less than significant impacts from the use of herbicides to control vegetation growth around the proposed fence line and site access roads. Herbicide application would be conducted in accordance with established standards and BMPs.
Socioeconomics	None	Construction. Short-term, beneficial impacts associated with construction period expenditures and employment. Operation. None

3.0 Affected Environment and Environmental Consequences

This section describes the affected environment and environmental consequences for each resource area. The affected environment portions describe the existing resources and environmental conditions at the project site and in the region of influence (ROI). These conditions form the baseline for analyzing the environmental consequences of the preferred alternative and the no-action alternative.

All potentially relevant resource areas were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and 32 CFR part 651 guidelines, the discussion of the affected environment focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in analyzing a resource is commensurate with the anticipated level of potential environmental impact. Temporary or short-term impacts (i.e., related to construction activities) and operational or long-term impacts (i.e., after construction is over) were analyzed for each resource area and classified in one of four impact categories:

- Significant impact
- Less than significant impact
- No Impact
- Beneficial impact

Based on the scope of the preferred and no-action alternatives, resource areas analyzed in detail include the following:

- Air quality
- Water resources
- Biological resources
- Historic, cultural, and archaeological resources
- Visual resources
- Land use
- Traffic
- Toxic and hazardous substances
- Socioeconomics (protection of children, environmental justice)

3.1 Air Quality

3.1.1 Affected Environment

Air pollution is characterized as the presence in the outdoor atmosphere of one or more contaminants that are injurious to humans, plants, or animals, or that interfere with the enjoyment of life and property. Air quality as a resource incorporates several components describing the levels of overall air pollution in a region, and sources of and regulations governing air emissions. The U.S. Environmental Protection Agency (EPA) characterizes air quality by comparing concentrations of criteria pollutants to established National Ambient Air Quality Standards (NAAQS). The Hawaii Department of Health has established ambient air quality standards similar to the NAAQS. Criteria pollutants at the national level include carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter less than ten microns in aerodynamic diameter, ozone, and lead. The ROI for assessing potential impacts to air quality is the Hawaii Air Quality Control Region (AQCR). Federal regulations designate AQCRs with levels below the NAAQS as attainment areas. Honolulu County (and, therefore, all areas associated with the Proposed Action) is in the State of Hawaii AQCR (AQCR 246) (40 CFR 81.76). Based on ambient air monitoring data, EPA has designated Honolulu County as in attainment or unclassifiable/attainment for all criteria pollutants for which designations have been issued (EPA 2015).

3.1.2 Environmental Consequences

Proposed Action

Short-term, less than significant impacts on air quality would be expected. The ambient air quality at the proposed project site is within the Hawaii and NAAQS. The construction of the proposed security fence and appurtenances would have minor, short-term impacts on air quality but would end when construction is complete. Emissions from heavy equipment (e.g., bulldozers, excavators, dump trucks, etc.) will temporarily affect ambient air quality during the construction phase. In addition, ground disturbing activities such as site clearing; grading for access roads; and trenching for fence posts and underground utility lines would temporarily generate fugitive dust. To minimize the effects of fugitive dust during construction, BMPs would be implemented in accordance with all applicable regulatory requirements.

During the operational period, none of the components of the proposed security fence and appurtenances would directly emit air pollutants of any kind. Periodic security patrols, and their associated vehicle emissions, would continue to be made, but these patrols are not expected to increase in frequency or duration from the existing baseline conditions. The power required to operate the new perimeter security fence lighting and intrusion detection devices would indirectly create emissions through their consumption of energy generated from fossil fuels. However, the relatively small amount of power required for the operation of the Proposed Action would have a negligible impact on air quality and greenhouse gas emissions.

Therefore, implementation of the Proposed Action would result in less than significant impacts to air quality

No Action Alternative

No impacts to air quality would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.2 Water Resources

3.2.1 Affected Environment

The ROI for water resources is the Waikele Watershed, the Waikele Stream, and the groundwater resources beneath the project site. FSK is located in the Waikele Watershed which drains a 45 square mile area in Central Oahu between the Koolau and Waianae Mountain Ranges. The Waikele Stream and its tributaries converge on the saddle between the mountains known as the Schofield Plateau, then flow southward and discharge into Pearl Harbor (Izuka 2012). The Proposed Action site is located approximately 1000 feet south of the Waikele Stream, and average annual rainfall is estimated at 37 inches (Giambelluca, et al. 2013). The Proposed Action site is in a flood zone D, which is defined as an area of undetermined but possible flood hazards.

Surface Water

The project site generally slopes toward the north and east in the direction of Waikele Stream. There are no natural streams, or national wetlands inventory features located on the Proposed Action site. Waikele Stream is listed on Hawaii's 303(d) list of impaired waters for nutrients and turbidity (The Hawaii State Department of Health 2017). Stream water quality is primarily affected by nonpoint agricultural pollution from croplands adjacent to the stream. A Total Maximum Daily Load has not yet been prepared for Waikele Stream.

Ground Water

FSK is located in the Schofield groundwater subarea of the Central Oahu groundwater flow system. The Schofield subarea is bounded on the north and south by vertical low permeability features that reduce or prevent groundwater flow and act like groundwater dams. Because the groundwater inside these dams is higher than outside, the groundwater in the Schofield Plateau is called high-level groundwater (Oki 1998). The Schofield High-Level Water Body is the major source of water for Schofield Barracks and Field Station Kunia, and groundwater elevations are in the range of 275 feet above mean sea level (approximately 600 feet below the ground surface).

Underlying the high-level aquifers is the basal aquifer, a freshwater lens occupying porous and permeable volcanic rocks beneath the island. The freshwater lens of the basal aquifer floats on denser salt water. Beneath the Schofield plateau, groundwater elevations in the basal aquifer are in the range of only 10 to 30 feet above mean sea level (Oki 1998). The third groundwater system in the ROI is the dike-impounded groundwater system associated with the dike intrusions within the Waianae volcanics underlying the Waianae Mountains. The dike-impounded groundwater system is recharged by runoff in the mountains, but lateral flow of this groundwater is blocked by vertical dike intrusions. Groundwater levels vary locally within the area of dike-impounded groundwater (Oki 1998).

3.2.2 Environmental Consequences

Proposed Action

Short-term, less than significant impacts on surface waters would be expected, and no impacts on groundwater, or the coastal zone would be expected. Construction period impacts on surface water could result from ground disturbance, vegetation removal, soil compaction and the use of construction equipment. During the operational period, the fence line and site access roadways would be kept clear of vegetation, and the soil around the fence line and site access roads would remain compacted. This increase of exposed and compacted terrain would increase stormwater runoff from the proposed action

site. However, the use of BMPs in accordance with regulatory requirements ensure that these impacts would be less than significant.

Permit coverage for stormwater runoff from the construction site would be obtained under the NPDES General Permit Authorizing Discharges of Stormwater Associated with Construction Activity (Hawaii Administrative Rules Chapter 11-55 Appendix C; expires December 5, 2018) issued by the Department of Health, Clean Water Branch. The permit requires that a project-specific Stormwater Pollution Prevention Plan (SWPPP) be prepared. An SWPPP identifies potential sources of stormwater pollution at the construction site, describes stormwater control measures to reduce or eliminate pollutants in stormwater discharges from the construction site, and identifies procedures the permittee will implement to comply with the terms and conditions of this general permit.

Section 438 of the Energy Independence and Security Act of 2007 (EISA) established strict stormwater runoff requirements for federal development and redevelopment projects. UFC 3-210-10 Low Impact Development has clarified the criteria and requirements necessary to comply with EISA. The provision requires that "The sponsor of any development or redevelopment project involving federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." These requirements will be followed for the Proposed Action.

No impacts on groundwater would be expected during construction or operation of the Proposed Action.

No Action Alternative

No changes to water resources would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.3 Biological Resources

3.3.1 Affected Environment

The ROI for biological resources is the project site, where plants and animals could be physically impacted, and a surrounding 0.5-mile buffer where species could be affected by the Proposed Action. Biological resource surveys of the Proposed Action site were conducted in November 2015 to document potential impacts that the Proposed Action could have on biological resources, including Endangered Species Act (ESA)-listed species and candidate species (SWCA Environmental Consultants 2015). Prior to the surveys, a review of the relevant literature for the proposed site was also undertaken. During the surveys, no state or federally listed threatened, endangered, proposed, or candidate species were observed in the survey area, and all plant and wildlife species assemblages observed during the surveys are typical of those found in disturbed areas on Oahu.

Flora

No state or federally listed threatened, endangered, proposed, or candidate plant species, or rare native Hawaiian plant species, were observed in the survey area. In all, 56 plant species were recorded in the survey area during the survey, and only two of these, *popolo* (*Solanum americanum*) and ‘*uhaloa*

(*Waltheria indica*), are native to the Hawaiian Islands (Wagner, Herbst and Sohmer 1999). Neither species is listed, or is proposed or candidate for listing.

Two main vegetation types were identified in the survey area: 1) non-native grassland, and 2) roadside vegetation.

Non-native Grassland

This vegetation type is characterized by large, monotypic areas of non-native grasses. Guinea grass (*Megathyrsus maximus*) is the most abundant species in the survey area, and forms solid stands in undisturbed areas that reach up to 8 feet tall in some places. Trees and shrubs found scattered sparsely throughout the grasslands include gunpowder tree (*Trema orientalis*), African tulip tree (*Spathodea campanulata*), Christmas berry (*Schinus terebinthifolius*), silk oak (*Grevillea robusta*), and albizia (*Falcataria moluccana*). Albizia forms a denser stand on the northern portion of the survey area, on the side closest to Kunia Road (State Highway 750). The vine species *Neonotonia wightii* and *maunaloa* (*Canavalia cathartica*) are occasionally seen twining through the thick grass layer.

Roadside Vegetation.

This vegetation type occurs as a narrow band along the dirt roads found in the survey area. These areas are periodically mowed, and the vegetation is composed of a mixture of grasses and weedy, mostly herbaceous species. Grass species common to abundant on these mowed areas are Guinea grass (*Megathyrsus maximus*), swollen fingergrass (*Chloris barbata*), and natal redtop (*Melinis repens*). California grass (*Urochloa mutica*) is locally common around the concrete ditch, which had flowing water at the time of the survey. Among the more frequently observed herbaceous species and smaller shrubs are Carolina bristlemallow (*Modiola caroliniana*), *lauki* (*Chamaecrista nictitans*), prickly sida (*Sida spinosa*), and indigo (*Indigofera suffruticosa*). Vines of little bell (*Ipomoea triloba*) and morning glory (*Ipomoea obscura*) are locally common and can be seen vining over the ground, and occasionally into surrounding vegetation.

Fauna

No state or federally listed threatened, endangered, proposed, or candidate species were observed during surveys; however, the Pacific golden-plover or *kolea* (*Pluvialis fulva*), which is federally protected by the Migratory Bird Treaty Act (MBTA), was observed. Although no individuals or sign of federally or state-listed threatened or endangered animal species or candidate or proposed species were observed, suitable habitat for federally and state-listed species occurs in the survey area. The survey area does not encompass any designated or proposed critical habitat for threatened or endangered species. The nearest designated critical habitat, for *ʻelepaio* (*Chasiempis ibidis*), is located approximately 1.5 miles away from the survey area.

AviFauna

Bird species observed in the survey area are species commonly found in Hawaii's urban areas and gardens. Of the eleven bird species documented, ten species are non-native introductions and one species, the Pacific golden-plover or *kolea* (*Pluvialis fulva*), is indigenous and protected under the MBTA. Although not observed during the surveys, potential habitat for federally and state-listed species occurs in the survey area. These species include the Hawaiian goose or *nene* (*Branta sandvicensis*), the Hawaii short-eared owl or *pueo* (*Asio flammeus sandwichensis*), and the Hawaiian hoary bat or *opeapea* (*Lasiurus cinereus semotus*). Additionally, two federally listed seabird species—the endangered Hawaiian petrel or *ʻuaʻu* (*Pterodroma sandwichensis*) and the threatened Newells shearwater or *ʻaʻo* (*Puffinus*

auricularis newelli)—could fly over the survey area at night while travelling to and from their upland nesting sites to the ocean.

Mammals

No mammals were observed during the pedestrian survey, although pig (*Sus scrofa*) tracks and scat were present. Other non-native mammals that could be expected in the survey area include cat (*Felis catus*), mongoose (*Herpestes javanicus*), rat (*Rattus spp*.), and mouse (*Mus musculus*).

The Proposed Action area is completely surrounded by fallow fields with no vegetation greater than 15 feet tall, therefore the Hawaiian Hoary Bats do not use the project area or immediately adjacent areas for roosting. However, Hawaiian Hoary Bats may use the area for foraging because potential roost trees (trees over 15 feet tall) do exist within 150 meters of the Proposed Action area boundary. No Hawaiian Hoary Bats were observed during the pedestrian survey (November), but the survey was conducted after the Hawaiian Hoary Bat pupping season (June 1 to September 15). Hawaiian Hoary Bats have been detected in areas near FSK, but detection rates are very low compared to those observed on other Hawaiian Islands (Pinzari 2016).

Reptiles and Amphibians

A cane toad (*Bufo marina*) carcass was observed in the survey area. No other terrestrial reptiles or amphibians were observed during the survey. There are no native terrestrial reptiles or amphibians in Hawaii.

Insects and other Invertabrates

All insects observed in the survey area are non-native to the Hawaiian Islands and include the honeybee (*Apis* sp.), gulf fritillary butterfly (*Agraulis vanilla*), cabbage white butterfly (*Pieris rapae*), large orange sulphur butterfly (*Phoebis agarithe*), an unidentified non-native small blue butterfly, roseate skimmer (*Orthemis ferruginea*), spot-winged glider (*Pantala hymenaea*), and giant African snail (*Achatina fulica)*.

3.3.2 Environmental Consequences

Proposed Action

Short- and long-term less than significant impacts to biological resources would be expected from the construction and operation of the Proposed Action. Impacts on botanical resources associated with construction period vegetation removal would be minor, as the vast majority of plant species at the project site are non-native plants. Specific design elements and operational activities have been committed by USAG-HI as part of the Proposed Action and would ensure that potential impacts to protected species that could enter the project area would be less than significant.

Flora

Site preparation and associated construction activities would include the removal of vegetation in the area of the proposed new security fence and appurtenances. However, the vegetation types and species identified during the survey are not considered unique. More than 96% of the plant species that were seen are not native to the Hawaiian Islands. The native species present are not rare, and no threatened or endangered plants were found. Vegetation removal could result in minor beneficial impacts by removing any invasive species that were present. However, construction activities are known to spread invasive species to new areas through the movement of vehicles and materials. Construction equipment and materials would be sourced locally or, if imported, would be subject to USDA regulations and

inspections to minimize the risk of introducing invasive species. The construction and operation of the Proposed Action would not be expected to have a significant, adverse impact to botanical resources.

If portions of the survey area are landscaped as a result of the project, it is recommended that native Hawaiian plants be employed for landscaping around the survey area to the maximum extent possible. Potential native species that may be appropriate for landscaping in the survey area are *koa* (*Acacia koa*), Oahu sedge (*Carex wahuensis*), *naio* (*Myoporum sandwicense*), *alahe'e* (*Psydrax odorata*), and *'ohai* (*Sesbania tomentosa*). If native plants do not meet landscaping objectives, plants with a low risk of becoming invasive may be substituted.

Fauna

No critical habitat is located within the Proposed Action area. SWCA observed one Pacific golden-plover, a native bird species federally protected under the MBTA, was observed during the field survey. Short-term impacts associated with construction could result in temporary displacement of the Pacific golden-plover; however, this species would be expected to find abundant foraging habitat nearby. Although the special-status species—the Hawaiian goose, Hawaiian short-eared owl, Hawaiian petrel, Newell's shearwater), and the Hawaiian hoary bat—were not observed during the survey, potential habitat for foraging and nesting exists in the survey area. Proposed construction at the site could potentially temporarily displace these species if they were present; however, they would be expected to find abundant foraging habitat nearby. The temporary displacement of these individuals from the survey area would not be expected to affect survival of individuals or populations. The following BMPs will minimize any potential impacts from the Proposed Action:

- If a Hawaiian goose, Hawaiian short-eared owl, or Hawaiian hoary bat is observed in the area during construction activities, all activities within 100 feet of the species should cease, and work should not continue until the species leaves the area on its own accord.
- If a Hawaiian goose nest is discovered, all activities within 100 feet of the nest should cease and USFWS should be contacted. Work should not resume until directed by USFWS. If a Hawaiian short-eared owl nest is discovered, all activities within 100 feet of the nest should cease and the Hawaii Department of Land and Natural Resources (DLNR) should be contacted. Work should not resume until directed by DLNR.
- Seabirds such as the Hawaiian petrel and Newell's shearwater could be impacted while transiting between their nest sites and the ocean. Seabirds are attracted to bright lights, which can cause them to become disoriented and grounded, making them vulnerable to mammalian predators or being struck by vehicles (Mitchell, et al. 2005). All lighting will be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on migratory birds.
- Hawaiian Hoary Bats have been detected in areas near FSK, with very low detection rates compared to those observed on other Hawaiian Islands. Therefore, although bats may be present in an area, the potential for them to hit a barbed wire fence, already an unlikely event, is even more unlikely. In addition, the security fence around FSK will be patrolled at least daily. During these patrols, the barbed wire will be monitored for wildlife impacts. In the event a Hawaiian Hoary Bat impact occurs on the FSK Security fence, USAG-HI will notify the USFWS within five business days and re-initiate informal consultation to assess the specific cause of the impact.

USAG-HI completed informal consultation under Section 7 of the Endangered Species Act with the USFWS, and a record of this agency coordination is provided in Appendix B. On December 1, 2015,

USAG-HI sent a letter to inform USFWS of their determination that the Proposed Action may affect, but would not be likely to adversely affect the Hawaiian hoary bat, *Lasiurus cinereus semotus*. At that time the proposed fence included a Y-outrigger with 6 strands of barbed wire. Further discussions with USFWS staff identified that the initial fence configuration would adversely affect the Hawaiian hoary bat due to potential entanglement with the six strands of barbed wire. To avoid a potential adverse effect to Hawaiian hoary bats, USAG-HI adjusted the proposed fence to include only a single outrigger with three strands of barbed wire. On September 23, 2016, USAG-HI sent a letter to inform the USFWS of this change to the proposed action, and to request concurrence with their finding that the Proposed Action may affect but would not be likely to affect the Hawaiian hoary bat. The USFWS notified USAG-HI of their concurrence with the determination via a letter dated October 25, 2016.

No Action Alternative

No changes to biological resources would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.4 Historic, Cultural, and Archaeological Resources

3.4.1 Affected Environment

This section examines the historic, cultural, and archaeological resources in the footprint of the proposed project. The section begins with a review of the historic context of the broader project area, and is followed by a description of the cultural resources directly in the proposed project footprint. This information is a summary of the detailed data in the *Archaeological Assessment at the Field Station Kunia* (Filimoehala 2015).

FSK is located in the northwest corner of the *moku* (traditional district) of *ʻEwa*, approximately 0.5 miles south of the *Waianae* district border. The project area straddles the two *ahupuaʻa* (land subdivision) of *Honouliuli* to the west and *Waikele* to the east. *Honouliuli*, which includes most of the Ewa Plain and lands extending northward to the Waianae Range, is the largest and westernmost *ahupuaʻa* in *ʻEwa* District. *Waikele* extends from the northern shore of West Loch at Pearl Harbor to the southern border of the *Waianae* District, which also forms the southern limit of Schofield Barracks.

Historic Context

Traditional History

Parts of the central plateau of Oahu played an important role in the traditional history of the island. Oral traditions along with archaeological remains in the form of *heiau* (temples) and other sacred places indicate that the interior of the island was home to several chiefly activities (Tomonari-Tuggle 1997). Additionally, a trail reportedly crossed through the plateau, linking the south and north shores (Iʻi 1963). Traditions associated with chiefly births are linked to the central plateau, at a place known as the *Kūkaniloko* Birthstones located 2.3 miles north of the project area, on the north side of Wahiawa. *Kūkaniloko* was one of the most notable places in the entire archipelago for the birth of *aliʻi* (Hawaiians of chiefly status). Tradition indicates that the birthing place was established by the chief *Nanakaoko*, whose wife, *Kahihiokalani*, was the first to give birth at the shrine (McAllister 1933).

The eastern portion of the project area is located within *Pouhala*, which was an ʻ*ili* or subdivision of *Waikele*. The name *Pouhala* means “Pandanus Post” (Pukui, Elbert and Mookini 1986); the ʻ*ili* was

divided into upper and lower sections, and shared the name with a well-known Pearl Harbor fishpond that bordered the lower section to the south. The western part of the project area falls within an area at the north end of *Honouliuli* known as *Lihu'e*. *Lihu'e* was a pre-Contact period settlement, and the name is translated as "cold chill" (Pukui, Elbert and Mookini 1986). A major battle is said to have been fought at *Lihu'e* between the Oahu chief *Kuali'i* and the rebellious chiefs of *'Ewa* and *Waialua* (Sterling and Summers 1978)

Early Post-Contact Period

By the time the first Europeans had arrived in Hawaii, the *ali'i* of Oahu had shifted their chiefly centers to the coastal areas of the island (Tomonari-Tuggle 1997). However, the importance of royal births at *Kūkaniloko* remained intact through the end of the 18th century. The inland center of the island was likely important to Hawaiian chiefs because it offered refuge from potential aggressors. The high mountain forests that once covered the interior of the island were certainly a useful sanctuary for those *ali'i* seeking to find shelter from their foes. The area was said to be heavily forested at earlier times. Kamakau describes the sandalwood trees of the region to be the largest on the entire island (Kamakau 1992).

Although the central plateau is a considerable distance to the coast in any direction, it appears the area was home to a sizeable population during the traditional period. Multiple settlement areas were located along the western side of the central plateau. Areas to the northwest and northeast of the project area contained several areas of *lo'i* (irrigated terrace), which were irrigated by water pulled from Helemano and Wahiawa Streams. Additionally, the region is said to be one of the few locations where irrigated sweet potato was cultivated (Handy and Handy 1972).

Contact with the outside world brought many changes to the Hawaiian Islands, but Western travelers focused their interests primarily on coastal areas, and the central plateau of Oahu likely remained comparatively unaffected by their influence (Tomonari-Tuggle 1997). As a result, little was written about the area during the late 18th and early 19th centuries.

Ranching

Initially introduced to the island of Hawaii in 1793, the first cattle were brought to Oahu by Kamehameha and John Young in 1809 (Kamakau 1964). Organized ranching was not implemented until several decades later, as a response to the devastating effect feral cattle had on the landscape. The central plateau was viewed as valuable ranching land from early on. Around 1831, two Westerners approached Oahu chiefs to lease a tract of land "inland of the district of Ewa" to grow cotton and raise cattle (Kuykendal 1967). This proposal was refused, but by the 1840s, land had been acquired for the establishment of ranching in the area (Carsons and Yeomans 2000).

John Meek was a central figure associated with ranching on the central plateau. He acquired a portion of *Kalena* '*ili* in *Waianae Uka*, approximately 3.7 miles northwest of the project area (Tomonari-Tuggle 1997). The 1873 map by Alexander shows a ranch complex belonging to Meek 1.1 miles southwest of the project area, in the area now occupied by Kunia Camp. At the time of his death, Meek controlled much of the land in *Waianae Uka*, Upper *Pouhala*, and *Lihu'e* , which he used for cattle and sheep ranching, as well as raising thoroughbred horses that were renowned throughout the Hawaiian islands (Tomonari-Tuggle 1997).

Leilehua Ranch was established by Kalakaua and C.H. Judd in 1882, on lands formerly leased by Meek (Carsons and Yeomans 2000). The king's ranch included Upper *Pouhala*, which runs through the eastern

half of the project area, and was intended primarily as a place for rest and relaxation. Kalakaua would often visit the ranch for pheasant hunting and recreation (Tomonari-Tuggle 1997). Leilehua was sold to James Dowsett in 1889, and portions continued operation as a ranch until 1912. The U.S. military took control of *Waianae Uka* in 1899, leaving the parcels located in the *'Ewa* district to the south as the last active part of Leilehua Ranch (Carsons and Yeomans 2000).

Plantations

Commercial agriculture was established on the central plateau with the arrival of James D. Dole, who first landed in Hawaii in 1899. Dole quickly acquired a tract of land in Wahiawa, and began growing pineapple in 1902. The northern part of *'Ewa* District, including the present project area, was also converted into pineapple lands early in the 20th century (Buffum and Peterson 2005). Within the first decade of the century, thousands of acres in the central interior of the island were under pineapple cultivation (Tomonari-Tuggle 1994). By the 1950s, Doles Hawaiian Pineapple Company produced 80% of the world-wide pineapple market (Krause, et al. 2015). In 1917, Calpak (later the Del Monte Corporation) acquired the Hawaiian Preserving Company, which included plantation lands in the Kunia area (Braznell 1982). Most of these lands remained under pineapple cultivation until 2006, when Del Monte ceased operations in Hawaii due to the rising cost of production and cheaper alternatives in other countries (Bolante 2007). Aerial photographs indicate that the land surrounding FSK was under pineapple cultivation until at least 2004.

A major factor in the development of commercial agriculture on Oahu was Benjamin Dillingham, who was the first person to bring railroad transportation to the island. Dillingham's Oahu Railroad and Land (OR&L) Company opened its first line between Honolulu and Ewa in 1890, which resulted in a dramatic increase in transportation efficiency, and made large-scale commercial agriculture possible. At the end of the 19th century, the Superintendent of the OR&L Ranch Department, Harry Von Holt, fenced off a portion of the upland slopes above and to the west of the project area; this area became the Honouliuli Forest Reserve (Krause, et al. 2015). The OR&L extended its rail network to the pineapple fields of Wahiawa in 1906, which facilitated the transportation of pineapples to the canneries of Honolulu (Tomonari-Tuggle 1997). 1n 1909 another extension, which connected the newly established Schofield Barracks with the Wahiawa line, was opened (Chiddix and Simpson 2004). A map of Upper *Pouhala* by Wall (1914) depicts a line labeled "Kunia Branch" extending from the Schofield Barracks line and running south toward Kunia Camp. The Kunia line was constructed in 1906, and runs directly through the center of the project area (West and Donaldson 2004). Analysis of maps from 1943 and 1953 indicate that, like other OR&L railroad lines on Oahu, the "Kunia Branch" was probably removed shortly after World War II as it is not depicted on a 1953 historic map of the project area.

Military Development and Land Use

As a result of the annexation of Hawaii by the United States, all Crown Lands became government property (Tomonari-Tuggle 1997). This included the Leilehua Ranch, which was still controlled by the Dowsett estate. The U.S. formally appropriated the *ahupua'a* of *Waianae Uka* in 1899, and set it aside as a military reservation (Carsons and Yeomans 2000). The area was first occupied by military personnel early in 1909, by 473 men belonging to the 5th Cavalry Regiment, after it had been explicitly selected as the base for the mobile defense force of Oahu (Tomonari-Tuggle 1997). The post was named Schofield Barracks in 1909, in honor of Lt. General John M. Schofield, a Civil War veteran who served as Commander of the Army's Pacific Division (Buffum and Peterson 2005). The first plans for the permanent post were prepared in 1912, and construction began in 1913 (Tomonari-Tuggle 1997).

Construction of the original post facilities were completed in the 1920s and the Hawaiian Division, based at Schofield, was formed in 1921 (Carsons and Yeomans 2000).

Construction of Wheeler Field, across Waieli Gulch to the northeast of the project area, began in 1922, initially as a small grass and dirt field that housed two squadrons (Tomonari-Tuggle 1994). The field underwent major upgrades in the 1930s and it became a permanent post, separate from Schofield Barracks, in 1939. After the Japanese attack on Pearl Harbor on December 7, 1941, the Wheeler Field experienced another phase of major construction and upgrades. Additional runways were added, including one at the base of Waieli Gulch 1,500 feet northeast of the current project area.

The FSK facilities were initially constructed during the military buildup following the Pearl Harbor attack. The top secret project, called the "Hole," was constructed as a three-story subsurface structure located to the southeast of Wheeler Field, and intended for aircraft repair and assembly. The main access to the facility is through a tunnel that extends from the south wall of Waieli Gulch. The runway in the gulch was constructed specifically to service the airplanes coming out of the facility. However, aircraft were never assembled in the facility, and it was soon converted to the headquarters of the 64th Topographic Company, which produced military charts and maps (Tomonari-Tuggle 1994).

The Kunia facility was subsequently repurposed several times over the second half of the 20th century (Navy n.d.). The Navy used the subsurface structure for ammunition and torpedo storage in the 1950s. After renovations in the 1960s, it was used as the central command of the Commander in Chief over Pacific Forces. The operations center was transferred to another location in 1976, and the Kunia facility was turned over to the General Services Administration. In 1980, the field station was reactivated under control of the Army, and was redesignated as the Kunia Regional Security Operations Center (KRSOC) in 1993; administration of the facility was transferred to the Navy in 1995. In 2012, a new intelligence operations center was completed in Wahiawa. Intelligence operations at Kunia were moved to the new facility at that time.

Historic, Cultural, and Archaeological Resources

Archaeological Investigations

Although the lands occupied by military facilities north of the project area in Waianae District have been the focus of a substantial number of archaeological investigations, relatively little research has been conducted in the upland areas of Honouliuli, where FSK is located. This section summarizes the previous archaeological studies conducted within 2.5 miles of the project area, including portions of Waianae and Honouliuli Districts. Some areas around FSK have been subjected to previous archaeological investigation, primarily areas not affected by intensive plantation agriculture. Documented archaeological sites around the project area are almost exclusively located in upland regions, drainages, or other areas untouched by commercial agriculture or development. Traditional sites recorded in the area consist of habitations, agricultural sites, and ceremonial structures, illustrating extensive occupation in the past. The distributions of existing sites indicate that plantation agriculture and development projects heavily impacted the low-lying areas of the Central Plateau, including the area surrounding FSK.

At least 62 traditional Hawaiian sites have been documented within a radius of 3.1 miles of the project area, primarily in the foothills to the west. McAllister (1933) recorded five sites in and around the Honouliuli Forest Reserve, consisting of several heiau and habitation site. Sinoto and Sterling (quoted in Sterling and Summers 1978) recorded an agricultural and habitation complex approximately 2.2 miles southwest of the project area. Tomonari-Tuggle (1994) documented a possible traditional boundary site

in Waieli Gulch 1.6 miles southwest of the project. Six habitation, agriculture, and transportation sites were recorded by Perziniski et al. (2003) 2.5 miles southwest of the project area. Roberts et al. (2004) recorded 29 traditional sites in the upland area 1.2 miles west of FSK. A field inspection of Honouliuli Forest Reserve performed by Tulchin et al. (2007) documented at least one traditional agricultural site. Monahan and Thurman (2013) recorded 23 previously undocumented sites in the foothill region 2.5 miles southwest of the project area.

The entire project area has been nominally investigated. West and Donaldson (2004) completed a survey in conjunction with the relocation of KRSOC to the new Naval Computer and Telecommunications Area Master Station Pacific at Wahiawa. No sites were identified during this survey.

Archaeological testing in support of this EA confirmed the findings of the background research and previous archaeological investigations. No archaeological features, cultural resources, or historic properties were encountered during the survey. The abandoned agricultural fields were a favorable environment for the fast-growing invasive Guinea grass (*Megathyrsus maximus*), which now dominates the area with dense vegetation reaching more than 10 feet in height. In total, grass and other vegetation covers 77.9% of the survey area. Portions of the project area that are not covered by grass are largely active roadways or areas cleared for facility access. Although the survey was carried out using a systematic methodology and no archaeological or other historic properties were encountered, the possibility of such features remains due to the density of the vegetation across the project area. However, given the intensity of previous agricultural and military activities throughout the area of potential effect, the likelihood of their presence remains low.

3.4.2 Environmental Consequences

Significant archaeological and historic properties are districts, sites, structures, or objects listed in or eligible for listing in the NRHP, and cultural resources are places, practices, or beliefs important to native Hawaiians and other ethnic groups. The threshold for significant impacts to the archaeological, historic, and traditional cultural resources is any loss or destruction of the current or future integrity of the property or belief by impacting the property's ability to convey its demonstrated historical significance through location, design, setting, materials, workmanship, feeling, and association.

Impacts on an areas unique tangible and intangible cultural resources can be direct or indirect. Negative impacts can result from physical alteration, damage, or destruction of the site or traditional place, alteration of the surrounding environment by introducing visual, audible, or atmospheric elements, instituting other elements out of character with the resource; or reduction of access to traditional places.

Proposed Action

Construction, operation, and maintenance of the new perimeter security fence and appurtenances at FSK will not impact historic, cultural, or archaeological resources. The archaeological assessment of the Proposed Action site confirmed the findings of the background research and previous archaeological investigations, as no archaeological features, cultural resources, or historic properties were encountered during the survey. It is clear that 20th and early 21st century activities have had an extensive impact on the landscape across most of the Central Plateau, including the Proposed Action site. Any evidence for presumed traditional activities was supplanted by large-scale commercial agriculture and military infrastructure, and any evidence relating to possible historical and/or cultural activities is likely long

destroyed. If, during construction, any previously unidentified archaeological or historic site is identified, construction activities would be halted in the vicinity and the SHPO would be immediately notified.

USAG-HI conducted consultation under Section 106 of the NHPA with the SHPO, and a record of this agency coordination is provided in Appendix C. On February 24, 2017, USAG-HI sent a letter to inform the SHPO of their determination that there are no historic properties present in the area and the Proposed Action will result in no historic properties affected. The SHPO notified USAG-HI of their concurrence with the determination via a letter dated May 8, 2017.

No Action Alternative

No changes to historic, cultural, and archaeological resources would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.5 Visual Resources

3.5.1 Affected Environment

Visual resources describe the visual quality or character of an area and consist of the landscape features and the social environment from which they are viewed. The landscape features that define an area of high visual quality may be natural or man-made. This section describes the visual resources in the project area. It begins with an overview of the existing appearance and visual character of the ROI, followed by a description of applicable guidance documents, distinct visual feature, scenic views, and sources of light and glare. The ROI is the viewshed of the project site, including areas visible from the project site and areas from which the new perimeter security fence and appurtenances would be visible.

The visual landscape around the Proposed Action site is generally characterized by low density development separated by large areas of undeveloped land. The Koolau and Waianae Mountain Ranges provide the background horizons to the east and the west, respectively. The area directly adjacent to the proposed project site was previously in agricultural cultivation, but is currently covered with dense scrub vegetation consisting of tall grasses, shrubs, and young trees. To the south of the proposed project site, there are extensive agricultural fields extending from Kunia Road to the flanks of the Waianae Mountain Range. To the north, the land drops in elevation to the FSK parking lot and a wooded gulch carved by Waikele Stream. To the east of the site, views consist of undeveloped lands and Wheeler Army Airfield, with the Koolau Mountains providing the backdrop. To the west, the views from the site include mostly undeveloped lands and some structures associated with the Schofield Barracks South Range Acquisition Area, with the Waianae Mountain Range in the background. Kunia Road runs approximately 8 miles long in a north-south alignment from Wilikina Road to the H-1 Freeway. The approximately 7 mile stretch from FSK to the H-1 Freeway provides broad views of the Waianae Mountain Range that are only periodically interrupted by terrain, landscape features, and the agricultural support facilities at Kunia Village. The Proposed Action site is visible from Kunia Road for approximately 0.6 miles, from Kunia Drive to the existing informal access road for the existing topside infrastructure.

The visual landscape at the proposed project site is currently characterized by the fencing, lighting, power poles, and structures associated with existing topside infrastructure. These existing site elements are visible from Kunia Road with the Waianae Mountain Range in the background. Public views into the project site are limited to those views gained from Kunia Road. Approaching the project site from the

north on Kunia Road, the view into the project site is blocked by a high berm along the west edge of the roadway (Figure 3-1). However, as you travel further south along Kunia Road, near the intersection of the existing informal topside infrastructure access road, the roadway rises to meet the elevation of the roadside berm and the topside infrastructure at the project site becomes visible (Figure 3-2). Approaching the project site from the south along Kunia Road, the existing topside infrastructure at the project site is generally visible from the intersection with Kunia Drive to the existing topside infrastructure access road. Occasionally intervening vegetation or the roadside berm blocks the view from Kunia Road in this stretch, but generally the project site is at least marginally visible.

Figure 3-1 Approaching the site heading south along Kunia Road, the site is blocked by a roadside berm.

Photo: HHF Planners, December 2015

Figure 3-2 View into the site from the existing informal access road

Photo: HHF Planners, December 2015

The Central Oahu Sustainable Communities Plan (COSCP) is Central Oahu's guide to local development policy for the region. The COSCP defines important public views and calls for their preservation. Public views are defined as views "…along streets and highways, mauka-makai view corridors, panoramic, and significant landmark views from public places, views of natural features, heritage resources, and other landmarks, and view corridors between significant landmarks (City and County of Honolulu 2016)." The COSCP includes a table of important public views, one of which is in the ROI:

- Views of the Waianae and Koolau Mountains from Kunia Road, Kamehameha Highway, and H-2 Freeway

To protect these views, the COSCP calls for the design and siting of all structures to reflect the need to maintain and enhance available views of significant landmarks and makes it public policy to oppose development that would block certain important public views (City and County of Honolulu 2016).

3.5.2 Environmental Consequences

Proposed Action

Short- and long-term less than significant impacts to visual resources would result from the implementation of the Proposed Action. Short-term impacts would be caused by the visibility of construction equipment, materials, and activities at the project site. Long-term impacts would be caused by the visibility of the new perimeter security fence and appurtenances from the important public views along Kunia Road.

After construction, the new perimeter security fence and appurtenances would become a lasting visual feature. The Proposed Action would be visible from Kunia Road and, for a short stretch of road, would affect views of the Waianae Mountain Range, an important public view defined in the COSCP. Due to its position at the very north edge of this important public view, it would only affect the view of the Waianae Mountains from Kunia Road for approximately 0.2 miles between the existing informal access road (Option 2) and the proposed site access route (Figure 2-1). The Proposed Action would be visible from Kunia Road for another 0.4 miles to the south, from the proposed site access route south to Kunia Village, but would not affect the important public views of the Waianae Mountain Range. For the remaining 3 miles to the South of Kunia Village, this important public view of the Waianae Mountains from Kunia Road would not be affected by the Proposed Action.

Although the very northern extent of this important public view would be affected by the Proposed Action, the existing topside infrastructure and security fence already encumber this view from Kunia Road, and the new perimeter security fence and appurtenances would not significantly increase this visual impact. The new fence line would encompass a larger footprint than the existing security fence at the project site. However, the fence would be only eight feet tall, which is much shorter than the existing overhead utility distribution lines and poles which currently inhabit the same public view from Kunia Road. Much of the existing topside infrastructure at FSK (Satellite dishes, water tank, etc.) would also be taller in height and more visually intrusive than the proposed new perimeter security fence and appurtenances. Overall, the new perimeter security fence an appurtenances would be expected to have only a minor, less than significant impact on visual resources.

No Action Alternative

No changes to visual resources would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.6 Land Use

3.6.1 Affected Environment

The Proposed Action is located in a former agricultural field in Central Oahu. The 21.8-acre project site is located directly south of Schofield Barracks, with Kunia Road (State Highway 750) running along the eastern boundary. A new Army training center and fallow agricultural lands lie to the west (upslope) and actively farmed agricultural lands are to the south. The State-owned, two-lane Kunia Road connects the Ewa Plain and Waipahu communities to the south with the Schofield Barracks, Wahiawa and North Shore communities to the north. The Schofield Barracks Kalakaua family housing area is about 0.6 miles to the northwest of the site and Kunia Village community is located approximately 0.9 miles to the south along Kunia Road. The site is approximately 23 miles northwest of Honolulu.

The project site is secured, with written authorization from the Army required prior to entry. The site is accessed via a gravel access road from Kunia Road. Current support utilities and infrastructure consist of a network of internal roads, and ancillary infrastructure to support the subsurface use of the property.

The Proposed Action would be constructed on three TMK parcels and one right-of-way referred to as Exclusion 40 (Figure 2-3). The TMK parcels are owned by Island Palms Communities LLC (TMK 9-2-005:022), the State of Hawaii (TMK 9-4-012-003), and the Federal Government (TMK 9-4-012:006).

- Island Palms Communities LLC (TMK 9-2-005:022)

  The Army acquired property interests for the Island Palms Communities-owned lands via Easements 103 and 104 issued in 1950. TMK parcel 9-2-005:022 is segmented by Exclusion 40. Easement 103 encompasses 9.5 acres of TMK parcel 9-2-005:022 on the southwest side of the Exclusion 40, and Easement 104 encompasses 1.5 acres of TMK parcel 9-2-005:022 on the north east side of Exclusion 40. Easements 103 and 104 permit the Army to construct and maintain, in perpetuity, underground facilities with rights to the surface lands for ancillary support services (e.g., ventilation shafts, vertical access, utilities, ingress/egress, and site security). It is this surface infrastructure that the Proposed Action will protect.

- State of Hawaii (TMK 9-4-012:003)

  The Army acquired property interests for the State of Hawaii-owned lands via EO 1301 issued in 1948. The portion of TMK parcel 9-4-012:003 which is covered by EO 1301 is referred to as tract WFE-4 and encompasses an area of 42.7 acres. EO 1301 permits the Army to construct and maintain, in perpetuity, underground facilities with rights similar to those mentioned above.

- Exclusion 40

  The former Campbell Estate conveyed Exclusion 40 to the Territory of Hawaii for a federal highway project in 1935. The portion of Exclusion 40 which is covered by EO 1301 is referred to as tract WFE-5 and encompasses an area of 1.5 acres. EO 1301 permits the Army to construct and maintain, in perpetuity, underground facilities with rights similar to those mentioned above.

- Federal Government (TMK 9-4-012:006)

  The federal government owns TMK parcel 9-4-012:006 outright. The parcel encompasses 2.1 acres and the Army is permitted exclusive rights to this property.

The total land area of the Army's property interests (Easements 103 and 104, EO 1301, and TMK 9-4-012:006) is 57.3 acres. However, the proposed project area would only encompass 16.2 acres. The Army purchased the land to the west of the EO area from the James Campbell Company in 2005, and since then, has constructed a new South Range Campus (located just upslope of the project area) and is the planning stages of granting a lease to Hawaiian Electric to construct a 50 megawatt power plant on an approximately eight-acre site upslope and north of the project site.

The project site is designated by the State of Hawaii as within the State Agricultural District and zoned AG-1 Restricted Agriculture by the City and County of Honolulu. The site lies within the City and County of Honolulu's Central Oahu Sustainable Community Plan (COSCP) district, identified as being outside of the COSCP Urban Growth Boundary, in an area designated for agriculture and preservation. The COSCP

Open Space Map identifies broad panoramic views of the Waianae and Koolau Ranges from Kunia Road across the property (City and County of Honolulu 2016). Visual resources are discussed in detail in Section 3.5.

The project site and surrounding lands are classified by the State of Hawaii Department of Agriculture as predominantly Unique Agricultural Lands, mirroring a farmland classification system established by the National Resources Conservation Service (NRCS) (Agricultural Lands of Importance to the State of Hawaii Revised," State Department of Agriculture, November, 1977). Federal actions that affect prime or unique farmlands are subject to the federal Farmland Protection Policy Act (FPPA, subtitle I of Title XV, Section 1539-1549) administered by the NRCS, if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency. However, there are several types of activities that are not subject to FPPA. These include, construction within an existing right-of-way purchased on or before August 4, 1984, and construction of new minor secondary structures such as a garage or storage shed. The Proposed Action would be constructed on land for which the federal property interest was acquired well before August 4, 1984 (EO 1301 was established in 1948, and Easements 103 and 104 were established in 1950). Additionally, the proposed new security fence and appurtenances represent secondary structures that would provide the required ATFP protection for FSK topside infrastructure. Therefore, the Proposed Action is not subject to FPPA.

The COSCP describes the Kunia lands as among the most productive agricultural lands in the State, uniquely suited for pineapple production (City and County of Honolulu 2016). The University of Hawaii Land Study Bureau's December 1972 bulletin, Detailed Land Classification - Island of Oahu, has identified a productivity rating of B (A being the highest rating and E being the lowest) for the project area. Pursuant to Hawaii Revised Statutes (HRS) Chapter 205 Part III, the City and County of Honolulu is currently conducting a study to designate Important Agricultural Lands (IAL) on the island of Oahu. The Island Palm Communities-owned land at the project site (approximately 5 acres) is identified as IAL in the current version of the study (November 2017). The State of Hawaii-owned lands at the project site are not subject to the City and County study, but will be subject to a similar study for State-owned agricultural lands at a later date. The federally-owned properties are not designated IAL. The IAL designations are still a draft version, and have not been adopted.

The project area has been secured for many decades as part of the EO 1301 authority, with restricted public access. Two smaller fence lines enclosing critical infrastructure covering approximately 7.7 acres of the project area have been in place for many years. The adjacent 8.5 acres (between the original fences and the new fence perimeter) were under pineapple cultivation until the closure of the Del Monte Planation in 2005. Since that time, the project area and the surrounding lands covered by EO 1301 have remained fallow and are now densely covered by grasses and scrub vegetation. Based on data compiled for the report entitled, "Oahu Important Agricultural Lands, Phase I Study," there are about 56,600 acres of usable farmland on Oahu (City and County of Honolulu 2014). Much of this land remains available for agriculture. The closure of Del Monte Kunia Planation released 4,400 acres, and most of that (3,200 acres) remains available for farming (Decision Analysts Hawaii, Inc. 2008).

The Proposed Action would close a portion of the Exclusion 40 right-of-way that currently bisects the project area. The Proposed Action would provide an access road along the southern boundary of the fence line perimeter to maintain a vehicular connection around the closed portion of the right-of-way.

The site is located approximately 4,000 feet off the west end of the Wheeler Army Airfield runway (runway 06/24) and under the runway's western approach-departure clearance surface; an imaginary surface rising at 40H:1V off each end of the runway. Wheeler Army Airfield runway elevation is 820 feet MSL so at 4,000 feet away, clearance under the slope at the site is approximately 50 feet.[1] Clear Zones and Accident Potential Zones (APZ) extend 8,000 feet off of each end of the Wheeler Army Airfield runway, the north end of the project site is under APZ-1. APZs are areas where an aircraft mishap is most likely to occur if one occurs. They do not reflect the probability of an accident. APZs follow arrival, departure and pattern flight tracks and are based upon analysis of historical data. UFC 3-260-01, Airfield and Heliport Planning Design provides land use compatibly recommendations on areas within the APZs. Agriculture and low occupancy uses such as industrial storage and other types of non-residential uses are considered compatible within APZ 1. Housing and retail type uses are not recommended. The project site is also within the Wheeler Army Airfield "Zone II" noise contour (experiencing sound levels between 65 and 75 A-weighted decibels DNL[2]). This is considered a moderately loud noise environment, normally not recommended for housing, schools, medical facilities, and other noise-sensitive land uses (Army Regulation 200-1).

3.6.2 Environmental Consequences

Proposed Action

Less than significant impacts to visual resources would result from the implementation of the Proposed Action. The Proposed Action is considered a compatible land use. It would provide the required security but would not result in any incompatibilities. The site is within an area already secured by the US Army so there will be no impact on public access to the project site. As noted, the Proposed Action would close a portion of the Exclusion 40 right-of-way that currently bisects the project area. However, the Proposed Action would provide an access road along the southern boundary of the fence line perimeter to maintain a vehicular connection around the closed portion of the right-of-way. Farming in the vicinity of the Proposed Action, including the 8.5-acre area, ceased with the closure of the Del Monte Planation over ten years ago, so the area has been fallow for a decade. The permanent loss of 8.5 acres within the new perimeter fence line represent 0.3% of the available farmland in the Kunia area and a much smaller percentage of available farmlands on Oahu. The Proposed Action is compatible with the Wheeler Army Airfield constraints (imaginary surface, APZ and noise contours). The Proposed Action is consistent with the Army's real estate interests defined by EO 1301 and Easements 103 and 104.

No Action Alternative

No impacts to land use would occur because the perimeter security fence and appurtenances would not be built. Existing site conditions would continue to be maintained.

[1] 870 feet project site el.- 820 feet runway el. = 50 feet el. delta; 100 feet (4,000 feet at 40H:1V) – 50 feet delta= 50 feet

[2] Day-night average sound level (DNL) is a time-weighted average sound energy over 24 hours; a 10-decibel penalty is added to the nighttime levels (10 p.m. to 7 a.m.).

3.7 Traffic

3.7.1 Affected Environment

Traffic and transportation resources incorporate several components describing the levels of vehicle traffic and types of transportation infrastructure in an area. This section provides an overview of the existing transportation and roadway network and existing traffic conditions. The ROI for traffic and transportation is Kunia Road and the internal network of interior roadways which provide access to the project site.

Kunia Road

FSK is located in central Oahu, approximately 23 road miles northwest of Honolulu. It is bordered to the east by Kunia Road, which runs north-south and separates Schofield Barracks and Field Station Kunia from Wheeler Army Airfield. Kunia Road serves as main roadway connection from the existing FSK parking lot and security facilities to the topside infrastructure at the Proposed Action site. In this section of Kunia Road, the roadway is a two-lane minor road with a posted speed limit of 35 miles per hour. Approximately 1,900 feet north from the entrance to the main FSK parking lot and security facilities, Kunia Road transitions to a four-lane arterial roadway. There are no pedestrian or bicycle facilities located on Kunia Road in the project vicinity.

A traffic study was completed in 2014 to support the EIS for the Schofield Generating Station Project, and it analyzed existing traffic conditions along Kunia Road. Traffic on Kunia Road leading to Schofield Barracks and Wheeler Army Airfield experience delays during peak periods. The primary area of congestion is located to the north of FSK at the Schofield Barracks gates along Kunia Road (Lyman Gate and Foote Gate). Level of service (LOS) is a measure of the operational conditions on a roadway or at an intersection. The LOS for a given roadway or intersection is rated using the letters A through F, with A being the best, and F being the worst. The traffic study found that the existing LOS at Kunia Road and the Lyman Gate was rated at a D in both the a.m. and p.m. peak traffic periods, and the existing LOS at Kunia Road and the Foote Gate was rated at C in both the a.m. and p.m. peak traffic periods. The intersection at Kunia Road and the main entrance to FSK was found to have an LOS rated at B in both the a.m. and p.m. peak traffic periods (Tetra Tech 2014).

Interior Roadway Network

FSK, including the Proposed Action site, is served by a network of unpaved access roads that are generally used to access the topside infrastructure, and to perform security patrols. Access to the Proposed Action site from Kunia Road is currently provided by an informal access road which intersects Kunia Road approx. 1,900 feet south of the main entrance to FSK (Identified as Option 2 in Figure 2-1). No trespassing signs are provided at the entrance to the site from Kunia Road and FSK security regularly patrols the area, but there is no existing access gate at the existing informal entrance from Kunia Road. This informal access road has been identified as the temporary construction access route for the Schofield Generating Station Project.

Another construction access roadway intersects Kunia Road approximately 800 feet south of the existing informal access road to the project site. This construction access road is being utilized for the construction of the Army's improvements in the Schofield Barracks South Range Acquisition Area. This roadway can also be utilized to access the interior road network at the Proposed Action site, and it will become the formal access route for the topside infrastructure at FSK as part of the Proposed Action (Figure 2-1).

3.7.2 Environmental Consequences

Proposed Action

Short-term less than significant impacts would be expected from the Proposed Action. There would be short-term impacts from construction vehicles and day-labor traffic during the construction period. Long-term impacts would not be expected as the Proposed Action will maintain the existing frequency of security patrols and maintenance trips that are required to the project site.

Construction and operation period access to the project site would be changed from the existing informal access road to the construction access road currently being used for the improvements at Schofield Barracks South Range Acquisition Area. Due to ATFP setback requirements, the proposed fence line would close off the existing access road for the Schofield Barracks South Range, Schofield Generation Station, and the Kunia Water Association (KWA) water well #3 along the northern edge of the proposed fence line (Figure 2-1). In order to provide continuous access to these sites, an access road bypass would be constructed along the western edge of the proposed fence line prior to the construction of the fence line. This bypass road would be located adjacent to the fence's exterior access roadway on land owned by Island Palm Communities. The Army would obtain a right of entry for construction purposes, and a permanent easement for access associated with maintenance and operations of the Proposed Action from Island Palm Communities, LLC.

The minor impacts to traffic associated with construction would primarily result from worker commutes and delivery of equipment and materials. Construction traffic would consist of noncommercial and commercial vehicles. Noncommercial traffic would primarily be workers commuting to the site and would be heaviest during peak traffic periods (6 to 8 a.m. and 4 to 6 p.m., Monday through Friday). Commercial traffic would likely come from the south on Kunia Road and would include the delivery of materials and equipment. Only the noncommercial traffic from the north would impact the intersections on Kunia Road near the installation which currently experience high levels of congestion. Traffic congestion eases at the main entrance to FSK, and disappears further as it approaches the construction access road (LOS B). Therefore, the incremental traffic contribution from construction related vehicles entering and exiting the site from Kunia Road is expected to have only temporary, less than significant impacts on traffic.

No Action Alternative

No changes to traffic would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.8 Toxic and Hazardous Substances

3.8.1 Affected Environment

The generation, use, storage, transport, and disposal of hazardous materials and waste are regulated at the federal, state, and local levels. For this analysis, the terms hazardous waste, hazardous materials, and hazardous substances include those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA). In general, they include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, could present substantial danger to public health or welfare, or the environment, when released. Petroleum

products are also addressed in this section. The ROI for hazardous materials and waste is the Proposed Action site, adjacent sites, and areas within approximately 1 mile where releases have occurred that could migrate to the project site.

Historical Pesticide Application

Much of the Proposed Action site was previously used for pineapple cultivation, and fumigants were applied to the soil to control pests. Before 1981, fumigants were commonly mixed with petroleum products to achieve proper dilution before application. A Preliminary Assessment/Site Investigation (PA/SI) conducted in 1994 at FSK identified that the soils at FSK which were previously utilized for pineapple production have been exposed to hazardous substances (pesticides and herbicides), but that existing concentration levels in the soil do not require a removal or remedial response (U.S. Army Corps of Engineers, Honolulu District [USACE-POH] 2012). Similarly, in 2009, the Army completed an environmental site characterization of the adjacent former pineapple cultivation fields in the South Range Acquisition Area. Multi-increment soil samples were collected and analyzed for organochlorine pesticides, carbamates, semi volatile organic compounds (SVOC), and arsenic. Soil samples indicated that low levels of organochlorine pesticides, carbamates, and other SVOC pesticides are in the surface and subsurface soils, and are likely from the application of pesticides during pineapple cultivation. The levels of organochlorine pesticides, carbamates, and other SVOC pesticides were all below the EPA Industrial Regional Screening Level and Hawaii DOH commercial/industrial land use environmental action levels. Arsenic detected in soil was below the Hawaii DOH-accepted naturally occurring background concentration. Therefore, soil removal and remediation are not warranted.

Environmental Condition of Property

In 2012 an environmental condition of property (ECP) report was completed for FSK. The ECP covers hazardous and toxic substances as defined in CERCLA, RCRA, and TSCA, and other materials that could affect human health and safety and the environment. The scope of the ECP was limited to FSK and includes the Proposed Action site. The ECP identified 10 sites at FSK that represented potential environmental concerns due to toxic or hazardous substances. However, for most of these sites, remediation clean-up activities have already occurred, and/or no further action is required. Only three sites were recommended to undergo additional investigation or remediation (USACE-POH 2012). These sites are discussed in detail below:

IR Site A, Pineapple Field Fuel Box

The 1994 PA/SI noted that a diesel fuel spill occurred between 1970 and 1972 from the fuel box at Fuel Tank No. 8. An unknown volume of fuel saturated the adjacent pineapple field and spilled across Kunia Road. The ECP recommended an investigation to determine the absence or presence of petroleum-contaminated soil and if contaminated, clean up the contaminated

IR Site B, PCB Transformers

The 1994 PA/SI identified seven exterior transformers that could have contaminated the surrounding soil and concrete with polychlorinated biphenyls (PCB). In the past, dielectric fluid testing practices at other military facilities has been found to result in PCB contamination of the adjacent soils and concrete pads. The ECP recommended an investigation to determine the absence or presence of PCB-contaminated soil and/or concrete pads around the transformers.

Air intake tunnel

An air intake tunnel servicing FSK was found to have been painted with lead-based paint, and paint flakes were found to have contaminated the soil in the bottom of the tunnel. The ECP recommended the removal of the lead-contaminated soil.

Adjacent Properties

The ECP included an agency record search to identify potential hazardous or toxic substance contamination sites on properties adjacent to FSK. The agency record search identified several sites on adjacent Department of Defense property and the Del Monte Corporation Superfund site. The Del Monte Corporation Superfund site was formerly a 6,000-acre pineapple plantation located near FSK. The Del Monte Corporation grew and processed pineapple on the plantation from about 1946 to November 2006. As part of site operations, the Del Monte Corporation used pesticides to control pests that attack pineapple roots. EPA added the site to the National Priorities List in 1994. Remedial actions at the site included the removal of 18,000 tons of contaminated soil, phytoremediation of contaminated ground water, installation of a vegetated soil cap, and installation of an air stripper and carbon filtration system to address contaminated drinking water. Land use restrictions are in place to prevent activities that may interfere with ground water extraction, monitoring wells and the soil cap.

None of the sites identified in the adjacent properties are expected to have significant potential to affect FSK. The distance between the identified sites and FSK were determined to be sufficient to negate any potential impacts to the property through contaminant pathways (air, surface runoff, and groundwater).

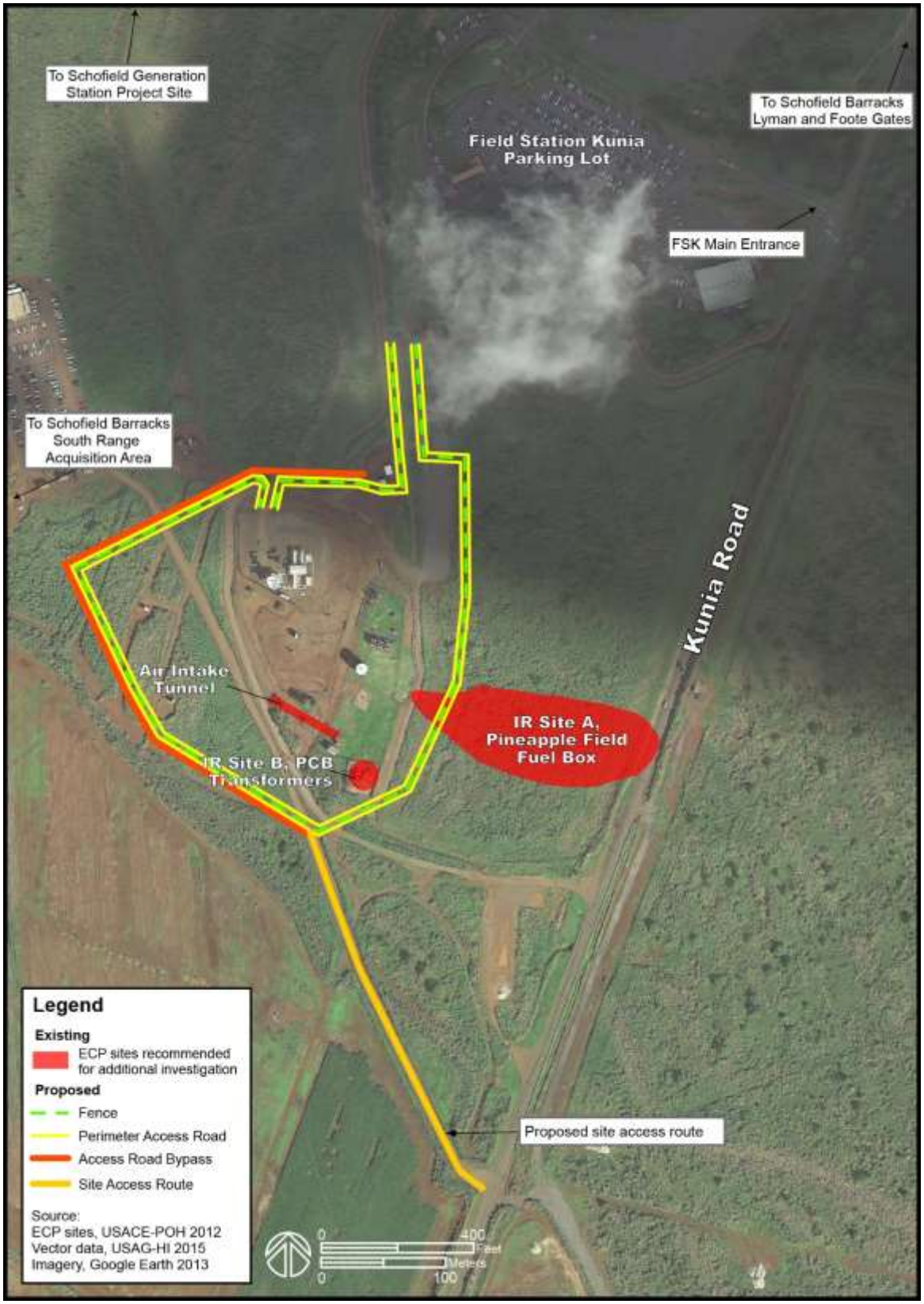

Figure 3-3 ECP identified sites recommended for additional investigation

3.8.2 Environmental Consequences

Proposed Action

Less than significant impacts on toxic and hazardous substances would be expected in association with the construction and operation of the Proposed Action. Construction would require petroleum, oil, lubricants, paint, asphalt, and other potentially hazardous materials to be transported to, temporarily stored on, and used at the project site, and would generate debris such as scrap wood and metal. Proper handling, storage, use, transport, disposal, and cleanup of hazardous substances, petroleum products, solid waste, and construction debris would prevent potential releases of hazardous substances. Containment measures would be employed to ensure that any accidental releases of hazardous substances (e.g., anti-freeze, petroleum, oils, and lubricants) are prevented or limited in scope. Portable catch basins, portable containment berms, and other similar measures would be used for refueling equipment. The contractor would ensure that spill kits are kept on site to ensure that response and cleanup actions are promptly undertaken should a spill occur. All construction workers will be trained on spill prevention and notification measures in accordance with Department of Defense pollution control requirements to reduce the potential for accidental spills.

Construction would involve ground disturbance. The soil at the Proposed Action site was historically used for agriculture, and pesticides were regularly applied. Soils in the immediate vicinity of the project area have been tested, and suggest that pesticide levels are low enough that the soil can be left in place. Once the soil is disturbed, it may require special handling and disposal, and there is a slight possibility that undiscovered contamination or buried materials associated with historical agriculture could be encountered. The IR site A, Pineapple Field Fuel Box, is one location where potentially contaminated soils could be encountered. The IR site B, PCB Transformers, and the air intake tunnel are located far enough inside of the proposed fence line and appurtenances that they would not be disturbed by the ground disturbance or construction activities associated with the Proposed Action.

BMPs would be established to determine if disturbed soils require special handling and disposal and, if so, for handling and disposing of it properly; and responding to unanticipated discoveries of contamination or hazardous materials. Although groundwater below the site might be contaminated, it is deep enough that it would not be encountered during construction. A minor beneficial impact would result if contaminated soil were removed from the site.

During the operational period, herbicides may be used to control vegetation growth for security purposes. The use of herbicides would be limited to the areas directly adjacent to the proposed fence line and site access roads, and application would be conducted in accordance with established standards and BMPs. Overall, the impacts to the public or the environment would be less than significant.

No Action Alternative

No changes to toxic and hazardous substances would occur because no construction activities would take place and existing site conditions would continue to be maintained.

3.9 Socioeconomics

3.9.1 Affected Environment

This section describes the socioeconomic environment of the ROI, which for socioeconomics is the City and County of Honolulu, Hawaii (which includes the entire island of Oahu), and in particular, the Central Oahu region. In its annual facts and figures report, the Hawaii Department of Business, Economic Development & Tourism (DBEDT) describes the City and County of Honolulu as, "the center of business and government for the State of Hawaii. Downtown Honolulu is Hawaii's financial center while Waikiki, the world famous tourist destination, is only a few miles away (DBEDT 2015)." Recent years showed strong tourism gains for Oahu as the county continues to recover from the 2008 national economic recession. Economic growth is predicted to continue with the expansion of construction activity and only a slight easing in the growth of visitor arrivals (University of Hawaii Economic Research Organization 2015). Oahu is also strategically important in the defense of the United States; consequently, federal government expenditures are an important contributor in the county's economy.

In particular, the area around the Proposed Action site is home to a significant military presence with Schofield Barracks and Wheeler Army Airfield bordering Field Station Kunia to the north and east respectively. To the south of the Proposed Action site is mostly agricultural lands with the small settlement of Kunia Camp providing some housing and support services for the agricultural production in the area. Mililani and Wahiawa are the nearest urban centers to the Proposed Action site.

Population, Housing, and Employment

Hawaii had an estimated resident population of 1,419,561 in 2014, and the City and County of Honolulu is home to approximately 70 percent of the state's population. The county's population increased by 13 percent between 2000 and 2014. This rate of growth was lower than the State population growth of 17 percent. Projections estimate a 12% growth in the City and County of Honolulu's population between 2010 and 2035, and an estimated 79,500 new homes will be required to meet this population growth (DBEDT 2012). The City and County of Honolulu General Plan directs most of this new housing capacity to downtown Honolulu, the Ewa Plain, and Central Oahu. The COSCP Public Review Draft outlines an increase of 12,800 new housing units in the region by 2035 (City and County of Honolulu 2016).

Between 2003 and 2014, the City and County of Honolulu's labor force increased by 5 percent. Hawaii's labor force also increased by 5 percent and the nation's labor force increased by 6 percent. The county's 2013 annual average unemployment rate was 4 percent, lower than Hawaii's unemployment rate of 5 percent and the national unemployment rate of 7 percent. The City and County of Honolulu consistently had a lower annual unemployment rate than the state and nation from 2005 through 2015. In that same timeframe, Honolulu hit a peak unemployment rate of 6.7% in June 2009. Since then, the unemployment rate has been steadily decreasing, and was estimated at 3.2% in October 2015 (Bureau of Labor Statistics 2015). The COSCP Public Review Draft projects an increase from 62,600 jobs in 2010 to 83,600 in 2035 in Central Oahu, with nearly all of the increase consisting of civilian jobs (City and County of Honolulu 2016).

Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, was issued by President Clinton on February 11, 1994. The EO requires that federal agencies take into consideration disproportionately high and adverse environmental effects of governmental decisions, policies, projects, and programs on minority and low-income populations, and

to identify alternatives that could mitigate such impacts. Environmental justice analyses are performed to identify potential disproportionately high and adverse impacts from Proposed Actions and to identify alternatives that might mitigate these impacts. Minority populations included in the census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic or Latino, Some Other Race, and Two or More Races. Poverty status, used in this analysis to define low-income status, is reported as the number of persons with income below the poverty level. A demographic profile and poverty rates for the ROI are provided in Table 3-1.

Table 3-1 Race/Ethnicity and Poverty Rates

Race/Ethnicity (2014)	**United States**	**State of Hawaii**	**Honolulu County**	**Census Tract 86.14**
White	73.8%	25.2%	21.5%	15.2%
Black or African American	12.6%	1.9%	2.5%	5.8%
American Indian and Alaska Native	0.8%	0.2%	0.2%	0.5%
Asian	5.0%	38.0%	43.2%	34.6%
Native Hawaiian and Other Pacific Islander	0.2%	10.0%	9.4%	7.1%
Some other race	4.7%	1.1%	0.9%	0.0%
Two or more races	2.9%	23.6%	22.3%	36.8%
Hispanic or Latino origin (of any race)	16.9%	9.6%	8.9%	13.0%
Poverty (2014)	**United States**	**State of Hawaii**	**Honolulu County**	**Census Tract 86.14**
Population below the poverty rate	15.60%	11.30%	9.80%	3.40%

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

Compared to the United States as a whole, Honolulu has large Asian and Native Hawaiian and Other Pacific Islander populations. These groups accounted for 43.2% and 9.4% respectively for the County of Honolulu in 2014. Honolulu has a lower proportion of White, Black or African American, and Hispanic or Latino origin population when compared with the United States as a whole. While the State of Hawaii and Census Tract 86.14 vary slightly from the County of Honolulu, in general they follow the trends mentioned above compared with the United States as a whole.

In 2014, approximately 15.6% of the population in the United States is classified as living in poverty. In comparison, the poverty rate for the County of Honolulu in 2014 is estimated at 9.8%. This is lower than the estimated poverty rate for the State of Hawaii (11.3%), but higher than the poverty rate estimated for Census Tract 86.14 (3.4%).

Protection of Children

Executive Order 13045, *Protection of Children from Environmental Health and Safety Risks*, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children.

According to the Census Bureau, approximately 24.3% of the County of Honolulu's 2014 population is age 19 or younger (U.S. Census Bureau 2014). However, the Proposed Action project site is a secured area, and the general public, including children, are generally not allowed to visit the site. The Proposed Action site is not in the direct vicinity of any schools, housing developments, or recreational areas, where children would be expected.

3.9.2 Environmental Consequences

Proposed Action

Short-term beneficial impacts would be expected to occur during the construction period by implementing the Proposed Action. Direct benefits would result from materials procurement for construction of the new perimeter security fence and appurtenances, and the associated state excise tax on those materials. The projected construction expenditures for the Proposed Action would marginally increase employment and income in the ROI during the construction period.

During the operational period, no impacts would be expected to socioeconomic conditions. The Proposed Action would not result in any long-term impacts to population growth, employment opportunities, or housing demand.

Environmental Justice

The Proposed Action would not have any impacts on low-income or minority populations within the ROI. However, it may result in beneficial short-term impacts through the creation of jobs during the construction period, if low-income or minority residents within the ROI were hired. There would be no long-term impact on social, economic, physical, environmental, or health conditions from the Proposed Action. Therefore, the Proposed Action would have no impacts on any low-income or minority group in the ROI.

Protection of Children

During construction of the new perimeter security fence and appurtenances, safety measures stated in 29 CFR, 1926, Safety and Health Regulations for Construction, and Army Regulation 385-10, Army Safety Program, would be followed to protect the health and safety of residents, including children. Therefore, the Proposed Action would have no impacts on children.

No Action Alternative

No changes to socioeconomic conditions, environmental justice, or the protection of children would occur because no construction activities would take place and existing site conditions would continue to be maintained.

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4.0 Cumulative Impacts

A cumulative impact is defined in 40 CFR Part 1508.7 as "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."

4.1 Past, Present, and Reasonably Foreseeable Future Actions

Past, present, and reasonably foreseeable future actions include those actions or projects identified in the area of the FSK that could result in impacts to one or more of the resource areas discussed in Section 3. Projects too geographically distant from the project area or otherwise not considered likely to produce negative impacts are not included. Projects that are considered for analysis of the cumulative impacts associated with the FSK are in Table 4-1.

Table 4-1 Past, Present, and Reasonably Foreseeable Future Actions

Action	*Description*	*Timeframe*	*Location*
City and County of Honolulu, Central Oahu Sustainable Communities Plan (COSCP)	Directs urban development and population growth; designates urban growth boundaries; preserves open space and agricultural lands.	2016 revision pending approval	Central Oahu
Del Monte Fresh Produce Closure	Closure of Del Monte's pineapple production on the island of Oahu, including approximately 4,000 acres in Kunia.	2006	Central Oahu
Sale of Campbell Estate Kunia Parcels	Campbell Estate divested its land holdings in the Kunia area.	2007	Kunia
Kunia Village and Agribusiness Complex Low-Income Housing Redevelopment	Redevelopment at Kunia Village to provide up to 200 housing units for low income residents.	ongoing	Kunia Village
Construction of Four Projects to Support the Army Growth Stationing Action at Schofield Barracks	Construction of an engineer brigade complex, Explosive Ordnance Disposal battalion complex, Military Police battalion complex, and associated infrastructure.	complete	South Range Acquisition Area
Army Residential Communities Initiative	Add 42 acres to an existing 50-year ground lease, and construct 230 units of multifamily housing as part of the Kalakaua Phase 3 Housing Development.	2011 - ongoing	South Range Acquisition Area
USAG-HI Real Property Master Planning	Installation-wide facilities construction and associated infrastructure improvements.	2009 - ongoing	USAG-HI including Schofield Barracks and Wheeler Army Airfield

Table 4-1 Past, Present, and Reasonably Foreseeable Future Actions

Action	*Description*	*Timeframe*	*Location*
Army 2020 Force Structure Realignment	Army wide force and realignment, including reductions up to 8,000 Soldiers and Army civilians at Schofield Barracks.	2013 - ongoing	Army -wide including Schofield Barracks and Wheeler Army Airfield
Army Wildland Fire Management Program	Implement a prescribed burn program to manage the timing and location of wildfires so as to protect valued resources.	2003 - ongoing	Schofield Barracks, South Range Acquisition Area, Schofield East Range, Dillingham Military Barracks, Kahuku Training Area, Kawailoa Training Area, Makua Military Reservation,
Army Military Munitions Response Program	The compliance, restoration, and closeout activities for Schofield Barracks munitions ranges.	1985 - ongoing	Schofield Barracks (Installation-wide)
Permanent Stationing of 2/25th Stryker Brigade Combat Team[3]	Army Transformation of the 2nd Brigade, 25th Infantry Division including 28 construction projects and five land acquisitions.	complete	Oahu and Hawaii including Schofield Barracks and Wheeler Army Airfield
Army Implementation Plan of Oahu Training Areas	Continued use and modernization of training areas and ranges to meet evolving training standards, use of ammunition, and other expendables; maintenance and repair of training infrastructure; and construction of additional facilities at existing training	2010 - ongoing	Schofield Barracks, Schofield East Range, Dillingham Military Barracks, Kahuku Training Area, Kawailoa Training Area, Makua Military Reservation
Schofield Generating Station	Construction and operation of a multi-fuel capable 50-megawatt power plant and associated transmission line.	complete	South Range Acquisition Area

4.2 Cumulative Impacts by Resource Area

4.2.1 Air Quality

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, would have less than significant short-term cumulative impacts and no significant long-term cumulative impacts on air quality. The air quality impacts of the Proposed Action and other projects in the vicinity

[3] As part of a national cost cutting measure, the Army decided (in July 2015), to relocate the Stryker Brigade to the West Coast and replace it with an infantry brigade combat team with an overall reduction of approximately 1,200 soldiers.

are mainly due short-term construction period impacts. Temporary construction-related air quality issues include local fugitive dust and emissions from construction equipment engine exhaust. Emissions from cumulative projects would affect the local area, but impacts should be minimal because the proponents of the cumulative projects are expected to use such BMPs as dust minimization to ensure that their projects comply with air quality standards. Therefore, cumulative air quality impacts from the Proposed Action and other local and regional projects are considered to be less than significant.

In the long-term, the State of Hawaii takes into account the effects of all past and present emissions by monitoring concentrations of criteria pollutants. This is accomplished via a regulatory structure in place designed to prevent air quality deterioration for attainment areas. This structure of rules and regulations is contained in the State Implementation Plan (EPA 2014). The State Implementation Plan process applies either specifically or indirectly to all activities in the region. Effects of the past, present, and reasonably foreseeable future actions would range from none to moderate, and the Proposed Action would not contribute to long-term cumulative air quality effects as it will not impact air quality during the operational period.

4.2.2 Water Resources

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, would have less than significant cumulative impacts on water resources. Site preparation and construction activities associated with the projects would generally involve disturbing soils and removing vegetation which can decrease the quality and increase the quantity of stormwater runoff. Once these projects have been developed, soil compaction and/or the installation of impervious surfaces can increase post-development stormwater runoff. There is also the potential for the release of minor quantities of petroleum products from construction equipment which could enter stormwater runoff or groundwater.

However, each of the present and reasonably foreseeable construction projects would be required to minimize stormwater runoff in compliance with the NPDES General Permit Authorizing Discharges of Storm Water Associated with Construction Activity, which requires implementing a Stormwater Pollution Prevention Plan and limiting the post-development discharge of stormwater from a 10-year event to the predevelopment rate. Compliance with these requirements would ensure that each project would have only minor impacts on water resources and that any cumulative impact of the projects would be less than significant. Additionally, all present or reasonably foreseeable federal projects would be subject to compliance with the EISA and the low impact development requirements of UFC 3-210-10.

4.2.3 Biological Resources

The Proposed Action site and the adjacent lands have been immensely altered as a result of previous land uses. Ranching, commercial agriculture, and military activities have all contributed to significant changes in the biological landscape. For much of the last century, portions of the Proposed Action site and adjacent lands were manipulated for pineapple production. Since pineapple production ceased in 2006, the fallow lands have become dominated by introduced species. While these non-native grasslands may provide potential habitat to some protected avian species, they do not represent a critical habitat or a significant biological resource.

Past, present, and reasonably foreseeable future actions in the ROI range from beneficial to significant and unavoidable. The construction of many of these projects results in increased pressures on biological

resources from increased human presence, noise, dust, and reduced natural habitat. Operation of these actions can also exert significant pressures on biological resources including from increased structural hazards and military training activity. However, the Army is required under federal law to fully consider and whenever possible mitigate against potential significant impacts to biological resources.

The Final EIS Army Transformation of the 2nd Brigade, 25th Infantry Division (L) to a Stryker Brigade Combat Team in Hawaii identified that the increased risk of wildfires and their effects on biological resources were considered not mitigable to less than significant (Tetra Tech 2004). This action in the ROI would have significant and unavoidable effects on biological resources. However, the new perimeter security fence and appurtenances at FSK would only generate minor impacts, and its contribution to cumulative impacts on biological resources would be less than significant.

4.2.4 Historic, Cultural, and Archaeological Resources

In general, projects involving construction, demolition, and/or ground disturbance have the potential to impact historic architecture, traditional cultural resources, or archaeological resources. However, the significant previous land disturbance in and around the project area related to plantation agriculture has compromised any cultural resources that may have existed. The Proposed Action is expected to have no impact on historic, cultural, and archaeological resources, and it would not contribute to any cumulative impacts on those resources.

4.2.5 Visual Resources

The Proposed Action, when combined with past, present, and reasonably foreseeable future actions, would have less than significant cumulative impacts on visual resources, primarily resulting from the altering of views. Visual resources in the ROI are primarily defined by the open space views associated with the agricultural lands around Kunia Road. Many of the present, and reasonably foreseeable future actions involve development that would result in less than significant adverse impacts on visual resources, including increasing urban development, reducing the amount open space, and altering views. However, the military development projects are mostly confined to the Schofield Barracks and the South Range Acquisition Area, and would have limited impacts on visual resources. The redevelopment at Kunia Village, located approximately 0.6 miles to the south of the Proposed Action site, would alter the visual landscape along Kunia Road, but these changes would be more or less encompassed within the existing development footprint at Kunia Village.

This trend in the changing visual character of Central Oahu that is echoed in the COSCP calls for significant population growth and housing development. However, the COSCP directs this growth mainly around the H-2 corridor, and protects the Kunia agricultural lands by placing them outside of the urban growth boundary (City and County of Honolulu 2016). This document also identifies that certain important public views, like the view of the Waianae Mountain Range from Kunia Road, should be protected as development occurs. Therefore, large-scale cumulative impacts to the views along Kunia Road are not expected. The Proposed Action would have a minor impact on visual resources, but overall the Proposed Actions contribution to cumulative impacts on visual resources would be less than significant.

4.2.6 Land Use

Military development at Schofield Barracks, Field Station Kunia, and Wheeler Army Airfield, and commercial pineapple production are the two major land uses which have dominated the ROI for the better part of the past century. However, the closure of the Del Monte pineapple production in 2006 took a large amount of agricultural lands in the Kunia out of active agricultural production. Some of these lands have been repurposed for different types of agriculture, including seed corn production and small-holder vegetable farms. Still, much of the lands which were previously in pineapple production, including those directly adjacent to the Proposed Action site, remain fallow. While these fallow lands could become targets for residential development and urban sprawl, the COSCP has identified the vast majority of this land as agricultural land and has instead focused urban expansion around the H-2 Corridor (City and County of Honolulu 2016).

The Army has constructed new facilities in the South Range Acquisition Area adjacent to the Proposed Action site. The impacts of these developments were addressed in the Final EIS, Permanent Stationing of the 2/25th Stryker Brigade Combat Team (U.S. Army Environmental Command 2008) and in the Environmental Assessment for Construction of Four Projects to Support the Army Growth Stationing Action at Schofield Barracks Military Reservation Oahu, Hawaii (USACE-POH 2010). The land use impacts of these projects would include beneficial impacts because the facilities would be near other Army support facilities and less than significant impacts because of potential incompatibility with the USAG-HI master plan and the conversion of agricultural land to military uses. No significant and unmitigable land use impacts were identified.

The new perimeter security fence and appurtenances would have minor adverse impacts on land use associated with the loss of 8.5 acres of agricultural land within the new perimeter fence. However, this agricultural land hasn't been actively farmed in the last decade, and the 8.5 acres represents only approximately 0.3% of the available farmland in the Kunia area and a much smaller percentage of available farmlands on Oahu. Therefore, the contribution of the Proposed Action to cumulative land use impacts would be minor, and when combined with the past, present, and reasonably foreseeable future actions, would remain less than significant.

4.2.7 Traffic and Transportation

Past, present, and reasonably foreseeable projects have the potential to increase traffic or change vehicular, pedestrian, and bicycle circulation. The traffic study performed for the Schofield Generating Station Project EIS took into account these projects and the projected effects on traffic. The study found that the construction and operation of these projects, including the Grow the Army facilities, will likely lead to incremental increases in traffic over time. In comparison, the Proposed Action would only have short-term minor impacts on traffic related with construction. In the long-term, no impacts to traffic are expected from the Proposed Action, so it would not contribute to cumulative impacts.

4.2.8 Toxic and Hazardous Substances

Up until 2006, much of the area in and around the Proposed Action site was utilized for the commercial agricultural production of pineapples. The 1994 PA/SI has identified that the soils at FSK which were previously utilized for pineapple production have been exposed to hazardous substances (pesticides and

herbicides), but that existing concentration levels in the soil do not require a removal or remedial response (USACE-POH 2012).

Construction of the Proposed Action and other present and reasonably foreseeable projects would involve the use, storage, generation, transport, and/or disposal of hazardous materials and waste, petroleum products, and solid and municipal waste. Operations of those actions would involve installation of aboveground storage tanks, use of pesticides, and/or routine use of hazardous materials such as petroleum, oils, lubricants, and paints. Each activity involving these materials entails some risk to human health and safety and the environment due to the potential for misuse or an accident. Of the past, present, and reasonably foreseeable projects in the ROI, the Scofield Generating Station Project would involve the greatest amount of hazardous materials, particularly during operation. However, due to the required compliance with federal, state, and local laws and BMPs, the operation of Schofield Generating Station was found to have only minor impacts on hazardous substances (Tetra Tech, Inc., 2015).

The Proposed Action would be expected to have less than significant impacts to toxic and hazardous substances associated with construction equipment, the potential excavation of previously contaminated soils, and the use of herbicides for vegetation control. The other projects within the ROI would use minor to moderate amounts of these hazardous materials with less than significant impacts. Collectively, the cumulative impacts of the Proposed Action and all past, present, and reasonably foreseeable projects in the ROI would remain less than significant.

4.2.9 Socioeconomics

The Proposed Action would have minor short-term beneficial economic effects on the regional economy associated with construction employment and expenditures. This benefit, in combination with economic activity generated by the other past, present, and reasonably foreseeable projects would result in beneficial cumulative economic effects. The COSCP has identified that the Central Oahu Region will undergo significant population growth and housing development in the next 20 years. However, the COSCP also identifies that the vast majority of this growth will come from civilians (City and County of Honolulu 2016). Therefore, the effects of military projects at Field Station Kunia, Schofield Barracks, and Wheeler Army Airfield are not expected to have a significant cumulative impact on population growth or housing demand in the region. Implementing the Proposed Action would not result in disproportionately adverse environmental or health effects on low-income or minority populations or the health and safety of children. No cumulative impacts to environmental justice or the protection of children would be expected.

5.0 Other Considerations Required by NEPA

In addition to the analyses discussed in Chapter 3, NEPA requires additional evaluation of the project's impacts including the relationship between short-term uses and long-term productivity, and any irreversible or irretrievable commitment of resources. Additionally, this chapter confirms the absence of any significant unavoidable impacts or required mitigation measures for the Proposed Action, and provides a discussion of the Proposed Action's consistency with the CZMA.

5.1 Relationship Between Short-Term Uses and Long-Term Productivity

NEPA requires that an EA consider the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity.

Short-term uses of the environment associated with the new perimeter security fence and appurtenances would generally be the same as the environmental impacts described for each environmental resource in Section 3. These impacts would include temporary construction-period impacts to air quality, water resources, biological resources, and toxic and hazardous substances.

5.2 Irreversible of Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that could not be replaced within a reasonable time frame (e.g., fossil fuels, minerals). Irretrievable resource commitments involve the loss in value of an affected resource that could not be restored as a result of the action (e.g., the extinction of a threatened or endangered species, disturbance of a cultural resource).

Irreversible resources that would be consumed by the Proposed Action include the non-renewable or slowly renewable natural resources needed to manufacture, transport, and construct the new perimeter security fence and appurtenances. The consumption of these resources would not represent an unnecessary, inefficient, or wasteful use of resources, nor would it prevent sustainable development. The long-term productivity of the Proposed Action is based on the ATFP security that will be provided by the Proposed Action. This will ensure the safety and security of the topside infrastructure at FSK, as well as the national defense efforts and missions which that infrastructure supports. While the Army will take whatever actions are reasonable and practicable to preserve and protect the natural environment under its stewardship, the necessity of national defense requires the Army to provide the nation with capabilities that meet current and evolving national defense requirements. The Proposed Action is designed to help the Army meet these goals and further the security and welfare of the United States, its residents, and its natural environment.

5.3 Significant Unavoidable Impacts

An EA must include a description of any significant unavoidable impacts for which no mitigation, or only partial mitigation, is feasible. The Proposed Action would not result in any significant unavoidable impacts for which no mitigation, or only partial mitigation, is feasible; all impacts would be less than significant.

5.4 Mitigation Measures

Impacts would be less than significant for all resources, so no mitigation measures are proposed. No activities outside compliance with existing regulations, permits, and plans would be required. Best management practices and design measures that would minimize impacts would be implemented for the following resources: air quality, water resources, biological resources, and hazardous and toxic substances.

5.5 Coastal Zone Management Act

The federal CZMA of 1972 establishes a federal–state partnership to provide for the comprehensive management of coastal resources. Coastal states and territories develop site-specific coastal management programs based on enforceable policies and mechanisms to balance resource protection and coastal development needs. The HCZMP lays out the policy to guide the use, protection, and development of land and ocean resources within the state's coastal zone. Under the CZMA, federal activity in, or affecting, a coastal zone requires preparation of a Coastal Zone Consistency Determination or a Negative Determination. In other words, any federal agency proposing to conduct or support an activity within or outside the coastal zone that will affect any land or water use or natural resource of the coastal zone is required to do so in a manner consistent with the CZMA or applicable state coastal zone program to the maximum extent practicable.

USAG-HI assessed reasonably foreseeable direct, indirect and cumulative effects on Hawaii's defined coastal zone and reviewed relevant management programs of the HCZMP in accordance with the CZMA. Based on the information, data, and analysis contained in the completed assessment form (Appendix A), USAG-HI found that the proposed new perimeter security fence and appurtenances are consistent to the maximum extent practicable with the enforceable policies of the HCZMP.

USAG-HI sent a Coastal Zone Consistency Determination Letter to the State of Hawaii Office of Planning HCZMP on March 27, 2018. The Office of Planning responded with a letter of concurrence on May 11, 2018. A record of this agency coordination is provided in Appendix A.

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7.0 List of Preparers

U.S. Department of the Army

Kevin Nishimura, Environmental Protection Specialist (USACE-POH)
Project Manager

Ed J. Hewitt, NEPA Coordinator (USAG-HI)
Contributor

A-E Contractors:

HHF Planners

Thomas A. Fee, AICP, Principal (HHF Planners)
Principal investigator and contributing author

John Hagihara, Associate (HHF Planners)
Project manager and principal author

HHF Planners Subcontractors

Jaap Eijzenga, Director Pacific Islands (SWCA Environmental Consultants)
Biological Resources Survey Report

Alex Morrison, Ph.D., Project Manager (International Archaeology, LLC)
Archaeological Assessment

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Appendix A
Coastal Zone Management Act Documentation

- USAG-HI letter to the Hawaii Office of Planning Coastal Zone Management Program, dated March 27, 2018 (USAG-HI determination that the Proposed Action is Consistent with the HCZMP)
- Hawaii Office of Planning Coastal Zone Management Program letter to USAG-HI, dated May 11, 2018 (concurrence with USAG-HI consistency determination)

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DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII
DIRECTORATE OF PUBLIC WORKS
947 WRIGHT AVENUE, WHEELER ARMY AIRFIELD
SCHOFIELD BARRACKS, HAWAII 96857-5013

REPLY TO
ATTENTION OF:

MAR 2 7 2018

Directorate of Public Works

SUBJECT: Federal Agency Coastal Zone Management Act Consistency Determination for the Proposed New Perimeter Security Fence and Appurtenances at the Field Station Kunia, Oahu, Hawaii.

Mr. Leo R. Asuncion
Office of Planning, State of Hawaii
Coastal Zone Management Program
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Asuncion:

In accordance with the 1972 Coastal Zone Management Act (CZMA) §307 (16 United States Code [U.S.C.] §1456) and the National Oceanic and Atmospheric Administration federal consistency regulations (15 Code of Federal Regulations [C.F.R.] Part 930), please find enclosed U.S. Army Garrison, Hawaii's (USAG-HI) application for a Coastal Zone Management (CZM) Federal Consistency review for new perimeter security fence and appurtenances at the Field Station Kunia in Hawaii on the Island of Oahu. The enclosed packet contains the completed CZM application, assessment form, and supporting documentation including a project description, site maps and consultation correspondence.

Per 15 CFR §930.33, USAG-HI assessed reasonably foreseeable direct, indirect and cumulative effects on Hawaii's defined coastal zone and reviewed relevant management programs of the Hawaii CZM Program in accordance with the CZMA. Based on the information, data, and analysis contained in the attached completed assessment form, USAG-HI finds that the proposed new perimeter security fence and appurtenances are consistent to the maximum extent practicable with the enforceable policies of the Hawaii CZM Program.

We appreciate your consideration of our determination and look forward to your response. If you have any questions, please contact Lisa Graham, the USAG-HI National Environmental Policy Act Program Manager at 808-656-3075 or via e-mail at lisa.m.graham52.civ@mail.mil.

Sincerely,

Kent K. Watase, PE
Director of Public Works

Hawaii CZM Program
Coastal Zone Management

www.hawaii.gov/dbedt/czm

APPLICATION FOR CZM FEDERAL CONSISTENCY REVIEW

Project/Activity Title or Description: Perimeter Security Fence and Appurtenances

Location: Field Station Kunia

Island: Oahu

Tax Map Key: (1) 9-2-5: por. 022; 9-4-12: pors. 006, 003

Applicant or Agency

Kent Watase, USAG-HI Director of Public Works
Name of Applicant or Agency

947 Wright Avenue, Wheeler Army Airfield
Mailing Address

Schofield Barracks, HI 96857-5013
City / State / Zip Code

808.656.3056
Phone

kent.k.watase.civ@mail.mil
E-mail Address

Agent or Representative for Applicant

Lisa Graham, USAG-HI Environmental Division
Agent or Representative for Applicant

947 Wright Avenue, Wheeler Army Airfield
Mailing Address

Schofield Barracks, HI 96857-5013
City / State / Zip Code

808.656.3075
Phone

lisa.m.graham52.civ@mail.mil
E-mail Address

CZM Consistency Determination or Certification

✓ Check the applicable type of federal action below and sign.

☑ Federal Agency Activity

CZM Consistency Determination: "The proposed activity will be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of the Hawaii Coastal Zone Management Program."

Signature _____ Date 3/21/18

☐ Federal Permit or License

CZM Consistency Certification: "The proposed activity complies with the enforceable policies of Hawaii's approved management program and will be conducted in a manner consistent with such program."

Signature _____ Date _____

☐ Federal Grants and Assistance

CZM Consistency Certification: "The proposed activity complies with the enforceable policies of Hawaii's approved management program and will be conducted in a manner consistent with such program."

Signature _____ Date _____

Mail Application To: Office of Planning, State of Hawaii, P.O. Box 2359, Honolulu, Hawaii 96804

HAWAII CZM PROGRAM
FEDERAL CONSISTENCY ASSESSMENT FORM

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1) Improve coordination and funding of coastal recreational planning and management.
2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
   a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas.
   b) Requiring replacement of coastal resources having significant recreational value including, but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable.
   c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.
   d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation.
   e) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources.
   f) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.
   g) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing.
   h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of Hawaii Revised Statutes, section 46-6.

RECREATIONAL RESOURCES (continued)

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action occur in or adjacent to a dedicated public right-of-way, e.g., public beach access, hiking trail, shared-use path?	☐	☑
2. Will the proposed action affect public access to and along the shoreline?	☐	☑
3. Does the project site abut the shoreline?	☐	☑
4. Is the project site on or adjacent to a sandy beach?	☐	☑
5. Is the project site in or adjacent to a state or county park?	☐	☑
6. Is the project site in or adjacent to a water body such as a stream, river, pond, lake, or ocean?	☐	☑
7. Will the proposed action occur in or affect an ocean recreation area, swimming area, surf site, fishing area, or boating area?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

The proposed action is not located within or adjacent to a recreation area, and it would not affect or restrict access to any such area.

HISTORIC RESOURCES

Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

1) Identify and analyze significant archaeological resources.
2) Maximize information retention through preservation of remains and artifacts or salvage operations.
3) Support state goals for protection, restoration, interpretation, and display of historic resources.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Is the project site within a designated historic or cultural district?	☐	☑
2. Is the project site listed on or nominated to the Hawaii or National Register of Historic Places?	☐	☑
3. Has the project site been surveyed for historic or archaeological resources?	☑	☐
4. Does the project parcel include undeveloped land which has not been surveyed by an archaeologist?	☐	☑
5. Is the project site within or adjacent to a Hawaiian fishpond or historic settlement area?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

3. Has the project site been surveyed for historic or archaeological resources?
In accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. §306108) the U.S. Army Garrison, Hawaii (USAG-HI) consulted with the State Historic Preservation Office (SHPO) regarding the proposed undertaking. USAG-HI determined that there are no historic properties present in the Area of Potential Effect and the proposed undertaking would result in no historic properties affected (Encl. 1). The SHPO concurred with the USAG-HI determination of no historic properties affected (Encl. 2).

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

1) Identify valued scenic resources in the coastal zone management area.
2) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.
3) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.
4) Encourage those developments that are not coastal dependent to locate in inland areas.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action alter any natural landforms or existing public views to and along the shoreline?	☐	☑
2. Does the proposed action involve the construction of a multi-story structure?	☐	☑
3. Is the project site located on or adjacent to an undeveloped parcel, including a beach or oceanfront land?	☑	☐
4. Does the proposed action involve the construction of a structure visible between the nearest coastal roadway and the shoreline?	☐	☑
5. Will the proposed action involve constructing or placing a structure in waters seaward of the shoreline?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

3. Is the project site located on or adjacent to an undeveloped parcel, including a beach or oceanfront land? The proposed perimeter fence line would be located within former agricultural fields in Central Oahu. It would augment the existing fence surrounding the topside infrastructure at Field Station Kunia to meet Anti-Terrorism Force Protection (ATFP) requirements. The proposed action would be visible from Kunia Road and, for a short stretch of road, would affect views of the Waianae Mountain Range. This view has been defined in the Central Oahu Sustainable Communities Plan as an important public view. However, the existing topside infrastructure and security fence already encumber this view from Kunia Road and the new perimeter security fence and appurtenances would not significantly increase this visual impact. The proposed action is located inland in Central Oahu and would not affect views of the coastline or ocean.

COASTAL ECOSYSTEMS

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

1) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources.
2) Improve the technical basis for natural resource management.
3) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance.
4) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land water uses, recognizing competing water needs.
5) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Does the proposed action involve dredge or fill activities?	☐	☑
2. Is the project site within the Special Management Area (SMA) or the Shoreline Setback Area?	☐	☑
3. Is the project site within the State Conservation District?	☐	☑
4. Will the proposed action involve some form of discharge or placement of material into a body of water or wetland?	☐	☑
5. Will the proposed action require earthwork, grading, clearing, or grubbing?	☑	☐
6. Will the proposed action include the construction of waste treatment facilities, such as injection wells, discharge pipes, or septic systems?	☐	☑
7. Is an intermittent or perennial stream located on or adjacent to the project parcel?	☐	☑
8. Does the project site provide habitat for endangered species of plants, birds, or mammals?	☑	☐
9. Is any such habitat located in close proximity to the project site?	☑	☐

COASTAL ECOSYSTEMS (continued)

	Yes	No
10. Is a wetland located on the project site or parcel?	☐	☑
11. Is the project site situated in or abutting a Natural Area Reserve, a Marine Life Conservation District, or an estuary?	☐	☑
12. Will the proposed action occur on or in close proximity to a reef or coral colonies?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

5. Will the proposed action require earthwork, grading, clearing, or grubbing?
During site preparation, surface vegetation in the fence line corridor would be cleared and grubbed (e.g. roots and stumps extracted). Ground disturbance during construction would include the excavation of post holes for the new security fence and gates, trenching for underground electrical and telecommunications cables, foundation work for the blast wall, and miscellaneous civil works (e.g., access roads and drainage). Best management practices for soil erosion and sedimentation control would be implemented in accordance with a project-specific drainage and erosion control plans which would comply with applicable National Pollution Discharge Elimination System requirements for construction-related activities.

8. Does the project site provide habitat for endangered species of plants, birds, or mammals?
The federally-listed, endangered Hawaiian Hoary Bat, Lasiurus cinereus semotus, is the only Endangered Species Act-listed species that may occur within the action area, or may be affected by the proposed action. USAG-HI consulted with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act and requested concurrence with their determination that the proposed fence may affect but not likely to adversely affect the bat (Encl. 3). The USFWS concurred with the USAG-HI determination (Encl. 4).

9. Is any such habitat located in close proximity to the project site?
See above answer to question #8.

ECONOMIC USES

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

1) Concentrate coastal development in appropriate areas.

2) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area.

3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
   a) Use of presently designated locations is not feasible;
   b) Adverse environmental effects are minimized; and
   c) The development is important to the State's economy.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Does the proposed action involve a harbor or port?	☐	☑
2. Is the proposed action a visitor industry facility or a visitor industry related activity?	☐	☑
3. Does the project site include agricultural lands or lands designated for such use?	☑	☐
4. Does the proposed action relate to commercial fishing or seafood production?	☐	☑
5. Is the proposed action related to energy production or transmission?	☐	☑
6. Is the proposed action related to seabed mining?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

3. Does the project site include agricultural lands or lands designated for such use?
Two existing fences enclose critical infrastructure At Field Station Kunia encompassing approximately 7.7 acres of the project area. These fences restrict public access and have been in existence since its initial construction, however, they do not meet current ATFP requirements. The proposed new security fence would encompass a total of approximately 21.8 acres. The additional 14.1 acres were under pineapple cultivation until the closure of the Del Monte Plantation in 2005. Since that time, the project area and the surrounding lands have remained fallow and are now densely covered by grasses and scrub vegetation. Based upon data compiled for the report entitled, "Oahu Important Agricultural Lands, Phase I Study" (April 2014), there are about 56,600 acres of usable farmland on Oahu (Encl. 5). The additional 14.1 acres enclosed within the new perimeter fence line represents a permanent loss of about 0.03% of usable farmlands on Oahu.

COASTAL HAZARDS

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies:

1) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards.
2) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards.
3) Ensure that developments comply with requirements of the Federal Flood Insurance Program.
4) Prevent coastal flooding from inland projects.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Is the project site on or abutting a sandy beach?	☐	☑
2. If "Yes" to question no. 1, has the project parcel or adjoining shoreline areas experienced erosion?	☐	☐
3. Is the project site within a potential tsunami inundation area? Refer to tsunami evacuation maps at http://www.scd.hawaii.gov	☐	☑
4. Is the project site within a flood hazard area according to a FEMA Flood Insurance Rate Map (https://msc.fema.gov)?	☐	☑
5. Is the project site within a subsidence hazard area?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

The proposed action is located inland in Central Oahu. It is not located near any beaches, shorelines, tsunami inundation areas, flood zones, or subsidence hazard zones.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

1) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development.
2) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements.
3) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. List the permits or approvals required for the proposed action and provide the status of each in the Discussion section below.		
2. Does the proposed action conform with state and county land use designations for the site?	☑	☐
3. Has the public been notified of the proposed action?	☐	☑
4. Has an environmental impact statement or environmental assessment been prepared for the proposed action?	☑	☐

Discussion: (If more space is needed, attach a separate sheet.)

1. List the permits or approvals required for the proposed action and provide the status of each.
FEDERAL
A. National Environmental Policy Act: EA in progress
B. Coastal Zone Management Act: Federal consistency review in progress
C. National Historic Preservation Act: Consultation concluded (SHPO concurrence)
D. Endangered Species Act: Consultation concluded (USFWS concurrence)
STATE
A. Department of Health National Pollutant Discharge Elimination System permit: (to be completed)

2. Does the proposed action conform with state and county land use designations for the site?
The proposed action is located within a State Agricultural District and the County identifies the project parcels as an Agricultural-2 zoning district (AG-2). The proposed action would restrict agricultural activity from the area within the proposed fence line. However, the proposed action is consistent with the Army's real estate interests defined by EO 1301.

3. and 4. Public notification/EA.
An environmental assessment (EA) is being prepared that will meet federal NEPA requirements. The public will be notified of the proposed action through the NEPA EA process. USAG-HI will solicit public review and comment on the EA. A notice of availability will be published in the Office of Environmental Quality Control's Environmental Notice and in the Honolulu Star Advertiser to notify the public.

PUBLIC PARTICIPATION

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

1) Promote public involvement in coastal zone management processes.
2) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities.
3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Has information about the proposed action been disseminated to the public?	☐	☑
2. Has the public been provided an opportunity to comment on the proposed action?	☐	☑
3. Has or will a public hearing or public informational meeting be held?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

The public has not yet been informed about the proposed action. However, an environmental assessment (EA) is being prepared that will meet federal NEPA requirements. The public will be notified of the proposed action through the NEPA EA process. USAG-HI will solicit public review and comment on the EA. A notice of availability will be published in the Office of Environmental Quality Control's Environmental Notice and in the Honolulu Star Advertiser to notify the public.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

1) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion.
2) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities.
3) Minimize the construction of public erosion-protection structures seaward of the shoreline.
4) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor.
5) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action occur on or adjacent to a beach?	☐	☑
2. Is the proposed action located within the shoreline setback area?	☐	☑
3. Will the proposed action affect natural shoreline processes?	☐	☑
4. Will the proposed action affect recreational activities?	☐	☑
5. Will the proposed action affect public access to and along the shoreline?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

The proposed action is located inland in Central Oahu. It would not affect natural shoreline processes or access to the shoreline and/or recreational activities.

MARINE RESOURCES

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

1) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial.

2) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency.

4) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone.

5) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources.

6) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Check either Yes or No for each of the following questions, and provide an explanation or information for Yes responses in the Discussion section:

	Yes	No
1. Will the proposed action involve the use or development of marine or coastal resources?	☐	☑
2. Will the proposed action affect the use or development of marine or coastal resources?	☐	☑
3. Does the proposed action involve research of ocean processes or resources?	☐	☑

Discussion: (If more space is needed, attach a separate sheet.)

The proposed action is located inland in Central Oahu. It would not involve the protection, use, development, or research of marine or coastal resources.

Proposed New Perimeter Security Fence and Appurtenances
Field Station Kunia, Oahu, Hawai'i
Federal Consistency Review

Project Description

1. Introduction

The United States Army Garrison-Hawaii (USAG-HI) proposes to construct a new perimeter security fence and appurtenances at Field Station Kunia (FSK), Oahu, Hawaii. The proposed action includes the construction and operation of a new perimeter security fence and appurtenances to provide required setbacks to infrastructure supporting FSK. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between neighboring water wells and the new fence line; and, the routing of electrical, and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The proposed facilities would be constructed in accordance with all applicable laws.

2. Location

FSK is located in Central Oahu approximately one mile south of the Lyman Gate at Schofield Barracks (Figure 1). FSK is bordered on the north by Schofield Barracks, to the east by Kunia Road, and to the south by agricultural fields.

The proposed new security fence and appurtenances would be constructed on three Tax Map Key (TMK) parcels and one State of Hawaii-owned right of way (Figure 2). The TMK parcels are owned by Island Palm Communities LLC (TMK 9-2-005-022), the State of Hawaii (TMK 9-4-012-003), and the Federal Government (TMK 9-4-012-006). The Island Palm Communities-owned lands are subject to federal property interests provided by easements 103 and 104. The State of Hawaii-owned lands are subject to federal property interests provided by Executive Order (EO) 1301. Easements 103 and 104, and EO 1301 provide the Federal Government with rights to the exclusive use of the subsurface of these parcels and the right to incidental use of the surface of the parcels to support their subsurface use.

Table 2 List of TMK Parcels, Ownership, and Federal Property Interest

TMK Parcel	TMK Acres	Ownership	Existing Use	Federal Property Interest	Federal Property Interest Acres
9-2-005-022	2,405.0	Island Palm Communities LLC	Agriculture	Easement 103 and 104	Easement 103: 9.5 Easement 104: 1.1
9-4-012-003	78.3	State of Hawaii	Topside infrastructure, access roads, and vacant land	EO 1301, subject portion of parcel is identified as Tract WFE 4.	44.7
Right of way	n/a	State of Hawaii	Access Road	EO 1301, subject portion of right of way is identified as Tract WFE 5.	1.5
9-4-012-006	2.3	Federal Government	Topside Infrastructure	Owned by Federal Government	2.3
Total	2,485.6				59.1

3. Proposed Action

The proposed action includes the construction and operation of a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting FSK. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between neighboring water wells and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The proposed facilities would be constructed in accordance with all applicable laws.

3.1 Perimeter Security Fence

The proposed perimeter security fence would encircle the topside infrastructure at FSK. The proposed fence line would enclose an area of approximately 21.8 acres (Figure 3). The proposed security fence has been designed to meet the minimum safety buffers required by ATFP standards. Therefore, it represents the smallest feasible project footprint that would still meet the purpose and need for the proposed action. The fence would also be required to meet ATFP standards for structural integrity including the Department of Defense's K12 ram barrier protection specifications. A sample schematic design of a K12 rated fence is provided in Figure 4. The new security fence would be eight feet tall affixed with an outrigger holding three strands of barbed wire. The total length of the fence would be approximately 4,400 feet or 0.83 miles. One blast wall would be constructed to isolate FSK from adjacent private water wells along the northern edge of the site (to meet ATFP requirements). The blast wall is expected to be approximately 10 feet high, but the final dimensions would not be determined until the project design phase.

Security lighting and intrusion detection devices would be located along and within the proposed new perimeter fence. All lighting would be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on protected species. To support the lighting and intrusion detection devices, electrical and telecommunications lines would be routed along and within the proposed security fence.

3.2 Site Access

Access to the site would be provided by an existing access road. The access road is located on a State of Hawaii-owned right of way, and the adjacent Island Palm Communities-owned parcel (TMK 9-2-005-022). The Army would require a rights of entry for construction purposes, and a permanent easements for access associated with maintenance and operations. The access road would connect from the south edge of the proposed fence line to an existing intersection with Kunia Road approximately 900 feet to the south southeast. Perimeter access roads would be constructed along the interior and the exterior of the new security fence to provide vehicular access for security patrols. The new site access roads would be approximately 10 feet wide and would be constructed to the same standards as the existing unpaved dirt access roads in the project area.

Due to ATFP setback requirements, the proposed fence line would close off the existing access road for the Schofield Barracks South Range, Schofield Generation Station, and the Kunia Water Association (KWA) water well #3 along the northern edge of the proposed fence line (Figure 3). In order to provide

continuous access to these sites, an access road bypass would be constructed along the western edge of the proposed fence line prior to the construction of the fence line. This bypass road would be located adjacent to the fences' exterior access roadway. It would be approximately 30 feet wide and would be constructed to the same standards as the existing dirt access road.

Two vehicular access gates would be provided in the proposed fence. One gate would be located where the proposed access road would pass through the fence line. The second access gate would be located at the north end of the site where the proposed fence line meets an existing FSK fence line.

3.3 Site Preparation and Construction Activities

During site preparation, surface vegetation in the fence line corridor would be cleared and grubbed (e.g. roots and stumps extracted). Ground disturbance during construction would include the excavation of post holes for the new security fence and gates, trenching for underground electrical and telecommunications cables, foundation work for the blast wall, and miscellaneous civil works (e.g., access roads and drainage). Best management practices (BMP) for soil erosion and sedimentation control would be implemented in accordance with a project-specific drainage and erosion control plans which would comply with applicable NPDES requirements for construction-related activities.

During construction, materials would be transported to the project sites by truck, where they would be stored, assembled (as necessary), and moved into place. Temporary construction laydown areas for materials, equipment, and parking would be provided at the project site or on adjacent Army property. Prior to construction, site boundaries or limits of disturbance would be surveyed and staked to identify areas where construction activities would occur. Dust barriers would be erected around active construction areas to minimize the effects of fugitive dust on adjacent land uses in the area.

4. LIST OF FIGURES

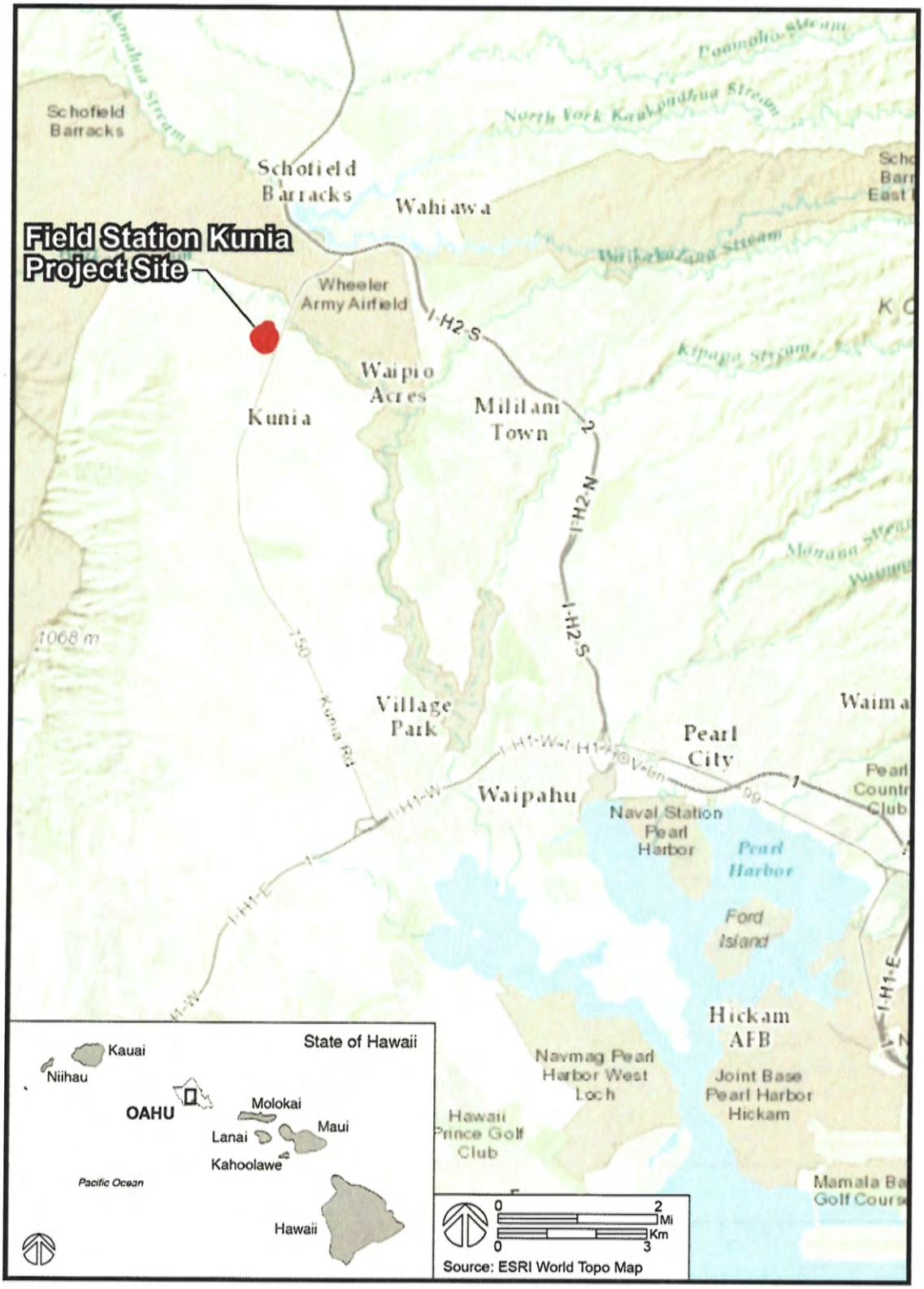

Figure 1 Project Location Map

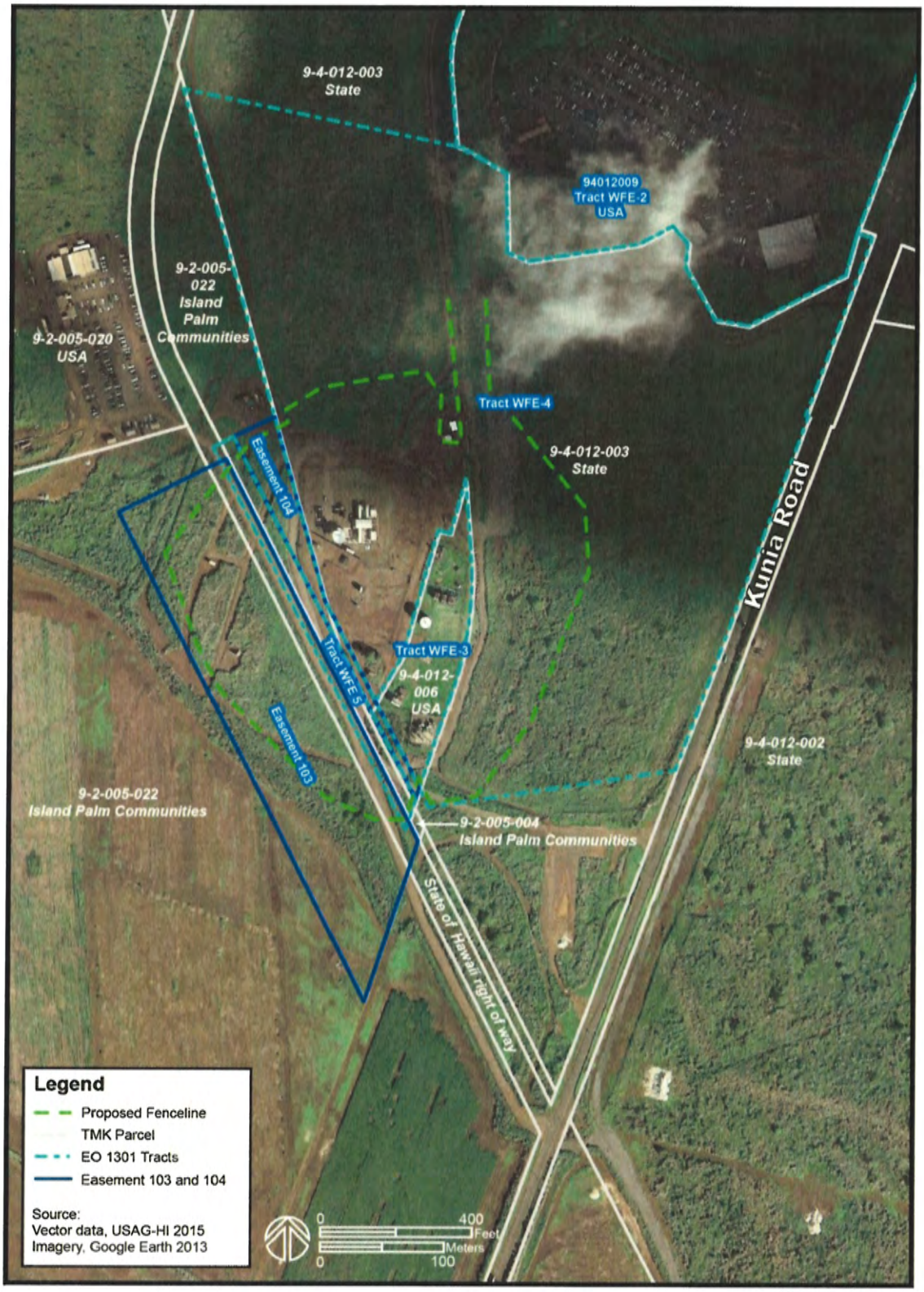

Figure 2 TMK Parcels and Easements Map

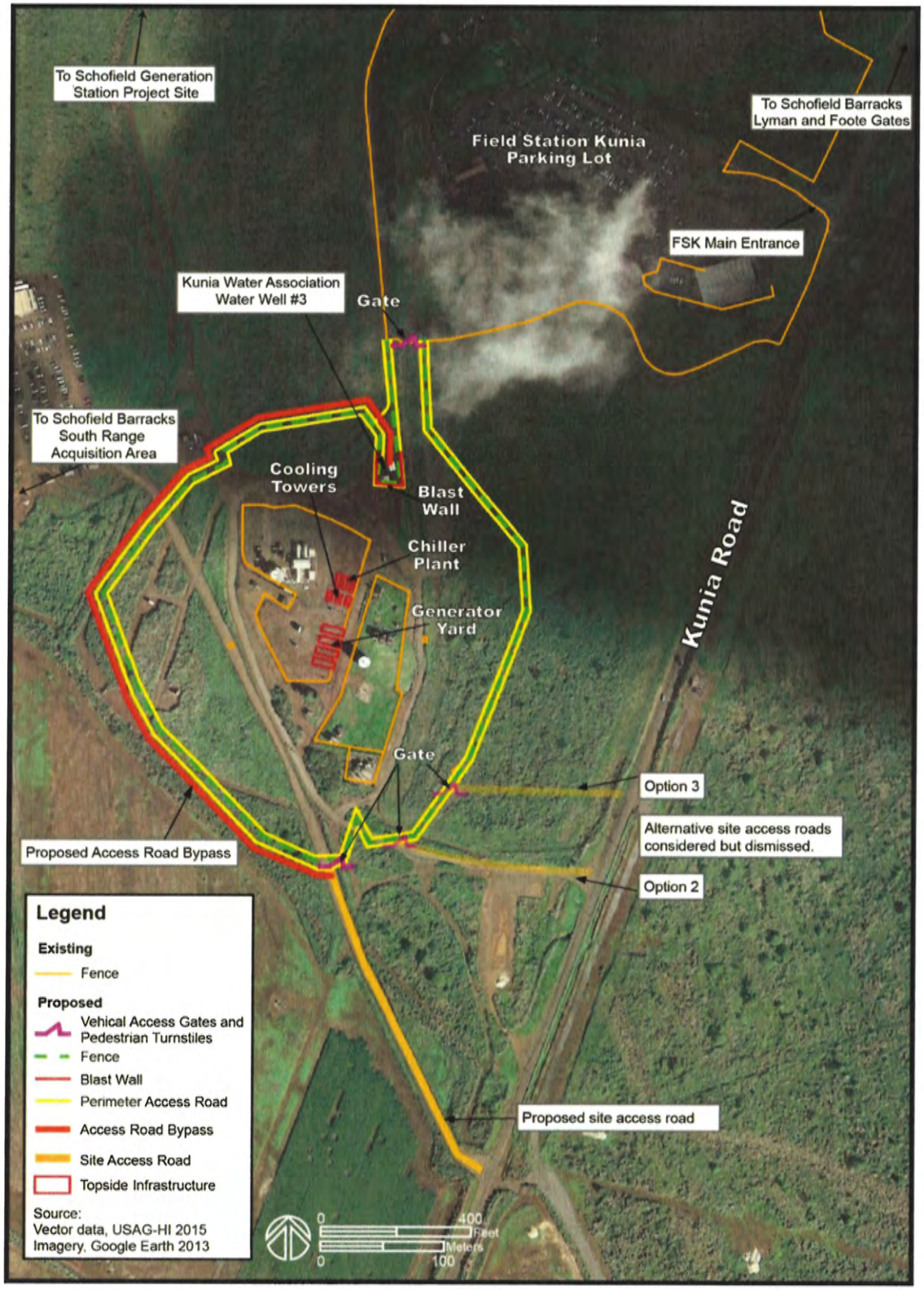

Figure 3 Project Site Map

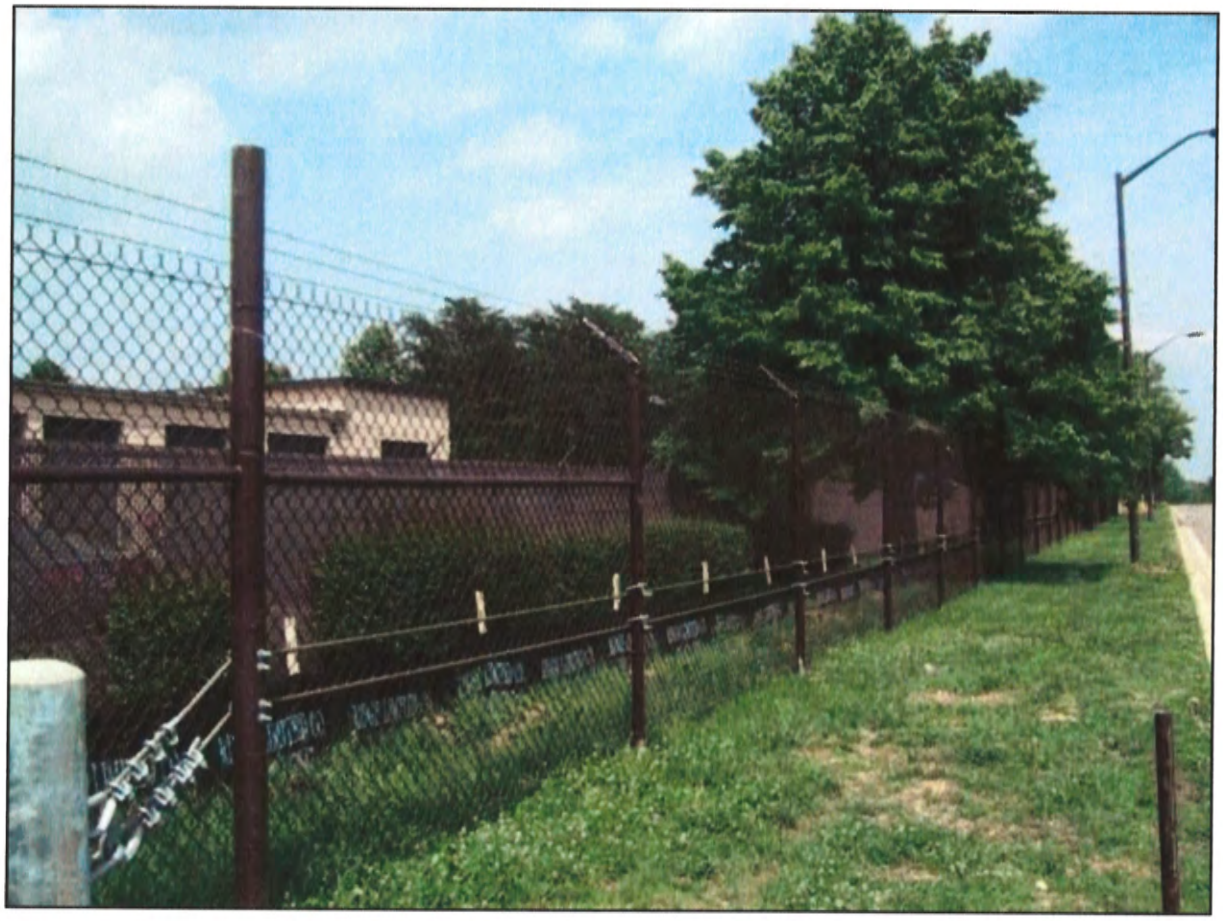

Figure 4 Typical Security Fence

Attachment 3 - Enclosure 1

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII
DIRECTORATE OF PUBLIC WORKS
947 WRIGHT AVENUE, WHEELER ARMY AIRFIELD
SCHOFIELD BARRACKS, HAWAII 96857-5013

REPLY TO
ATTENTION OF:

FEB 2 4 2017

Office of the Director of Public Works

SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua'a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua'a [TMK (1) 9-4-012:003 & 006], 'Ewa Moku, O'ahu. Archaeology Review.

Dr. Alan Downer
Deputy State Historic Preservation Officer
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamōkila Boulevard
Kapolei, Hawaii 96707

Dear Dr. Downer:

I am writing to consult with you on behalf of the U.S. Army Garrison, Hawaii (USAG-HI) in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. §306108) about a proposed project to install infrastructure around existing facilities above the tunnel at U.S. Army Field Station Kunia (FSK). This project encompasses 29.01 acres of land, including 17.34 acres owned by the State of Hawaii and 11.67 acres owned by the U.S. Army. The project will be funded by the U.S. Army and is a federal undertaking as defined by 36 CFR Part 800, the implementing regulations of Section 106.

The entire 29.1 acres of the area of potential effect (APE) was recently surveyed for historic properties by International Archaeology LLC. No historic properties or other cultural resources were identified. The ground surface of the APE has been significantly altered by intensive commercial agriculture from the late 19th through early 21st centuries, and by military construction of the FSK tunnel between 1942 and 1944.

Enclosure 1 provides the information required by 36 CFR 800.11(d) including descriptions of the undertaking, the APE, and the efforts made to identify historic properties. Also enclosed is the recent report of cultural resources inventory survey conducted within the APE by International Archaeology LLC. A digital copy of this report is included on a compact disc for your convenience.

Based on the information presented in Enclosure 1 and the recent survey, USAG-HI finds that there are no historic properties present in the APE and the proposed undertaking will result in no historic properties affected.

We are expediting consultation in accordance with 36 CFR §800.3(g) and are providing you with notification of the USAG-HI finding of effect per 36 CFR Part 800.4(d)(1). We respectfully request that you review the enclosed documentation and respond within 30 days if you have any comments, concerns, or questions about this undertaking or the finding of effect. The distribution list for this notification is presented in Enclosure 2.

If you have any comments, questions, or concerns, please contact Mr. Richard Davis, USAG-HI Cultural Resources Manager, Directorate of Public Works, or Mr. David Crowley, USAG-HI Archaeologist, Directorate of Public Works. You may reach them at (808) 655-9709 and (808) 655-9707 or richard.d.davis154.civ@mail.mil and david.m.crowley22.civ@mail.mil respectively.

Sincerely,

Rhonda S Suzuki

for Kent K. Watase, PE
Director of Public Works

Enclosures

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua'a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua'a [TMK (1) 9-4-012:003 & 006], 'Ewa Moku, O'ahu. Archaeology Review.

Description of the Undertaking

The undertaking is a proposal by the U.S. Army to increase security around the existing topside facilities above the Field Station Kunia (FSK) tunnel. The Army proposes to install a perimeter security fence and patrol pathways around the existing topside facilities, construct an access road from Kunia Road to the perimeter fence, and construct an access road around the south and west side of the fence to the existing Kunia Water Association well.

The project is located on the western side of the central plateau of O'ahu in the southeast corner of Schofield Barracks South Range, west of Wheeler Army Airfield and north of Kunia (figure 1). The location is situated on a flat ridge between Wai'eli Stream, about 400 meters to the northeast, and Manuwaiahu Gulch, about 400 meters to the southwest.

The Area of Potential Effect (APE) for the proposed project is a 29-acre area surrounding the existing topside facilities (figure 2). The APE encompasses the footprint of the proposed perimeter fence, patrol pathways, and access road, plus a 100' buffer on both sides of the project component centerlines to account for construction traffic and activities. The APE includes multiple potential routes for the access road to the facilities, but only one route will be selected for construction.

The APE comprises 11.67 acres of federal land and 17.336 acres of state land. The APE is within and adjacent to Schofield Barracks South Range. The proposed project is located about 200 meters south of the FSK surface installation boundaries, directly above the tunnel facility, which is estimated to be 30'-100' below the ground surface. The land encompassed by the APE is a fallow pineapple field that is now overgrown with Guinea grass.

Steps Taken to Identify Historic Properties

International Archaeology LLC conducted a cultural resources inventory survey to identify and document all potential historic properties in the project APE (Filimoehala and Morrison 2017). The enclosed report provides the results of the survey and also presents the background history, a consideration of the environmental setting, and a summary of previous work in the area. No sites, buildings, structures, objects, or districts were identified in the APE during the survey, and no artifacts, features, or other cultural resources were found. The landscape and ground surface of the APE has been heavily modified by large-scale commercial agricultural and there is no physical evidence of traditional or historic-period activities that may have occurred in the area.

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua'a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua'a [TMK (1) 9-4-012:003 & 006], 'Ewa Moku, O'ahu. Archaeology Review.

Schofield Barracks South Range (including a half of the current APE) was previously surveyed by Garcia and Associates in 2004 (Roberts et al. 2004) and by Cultural Surveys Hawaii, Inc. in 2009 (Tulchin & Hammatt 2013). The Army previously consulted with Native Hawaiian Organizations and the State Historic Preservation Division in 2010 on the results of South Range surveys. No historic properties, cultural resources, or related concerns were identified within the current APE during those surveys and the subsequent consultation efforts.

As previously described, the APE is located above the FSK tunnel facility. The tunnel was constructed between 1942 and 1944 and may be a historic property. However, the tunnel is located at least 30' below the surface, outside of the APE, and it was not documented or evaluated for this project. Much of the sediment above the tunnel consists of construction fill and the existing topside infrastructure is modern. There are no historic-period architectural resources within the APE.

Basis for Determination

No historic properties are present in the APE. Accordingly, the proposed undertaking will result in no historic properties affected.

References

Filimoehala, Christopher W. and Alex E. Morrison.
2017 *Cultural Resources Inventory Survey, Topside Infrastructure Replacement at the Field Station Kunia, Kunia, O'ahu, Hawai'i.* International Archaeology, LLC. Prepared Under Contract to Helber Hastert and Fee for U.S. Army Corps of Engineers, Honolulu.

Roberts, Alice K.S., Stephen Roberts, Michael Desilets, Amy Buffum, Jennifer Robbins
2004 Archaeological Reconnaissance Survey of U.S. Army Schofield Barracks Military Reservation South Range Land Purchase, O'ahu Island, Hawai'i. Garcia and Associates. Prepared for U.S. Army Corps of Engineers, Honolulu. Contract Number DACA83-01-D-0013, Task Order No. 0011.

Tulchin, Jon and Hallett H. Hammatt
2013 *Archaeological Inventory Survey for the Grow the Army Project in Schofield Barracks, Honouliuli Ahupua'a, 'Ewa District, Island of O'ahu, Hawai'i.* Cultural Surveys Hawai'i. Prepared for U.S. Army Corps of Engineers, Honolulu. Contract Number W9128A-08D-009, Task Order No. 0004.

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua'a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua'a [TMK (1) 9-4-012:003 & 006], 'Ewa Moku, O'ahu. Archaeology Review.

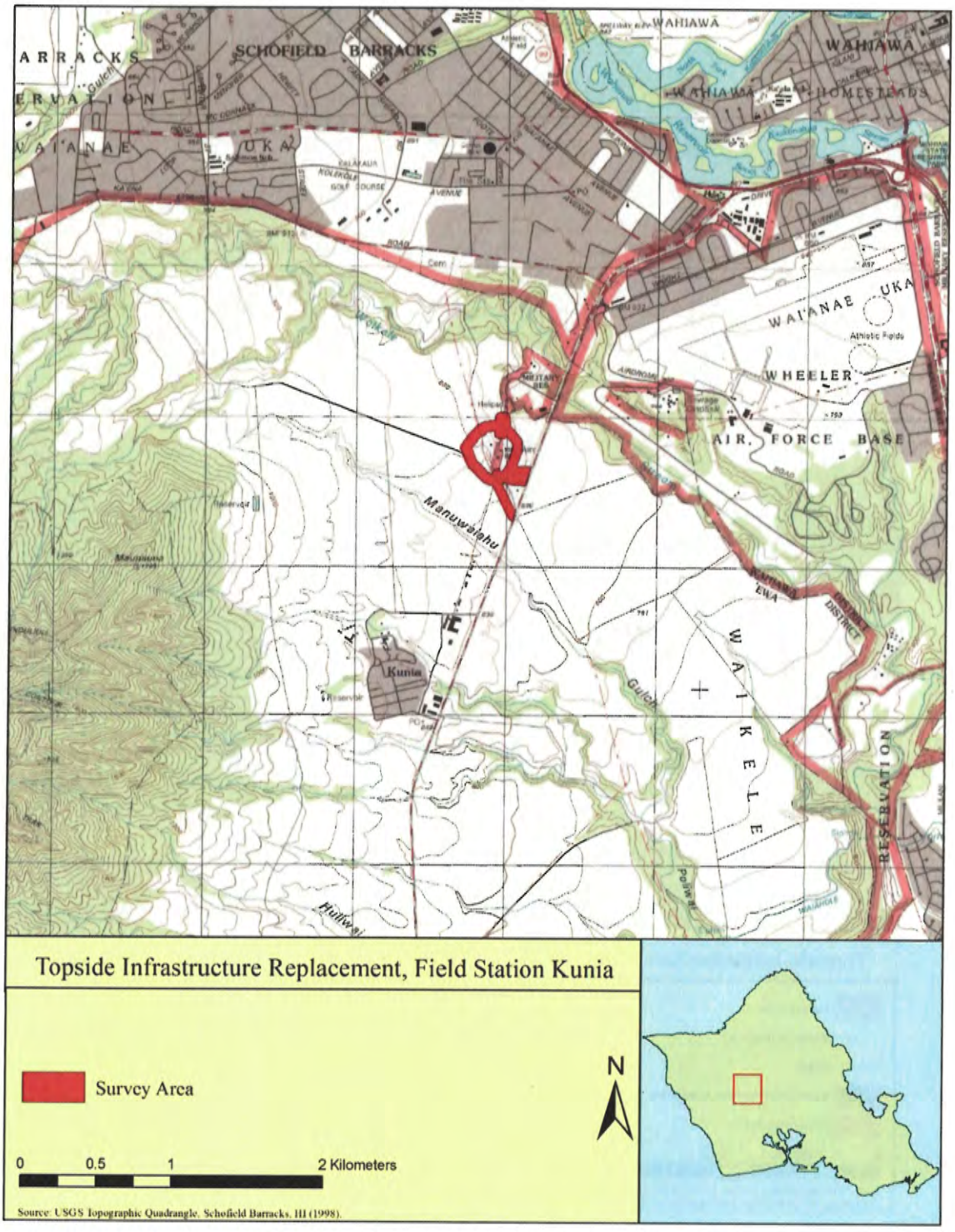

Figure 1 - USGS Topographic Map of the APE, labeled "survey area"

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua'a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua'a [TMK (1) 9-4-012:003 & 006], 'Ewa Moku, O'ahu. Archaeology Review.

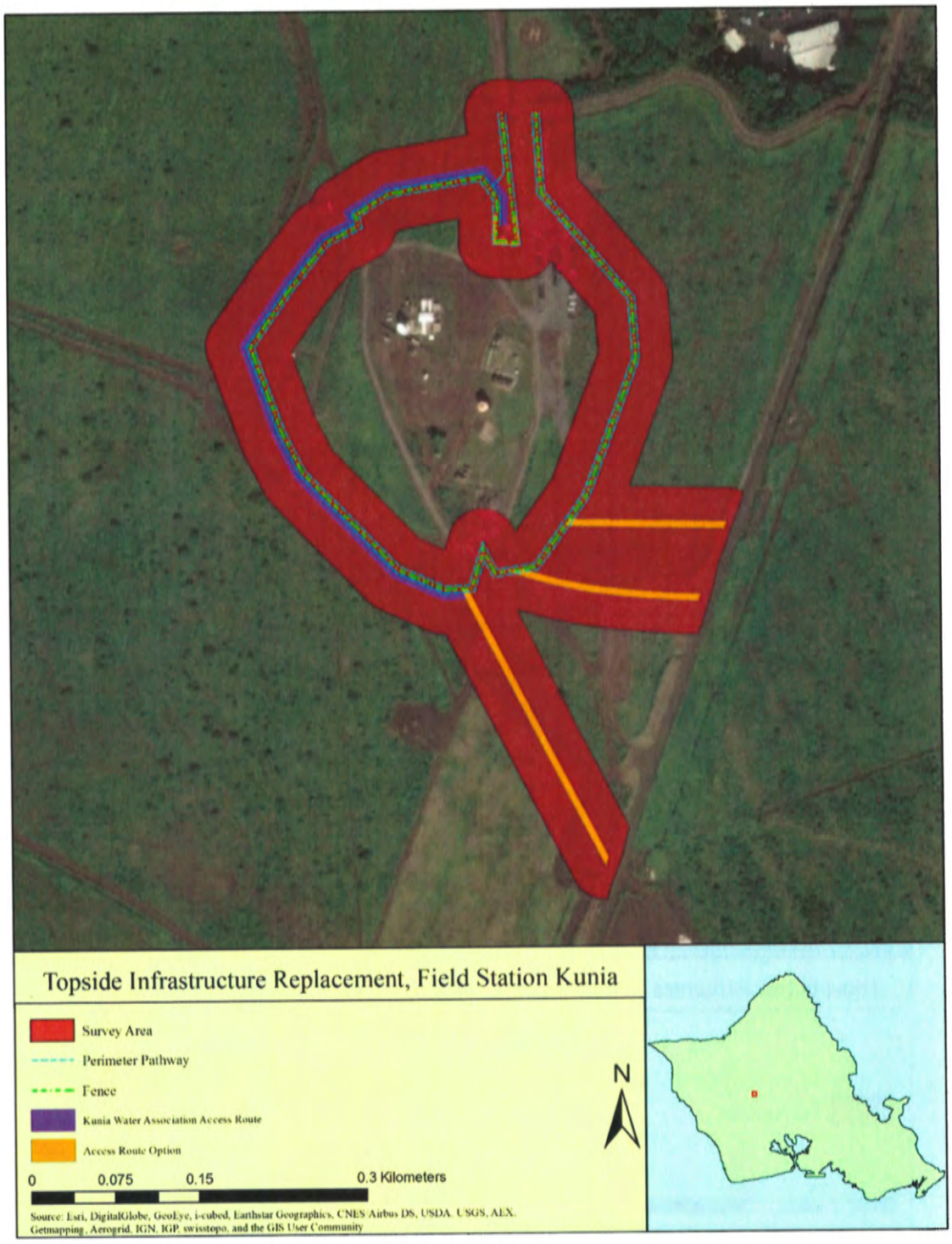

Figure 2 - Orthophoto of the APE, labeled as "survey area"

Enclosure 2
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-17-012: Warning Sign Installation at Makua Military Reservation, Mākua Ahupua'a, Wai'anae District, O'ahu [TMK: (1) 8-1-001:24]
Archaeology Review

Distribution List

State Agency

Dr. Alan Downer
Deputy State Historic Preservation Officer
State Historic Preservation Division
Department of Land and Natural Resources

Native Hawaiian Organizations

Mr. William J. Aila, Jr. & Mrs. Melva N. Aila
Hui Malama O Makua

Ms. Annelle Amaral
President, Association of Hawaiian Civic Clubs

Mr. Norman Mana Kaleilani Cáceres
'Ohana Huihui

Mr. Fred Cachola,
Royal Order of Kamehameha I

Dr. Kamana'opono Crabbe
Office of Hawaiian Affairs

Mr. Charles Ehrhorn
Oahu Island Burial Council

Dr. Ha'aheo Guanson
Native Hawaiian Church
Pacific Justice and Reconciliation Center

Mr. Henry Kila Hopfe
Ko'a Mana
Kupuka'āina O Wai'anae Moku, O'ahu

Mrs. Terrilee Keko'olani & Mr. Kyle Kajihiro
Hawai'i Peace and Justice

Mr. Tom Lenchanko
Kahuakai Ola Ko Laila Waha Olelo 'Aha Kūkaniloko
Ko'a Mana Mea Ola Kanaka Mauli

Mrs. Kaleo Paik
President, Hoi Mai Ka Lei I Mamo Aha Wahine

Mr. Melvin K. Soong
The I'Mua Group

Mr. Harry Wasson
Hui Malama Aina 'O Laie – Mahi'ai, Ki'ai

Interested Parties

Ms. Kiersten Faulkner
Historic Hawaii Foundation

Ms. Kēhaulani Souza

Mrs. Leimaile Quitevis

Attachment 3 - Enclosure 2

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
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

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

May 8, 2017

IN REPLY REFER TO:
Log No. 2017.00340
Doc. No. 1705SL17
Archaeology

Kent K. Watase, P.E., Director of Public Works
Department of the Army
Headquarters, U.S. Army Garrison, Hawaii
Directorate of Public Works
947 Wright Avenue, Wheeler Army Airfield
Schofield Barracks, HI 96857-5013

Dear Mr. Watase:

SUBJECT: **National Historic Preservation Act (NHPA) Section 106 Review —**
Request for Concurrence with "No Historic Properties Affected" Determination
Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Project # CRS-15-007
Honouliuli and Waikele Ahupua'a, 'Ewa District, O'ahu
TMK: (1) 9-2-005:004, 022; (1) 9-4-012:003, 006

Thank you for the opportunity to comment on this request from the U.S. Army Garrison, Hawaii (USAG-HI) for the State Historic Preservation Officer's (SHPO) concurrence on the USAG-HI's determination of no historic properties affected for the proposed project to install infrastructure around existing facilities above the tunnel at US Army Field Station Kunia (FSK). The USAG-HI has determined that this project is an undertaking as defined in 36 CFR 800.16(y). The State Historic Preservation Division received this submittal on February 27, 2017.

The proposed project encompasses 29.01 acres of land, including 17.34 acres owned by the State of Hawaii and 11.67 acres owned by the US Army. The entire 29.1 acres comprising the area of potential effect (APE) was recently surveyed International Archaeology, LLC (Filimoehala and Morrison, January 2017). No historic properties were identified. The APE has been significantly altered by intensive commercial agriculture since the late 19th century and by military construction of the FSK tunnel between 1942 and 1944.

Based on the information provided, the SHPO concurs with the USAG-HI's determination of no historic properties affected pursuant to 36 CFR 800. No historic properties have been identified within the APE.

Please maintain a copy of this letter with your environmental review record for this undertaking. Please contact Susan Lebo, Archaeology Branch Chief, at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov for any questions regarding this letter.

Aloha,

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc. Richard Davis, USAG-HI, richard.d.davis154.civ@mail.mil
David Crowley, USAG-HI, david.m.crowley22.civ@mail.mil

DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND, PACIFIC REGION
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII
745 WRIGHT AVENUE, BUILDING 107, WHEELER ARMY AIRFIELD
SCHOFIELD BARRACKS, HAWAII 96857-5000

REPLY TO
ATTENTION OF

SEP 2 3 2016

Office of the Garrison Commander

Ms. Mary Abrams
Field Supervisor
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Dear Ms. Abrams:

This letter amends the project description stated in our earlier letter initiating informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) of 1973 (16 U.S.C 1531 *et. seq.*), as amended, for the proposed construction and operation of a new perimeter security fence and appurtenances at Field Station Kunia (FSK), Oahu, Hawaii, dated December 1, 2015. Based on this amended description and the accompanying Biological Evaluation (BE) included as an enclosure to this letter, we renew our request for your agency's concurrence with our determination that the proposed project may affect, but not likely to adversely affect the endangered Hawaiian Hoary Bat.

The original description of the proposed project included the construction and operation of a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting FSK. The fence was described as being eight feet tall affixed with a Y-outrigger holding six strands of barbed wire. The total length of the fence would be 4,400 ft. or 0.83 mile long and enclose an area of ~22 acres. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between a neighboring water well and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. All lighting would be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on migratory birds. In addition, the security fence around FSK would be patrolled at least daily and monitored for wildlife impacts.

Based on this original project description, your staff responded that the fence configuration would adversely affect the Hawaiian Hoary Bat due to potential entanglement with the six strands of barbed wire. As a result of further consultation

with your staff, as chronicled in the BE, we will change the description of the fencing material from an eight-foot fence with a Y-outrigger and six strands of barbed wire to an eight-foot fence fabric with a single outrigger with three strands of barbed wire for a total height of nine feet as a minimization measure. All other project descriptors will remain the same.

The Army has therefore determined with this minimization measure and the further evaluation of affects to the species as described in the BE, effects to the Hawaiian Hoary Bat are discountable in regards to the construction and operation of the new perimeter security fence and appurtenances proposed at FSK. We request concurrence with our determination that the proposed project may affect but not likely to adversely affect the Hawaiian Hoary Bat.

If you have any questions or would like to meet to further discuss this project, please call Ms. Kapua Kawelo, Natural Resource Manager, Directorate of Public Works Environmental Division at (808) 655-9189 or email: hilary.k.kawelo.civ@mail.mil.

Sincerely,

Stephen E. Dawson
Colonel, U.S. Army
Commanding

Enclosure

ENCLOSURE

BIOLOGICAL EVALUATION
for the
PROPOSED NEW PERIMETER SECURITY FENCE
FIELD STATION KUNIA, OAHU, HAWAII
U.S. ARMY GARRISON, HAWAII

Prepared for:
Headquarters, U.S. Army Garrison, Hawaii
745 Wright Avenue, Building 107, Wheeler Army Airfield
Schofield Barracks, Hawaii 96857-5000

Prepared by:
Kapua Kawelo, Natural Resource Manager
U.S. Army Garrison, Hawaii
&
Lucas Cooksey, Wildlife Biologist
U.S. Army Environmental Command

10 August 2016

1.0 BACKGROUND/HISTORY

The purpose of this Biological Evaluation (BE) is to address the effects of a proposed project at Field Station Kunia (FSK), Oahu, Hawaii in relation to Endangered Species Act (ESA) listed species. The United States Army Garrison, Hawaii (USAG-HI) is consulting on behalf of a Department of Defense tenant proposing to construct a new perimeter security fence and appurtenances to FSK. The proposed project is required to meet current Anti-Terrorism and Force Protection (ATFP) requirements for national security. FSK is located approximately 0.5 mile south of Schofield Barracks on the island of Oahu, Hawaii (Attachment 1). This project has the potential to impact the federally listed endangered Hawaiian Hoary Bat (HHB), *Lasiurus cinereus semotus.*

This BE, prepared by USAG-HI, addresses the effects of the proposed action in accordance with Section 7(a)(2) of the ESA to assure that, through consultation with the U.S. Fish & Wildlife Service (Service), federal actions do not jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of critical habitat.

The USAG-HI and the Service have been in informal consultation via letters, email and phone conversations regarding the proposed project since July 2015. A consultation history is included below for reference.

- July 8, 2015. USAG-HI sent a letter to the Service seeking concurrence with the Army's may affect, not likely to adversely affect (NLAA) determination for security fence construction and replacement at FSK. Both the old and new fences have an outrigger affixed atop the fence holding three strands of barbed wire.
- July 24, 2015. Leila Gibson, Service Biologist, email correspondence to Michelle Mansker, USAG-HI Natural Resource Manager (NRM) asking for clarification regarding the total length of new and replacement fencing being proposed at FSK and the lifetime of the project. She also asks if USAG-HI used the Service formula for calculating HHB take from barbed wire fencing.
- July 24, 2015. Michelle Mansker responds to Service email saying she will try to clarify these items, and requests the Service email the formula for calculating HHB take.
- July 24, 2015. Leila Gibson emails the formula to Michelle Mansker.
- August 3, 2015. Leila Gibson requests via email any personal communications regarding bats and barbed wire.
- August 21, 2015. USAG-HI receives a response letter from the Service concurring with the Army's NLAA determination for 0.10 miles of temporary fence construction at FSK.
- December 1, 2015. USAG-HI sent a letter to the Service seeking concurrence on an NLAA determination for the HHB resulting from proposed new perimeter security fence and appurtenances at FSK. The proposed fence proposed would be 0.83 mile long, 8 feet tall with a Y-outrigger holding six strands of barbed wire.

- December 2015. Leila Gibson called to confirm that FSK could not reduce or eliminate barbed wire strands from the project description. Kapua Kawelo, USAG-HI NRM, stated that this change was not likely.
- January 4, 2016. Leila Gibson emailed requesting confirmation on the life of the fence.
- January 6, 2016. Kapua Kawelo responded that the fence is expected to last 20 years.
- January 8, 2016. USAG-HI received a letter from the Service which non-concurred with the Army's NLAA determination for the HHB. Based on the application of the Service formula to estimate bat take from barbed wire fences, the Service determined there will be take associated with the FSK fence. The Service concluded that the action requires formal Section 7 consultation.
- February 2016. Phone call from Kapua Kawelo to Leila Gibson notifying her that USAG-HI is likely to include the FSK fence into the formal ESA programmatic consultation for Oahu USAG-HI activities.
- April 2016. Emails between USAG-HI and Service regarding scheduling a meeting on the FSK fence project and bat take formula assumptions. Notification that the timing of the FSK project does not match the Programmatic BA timeline and that the USAG-HI would like to meet to discuss options to reduce HHB take.
- May 23, 2016. USAG-HI and the Service meet to discuss the FSK fence and bat take formula. Discussed USAG-HI's desire to adjust the bat take formula for barbed wire fence. USAG-HI conveyed that the formula is based on old take information from Maui and that Oahu is known to have lower bat detection rates than the Maui location where bat take along fences was determined. Also, USAG-HI asked for recognition of the risk difference between 3-stranded barbed wire in a pasture situation versus chain link security fence with barbed wire affixed to the top. An agreement was not reached at this time to adjust the formula for Oahu situations. The Service suggested possible bat deterrent devices such as metal tags affixed to barbed wire and privacy slats. Service committed to query users to determine success of such deterrents and provide that information to USAG-HI.
- May 26, 2016. Kapua Kawelo email correspondence to the Service on possible deterrent devices and requested updates on the status of the metal tag deterrents applied at the Pelekane Watershed project site on the island of Hawaii.
- June 21, 2016. Kapua Kawelo email correspondence to the Service requesting suggestions for possible minimization measures for bat take on barbed wire.
- June 30, 2016. Kapua Kawelo email correspondence to the Service requesting information regarding deterrents.
- July 12, 2016. Kapua Kawelo email correspondence to the Service requesting information regarding deterrents.
- July 12, 2016. Service email correspondence to USAG-HI confirming that USAG-HI is pursuing a consultation for the FSK fence separate from the Programmatic BA. Also confirmed that there are no known deterrents that can be applied to reduce HHB take on barbed wire fencing at this time.
- July 20, 2016. USAG-HI email correspondence to the Service requesting confirmation that reducing the number of strands of barbed wire affixed to the FSK

fence from six to three would reduce the probability of take below the 1 bat per 20 year threshold where consultation can be conducted informally.

- July 21, 2016. Service email correspondence to USAG-HI that the application of the Service's formula to a three-stranded barbed wire fence reduces bat take to less than one bat over the 20 year life of the fence, and informal consultation would be appropriate. The Service also requested that USAG-HI send a letter documenting the project description change.

2.0 DESCRIPTION OF THE ACTION & ACTION AREA

The proposed action to the FSK facility includes the construction and operation of a proposed new perimeter security fence and appurtenances to provide required ATFP setbacks to infrastructure supporting FSK. The new security fence would consist of eight foot tall chain link fence fabric with a one foot outrigger affixed atop the fence holding three strands of barbed wire. The total fence height including the barbed wire would be nine feet. The number of strands of barbed wire has been reduced from the previously proposed six to three. The fence line would enclose an area of ~22 acres, which is shown in Attachment 2. The total length of the planned fence will be 4,400 ft. or 0.83 miles. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between a neighboring water well and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. New security lighting and intrusion detection devices would also be installed. All lighting will be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts to migratory birds. To support lighting and intrusion detection devices, electrical and telecommunications lines would be installed.

The action area includes everything within the proposed FSK perimeter fence (Attachment 2) and an additional 25' buffer to include the construction and maintenance of a service road immediately outside the fence. The only effect is the potential direct effect to the HHB from accidental entanglement with barbed wire associated with the security fence. HHB have been accidentally killed when they fly into barbs along the wire strand, get entangled somewhere on their body, and are unable to free themselves. No other direct, indirect, interrelated, or interdependent effects were identified for any other federally listed species.

3.0 LISTED SPECIES & CRITICAL HABITAT IN THE ACTION AREA

The federally-listed, endangered Hawaiian Hoary Bat, *Lasiurus cinereus semotus* is the only ESA-listed species that may occur within the action area, or may be affected by the proposed action. The HHB is medium-sized (0.5 to 0.8 ounces), 14 to 22 grams), with a wingspan of 10.5 to 13.5 in (27 to 35 cm), and is nocturnal, insectivorous with thick, rounded ears and a furry tail. "Hoary" refers to the white-tinged, frosty appearance of the bat's grayish brown or

reddish brown fur. Although females are slightly larger than males, forearm lengths are similar in both genders. These bats are not colonial, and roost solitarily in tree foliage. The HHB is endemic to the State of Hawaii where it is the only existing, native terrestrial mammal. It has been documented historically on the islands of Hawaii, Maui, Molokai, Oahu, Kauai, and possibly Kahoolawe. There are no population estimates for the HHB and few historical or current records. Data are limited because no feasible method currently exists for surveying the abundance and distribution of solitary, tree-roosting bats. HHB have been observed year round in a wide variety of habitats and elevations below 7,500 ft (2,286 m), and a few sightings from limited surveys have been reported as high as 13,199 ft (4,023 m). For more information on the HHB and its life history, reference the Service website: http://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A03W

Ongoing research by Corinna Pinzari (USGS), stated that every Oahu acoustic study that they have conducted, have individual site detection rates that are much lower than those from the islands of Hawaii, Maui, and Kauai (pers. comm. C. Pinzari, July 2016). This suggests current density of HHB within the action area for this project is very low based on more detailed research observations across the island of Oahu on Army property as depicted in Attachment 3.

There are no other federally endangered species or designated critical habitat identified within the project footprint which includes the entire action area

4.0 ENVIRONMENTAL BASELINE CONDITIONS

Threats throughout the range and within the action area to the HHB are assumed to be the same as those that threaten many bat species in general (Harvey et al. 1999, p. 13; Service 1998, p. 15). Bats have the slowest reproductive rate and the longest life-span of all mammals of their size (Barclay and Harder 2003, pp. 209-256). Thus, any mortality of breeding-age adults, particularly females, constrains the recovery of the subspecies. The main factor limiting recovery is thought to be habitat loss, primarily the availability of roosting sites as suitable roosting habitat is particularly important to pregnant and lactating females and non-volant young. Other possible threats identified in the recovery plan may include: roost disturbance, predation by native hawks and nonnative feral cats, pesticide use (either directly or by impacting prey species), and alteration of prey availability due to introduction of nonnative insects. In addition, occasional instances of HHB mortality due to collisions with vehicles and structures have been documented (Kepler and Scott 1990, p. 60; Kuhn 2009; Menard 2001, p. 136; Tomich 1986, pp. I 1-30).

5.0 EFFECTS OF THE ACTION

As shown in Attachment 4, the project area is completely surrounded by fallow fields with no vegetation greater than 15 feet tall, therefore the HHBs do not use the action or immediate area for roosting. However, HHBs may use the area for foraging because potential roost trees (trees over 15 feet tall) do exist within 150 meters of the action area boundary. HHBs have been detected in areas near FSK, with very low detection rates compared to those observed

on other Hawaiian Islands. A map of detection probability on USAG-HI property, based on surveys completed between 2014 and 2016 on by US Geological Survey (USGS) is provided as Attachment 3 (unpublished data 2016). Bat detection probability at locations nearest FSK range from 0.0000 to 0.0311. These detection rates are very low as compared to other islands which have been surveyed utilizing the same methodology. USGS stated that every Oahu acoustic study so far that they have conducted, have individual site detection rates that are much lower than those from the islands of Hawaii, Maui, and Kauai (pers. comm. C. Pinzari, July 2016). By comparison a Maui study found that detection probability ranges between 0.00 and 0.55 for sites in shrubland vegetation close to the Haleakala fence on which the take formula is based (Todd et al 2016). Detection rates can be used as an indicator to relate relative presence of HHBs around Oahu compared to Maui and the relative likelihood a bat is going to encounter and potentially become entangled on a barbed wire fence. For comparison utilizing the highest detection probability observed near FSK (<0.5 miles) and the highest observed detection probability for Maui, 3.1% and 55.0% respectively, although bats may be present in the area the potential for them to encounter a barbed wire fence is 18 times less than on Maui where the take formula calculation originated.

In Hawaii, there are several documented instances of HHBs becoming entangled in barbed wire fences (Burgett 2009, pers. comm.; Jeffrey 2007, pers. comm.; Mansker 2008, pers. comm.; Marshall 2008, pers. comm.). It is presumed HHBs "turn off" their echolocation upon capturing an insect. If a bat has just captured an insect, especially a large moth or beetle, it must masticate the insect while in flight which can take several seconds and leaves the bat vulnerable to collision with objects that it cannot see or hear. When foraging HHBs fly at speeds of between 5 and 10 m per second. Without being able to emit sound effectively while masticating, HHBs do not sense barbed wire strands and thus can become entangled in the barbed wire (Bonaccorso 2009, pers. comm.). Determining the number of bat mortalities due to barbed wire can be difficult.

The current Service formula data comes from Haleakala National Park where they have observed 1.3 bats killed per 100 mi/per year/individual barbed wire strand. These calculations are based on individual strands of barbed wire fencing designed to contain or prevent livestock in an area and are typically seen in a few configurations. The main examples are: 1) 5 strands of barbed wire suspended on T-posts with an average height of 54" with individual barbed wire strands spaced 12" from the ground and then 10" for the four strands above; 2) a woven net wire fence suspended on t-posts approximately 48" high then topped with either 1, 2, or 3 barbed wire strands above on 5"-6" spacing. Security fencing as proposed for this project typically consists of 8' of chain-link fence topped with a 45 degree outrigger holding 3 strands of barbed wire adding an additional 1' total to the overall fence height. The barbed wire strands on the outrigger are then spaced 4" apart in a horizontal configuration. The difference in strand spacing has a definite potential impact on overall entanglement probability. Considering the HHB has an average 12" wingspan, we can assume a total wing stroke for a HHB would be no more than ½ the wingspan for an estimate of 6" above and below centerline. Given that the body width of the HHB accounts for total wingspan it is more likely that 4.5" up and down stroke of centerline giving a maximum amplitude for a complete wing stroke of 9". This is important because with a total estimated

wing stroke we can estimate entanglement probability for horizontal flight in relation to various barbed wire fence spacing configurations. It means that the average HHB has a much greater chance to pass through untouched with strand spacing greater than 9" as with the 5 strand barbed wire fence. With this type of fence it is safe to assume that each strand acts independently from one another in their ability to entangle bats. However, that means the converse is also true in which strand spacing less than 9" means that the strands do not act independently due to the inherent overlap of the entanglement zones of each strand. With the security fence outrigger system proposed with this project the overall barbed wire height is less than the total average wingspan and the strand spacing is less than 9" vertical wing stroke amplitude. This suggests that the outrigger system take calculation should be reduced to account for the entanglement zone overlap rather treating the 3 strands independently. Additionally the lower chain link portion of the security fence and the hard surface appurtenances within create a much more likely potential for HHB to echolocate away from the fence than single or multiple barbed wire strands in an open landscape.

Utilizing the Service's HHB take formula for this project 0.83 miles of fence, times 3 strands equals 2.49 miles of barbed wire fence, times 0.013 bat takes/mile, equals a take estimate of 0.03237 bats per year. Over the 20 year anticipated lifecycle of the fence the total estimated take would be 0.6474 bats which is less than 1 individual. However given that 3-strand outrigger security fences have lower entanglement probability than the individual strands the formula is based on, take over 20 years should actually be estimated less than 0.6474 bats from the unaltered formula. Additionally given the much lower detection probabilities near FSK compared to the higher detection probabilities at Haleakala National Park, take potential of HHB at FSK is reduced even greater.

In the event a HHB "take" occurs on the FSK Security fence during its 20 year lifecycle, USAG-HI will notify the Service within 5 business days and re-initiate informal consultation to assess the specific cause of the take.

In summary USAG-HI has determined that the effects to the HHB are discountable in regards to the construction and operation of the new perimeter security fence and appurtenances proposed at FSK.

6.0 CONCLUSION

In conclusion, USAG-HI has determined that the proposed action may affect, but not likely to adversely affect the Hawaiian Hoary Bat, *Lasiurus cinereus semotus*. Additionally no critical habitat for this or any other species exists within the action area.

7.0 LITERATURE CITED

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Attachment 3 - Enclosure 4

United States Department of the Interior

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

In Reply Refer To:
01EPIF00-2016-I-0143

OCT 25 2016

Colonel Stephen E. Dawson
Office of the Garrison Commander
U.S. Army Installation Management Command, Pacific Region
Headquarters, United States Army Garrison, Hawai'i
745 Wright Avenue, Building 107, Wheeler Army Airfield
Schofield Barracks, Hawai'i 96857-5000

Subject: Re-Initiate Informal Consultation for Work Conducted at Field Station Kunia, O'ahu

Dear Colonel Dawson:

The U.S. Fish and Wildlife Service (Service) received your letter on September 23, 2016, requesting our concurrence with your determination that proposed changes for the construction and operation of the security fence and appurtenances at Field Station Kunia (FSK), O'ahu may affect, but is not likely adversely affect the endangered Hawaiian hoary bat or ope'ape'a (*Lasiurus cinereus semotus*). The findings and recommendations in this consultation are based on: (1) your August 2016 Biological Evaluation for the Proposed New Perimeter Security Fence Field Station Kunia, Oahu, Hawaii U.S. Army Garrison, Hawaii; (2) a meeting held on May 23, 2016 between your office and the Service regarding the FSK fence and the Service's formula to estimate bat take from barbed wire fence use; (3) previous correspondences; and (4) other biological information available to us. Copies of pertinent materials and documentation are maintained in an administrative record in the Service's Pacific Islands Fish and Wildlife Office in Honolulu, Hawai'i. This response is in accordance with section 7 of the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], as amended (ESA).

Change in Project Description
The total length of the security fence is 4,400 feet (0.83 miles) and encloses approximately 22 acres. The expected life of the fence is twenty years. Due to the nature of the facility, the Army is unable to avoid the use of barbed wire. However, the security fence around FSK will be patrolled at least daily and monitored for wildlife impacts. In the previous project description, the fence was to be eight feet tall affixed with a Y-outrigger holding six strands of barbed wire. The fence has been changed to an eight-foot fence fabric with a single outrigger with three strands of barbed wire for a total height of nine feet.

Conclusion
By incorporating the revised number of three barbed wire strands and the original fence specifications and project duration into the Service's formula to estimate bat take from barbed wire fencing, the proposed project may result in 0.6474 Hawaiian hoary bats being taken. The Service has determined that any amount less than one, over the life of a project, is not consider take of the bat. The Service has determined that effects to the Hawaiian hoary bat as a result of the use of barbed wire for the FSK fence over the life of the project (20 years) is considered discountable. Based on the formula results, it is unlikely that take of at least one Hawaiian hoary bat will occur over the life of the project. Therefore, the Service concurs with your determination that the proposed project at FSK may effect, but is not likely to adversely affect the Hawaiian hoary bat.

Unless the project description changes, or new information reveals that the proposed project may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to section 7 of the ESA is necessary.

We appreciate your efforts to conserve endangered species. If you have questions regarding this letter, please contact Leila Gibson, Fish and Wildlife Biologist (phone: 808-792-9400 or email: leila_gibson@fws.gov).

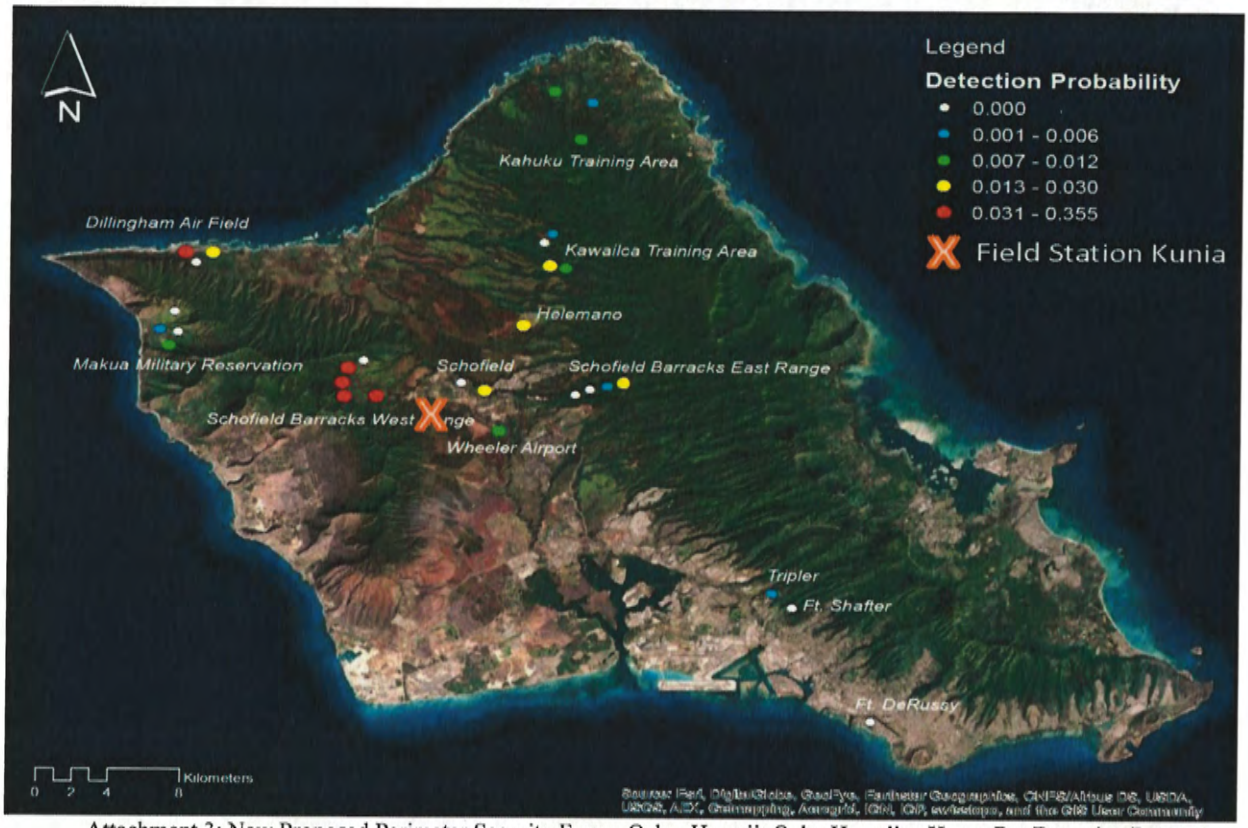
Sincerely,

Aaron Nadig
Island Team Manager
O'ahu, Kaua'i, Northwestern Hawaiian Islands, and American Samoa

cc: U.S. Army Garrison Hawaii, Directorate of Public Works, Environmental Division, Natural Resource Section

Attachment 1: Proposed New Perimeter Security Fence, Field Station Kunia, Oahu, Hawaii; Project Location

Attachment 2: Proposed New Perimeter Security Fence, Field Station Kunia, Oahu, Hawaii; Project Footprint



Attachment 3: New Proposed Perimeter Security Fence, Oahu, Hawaii; Oahu Hawaiian Hoary Bat Detection Rates

Attachment 4: New Perimeter Security Fence, Field Station Kunia, Oahu, Hawaii; Project Site Imagery

been to direct growth to 'Ewa, Central O'ahu and the Primary Urban Center, and to support the development of Kapolei in 'Ewa as O'ahu's second city (see Figure 2-2). This strategy preserves O'ahu's rural areas and high-quality farmland while addressing other community needs (i.e., housing, commercial and industrial areas, etc.). Some high-quality farmland within the community growth boundary has been and will be sacrificed in order to preserve large tracts of high-quality farmland in Kunia and on the North Shore, and to "keep the country country."

2.2 PHYSICAL RESOURCES AVAILABLE FOR AGRICULTURE PRODUCTION

All lands in the State are classified into one of four state land use districts: Urban, Rural, Agricultural, or Conservation. An inventory of land use districts on O'ahu includes nearly 123,000 acres in the State Agricultural District, nearly 159,000 acres in the State Conservation District, and approximately 102,000 acres in the State Urban District. This accounts for about 32 percent of O'ahu's acreage in the State Agricultural District, about 41 percent in the State Conservation District, and about 27 percent in the State Urban District. O'ahu does not have any lands in the State Rural District (see Table 2-1).

Table 2-1: O'ahu State Land Use Districts

State Land Use District	Acreage[1]	Percent
Urban	102,129	27%
Conservation	158,652	41%
Agricultural	122,910	32%
Rural	--	
Total	**383,691**	**100%**

[1] Figures are approximate as of February 2012. http://files.hawaii.gov/dbedt/op/docs/LUD_Program_Flyer_20120223.pdf accessed September 16,2013.

O'ahu's acreage in the State Agricultural District consists of farmland suitable for crops, pasture or forestry; Federal land that is not available for agricultural production; and land that does not have the qualities necessary to be classified as one of the other land use districts but may be suitable for parks, golf courses and open space relief. Of the nearly 123,000 acres on O'ahu in the State Agricultural District, about 13,700 acres (about 11 percent) in 'Ewa, Makakilo, Central O'ahu, Hale'iwa and Pūpūkea are within the City's community growth boundary as areas for future urbanization. The remaining 109,200 acres (about 89 percent) outside the community growth boundary are to be protected from urban development for the foreseeable future.[14] Subtracting Federal lands that are not available for farming leaves about 88,000 acres of useable agricultural land, including both farmland and grazing land. About 56,600 acres of this land are useable farmland, of which about 44,400 acres have high soil ratings (rated A or B by the Land Study Bureau (LSB) ratings, Prime or Unique by the Agricultural Lands of Importance to the State of Hawai'i (ALISH), or I or II by the NRCS. About 12,000 acres are currently farmed on O'ahu.

Approximately 11,395 acres of the inventory in O'ahu's State Agricultural District are owned by the State of Hawai'i (excluding lands owned by the Department of Hawaiian Home Lands). This acreage includes about 1,700 acres of high-quality agricultural land in Central O'ahu that were formerly owned by the Estate of George Galbraith, which were added to the State's landholding in 2012 following a $25 million public-private partnership brokered by the Trust for Public Lands. The acquisition of the Galbraith lands resulted in the transfer of 1,207 acres to the state Agribusiness Development Corporation (ADC) and 495 acres to the Office of Hawaiian Affairs (OHA). The State's purchase of this land was a major step towards protecting high-quality agricultural land from development and ensuring its long-term use for farming.

[14] City and County of Honolulu Department of Planning and Permitting, February 2011.

OFFICE OF PLANNING
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

DTS201805111424RI

May 11, 2018

Mr. Kent K. Watase, PE
Director of Public Works
Department of the Army
Headquarters, U.S. Army Garrison, Hawaii
Directorate of Public Works
947 Wright Avenue, Wheeler Army Airfield
Schofield Barracks, Hawaii 96857-5013

Attention: Ms. Lisa Graham

Dear Mr. Watase:

Subject: Hawaii Coastal Zone Management Program Federal Consistency Review for Field Station Kunia Perimeter Security Fence and Appurtenances, Kunia, Oahu; TMK (1) 9-2-5: por. 22; 9-4-12: pors. 6, 3

The Hawaii Coastal Zone Management (CZM) Program has completed the federal consistency review of the proposed construction of a new perimeter security fence and appurtenances at Field Station Kunia (FSK), Oahu, to provide required Anti-Terrorism Force Protection setbacks to infrastructure supporting FSK (proposed activity). According to the consistency determination, the new security fence will be eight feet tall affixed with an outrigger holding three strands of barbed wire. The associated appurtenances include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between neighboring water wells and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work includes grubbing and grading of the affected area.

The Hawaii CZM Program conditionally concurs with the determination that the proposed federal agency activity is consistent to the maximum extent practicable with the enforceable policies of the Hawaii CZM Program. The following condition shall apply to the proposed activity.

The proposed Field Station Kunia perimeter security fence and appurtenances shall be constructed and completed as represented in the CZM federal consistency determination. Any changes to the proposal shall be submitted to the Hawaii CZM Program for review

RECEIVED
5/17/18

and approval. Changes to the proposal may require a full CZM federal consistency review, including publication of a public notice and provision for public review and comment. This condition is necessary to ensure that the proposed activity is implemented as reviewed for consistency with the enforceable policies of the Hawaii CZM Program. Hawaii Revised Statutes (HRS) Chapter 205A Coastal Zone Management, is the federally approved enforceable policy of the Hawaii CZM Program that applies to this condition.

If the requirements for conditional concurrences specified in 15 CFR § 930.4(a), (1) through (3), are not met, then all parties shall treat this conditional concurrence letter as an objection pursuant to 15 CFR Part 930, subpart C.

This CZM consistency conditional concurrence does not represent an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with the Hawaii CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

Leo R. Asuncion
Director

Appendix B
Section 7, Endangered Species Act Documentation

- USAG-HI letter to the United States Fish and Wildlife Service, dated December 1, 2015 (Initial determination letter)
- USAG-HI letter to the United States Fish and Wildlife Service, dated September 23, 2016 (Amendmended determination letter describing changes in the Proposed Action)
- United States Fish and Wildlife Service Letter to USAG-HI, dated October 25, 2016 (concurrence with USAG-HI determination)

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DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND, PACIFIC REGION
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII
745 WRIGHT AVENUE, BUILDING 107, WHEELER ARMY AIRFIELD
SCHOFIELD BARRACKS, HAWAII 96857-5000

REPLY TO
ATTENTION OF

DEC 01 2015

Office of the Garrison Commander

Mary Abrams
Field Supervisor
US Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, Hawaii 96850

Dear Ms. Abrams:

This letter is to seek your concurrence with our may affect but not likely to adversely affect determination for planned upgrades at Field Station Kunia (FSK). FSK is located south of Schofield Barracks on the island of Oahu (Enclosure 1). The Army sent you a memorandum in July 2015 initiating informal consultation on the temporary planned upgrades to FSK. Your office responded with a letter concurring that temporary fencing being erected at FSK will not adversely affect the listed Hawaiian hoary bat (*Lasiurus cinereus semotus*) pursuant to the Endangered Species Act (ESA) of 1973. At the time, the details regarding permanent FSK facilities upgrades were not known.

Recently, more details have been provided by the project proponent. The proposed action includes the construction and operation of a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting Field Station Kunia (FSK). Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between neighboring water wells and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. The two items in these proposed upgrades which trigger consultation under ESA are the new perimeter fencing and the lighting.

The new security fence will be eight feet tall affixed with a Y-outrigger holding six strands of barbed wire. Enclosure 2 is a graphic showing the fence design. The fence line will enclose an area of ~22 acres. The total length of the planned fence will be 4,400 ft. or .83 miles. New security lighting and intrusion detection devices will also be installed surrounding FSK. All lighting will be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on migratory birds. To support lighting and intrusion detection devices, electrical and telecommunications lines will be installed.

The Army is aware that there is the potential for the endangered Hawaiian Hoary bat, *Lasirus cinereus semotus*, to occur in the area. As you are aware, bats were found along the firebreak road at Schofield Barracks during surveys conducted by US Geological Survey between 2010-2014 (Pinzari 2014). No bat detectors were installed at the FSK. As shown in

Enclosure 2, the project area is completely surrounded by fallow fields with no vegetation over 15 feet tall. Therefore, the bats are not using the project area for roosting. They may, however, be using the area for foraging since the closest potential roosting trees (trees over 15 feet tall) are within 150 meters of the project site. As noted by Pinzari 2014, "Bat detectability values on Oahu in general are much lower than those from surveys on Hawaii, Maui, and Kauai Islands, where bats are usually detected above 20% of the time throughout the seasonal cycle when comparing values from week-long bi-monthly surveys". Therefore, although bats may be present in an area, the potential for them to hit a barbed wire fence, already an unlikely event, is even more unlikely. In addition, the security fence around FSK will be patrolled at least daily. During these patrols, the barbed wire will be monitored for wildlife impacts.

The Army has determined that the use of barbed wire over such a small area may affect but is not likely to adversely affect the bat. If any protected wildlife is impacted by the FSK security fence or lighting, the Army will reinitiate consultation. The Army requests your agency's concurrence in this determination.

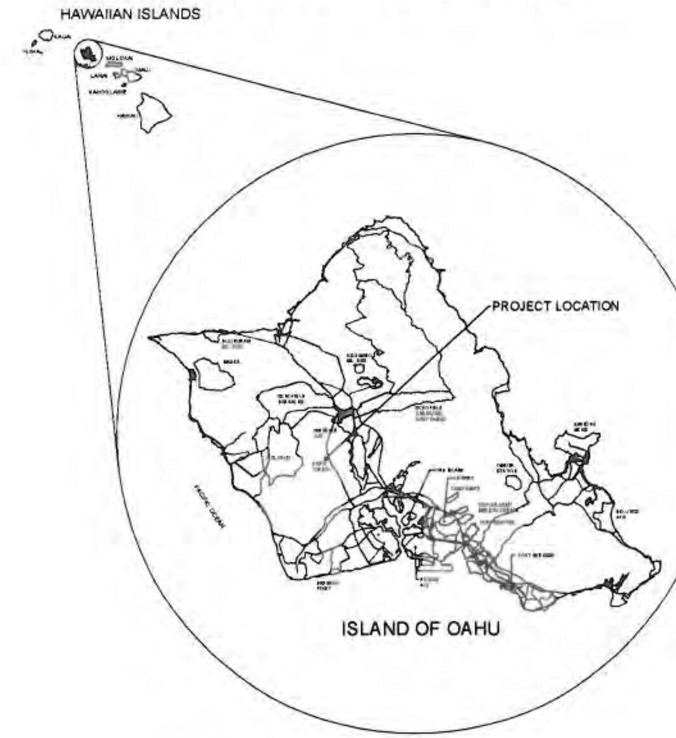
If you have any questions or would like to meet to further discuss this project, please call Ms. Kapua Kawelo, Biologist, Natural Resource Section, Directorate of Public Works Environmental Division at (808) 655-9189 or Email: hilary.k.kawelo.civ@mail.mil.

Sincerely,

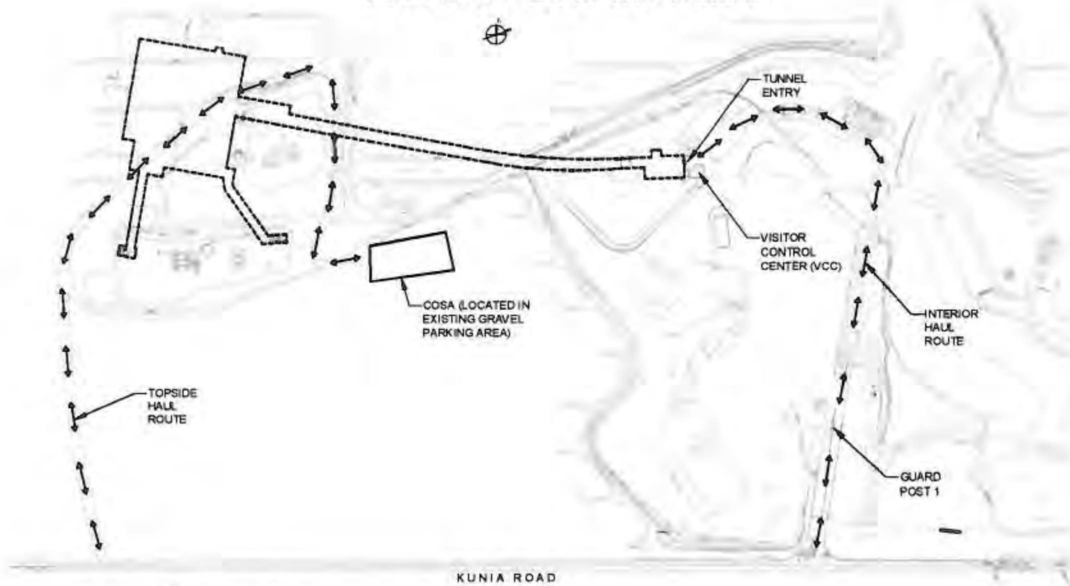
Richard A. Fromm
Colonel, US Army
Commanding

Enclosures:
1. Site Location Map
2. Imagery of Project Site

PROJECT VICINITY MAP



PROJECT LOCATION MAP



Enclosure 1

US Army Corps of Engineers®
HONOLULU DISTRICT

DESIGNED BY		DATE 04 MARCH 2016
DWN BY	CKD BY	SOLICITATION NO
SUBMITTED BY		CONTRACT NO W9128A-14-C-0016
PLOT SCALE	ISSUE DATE	FILE NUMBER
SIZE 44" X 34"	FILE NAME CP6PH1_3-G-002.DWG	

U.S. ARMY CORPS OF ENGINEERS
HONOLULU DISTRICT
HONOLULU, HAWAII

BRS ARCHITECTS
5700 S. ALLANTE PL
SUITE 100
BOISE, IDAHO 83709
TEL 208-336-8370
FAX 208-336-8380

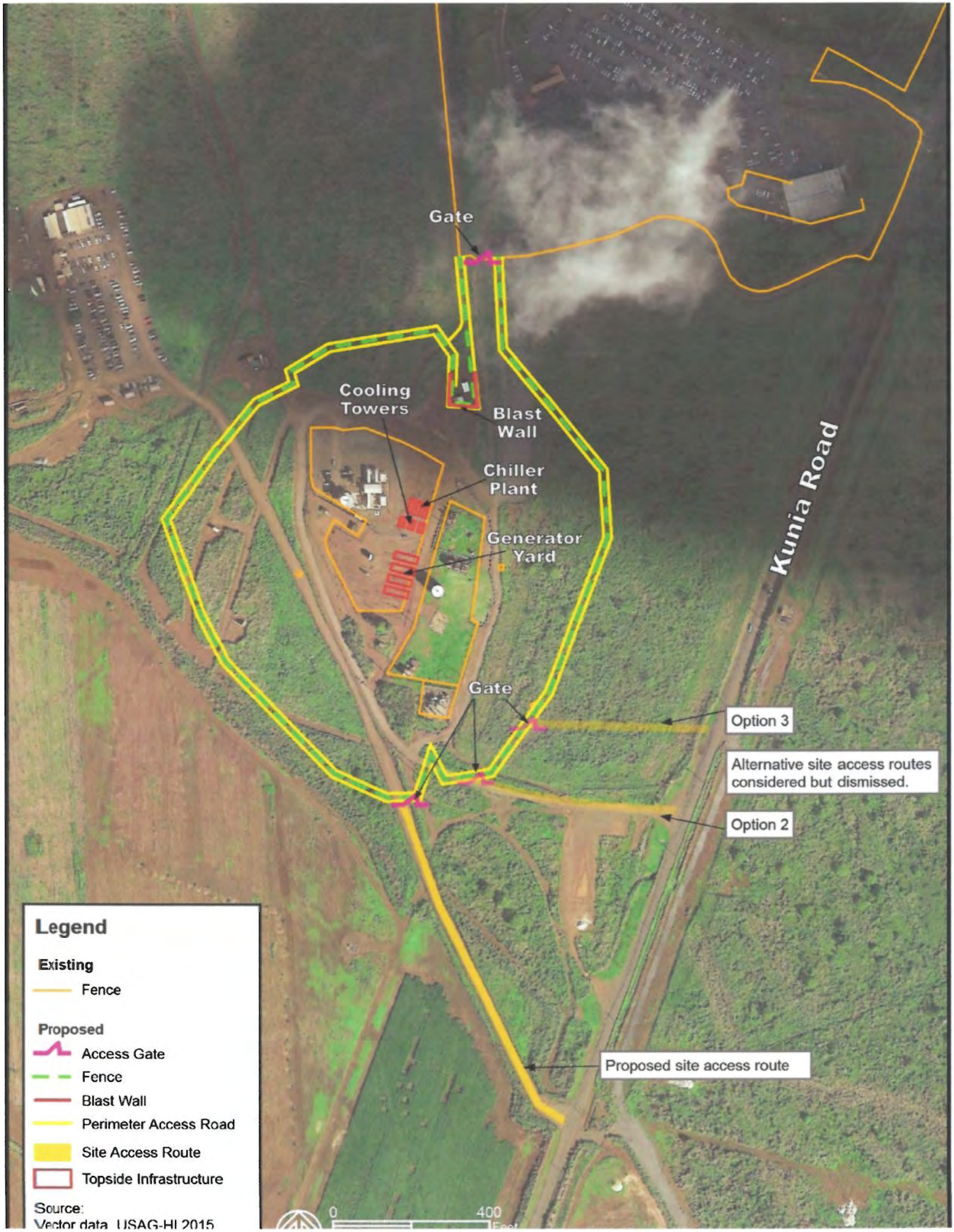
FY14 UPGRADE ELECTRICAL DISTRIBUTION SYSTEMS
CP-6 PHASES 1A, 1B AND 3
KUNIA TUNNEL, OAHU, HAWAII

GENERAL INFORMATION
VICINITY & LOCATION MAPS
& HAUL ROUTE

SHEET IDENTIFICATION
G-002
SHEET 3 OF 80

PLOT DATE: March 9 2016

UNCLASSIFIED // FOR OFFICIAL USE ONLY


Gate
Cooling Towers
Blast Wall
Chiller Plant
Generator Yard
Kunia Road
Gate
Option 3
Alternative site access routes considered but dismissed.
Option 2
Proposed site access route
Legend
Existing
Fence
Proposed
Access Gate
Fence
Blast Wall
Perimeter Access Road
Site Access Route
Topside Infrastructure
Source:
Vector data, USAG-HI 2015
0
400

DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND, PACIFIC REGION
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII
745 WRIGHT AVENUE, BUILDING 107, WHEELER ARMY AIRFIELD
SCHOFIELD BARRACKS, HAWAII 96857-5000

REPLY TO
ATTENTION OF

SEP 23 2016

Office of the Garrison Commander

Ms. Mary Abrams
Field Supervisor
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Dear Ms. Abrams:

This letter amends the project description stated in our earlier letter initiating informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) of 1973 (16 U.S.C 1531 *et. seq.*), as amended, for the proposed construction and operation of a new perimeter security fence and appurtenances at Field Station Kunia (FSK), Oahu, Hawaii, dated December 1, 2015. Based on this amended description and the accompanying Biological Evaluation (BE) included as an enclosure to this letter, we renew our request for your agency's concurrence with our determination that the proposed project may affect, but not likely to adversely affect the endangered Hawaiian Hoary Bat.

The original description of the proposed project included the construction and operation of a new perimeter security fence and appurtenances to provide required Anti-Terrorism Force Protection (ATFP) setbacks to infrastructure supporting FSK. The fence was described as being eight feet tall affixed with a Y-outrigger holding six strands of barbed wire. The total length of the fence would be 4,400 ft. or 0.83 mile long and enclose an area of ~22 acres. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between a neighboring water well and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. All lighting would be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts on migratory birds. In addition, the security fence around FSK would be patrolled at least daily and monitored for wildlife impacts.

Based on this original project description, your staff responded that the fence configuration would adversely affect the Hawaiian Hoary Bat due to potential entanglement with the six strands of barbed wire. As a result of further consultation

with your staff, as chronicled in the BE, we will change the description of the fencing material from an eight-foot fence with a Y-outrigger and six strands of barbed wire to an eight-foot fence fabric with a single outrigger with three strands of barbed wire for a total height of nine feet as a minimization measure. All other project descriptors will remain the same.

The Army has therefore determined with this minimization measure and the further evaluation of affects to the species as described in the BE, effects to the Hawaiian Hoary Bat are discountable in regards to the construction and operation of the new perimeter security fence and appurtenances proposed at FSK. We request concurrence with our determination that the proposed project may affect but not likely to adversely affect the Hawaiian Hoary Bat.

If you have any questions or would like to meet to further discuss this project, please call Ms. Kapua Kawelo, Natural Resource Manager, Directorate of Public Works Environmental Division at (808) 655-9189 or email: hilary.k.kawelo.civ@mail.mil.

Sincerely,

Stephen E. Dawson
Colonel, U.S. Army
Commanding

Enclosure

ENCLOSURE

BIOLOGICAL EVALUATION
for the
PROPOSED NEW PERIMETER SECURITY FENCE
FIELD STATION KUNIA, OAHU, HAWAII
U.S. ARMY GARRISON, HAWAII

Prepared for:
Headquarters, U.S. Army Garrison, Hawaii
745 Wright Avenue, Building 107, Wheeler Army Airfield
Schofield Barracks, Hawaii 96857-5000

Prepared by:
Kapua Kawelo, Natural Resource Manager
U.S. Army Garrison, Hawaii
&
Lucas Cooksey, Wildlife Biologist
U.S. Army Environmental Command

10 August 2016

1.0 BACKGROUND/HISTORY

The purpose of this Biological Evaluation (BE) is to address the effects of a proposed project at Field Station Kunia (FSK), Oahu, Hawaii in relation to Endangered Species Act (ESA) listed species. The United States Army Garrison, Hawaii (USAG-HI) is consulting on behalf of a Department of Defense tenant proposing to construct a new perimeter security fence and appurtenances to FSK. The proposed project is required to meet current Anti-Terrorism and Force Protection (ATFP) requirements for national security. FSK is located approximately 0.5 mile south of Schofield Barracks on the island of Oahu, Hawaii (Attachment 1). This project has the potential to impact the federally listed endangered Hawaiian Hoary Bat (HHB), *Lasiurus cinereus semotus.*

This BE, prepared by USAG-HI, addresses the effects of the proposed action in accordance with Section 7(a)(2) of the ESA to assure that, through consultation with the U.S. Fish & Wildlife Service (Service), federal actions do not jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of critical habitat.

The USAG-HI and the Service have been in informal consultation via letters, email and phone conversations regarding the proposed project since July 2015. A consultation history is included below for reference.

- July 8, 2015. USAG-HI sent a letter to the Service seeking concurrence with the Army's may affect, not likely to adversely affect (NLAA) determination for security fence construction and replacement at FSK. Both the old and new fences have an outrigger affixed atop the fence holding three strands of barbed wire.
- July 24, 2015. Leila Gibson, Service Biologist, email correspondence to Michelle Mansker, USAG-HI Natural Resource Manager (NRM) asking for clarification regarding the total length of new and replacement fencing being proposed at FSK and the lifetime of the project. She also asks if USAG-HI used the Service formula for calculating HHB take from barbed wire fencing.
- July 24, 2015. Michelle Mansker responds to Service email saying she will try to clarify these items, and requests the Service email the formula for calculating HHB take.
- July 24, 2015. Leila Gibson emails the formula to Michelle Mansker.
- August 3, 2015. Leila Gibson requests via email any personal communications regarding bats and barbed wire.
- August 21, 2015. USAG-HI receives a response letter from the Service concurring with the Army's NLAA determination for 0.10 miles of temporary fence construction at FSK.
- December 1, 2015. USAG-HI sent a letter to the Service seeking concurrence on an NLAA determination for the HHB resulting from proposed new perimeter security fence and appurtenances at FSK. The proposed fence proposed would be 0.83 mile long, 8 feet tall with a Y-outrigger holding six strands of barbed wire.

- December 2015. Leila Gibson called to confirm that FSK could not reduce or eliminate barbed wire strands from the project description. Kapua Kawelo, USAG-HI NRM, stated that this change was not likely.
- January 4, 2016. Leila Gibson emailed requesting confirmation on the life of the fence.
- January 6, 2016. Kapua Kawelo responded that the fence is expected to last 20 years.
- January 8, 2016. USAG-HI received a letter from the Service which non-concurred with the Army's NLAA determination for the HHB. Based on the application of the Service formula to estimate bat take from barbed wire fences, the Service determined there will be take associated with the FSK fence. The Service concluded that the action requires formal Section 7 consultation.
- February 2016. Phone call from Kapua Kawelo to Leila Gibson notifying her that USAG-HI is likely to include the FSK fence into the formal ESA programmatic consultation for Oahu USAG-HI activities.
- April 2016. Emails between USAG-HI and Service regarding scheduling a meeting on the FSK fence project and bat take formula assumptions. Notification that the timing of the FSK project does not match the Programmatic BA timeline and that the USAG-HI would like to meet to discuss options to reduce HHB take.
- May 23, 2016. USAG-HI and the Service meet to discuss the FSK fence and bat take formula. Discussed USAG-HI's desire to adjust the bat take formula for barbed wire fence. USAG-HI conveyed that the formula is based on old take information from Maui and that Oahu is known to have lower bat detection rates than the Maui location where bat take along fences was determined. Also, USAG-HI asked for recognition of the risk difference between 3-stranded barbed wire in a pasture situation versus chain link security fence with barbed wire affixed to the top. An agreement was not reached at this time to adjust the formula for Oahu situations. The Service suggested possible bat deterrent devices such as metal tags affixed to barbed wire and privacy slats. Service committed to query users to determine success of such deterrents and provide that information to USAG-HI.
- May 26, 2016. Kapua Kawelo email correspondence to the Service on possible deterrent devices and requested updates on the status of the metal tag deterrents applied at the Pelekane Watershed project site on the island of Hawaii.
- June 21, 2016. Kapua Kawelo email correspondence to the Service requesting suggestions for possible minimization measures for bat take on barbed wire.
- June 30, 2016. Kapua Kawelo email correspondence to the Service requesting information regarding deterrents.
- July 12, 2016. Kapua Kawelo email correspondence to the Service requesting information regarding deterrents.
- July 12, 2016. Service email correspondence to USAG-HI confirming that USAG-HI is pursuing a consultation for the FSK fence separate from the Programmatic BA. Also confirmed that there are no known deterrents that can be applied to reduce HHB take on barbed wire fencing at this time.
- July 20, 2016. USAG-HI email correspondence to the Service requesting confirmation that reducing the number of strands of barbed wire affixed to the FSK

fence from six to three would reduce the probability of take below the 1 bat per 20 year threshold where consultation can be conducted informally.

- July 21, 2016. Service email correspondence to USAG-HI that the application of the Service's formula to a three-stranded barbed wire fence reduces bat take to less than one bat over the 20 year life of the fence, and informal consultation would be appropriate. The Service also requested that USAG-HI send a letter documenting the project description change.

2.0 DESCRIPTION OF THE ACTION & ACTION AREA

The proposed action to the FSK facility includes the construction and operation of a proposed new perimeter security fence and appurtenances to provide required ATFP setbacks to infrastructure supporting FSK. The new security fence would consist of eight foot tall chain link fence fabric with a one foot outrigger affixed atop the fence holding three strands of barbed wire. The total fence height including the barbed wire would be nine feet. The number of strands of barbed wire has been reduced from the previously proposed six to three. The fence line would enclose an area of ~22 acres, which is shown in Attachment 2. The total length of the planned fence will be 4,400 ft. or 0.83 miles. Appurtenances would include: interior and exterior roadways abutting the new fence for security patrols; a new access road for operations and maintenance; two new vehicular access gates with vehicle barriers; two new personnel turnstile access points; additional lighting and intrusion detection devices; a blast wall constructed between a neighboring water well and the new fence line; and, the routing of electrical and telecommunication lines to provide infrastructure support for power and communications. Site preparation work would include grubbing and grading of the affected area for construction of the fence and appurtenances. New security lighting and intrusion detection devices would also be installed. All lighting will be fully shielded with full cut-off luminary lights to minimize light pollution and potential impacts to migratory birds. To support lighting and intrusion detection devices, electrical and telecommunications lines would be installed.

The action area includes everything within the proposed FSK perimeter fence (Attachment 2) and an additional 25' buffer to include the construction and maintenance of a service road immediately outside the fence. The only effect is the potential direct effect to the HHB from accidental entanglement with barbed wire associated with the security fence. HHB have been accidentally killed when they fly into barbs along the wire strand, get entangled somewhere on their body, and are unable to free themselves. No other direct, indirect, interrelated, or interdependent effects were identified for any other federally listed species.

3.0 LISTED SPECIES & CRITICAL HABITAT IN THE ACTION AREA

The federally-listed, endangered Hawaiian Hoary Bat, *Lasiurus cinereus semotus* is the only ESA-listed species that may occur within the action area, or may be affected by the proposed action. The HHB is medium-sized (0.5 to 0.8 ounces), 14 to 22 grams), with a wingspan of 10.5 to 13.5 in (27 to 35 cm), and is nocturnal, insectivorous with thick, rounded ears and a furry tail. "Hoary" refers to the white-tinged, frosty appearance of the bat's grayish brown or

reddish brown fur. Although females are slightly larger than males, forearm lengths are similar in both genders. These bats are not colonial, and roost solitarily in tree foliage. The HHB is endemic to the State of Hawaii where it is the only existing, native terrestrial mammal. It has been documented historically on the islands of Hawaii, Maui, Molokai, Oahu, Kauai, and possibly Kahoolawe. There are no population estimates for the HHB and few historical or current records. Data are limited because no feasible method currently exists for surveying the abundance and distribution of solitary, tree-roosting bats. HHB have been observed year round in a wide variety of habitats and elevations below 7,500 ft (2,286 m), and a few sightings from limited surveys have been reported as high as 13,199 ft (4,023 m). For more information on the HHB and its life history, reference the Service website: http://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A03W

Ongoing research by Corinna Pinzari (USGS), stated that every Oahu acoustic study that they have conducted, have individual site detection rates that are much lower than those from the islands of Hawaii, Maui, and Kauai (pers. comm. C. Pinzari, July 2016). This suggests current density of HHB within the action area for this project is very low based on more detailed research observations across the island of Oahu on Army property as depicted in Attachment 3.

There are no other federally endangered species or designated critical habitat identified within the project footprint which includes the entire action area

4.0 ENVIRONMENTAL BASELINE CONDITIONS

Threats throughout the range and within the action area to the HHB are assumed to be the same as those that threaten many bat species in general (Harvey et al. 1999, p. 13; Service 1998, p. 15). Bats have the slowest reproductive rate and the longest life-span of all mammals of their size (Barclay and Harder 2003, pp. 209-256). Thus, any mortality of breeding-age adults, particularly females, constrains the recovery of the subspecies. The main factor limiting recovery is thought to be habitat loss, primarily the availability of roosting sites as suitable roosting habitat is particularly important to pregnant and lactating females and non-volant young. Other possible threats identified in the recovery plan may include: roost disturbance, predation by native hawks and nonnative feral cats, pesticide use (either directly or by impacting prey species), and alteration of prey availability due to introduction of nonnative insects. In addition, occasional instances of HHB mortality due to collisions with vehicles and structures have been documented (Kepler and Scott 1990, p. 60; Kuhn 2009; Menard 2001, p. 136; Tomich 1986, pp. I 1-30).

5.0 EFFECTS OF THE ACTION

As shown in Attachment 4, the project area is completely surrounded by fallow fields with no vegetation greater than 15 feet tall, therefore the HHBs do not use the action or immediate area for roosting. However, HHBs may use the area for foraging because potential roost trees (trees over 15 feet tall) do exist within 150 meters of the action area boundary. HHBs have been detected in areas near FSK, with very low detection rates compared to those observed

on other Hawaiian Islands. A map of detection probability on USAG-HI property, based on surveys completed between 2014 and 2016 on by US Geological Survey (USGS) is provided as Attachment 3 (unpublished data 2016). Bat detection probability at locations nearest FSK range from 0.0000 to 0.0311. These detection rates are very low as compared to other islands which have been surveyed utilizing the same methodology. USGS stated that every Oahu acoustic study so far that they have conducted, have individual site detection rates that are much lower than those from the islands of Hawaii, Maui, and Kauai (pers. comm. C. Pinzari, July 2016). By comparison a Maui study found that detection probability ranges between 0.00 and 0.55 for sites in shrubland vegetation close to the Haleakala fence on which the take formula is based (Todd et al 2016). Detection rates can be used as an indicator to relate relative presence of HHBs around Oahu compared to Maui and the relative likelihood a bat is going to encounter and potentially become entangled on a barbed wire fence. For comparison utilizing the highest detection probability observed near FSK (<0.5 miles) and the highest observed detection probability for Maui, 3.1% and 55.0% respectively, although bats may be present in the area the potential for them to encounter a barbed wire fence is 18 times less than on Maui where the take formula calculation originated.

In Hawaii, there are several documented instances of HHBs becoming entangled in barbed wire fences (Burgett 2009, pers. comm.; Jeffrey 2007, pers. comm.; Mansker 2008, pers. comm.; Marshall 2008, pers. comm.). It is presumed HHBs "turn off" their echolocation upon capturing an insect. If a bat has just captured an insect, especially a large moth or beetle, it must masticate the insect while in flight which can take several seconds and leaves the bat vulnerable to collision with objects that it cannot see or hear. When foraging HHBs fly at speeds of between 5 and 10 m per second. Without being able to emit sound effectively while masticating, HHBs do not sense barbed wire strands and thus can become entangled in the barbed wire (Bonaccorso 2009, pers. comm.). Determining the number of bat mortalities due to barbed wire can be difficult.

The current Service formula data comes from Haleakala National Park where they have observed 1.3 bats killed per 100 mi/per year/individual barbed wire strand. These calculations are based on individual strands of barbed wire fencing designed to contain or prevent livestock in an area and are typically seen in a few configurations. The main examples are: 1) 5 strands of barbed wire suspended on T-posts with an average height of 54" with individual barbed wire strands spaced 12" from the ground and then 10" for the four strands above; 2) a woven net wire fence suspended on t-posts approximately 48" high then topped with either 1, 2, or 3 barbed wire strands above on 5"-6" spacing. Security fencing as proposed for this project typically consists of 8' of chain-link fence topped with a 45 degree outrigger holding 3 strands of barbed wire adding an additional 1' total to the overall fence height. The barbed wire strands on the outrigger are then spaced 4" apart in a horizontal configuration. The difference in strand spacing has a definite potential impact on overall entanglement probability. Considering the HHB has an average 12" wingspan, we can assume a total wing stroke for a HHB would be no more than ½ the wingspan for an estimate of 6" above and below centerline. Given that the body width of the HHB accounts for total wingspan it is more likely that 4.5" up and down stroke of centerline giving a maximum amplitude for a complete wing stroke of 9". This is important because with a total estimated

wing stroke we can estimate entanglement probability for horizontal flight in relation to various barbed wire fence spacing configurations. It means that the average HHB has a much greater chance to pass through untouched with strand spacing greater than 9" as with the 5 strand barbed wire fence. With this type of fence it is safe to assume that each strand acts independently from one another in their ability to entangle bats. However, that means the converse is also true in which strand spacing less than 9" means that the strands do not act independently due to the inherent overlap of the entanglement zones of each strand. With the security fence outrigger system proposed with this project the overall barbed wire height is less than the total average wingspan and the strand spacing is less than 9" vertical wing stroke amplitude. This suggests that the outrigger system take calculation should be reduced to account for the entanglement zone overlap rather treating the 3 strands independently. Additionally the lower chain link portion of the security fence and the hard surface appurtenances within create a much more likely potential for HHB to echolocate away from the fence than single or multiple barbed wire strands in an open landscape.

Utilizing the Service's HHB take formula for this project 0.83 miles of fence, times 3 strands equals 2.49 miles of barbed wire fence, times 0.013 bat takes/mile, equals a take estimate of 0.03237 bats per year. Over the 20 year anticipated lifecycle of the fence the total estimated take would be 0.6474 bats which is less than 1 individual. However given that 3-strand outrigger security fences have lower entanglement probability than the individual strands the formula is based on, take over 20 years should actually be estimated less than 0.6474 bats from the unaltered formula. Additionally given the much lower detection probabilities near FSK compared to the higher detection probabilities at Haleakala National Park, take potential of HHB at FSK is reduced even greater.

In the event a HHB "take" occurs on the FSK Security fence during its 20 year lifecycle, USAG-HI will notify the Service within 5 business days and re-initiate informal consultation to assess the specific cause of the take.

In summary USAG-HI has determined that the effects to the HHB are discountable in regards to the construction and operation of the new perimeter security fence and appurtenances proposed at FSK.

6.0 CONCLUSION

In conclusion, USAG-HI has determined that the proposed action may affect, but not likely to adversely affect the Hawaiian Hoary Bat, *Lasiurus cinereus semotus*. Additionally no critical habitat for this or any other species exists within the action area.

7.0 LITERATURE CITED

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Todd, C.M., C.A. Pinzari, and F.J. Bonaccorso. 2016. Acoustic Surveys of Hawaiian Hoary Bats in Kahikinui Forest Reserve and Nakula Natural Area Reserve on the Island of Maui. Technical Report 78, Hawaii Cooperative Studies Unit, University of Hawaii at Hilo, HI. pp. 22.

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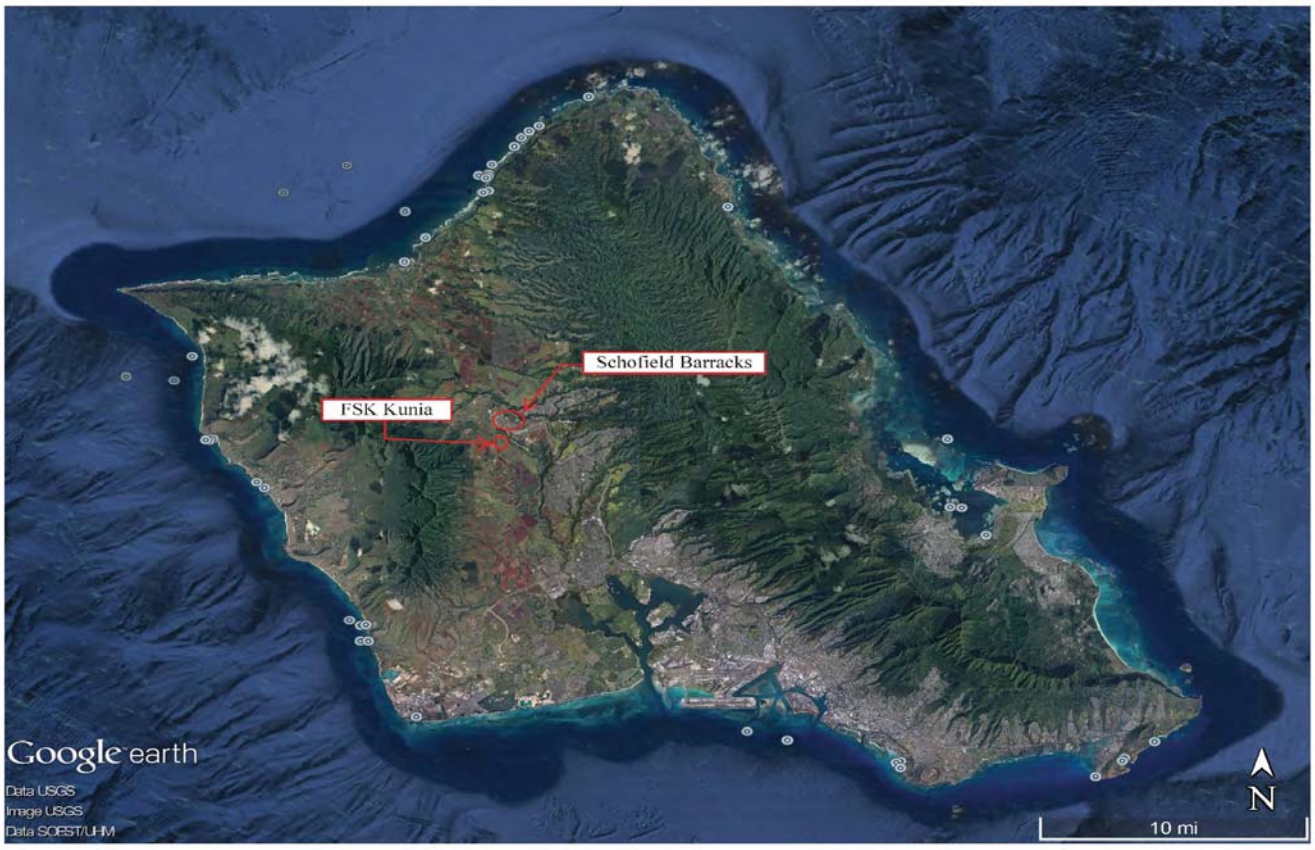
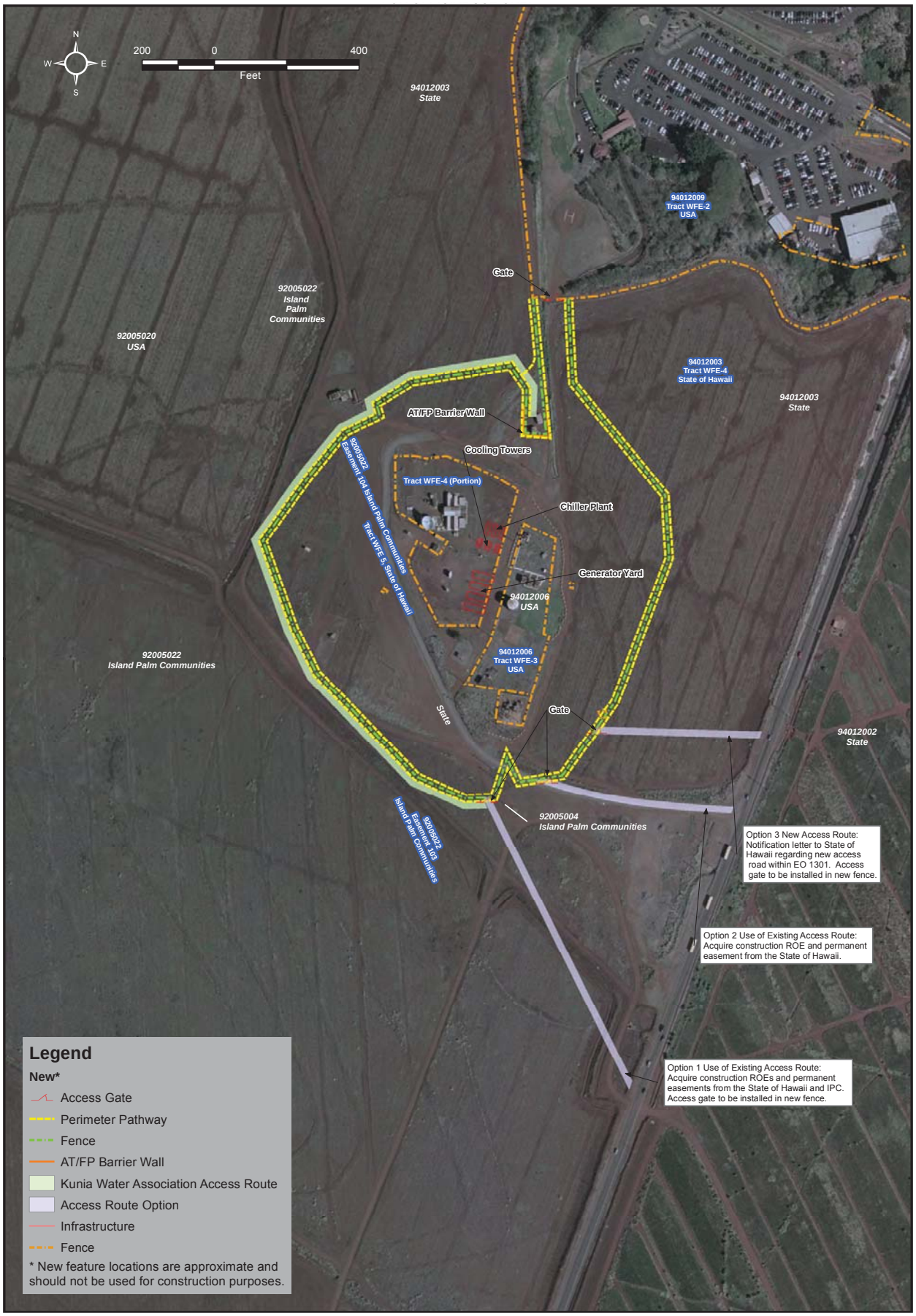
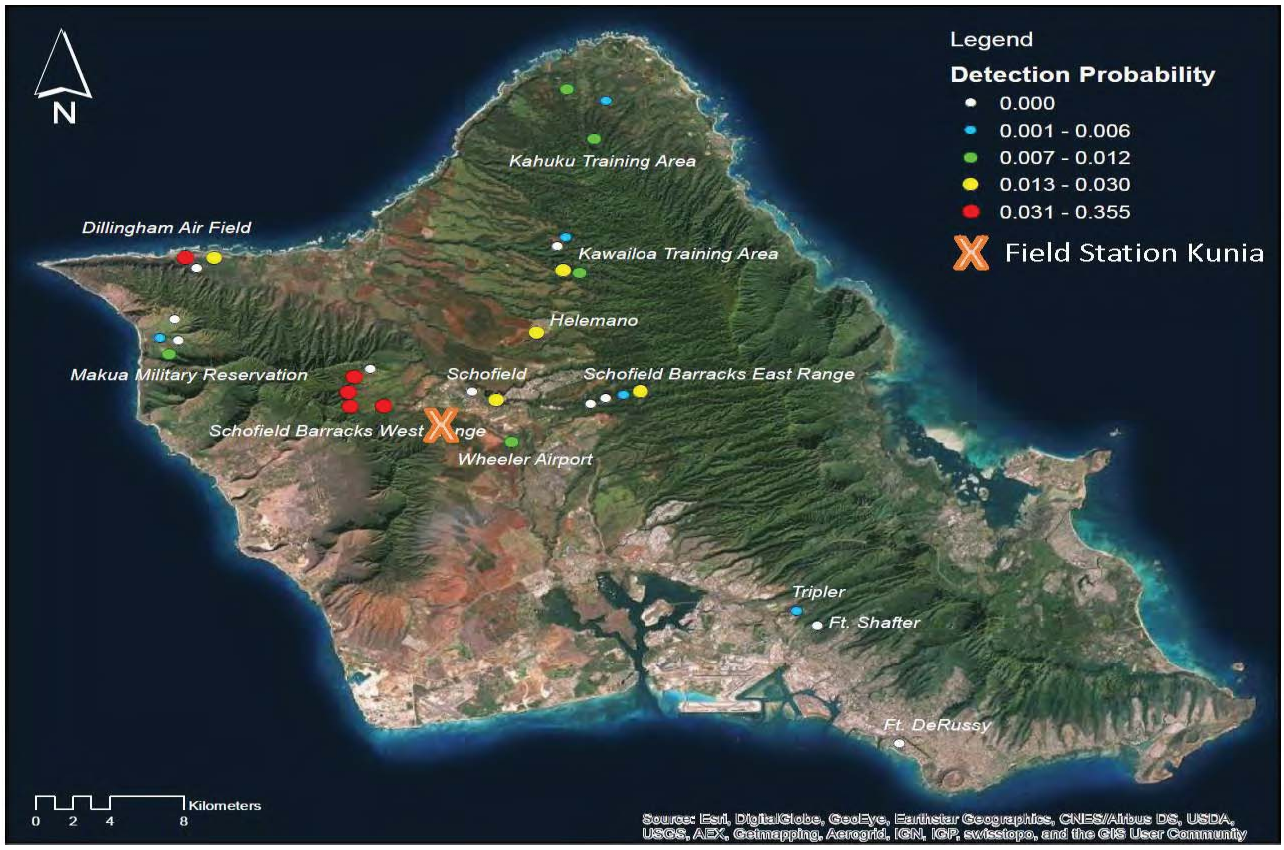
U.S. Fish and Wildlife Service. 1998. Recovery plan for the Hawaiian hoary bat (*Lasiurus cinereus semotus*). Portland, Oregon 50.



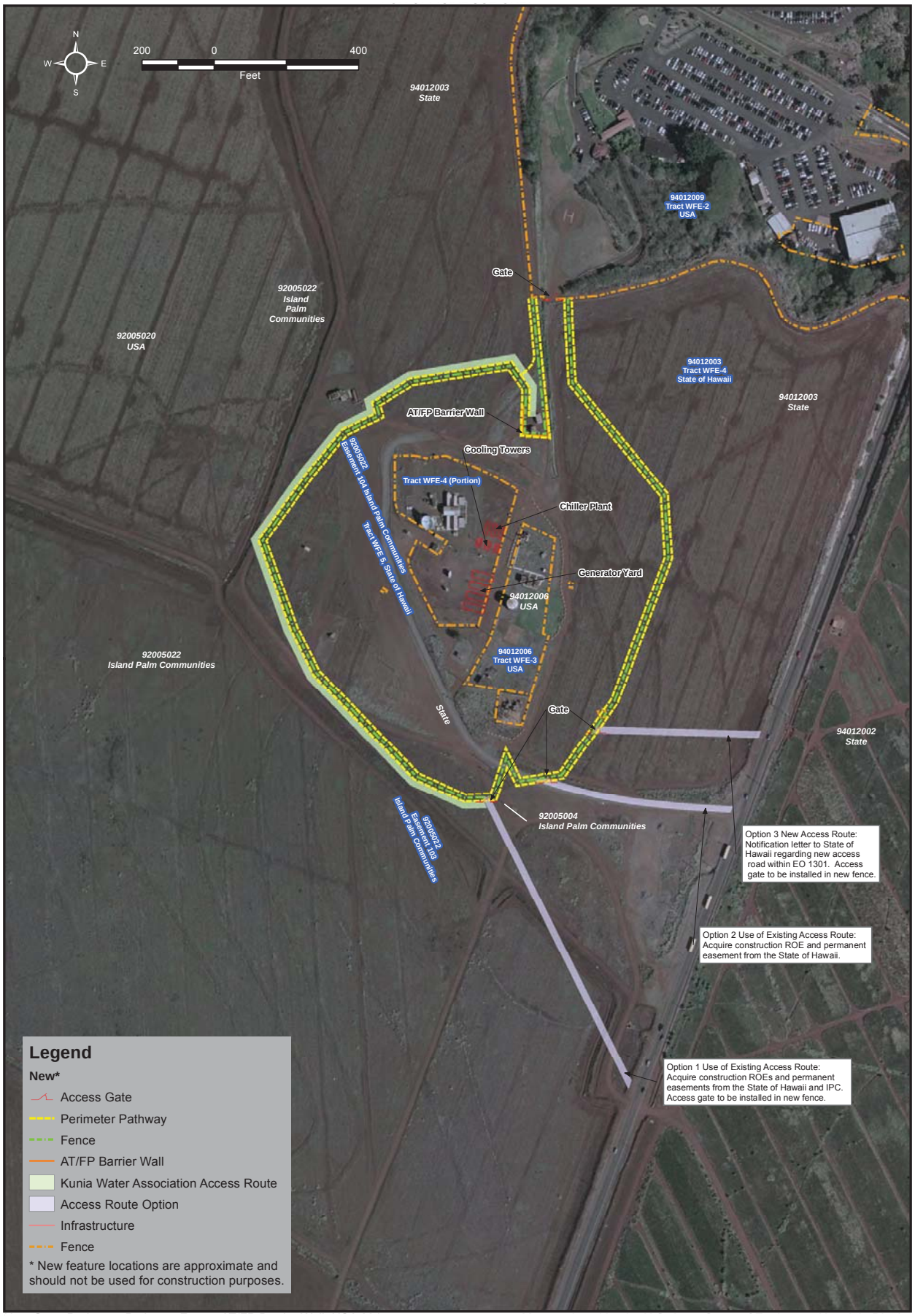
Attachment 1: Proposed New Perimeter Security Fence, Field Station Kunia, Oahu, Hawaii; Project Location



Attachment 2: Proposed New Perimeter Security Fence, Field Station Kunia, Oahu, Hawaii; Project Footprint



Attachment 3: New Proposed Perimeter Security Fence, Oahu, Hawaii; Oahu Hawaiian Hoary Bat Detection Rates



Attachment 4: New Perimeter Security Fence, Field Station Kunia, Oahu, Hawaii; Project Site Imagery

United States Department of the Interior

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

In Reply Refer To:
01EPIF00-2016-I-0143

OCT 25 2016

Colonel Stephen E. Dawson
Office of the Garrison Commander
U.S. Army Installation Management Command, Pacific Region
Headquarters, United States Army Garrison, Hawai'i
745 Wright Avenue, Building 107, Wheeler Army Airfield
Schofield Barracks, Hawai'i 96857-5000

Subject: Re-Initiate Informal Consultation for Work Conducted at Field Station Kunia, O'ahu

Dear Colonel Dawson:

The U.S. Fish and Wildlife Service (Service) received your letter on September 23, 2016, requesting our concurrence with your determination that proposed changes for the construction and operation of the security fence and appurtenances at Field Station Kunia (FSK), O'ahu may affect, but is not likely adversely affect the endangered Hawaiian hoary bat or ope'ape'a (*Lasiurus cinereus semotus*). The findings and recommendations in this consultation are based on: (1) your August 2016 Biological Evaluation for the Proposed New Perimeter Security Fence Field Station Kunia, Oahu, Hawaii U.S. Army Garrison, Hawaii; (2) a meeting held on May 23, 2016 between your office and the Service regarding the FSK fence and the Service's formula to estimate bat take from barbed wire fence use; (3) previous correspondences; and (4) other biological information available to us. Copies of pertinent materials and documentation are maintained in an administrative record in the Service's Pacific Islands Fish and Wildlife Office in Honolulu, Hawai'i. This response is in accordance with section 7 of the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], as amended (ESA).

Change in Project Description

The total length of the security fence is 4,400 feet (0.83 miles) and encloses approximately 22 acres. The expected life of the fence is twenty years. Due to the nature of the facility, the Army is unable to avoid the use of barbed wire. However, the security fence around FSK will be patrolled at least daily and monitored for wildlife impacts. In the previous project description, the fence was to be eight feet tall affixed with a Y-outrigger holding six strands of barbed wire. The fence has been changed to an eight-foot fence fabric with a single outrigger with three strands of barbed wire for a total height of nine feet.

Conclusion
By incorporating the revised number of three barbed wire strands and the original fence specifications and project duration into the Service's formula to estimate bat take from barbed wire fencing, the proposed project may result in 0.6474 Hawaiian hoary bats being taken. The Service has determined that any amount less than one, over the life of a project, is not consider take of the bat. The Service has determined that effects to the Hawaiian hoary bat as a result of the use of barbed wire for the FSK fence over the life of the project (20 years) is considered discountable. Based on the formula results, it is unlikely that take of at least one Hawaiian hoary bat will occur over the life of the project. Therefore, the Service concurs with your determination that the proposed project at FSK may effect, but is not likely to adversely affect the Hawaiian hoary bat.

Unless the project description changes, or new information reveals that the proposed project may affect listed species in a manner or to an extent not considered, or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to section 7 of the ESA is necessary.

We appreciate your efforts to conserve endangered species. If you have questions regarding this letter, please contact Leila Gibson, Fish and Wildlife Biologist (phone: 808-792-9400 or email: leila_gibson@fws.gov).

Sincerely,

Aaron Nadig
Island Team Manager
O'ahu, Kaua'i, Northwestern Hawaiian Islands, and American Samoa

cc: U.S. Army Garrison Hawaii, Directorate of Public Works, Environmental Division, Natural Resource Section

Appendix C
Section 106, National Historic Preservation Act Documentation

- USAG-HI letter to the Hawaii State Historic Preservation Division, dated February 24, 2017 (USAG-HI determination of no historic properties affected)
- Hawaii State Historic Preservation Division letter to USAG-HI, dated May 8, 2017 (concurrence with USAG-HI determination)

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DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY GARRISON, HAWAII
DIRECTORATE OF PUBLIC WORKS
947 WRIGHT AVENUE, WHEELER ARMY AIRFIELD
SCHOFIELD BARRACKS, HAWAII 96857-5013

REPLY TO
ATTENTION OF:

FEB 2 4 2017

Office of the Director of Public Works

SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua'a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua'a [TMK (1) 9-4-012:003 & 006], 'Ewa Moku, O'ahu. Archaeology Review.

Dr. Alan Downer
Deputy State Historic Preservation Officer
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building, Room 555
601 Kamōkila Boulevard
Kapolei, Hawaii 96707

Dear Dr. Downer:

I am writing to consult with you on behalf of the U.S. Army Garrison, Hawaii (USAG-HI) in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. §306108) about a proposed project to install infrastructure around existing facilities above the tunnel at U.S. Army Field Station Kunia (FSK). This project encompasses 29.01 acres of land, including 17.34 acres owned by the State of Hawaii and 11.67 acres owned by the U.S. Army. The project will be funded by the U.S. Army and is a federal undertaking as defined by 36 CFR Part 800, the implementing regulations of Section 106.

The entire 29.1 acres of the area of potential effect (APE) was recently surveyed for historic properties by International Archaeology LLC. No historic properties or other cultural resources were identified. The ground surface of the APE has been significantly altered by intensive commercial agriculture from the late 19th through early 21st centuries, and by military construction of the FSK tunnel between 1942 and 1944.

Enclosure 1 provides the information required by 36 CFR 800.11(d) including descriptions of the undertaking, the APE, and the efforts made to identify historic properties. Also enclosed is the recent report of cultural resources inventory survey conducted within the APE by International Archaeology LLC. A digital copy of this report is included on a compact disc for your convenience.

Based on the information presented in Enclosure 1 and the recent survey, USAG-HI finds that there are no historic properties present in the APE and the proposed undertaking will result in no historic properties affected.

We are expediting consultation in accordance with 36 CFR §800.3(g) and are providing you with notification of the USAG-HI finding of effect per 36 CFR Part 800.4(d)(1). We respectfully request that you review the enclosed documentation and respond within 30 days if you have any comments, concerns, or questions about this undertaking or the finding of effect. The distribution list for this notification is presented in Enclosure 2.

If you have any comments, questions, or concerns, please contact Mr. Richard Davis, USAG-HI Cultural Resources Manager, Directorate of Public Works, or Mr. David Crowley, USAG-HI Archaeologist, Directorate of Public Works. You may reach them at (808) 655-9709 and (808) 655-9707 or richard.d.davis154.civ@mail.mil and david.m.crowley22.civ@mail.mil respectively.

Sincerely,

Rhonda S Suzuki

for Kent K. Watase, PE
Director of Public Works

Enclosures

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua‘a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua‘a [TMK (1) 9-4-012:003 & 006], ‘Ewa Moku, O‘ahu. Archaeology Review.

Description of the Undertaking

The undertaking is a proposal by the U.S. Army to increase security around the existing topside facilities above the Field Station Kunia (FSK) tunnel. The Army proposes to install a perimeter security fence and patrol pathways around the existing topside facilities, construct an access road from Kunia Road to the perimeter fence, and construct an access road around the south and west side of the fence to the existing Kunia Water Association well.

The project is located on the western side of the central plateau of O‘ahu in the southeast corner of Schofield Barracks South Range, west of Wheeler Army Airfield and north of Kunia (figure 1). The location is situated on a flat ridge between Wai‘eli Stream, about 400 meters to the northeast, and Manuwaiahu Gulch, about 400 meters to the southwest.

The Area of Potential Effect (APE) for the proposed project is a 29-acre area surrounding the existing topside facilities (figure 2). The APE encompasses the footprint of the proposed perimeter fence, patrol pathways, and access road, plus a 100’ buffer on both sides of the project component centerlines to account for construction traffic and activities. The APE includes multiple potential routes for the access road to the facilities, but only one route will be selected for construction.

The APE comprises 11.67 acres of federal land and 17.336 acres of state land. The APE is within and adjacent to Schofield Barracks South Range. The proposed project is located about 200 meters south of the FSK surface installation boundaries, directly above the tunnel facility, which is estimated to be 30’-100’ below the ground surface. The land encompassed by the APE is a fallow pineapple field that is now overgrown with Guinea grass.

Steps Taken to Identify Historic Properties

International Archaeology LLC conducted a cultural resources inventory survey to identify and document all potential historic properties in the project APE (Filimoehala and Morrison 2017). The enclosed report provides the results of the survey and also presents the background history, a consideration of the environmental setting, and a summary of previous work in the area. No sites, buildings, structures, objects, or districts were identified in the APE during the survey, and no artifacts, features, or other cultural resources were found. The landscape and ground surface of the APE has been heavily modified by large-scale commercial agricultural and there is no physical evidence of traditional or historic-period activities that may have occurred in the area.

Schofield Barracks South Range (including a half of the current APE) was previously surveyed by Garcia and Associates in 2004 (Roberts et al. 2004) and by Cultural Surveys Hawaii, Inc. in 2009 (Tulchin & Hammatt 2013). The Army previously consulted with Native Hawaiian Organizations and the State Historic Preservation Division in 2010 on the results of South Range surveys. No historic properties, cultural resources, or related concerns were identified within the current APE during those surveys and the subsequent consultation efforts.

As previously described, the APE is located above the FSK tunnel facility. The tunnel was constructed between 1942 and 1944 and may be a historic property. However, the tunnel is located at least 30’ below the surface, outside of the APE, and it was not documented or evaluated for this project. Much of the sediment above the tunnel consists of construction fill and the existing topside infrastructure is modern. There are no historic-period architectural resources within the APE.

Basis for Determination

No historic properties are present in the APE. Accordingly, the proposed undertaking will result in no historic properties affected.

References

Filimoehala, Christopher W. and Alex E. Morrison.
2017 *Cultural Resources Inventory Survey, Topside Infrastructure Replacement at the Field Station Kunia, Kunia, O‘ahu, Hawai‘i.* International Archaeology, LLC. Prepared Under Contract to Helber Hastert and Fee for U.S. Army Corps of Engineers, Honolulu.

Roberts, Alice K.S., Stephen Roberts, Michael Desilets, Amy Buffum, Jennifer Robbins
2004 Archaeological Reconnaissance Survey of U.S. Army Schofield Barracks Military Reservation South Range Land Purchase, O‘ahu Island, Hawai‘i. Garcia and Associates. Prepared for U.S. Army Corps of Engineers, Honolulu. Contract Number DACA83-01-D-0013, Task Order No. 0011.

Tulchin, Jon and Hallett H. Hammatt
2013 *Archaeological Inventory Survey for the Grow the Army Project in Schofield Barracks, Honouliuli Ahupua‘a, ‘Ewa District, Island of O‘ahu, Hawai‘i.* Cultural Surveys Hawai‘i. Prepared for U.S. Army Corps of Engineers, Honolulu. Contract Number W9128A-08D-009, Task Order No. 0004.

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua‘a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua‘a [TMK (1) 9-4-012:003 & 006], ‘Ewa Moku, O‘ahu. Archaeology Review.

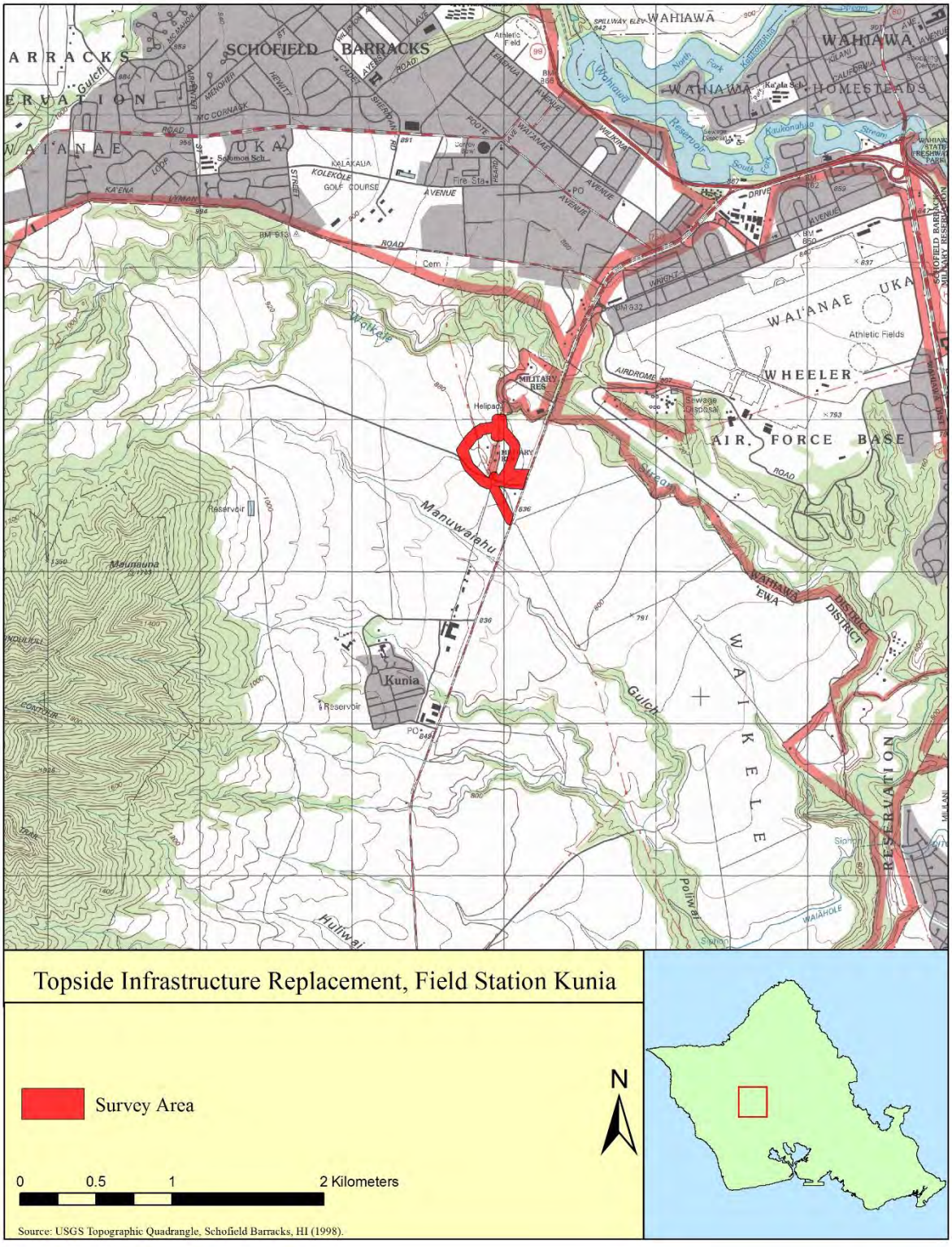

Figure 1 - USGS Topographic Map of the APE, labeled "survey area"

Enclosure 1
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-15-007: Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Honouliuli Ahupua‘a [TMK (1) 9-2-005:004 & 022] and Waikele Ahupua‘a [TMK (1) 9-4-012:003 & 006], ‘Ewa Moku, O‘ahu. Archaeology Review.

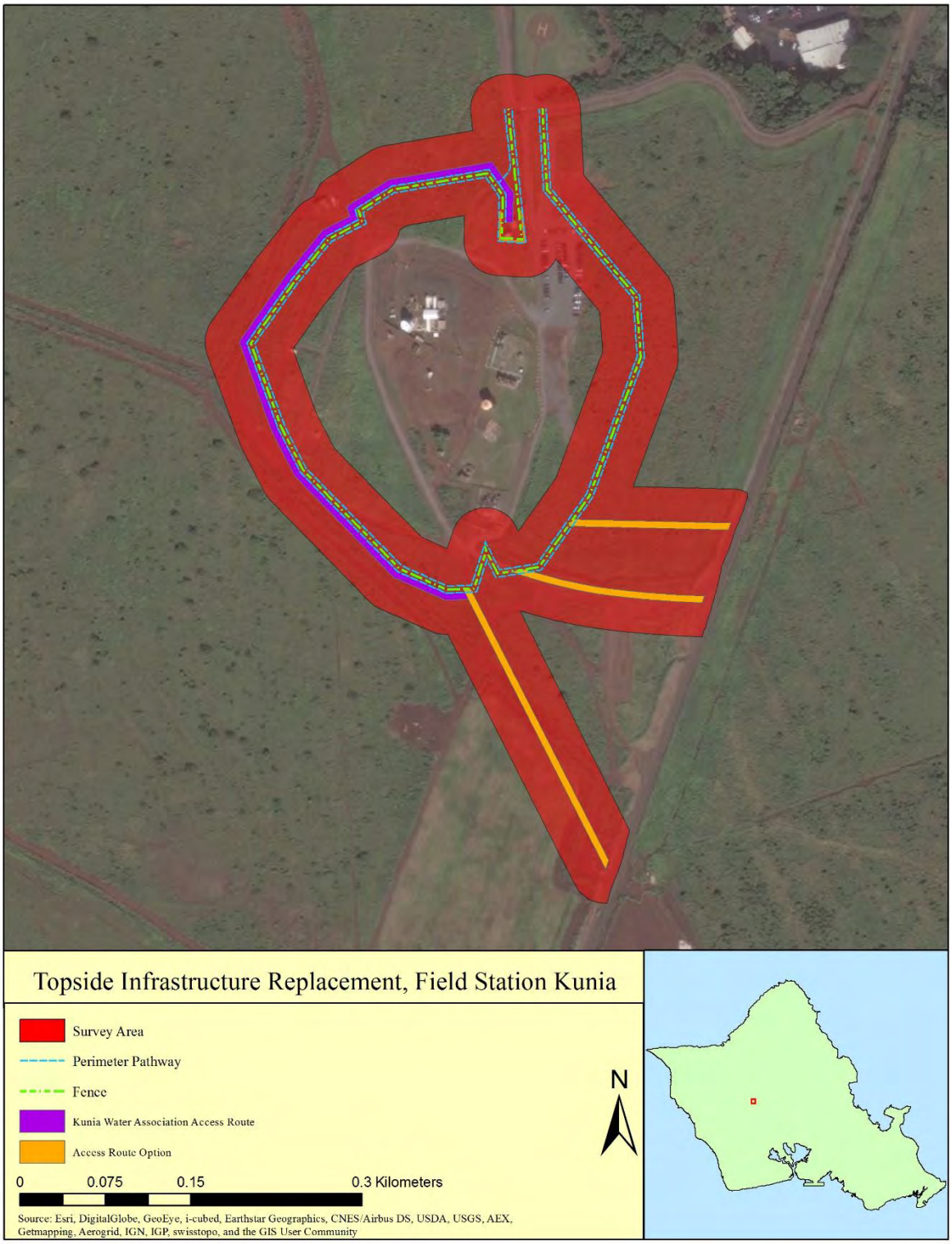

Figure 2 - Orthophoto of the APE, labeled as "survey area"

Enclosure 2
SUBJECT: National Historic Preservation Act Compliance for Project # CRS-17-012: Warning Sign Installation at Makua Military Reservation, Mākua Ahupuaʻa, Waiʻanae District, Oʻahu [TMK: (1) 8-1-001:24]
Archaeology Review

Distribution List

State Agency

Dr. Alan Downer
Deputy State Historic Preservation Officer
State Historic Preservation Division
Department of Land and Natural Resources

Native Hawaiian Organizations

Mr. William J. Aila, Jr. & Mrs. Melva N. Aila
Hui Malama O Makua

Ms. Annelle Amaral
President, Association of Hawaiian Civic Clubs

Mr. Norman Mana Kaleilani Cáceres
'Ohana Huihui

Mr. Fred Cachola,
Royal Order of Kamehameha I

Dr. Kamanaʻopono Crabbe
Office of Hawaiian Affairs

Mr. Charles Ehrhorn
Oahu Island Burial Council

Dr. Haʻaheo Guanson
Native Hawaiian Church
Pacific Justice and Reconciliation Center

Mr. Henry Kila Hopfe
Koʻa Mana
Kupukaʻāina O Waiʻanae Moku, Oʻahu

Mrs. Terrilee Kekoʻolani & Mr. Kyle Kajihiro
Hawaiʻi Peace and Justice

Mr. Tom Lenchanko
Kahuakai Ola Ko Laila Waha Olelo 'Aha Kūkaniloko
Ko'a Mana Mea Ola Kanaka Mauli

Mrs. Kaleo Paik
President, Hoi Mai Ka Lei I Mamo Aha Wahine

Mr. Melvin K. Soong
The Iʻ Mua Group

Mr. Harry Wasson
Hui Malama Aina ʻO Laie – Mahiʻai, Kiʻai

Interested Parties

Ms. Kiersten Faulkner
Historic Hawaii Foundation

Ms. Kēhaulani Souza

Mrs. Leimaile Quitevis

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

May 8, 2017

IN REPLY REFER TO:
Log No. 2017.00340
Doc. No. 1705SL17
Archaeology

Kent K. Watase, P.E., Director of Public Works
Department of the Army
Headquarters, U.S. Army Garrison, Hawaii
Directorate of Public Works
947 Wright Avenue, Wheeler Army Airfield
Schofield Barracks, HI 96857-5013

Dear Mr. Watase:

SUBJECT: **National Historic Preservation Act (NHPA) Section 106 Review —**
Request for Concurrence with "No Historic Properties Affected" Determination
Installation of Topside Infrastructure at U.S. Army Field Station Kunia, Project # CRS-15-007
Honouliuli and Waikele Ahupua'a, 'Ewa District, O'ahu
TMK: (1) 9-2-005:004, 022; (1) 9-4-012:003, 006

Thank you for the opportunity to comment on this request from the U.S. Army Garrison, Hawaii (USAG-HI) for the State Historic Preservation Officer's (SHPO) concurrence on the USAG-HI's determination of no historic properties affected for the proposed project to install infrastructure around existing facilities above the tunnel at US Army Field Station Kunia (FSK). The USAG-HI has determined that this project is an undertaking as defined in 36 CFR 800.16(y). The State Historic Preservation Division received this submittal on February 27, 2017.

The proposed project encompasses 29.01 acres of land, including 17.34 acres owned by the State of Hawaii and 11.67 acres owned by the US Army. The entire 29.1 acres comprising the area of potential effect (APE) was recently surveyed International Archaeology, LLC (Filimoehala and Morrison, January 2017). No historic properties were identified. The APE has been significantly altered by intensive commercial agriculture since the late 19th century and by military construction of the FSK tunnel between 1942 and 1944.

Based on the information provided, the SHPO concurs with the USAG-HI's determination of no historic properties affected pursuant to 36 CFR 800. No historic properties have been identified within the APE.

Please maintain a copy of this letter with your environmental review record for this undertaking. Please contact Susan Lebo, Archaeology Branch Chief, at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov for any questions regarding this letter.

Aloha,

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc. Richard Davis, USAG-HI, richard.d.davis154.civ@mail.mil
David Crowley, USAG-HI, david.m.crowley22.civ@mail.mil