

*DRAFT*

**ENVIRONMENTAL ASSESSMENT**

**ADDRESSING THE DEMOLITION OF NINE BUILDINGS AND**

**CONSTRUCTION OF A CIVIL ENGINEERING STORAGE BUILDING**

**AT**

**KA'ENA POINT SATELLITE TRACKING STATION, O'AHU, HAWAI'I**



**AUGUST 2011**

FILE COPY



SEP 23 2011

31 August 2011

MEMORANDUM FOR: Director  
Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792

Subject: Draft Environmental Assessment Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Ka'ena Point Satellite Tracking Station; Wai'anae and North Shore Districts; O'ahu, Hawai'i

Dear Director:

The U.S. Air Force: Air Force Center for Engineering and the Environment has reviewed the Draft Environmental Assessment (EA) Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Ka'ena Point Satellite Tracking Station, O'ahu, Hawai'i, and anticipates a Finding of No Significant Impact (FONSI). Please publish notice in the next available OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and one (1) copy of the Draft EA and FONSI on a CD and one (1) hardcopy of the Draft EA and FONSI. Should you have any questions or need any further information, please contact me at elizabeth.vashro@hdrinc.com or by telephone at 571-327-5844. Thank you.

Sincerely,

Elizabeth Vashro  
Project Manager, HDR

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QUALITY CONTROL

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forgot to add subject

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**Project Name:**

**Publication Form  
The Environmental Notice  
Office of Environmental Quality Control**

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**Applicable Law:** National Environmental Policy Act (NEPA)  
**Type of Document:** Environmental Assessment (EA) Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Ka'ena Point Satellite Tracking Station (KPSTS), O'ahu, Hawai'i  
**Island:** O'ahu  
**District:** Wai'anae and North Shore  
**TMK:** (1) 6-9-003:3,4,5  
**Permits Required:** None  
**Applicant or Proposing Agency:** United States Air Force  
Address: 2261 Hughes Avenue, Suite 155  
Lackland AFB, Texas 78236  
Contact & Phone: Mr. Lance Hayashi, 808-697-4314  
**Approving Agency/ Accepting Authority:** United States Air Force  
Address: 2261 Hughes Avenue, Suite 155  
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Contact & Phone: Mr. Lance Hayashi, 808-697-4314  
**Consultant:** HDR  
Address: 2600 Park Tower Drive, Suite 100, Vienna, VA 22180  
Contact & Phone: Elizabeth Vashro, 571-327-5844

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**Project Summary:** Summary of the direct, indirect, secondary, and cumulative impacts of the proposed action (less than 200 words).

The purpose of the Proposed Action is to demolish nine underused facilities that are in poor condition at KPSTS and to provide KPSTS with a new Civil Engineering Storage Building to consolidate the storage facilities and lessen the burden associated with maintaining underused facilities at KPSTS. The EA evaluates the potential environmental consequences of the Proposed Action and the No Action Alternative on the following general impact topics: noise, air quality, land use (including recreation), geological resources, water resources, coastal zone management, biological resources, health and safety, utilities and infrastructure (including transportation), hazardous materials and wastes, socioeconomic resources and environmental justice, and cultural and visual resources. The Proposed Action and No Action Alternative have been reviewed in accordance with NEPA as implemented by the regulations of the Council on Environmental Quality and 32 Code of Federal Regulations 989 (*Environmental Impact Analysis Process*). Implementation of the Proposed Action would not result in significant impacts to the quality of the human or natural environment. An analysis of the Proposed Action, in conjunction with other present and proposed activities, concluded that no significant cumulative environmental impacts would occur.

## ABBREVIATIONS AND ACRONYMS

21 SOPS	21st Space Operations Squadron	DLNR	Department of Land and Natural Resources
22 SOPS	22nd Space Operations Squadron		
50 SW	50th Space Wing	DOD	Department of Defense
750 SGP	750th Space Group	DOFAW	Division of Forestry and Wildlife
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter	DOH	Department of Health
ACHP	Advisory Council on Historic Preservation	EA	Environmental Assessment
ACM	asbestos-containing materials	EIAP	Environmental Impact Analysis Process
AFB	Air Force Base	EIS	Environmental Impact Statement
AFI	Air Force Instruction	EISA	Energy Independence and Security Act
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health	ELG	Effluent Limitations Guidelines
AFPAM	Air Force Pamphlet	EO	Executive Order
AFPD	Air Force Policy Directive	EPCRA	Emergency Planning and Community Right to Know Act
AFS	Air Force Station	ERP	Environmental Restoration Program
AFSCN	Air Force Satellite Control Network	ESA	Endangered Species Act
AFWA	Air Force Weather Agency	ESCP	erosion-and-sediment-control plan
AOC	Area of Concern	FAA	Federal Aviation Administration
APE	Area of Potential Effect	FEMA	Federal Emergency Management Agency
AQCR	Air Quality Control Region	FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
ARPA	Archaeological Resource Protection Act	FIRM	Flood Insurance Rate Map
AST	aboveground storage tank	FONSI	Finding of No Significant Impact
BMP	Best Management Practice	FPPA	Farmland Protection Policy Act
CAA	Clean Air Act	FR	Federal Register
CE	Civil Engineering	ft <sup>2</sup>	square feet
CEO	Civil Engineering Operations	FY	Fiscal Year
CEQ	Council on Environmental Quality	GHG	greenhouse gas
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	HABS	Historic American Buildings Survey
CESQG	conditionally exempt small-quantity generator	HAP	hazardous air pollutant
CFR	Code of Federal Regulations	HAR	Hawai'i Administrative Rules
CGP	Construction General Permit	HEPA	Hawai'i Environmental Policy Act
CO	carbon monoxide	HRS	Hawai'i Revised Statutes
CO <sup>2</sup>	carbon dioxide	HSWA	Hazardous and Solid Waste Amendments
CWA	Clean Water Act	HTS	Hawai'i Tracking Station
CZM	Coastal Zone Management	HUD	U.S. Department of Housing and Urban Development
CZMA	Coastal Zone Management Act	HVAC	heating, ventilation, and air conditioning
dba	A-weighted decibel		
Det 3	Detachment 3		
Det 4	Detachment 4		

ICRMP	Integrated Cultural Resources Management Plan	PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning	ppb	parts per billion
IPM	Integrated Pest Management	ppm	parts per million
IPMP	Integrated Pest Management Plan	POL	petroleum, oil, and lubricants
ISOON	Improved Solar Observing Optical Network	PSD	Prevention of Significant Deterioration
KPSTS	Ka'ena Point Satellite Tracking Station	PWC	Public Works Center
lbs/ft <sup>2</sup>	pounds per square feet	RBC	Remote Block Change
LBP	lead-based paint	RCRA	Resource Conservation and Recovery Act
LEED	Leadership in Energy and Environmental Design	RFR	radio frequency radiation
LID	low-impact development	RI	remedial investigation
MBTA	Migratory Bird Treaty Act	SAAQS	State Ambient Air Quality Standards
mg/m <sup>3</sup>	milligrams per cubic meter	SARA	Superfund Amendments and Reauthorization Act
MOA	Memorandum of Agreement	SCP	Sustainable Communities Plan
MOU	Memorandum of Understanding	SDWA	Safe Drinking Water Act
MS4	municipal storm sewer system	SGLS	Space Ground Link Subsystem
MSA	Metropolitan Statistical Area	SHPD	State Historic Preservation Division
MSDS	Material Safety Data Sheets	SHPO	State Historic Preservation Office
MSL	mean sea level	SIP	State Implementation Plan
NAAQS	National Ambient Air Quality Standards	SMA	Special Management Area
NAGPRA	Native American Graves Protection and Repatriation Act	SO <sub>2</sub>	sulfur dioxide
NAR	Natural Area Reserve	SSPP	Strategic Sustainability Performance Plan
NEPA	National Environmental Policy Act	SWMP	Storm Water Management Plan
NHPA	National Historic Preservation Act	TMDL	Total Maximum Daily Load
NO <sub>x</sub>	nitrogen oxides	TPH	total petroleum hydrocarbons
NPDES	National Pollutant Discharge Elimination System	tpy	tons per year
NRCS	Natural Resources Conservation Service	TSCA	Toxic Substance Control Act
NRHP	National Register of Historic Places	USACE	U.S. Army Corps of Engineers
O <sub>3</sub>	ozone	USAF	U.S. Air Force
OSHA	Occupational Safety and Health Administration	U.S.C.	United States Code
PAH	polycyclic aromatic hydrocarbons	USEPA	U.S. Environmental Protection Agency
PA/SI	Preliminary Assessment/Site Investigation	USFWS	U.S. Fish and Wildlife Service
Pb	lead	USGS	U.S. Geological Survey
percent g	percentage of the force of gravity	UST	underground storage tank
PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter	VOC	volatile organic compound



1 **COVER SHEET**

2 **DRAFT**  
3 **ENVIRONMENTAL ASSESSMENT**  
4 **ADDRESSING THE DEMOLITION OF NINE BUILDINGS AND**  
5 **CONSTRUCTION OF A CIVIL ENGINEERING STORAGE BUILDING AT**  
6 **KA'ENA POINT SATELLITE TRACKING STATION, O'AHU, HAWAI'I**

7 **Responsible Agencies:** U.S. Air Force (USAF); Air Force Center for Engineering and the Environment;  
8 Detachment 3 (Det 3), 21st Space Operations Squadron (21 SOPS); 50th Space Wing (50 SW); and  
9 Department of Defense (DOD).

10 **Affected Location:** Ka'ena Point Satellite Tracking Station (KPSTS), O'ahu, Hawai'i.

11 **Report Designation:** Draft Environmental Assessment (EA).

12 **Abstract:** Under the Proposed Action, the USAF would demolish nine existing buildings and construct a  
13 Civil Engineering (CE) storage facility ("CE Storage Building") at KPSTS. All of the existing buildings  
14 proposed for demolition are currently underutilized, in poor condition, and costly to maintain.  
15 Demolition of the nine existing facilities and construction of a new CE Storage Building would be  
16 completed in phases during a 12-month period. Upon completion of demolition activities, the areas of the  
17 demolished facilities would be restored (i.e., revegetated), as appropriate. The new CE Storage Building  
18 would be approximately 2,600 square feet (ft<sup>2</sup>) and would include a new vehicle bay. The new building  
19 would be constructed in the area where Buildings 16, 17, and 18 were previously located. The new CE  
20 Storage Building would replace Buildings 14, 16, 17, and 18 and would be used as a consolidated storage  
21 and maintenance facility. Construction activities and materials would promote as many Leadership in  
22 Energy and Environmental Design points as possible to demonstrate good environmental stewardship.  
23 Upon completion of the Proposed Action, there would be an overall decrease in impervious surface area  
24 at KPSTS (approximately 5,392 ft<sup>2</sup>). The decrease in impervious surfaces would provide more surface  
25 area for storm water permeation into the ground and would, thereby, permanently decrease sheet flow  
26 runoff into the storm water drainage system.

27 KPSTS is a radio receiving and transmitting facility that occupies approximately 153 acres of land leased  
28 from the State of Hawai'i, including easements and rights-of-way. KPSTS was originally established in  
29 1958 to support the Discover Satellite (Corona) Program. KPSTS included antennas for acquisition,  
30 telemetry reception, and space vehicle command. Through the years, KPSTS has also supported other  
31 DOD space programs, including a satellite communications network (i.e., Advent), the Missile Detection  
32 and Alarm System, the Satellite and Missile Observation System, and the North American Aerospace  
33 Defense command. The current mission of KPSTS is to provide uninterrupted support (i.e., telemetry,  
34 tracking, command, and data retrieval functions) for DOD space vehicles and other high-priority space  
35 programs supported by the Air Force Satellite Control Network (AFSCN). KPSTS is one of eight  
36 satellite tracking stations that make up the common user segment of the AFSCN.

37 In June 1997, Detachment 6, 750th Space Group (750 SGP) was redesignated as Detachment 4 (Det 4),  
38 22 Space Operations Squadron (22 SOPS) of the 50 SW due to the realignment of the 750 SGP. Until  
39 2003, KPSTS was under the stewardship of the 15th Airlift Wing (formerly the 15th Air Base Wing) at  
40 Hickam Air Force Base (AFB) O'ahu, Hawai'i. In October 2010, Det 4, 22 SOPS was redesignated as  
41 Det 3, 21 SOPS. KPSTS is currently managed and operated by Det 3, 21 SOPS of the 50 SW, 14th Air  
42 Force, and U.S. Air Force Space Command. The 50 SW, based at Schriever AFB, Colorado, is  
43 responsible for the on-orbit control and evaluation of DOD space vehicles.

1 This EA analyzes and documents potential environmental consequences associated with the Proposed  
2 Action and alternatives, including the No Action Alternative, on the following general impact topics:  
3 noise, air quality, land use (including recreation), geological resources, water resources, coastal zone  
4 management, biological resources, health and safety, utilities and infrastructure (including transportation),  
5 hazardous materials and wastes, socioeconomic resources and environmental justice, and cultural and  
6 visual resources. If the analyses presented in the EA indicate that implementation of the considered  
7 alternatives would not result in significant environmental or socioeconomic impacts, a Finding of No  
8 Significant Impact would be prepared. If significant environmental issues are identified that cannot be  
9 minimized to insignificant levels, an Environmental Impact Statement would be prepared or the Proposed  
10 Action would be abandoned and no action would be taken.

11 Written comments and inquiries regarding this document should be directed by mail to Mr. Lance  
12 Hayashi, Det 3, 21 SOPS/CE, P.O. Box 868, Wai'anae, HI 96792-0868; by telephone at 808-697-4314;  
13 or by email at [lynn.cruz.ctr@kaenapt.af.mil](mailto:lynn.cruz.ctr@kaenapt.af.mil).

14 **PRIVACY NOTICE**

15 Your comments on this document are requested. Letters or other written comments provided may be  
16 published in the EA. Comments will normally be addressed in the EA and made available to the public.  
17 Any personal information provided will be used only to identify your desire to make a statement during  
18 the public comment period or to fulfill requests for copies of the EA or associated documents. Private  
19 addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only  
20 the names of the individuals making comments and specific comments will be disclosed; personal home  
21 addresses and phone numbers will not be published in the EA.



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**ENVIRONMENTAL ASSESSMENT  
ADDRESSING THE DEMOLITION OF NINE BUILDINGS  
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STORAGE BUILDING  
AT  
KA'ENA POINT SATELLITE TRACKING STATION  
O'AHU, HAWAI'I**

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**AIR FORCE CENTER FOR ENGINEERING  
AND THE ENVIRONMENT  
2261 Hughes Avenue, Suite 155  
Lackland Air Force Base, Texas 78236**

**AUGUST 2011**



## Executive Summary

### Introduction

This Environmental Assessment (EA) describes the U.S. Air Force's (USAF) proposal to demolish nine buildings and construct a Civil Engineering (CE) storage facility ("CE Storage Building") at Ka'ena Point Satellite Tracking Station (KPSTS), O'ahu, Hawai'i. The EA process is carried out in compliance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508); Department of Defense (DOD) Directive 6050.1, *Environmental Considerations in DOD Actions*; and Air Force Instruction (AFI) 32-7061 implementing regulation for NEPA, the *Environmental Impact Analysis Process* (EIAP), Title 32 CFR Part 989, as amended.

### Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to demolish underutilized facilities that are in poor condition at KPSTS, which would, thereby, alleviate the burden associated with maintaining these buildings. In addition, the purpose of the Proposed Action is to provide KPSTS with a new CE Storage Building. The Proposed Action is needed to consolidate the storage facilities and lessen the burden associated with maintaining underutilized facilities that are in poor condition at KPSTS.

### Description of the Proposed Action and Alternatives

**Proposed Action.** Under the Proposed Action, the USAF would demolish nine existing buildings and construct a new CE Storage Building at KPSTS. Demolition of the existing facilities and construction of a new CE Storage Building would be completed in phases during a 12-month period. Upon completion of demolition activities, the land areas associated with the demolished facilities would be restored (i.e., revegetated), as appropriate.

A number of construction vehicles would be required for the Proposed Action. Temporary staging areas for construction machinery and temporary parking areas for construction vehicles would be used during the Proposed Action. It is not anticipated that the Proposed Action would require the removal of trees at KPSTS. However, minimal trimming of trees could be required prior to commencement of demolition activities to provide space for vehicles in the demolition and construction areas. Due to the proximity of several federally listed plant species and designated critical habitat, a qualified biologist would survey these areas prior to any tree trimming or vegetation removal. If it is determined that any federally listed species are observed within any of the projected footprints, the U.S. Fish and Wildlife Service (USFWS) would be contacted for their guidance pursuant to Section 7 of the Endangered Species Act (ESA). Any additional areas disturbed as a result of the Proposed Action would be replanted with approved grass mixtures and vegetation upon completion of demolition and construction activities.

The new CE Storage Building would be approximately 2,600 square feet (ft<sup>2</sup>) and would be constructed in the area where Buildings 16, 17, and 18 were previously located. The new CE Storage Building would replace Buildings 14, 16, 17, and 18 and would be used as a consolidated storage and maintenance facility. Construction activities and materials would promote as many Leadership in Energy and Environmental Design points as possible to demonstrate good environmental stewardship.

Upon completion of the Proposed Action, there would be an overall decrease in impervious surface area at KPSTS (approximately 5,392 ft<sup>2</sup>). The decrease in impervious surfaces would provide more surface

1 area for storm water permeation into the ground and would, thereby, permanently decrease sheet flow  
2 runoff into the storm water drainage system.

3 **No Action Alternative.** CEQ regulations require consideration of the No Action Alternative. The No  
4 Action Alternative serves as a baseline against which the impacts of the Proposed Action and other  
5 potential action alternatives can be evaluated. Under the No Action Alternative, the USAF would not  
6 demolish nine existing buildings or construct a new CE Storage Building at KPSTS. The burden and cost  
7 associated with maintaining the existing underutilized facilities that are in poor condition would not be  
8 alleviated; the amount of impervious surfaces at KPSTS would not be decreased; and the storage and  
9 maintenance facilities would not be consolidated. The No Action Alternative would not meet the purpose  
10 of and need for the action.

## 11 **Summary of Environmental Impacts**

### 12 **Proposed Action**

13 Implementation of the Proposed Action would not result in any significant individual or cumulative  
14 environmental impacts. Because there would be no significant impacts on the environment, no mitigation  
15 measures would be required. However, the Navy would conduct all actions described under the Proposed  
16 Action in accordance with best management practices (BMPs) and environmental protection measures to  
17 minimize any potential adverse impacts on the environment. A summary of the potential environmental  
18 impacts that could result from implementation of the Proposed Action is provided below.

### 19 **Noise**

20 The noise from construction equipment would be localized, short-term, and intermittent during machinery  
21 operations. Heavy construction equipment would be used periodically during construction; therefore,  
22 noise levels from the equipment would fluctuate throughout the day. Populations potentially affected by  
23 increased noise levels from construction activities under the Proposed Action would include USAF and  
24 maintenance personnel accessing the existing buildings that are adjacent to those proposed for demolition  
25 and the existing buildings adjacent to the proposed CE Storage Building. Noise generation would last  
26 only for the duration of construction activities and would be isolated to normal working hours  
27 (i.e., between 7:00 a.m. and 5:00 p.m.). Construction noise would also diminish as construction activities  
28 moved farther away from the receptor. Consequently, construction activities associated with the  
29 Proposed Action would result in short-term, minor, direct, adverse impacts on the ambient noise  
30 environment in the vicinity of construction activities.

31 A permit for operation of “excessive noise sources” (i.e., construction equipment) would be obtained for  
32 implementing the Proposed Action in compliance with the State of Hawai‘i Community Noise  
33 regulations. Equipment operating procedures (such as the mandatory use of mufflers), permissible hours  
34 of operation, and potentially public participation requirements would be implemented in compliance with  
35 state regulations. Noise impacts on construction workers would be in compliance with applicable  
36 Occupational Safety and Health Administration (OSHA) standards. Short-term, direct, minor, adverse  
37 impacts on the ambient noise environment would be anticipated as a result of the increase in construction  
38 vehicle traffic under the Proposed Action.

### 39 **Air Quality**

40 Short-term, minor, adverse effects on local air quality and short-term, negligible, adverse effects on  
41 regional air quality would result from the implementation of the Proposed Action. The Proposed Action  
42 would only generate air pollutant emissions from construction and demolition activities. These emissions

1 would be produced only for the duration of construction and demolition activities, which is expected to be  
2 approximately 240 workdays or 1 calendar year.

3 Construction of the proposed CE Storage Building and the demolition of the nine existing buildings  
4 would generate air pollutant emissions because of site-disturbing activities such as grading, filling,  
5 compacting, and trenching and operation of construction and demolition equipment and generators.  
6 Construction and demolition activities would also generate particulate emissions as fugitive dust from  
7 ground-disturbing activities and from the combustion of fuels in construction and demolition equipment.  
8 Construction and demolition activities would incorporate BMPs and control measures (e.g., frequent use  
9 of water for dust-generating activities) to minimize fugitive particular matter emissions. Additionally, the  
10 construction vehicles are assumed to be well-maintained and could use diesel particle filters to reduce  
11 emissions. Construction workers commuting daily to and from the construction site in their personal  
12 vehicles would also result in criteria pollutant emissions. Because levels of criteria pollutants in  
13 Honolulu County are consistently well below Federal and state air quality standards, and because the  
14 prevailing winds rapidly dissipate pollutants, short-term increases in levels of criteria pollutants from the  
15 Proposed Action are not expected to be significant. No long-term effects on air quality would result from  
16 the Proposed Action.

17 Short-term, negligible, adverse effects on greenhouse gas (GHG) emissions would be expected from the  
18 implementation of the Proposed Action. Total annual carbon dioxide (CO<sub>2</sub>) emissions from the Proposed  
19 Action would be 0.00286 percent of the State of Hawai'i 2008 CO<sub>2</sub> emissions and 0.000010 percent of  
20 the entire United States 2008 CO<sub>2</sub> emissions. Therefore, the Proposed Action would represent a  
21 negligible contribution towards statewide and national GHG inventories.

## 22 **Land Use and Recreation**

23 Implementation of the Proposed Action would not be expected to have adverse impacts on land use plans  
24 or policies. The Proposed Action would be consistent with the vision statements and policies of the  
25 Wai'anae and North Shore Sustainable Communities Plans (SCPs), especially with respect to preservation  
26 of natural resources and open space. The Proposed Action would demolish nine buildings and construct  
27 one new CE Storage Building resulting in an overall decrease in impervious surface area at KPSTS by  
28 approximately 5,392 ft<sup>2</sup>. The Proposed Action would result in long-term, minor, beneficial impacts on  
29 the Wai'anae and North Shore SCPs due to the increase of land devoted to open space.

30 All demolition and construction activities under the Proposed Action would occur within the boundaries  
31 of KPSTS. The Proposed Action would not introduce incompatible land uses at KPSTS. Because  
32 KPSTS already houses storage facilities, the Proposed Action would be compatible with existing  
33 surrounding uses at KPSTS, including Light Industrial and Open Space. The Proposed Action would not  
34 preclude the viability of existing land use within KPSTS or the continued use or occupation of any areas  
35 adjacent to the demolition or construction work sites.

36 All demolition and construction activities under the Proposed Action would occur within the boundaries  
37 of KPSTS; therefore, no adverse impacts on recreational resources would be expected. However, access  
38 to state lands near KPSTS could be temporarily delayed due to construction vehicles traveling to KPSTS  
39 or due to restriction of areas around project work sites for safety reasons. Therefore, short-term,  
40 negligible, adverse impacts on access to recreation areas could result from demolition or construction  
41 activities associated with the Proposed Action.

1 **Geological Resources**

2 Short- and long-term, negligible, adverse, and long-term, beneficial impacts on geology and soils would  
3 be expected from implementation of the Proposed Action. Short-term impacts would be expected from  
4 construction and demolition work consisting of minor clearing of vegetation, grading, and recontouring.  
5 Erosion-and-sediment-control plans would be developed and implemented both during and following site  
6 development to contain soil and runoff on site, and would reduce potential for adverse impacts associated  
7 with erosion and sedimentation and transport of sediments in runoff.

8 Long-term impacts would be anticipated to be negligible and beneficial. As a result of implementing the  
9 Proposed Action, soils would be compacted, and soil structure would be disturbed and modified.  
10 However, once construction and demolition activities have been completed, revegetation would occur in  
11 disturbed areas, resulting in decreased soil erosion and sedimentation rates.

12 Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in  
13 disturbed areas and be eliminated in those areas within the footprint of new building structures. However,  
14 impervious surfaces would decrease by approximately 5,392 ft<sup>2</sup> under the Proposed Action and would  
15 provide more surface area for storm water permeation into the ground and would, thereby, permanently  
16 decrease sheet flow runoff into the storm water drainage system. This would minimize the potential for  
17 erosion and sediment production as a result of future storm events.

18 **Water Resources**

19 Since the Proposed Action would disturb less than 1 acre of land, KPSTS is not required to follow the  
20 minimum control measures outlined in its Storm Water Management Plan. However, KPSTS is subject to  
21 the new storm water design requirements of Section 438 of the Energy Independence and Security Act  
22 that require predevelopment site hydrology to be maintained or restored to the maximum extent  
23 technically feasible with respect to temperature, rate, volume, and duration of flow. Therefore, only  
24 negligible, short-term, adverse impacts on surface water would be expected from implementing the  
25 Proposed Action. Short-term impacts could occur from temporarily increased soil erosion from ground  
26 disturbances and potential leaks or spills of petroleum or hazardous materials during demolition and  
27 construction; however, erosion- and sedimentation-control measures would be implemented for the  
28 duration of the Proposed Action. Long-term, adverse impacts on the storm water system would not be  
29 expected, as hydrologic conditions of the post-construction project area should mimic predevelopment  
30 site hydrology. In addition, long-term, beneficial impacts would be expected from the demolition of the  
31 nine existing buildings due to an overall decrease in impervious surface area (approximately 5,392 ft<sup>2</sup>).

32 **Coastal Zone Management**

33 There is the potential that hazardous waste cleanup would be required from demolition activities. These  
34 activities are covered under the KPSTS *de minimis* activity list. If the appropriate conditions and  
35 mitigation measures are met and implemented under the Proposed Action, no short-term, long-term, direct  
36 or indirect, cumulative or secondary, adverse effects on coastal zone resources would be expected.  
37 Additionally, on June 13, 2011, the Hawai'i Office of Planning provided concurrence with the use of the  
38 *de minimis* list for the Proposed Action. Therefore, a Coastal Consistency Negative Determination would  
39 not be required.

40 **Biological Resources**

41 **Vegetation.** Short-term, negligible, adverse impacts on vegetation would be expected from land-clearing  
42 activities under the Proposed Action. A negligible amount of vegetation would be required to be removed

1 or would be damaged during demolition activities. A number of construction vehicles would be required  
2 for the Proposed Action. Temporary staging areas for construction machinery and temporary parking  
3 areas for construction vehicles would be used during the Proposed Action. It is not anticipated that the  
4 Proposed Action would require the removal of trees from or adjacent to the project areas. However,  
5 minimal trimming of shrubs or trees could be required prior to commencement of demolition activities to  
6 provide space for vehicles in the demolition and construction areas, particularly for the demolition of  
7 Buildings 16 and 17.

8 Long-term, minor, beneficial effects on vegetation would be expected from an overall decrease in  
9 impervious surfaces and increase in vegetative cover on KPSTS. Upon completion of demolition  
10 activities, the land areas associated with the demolished facilities would be restored (i.e., revegetated), as  
11 appropriate, with approved grass mixtures and vegetation.

12 **Wildlife.** Short-term, negligible, adverse impacts on wildlife due to disturbances from noise, demolition  
13 and construction activities, and heavy equipment use would be expected from the Proposed Action.  
14 Demolition and construction noise could cause wildlife to engage in escape or avoidance behaviors,  
15 resulting in short-term, adverse impacts. The areas of disturbance would be relatively small (i.e., ranging  
16 from 36 ft<sup>2</sup> to 3,137 ft<sup>2</sup>) and demolition and construction projects would be phased over a 12-month  
17 period; therefore, the Proposed Action would only be expected to disturb individuals rather than  
18 populations. Most wildlife species near the project areas would be expected to recover once the  
19 construction noise and disturbances have ceased for the day or project period, as these are existing  
20 disturbed habitats that experience ongoing human activity. Furthermore, all new construction would  
21 occur within currently developed areas and no existing habitat would be removed; therefore, no long-  
22 term, adverse impacts on wildlife would be expected as a result of the Proposed Action.

23 Long-term, minor, beneficial effects on wildlife would be expected from the overall decrease in  
24 impervious surfaces and increase in vegetative cover, which would provide additional potential habitat for  
25 wildlife species common to developed areas (e.g., nonnative sparrows, doves, and other ground-feeders;  
26 and lizards and geckos).

27 **Protected and Sensitive Species.** No federally listed threatened or endangered plant or animal species are  
28 expected to occur at or near the project areas. Therefore, the implementation of the Proposed Action  
29 would have no effect on federally threatened or endangered species.

30 It is anticipated that construction activities would have a temporary impact on migratory birds transiting  
31 through areas with construction noise; however, since the project areas are not migratory bird nesting  
32 areas, construction noise is unlikely to have negative effects on nesting activities.

33 Wedge-tailed shearwaters are known to transit the area and are prone to collisions with objects in  
34 artificially lighted areas. Artificial lighting and structures higher than current existing vegetation, such as  
35 the proposed CE Storage Building under the Proposed Action, have the potential to attract seabirds.  
36 Seabirds end up circling the light source until they either collide with the structure or fall to the ground  
37 due to exhaustion. Once grounded, they are vulnerable to predation or often struck by vehicles. Potential  
38 impacts on wedge-tailed shearwaters and other migratory and sea bird species would be avoided and  
39 minimized by downshielding outside lights associated with the proposed CE Storage Building to prevent  
40 attraction, avoiding construction during the night, and providing all project staff with information about  
41 seabird injury and mortality.

42 Because of the lack of habitat and the use of construction and lighting BMPs to avoid and minimize  
43 impacts on wedge-tailed shearwaters and other migratory and sea birds, no impacts on migratory birds  
44 would be expected from the implementation of the Proposed Action.

1 **Wetlands.** No impacts on wetlands would occur from the implementation of the Proposed Action  
2 because no wetlands occur within or adjacent to the project area.

### 3 **Human Health and Safety**

4 Short-term, negligible, adverse impacts on the safety of contractors, installation personnel, and the public  
5 would be expected from rockfalls. The local contractor selected to perform construction activities would  
6 be required to implement appropriate engineering controls at the project sites during construction  
7 activities to prevent rockfalls from occurring. If necessary, signs could also be posted to notify  
8 construction personnel of the potential for rockfall hazards.

9 Short-term, minor, adverse impacts on contractor safety would be expected from construction activities.  
10 Implementing the Proposed Action would slightly increase the short-term risk associated with  
11 construction contractors performing work at the project site during the normal workday because the level  
12 of such activity would increase. Contractors would be required to establish and maintain safety programs  
13 for their employees. Contractors would be informed of the facility appropriate for hazardous materials  
14 and wastes, and coordinate the use of these materials with the appropriate authority at the installation.

15 The removal of asbestos-containing materials (ACM) and lead-based paint (LBP) in the nine buildings  
16 proposed for demolition would result in long-term, beneficial impacts by reducing exposure to personnel.

17 Short-term, negligible, adverse impacts on public safety would be expected from construction activities.  
18 Since the majority of the buildings proposed for demolition would be visible from Keawa'ula Beach, it is  
19 possible that members of the general public would approach the site. However, public safety would not  
20 likely be affected due to the safety precautions and access controls established by KPSTS.

### 21 **Utilities and Infrastructure**

22 **Water Supply.** Short-term, negligible, direct, adverse impacts on water supply would be expected from  
23 implementing the Proposed Action. Water demand could increase slightly during demolition and  
24 construction activities; however, potential increases in water demand would be temporary and would not  
25 be expected to exceed existing capacity.

26 **Storm Drainage System.** Short-term, minor, direct, adverse and long-term, minor, direct, beneficial  
27 impacts on the storm water drainage system would be expected from implementing the Proposed Action.  
28 Ground disturbance from demolition and construction activities would temporarily increase the potential  
29 for soil erosion and sediment transport during sheet flow runoff. Overall, there would be a long-term net  
30 reduction of 5,392 ft<sup>2</sup> of impervious surface area. This would provide more surface area for storm water  
31 permeation into the ground and, subsequently, would permanently decrease sheet flow runoff into the  
32 storm water drainage system.

33 **Sanitary Sewer and Wastewater System.** Short-term, negligible to minor, direct, adverse impacts and  
34 long-term, minor, direct, beneficial impacts on the sanitary sewer and wastewater system would be  
35 expected from implementing the Proposed Action. During general demolition and construction activities,  
36 there would be a slight increase in wastewater. This increase would be temporary and would not be  
37 expected to exceed existing capacity. Upon completion of demolition and construction activities, there  
38 would be an overall long-term, minor, direct, beneficial impact on the sanitary sewer and wastewater  
39 system from a decrease in demand.

40 **Electrical System.** Short-term, minor, direct, adverse and long-term, minor, direct, beneficial impacts on  
41 the electrical system would be expected from implementing the Proposed Action. There would be a



1 temporary increase in electrical demand during demolition and construction activities; however, the  
2 increase in electricity demand would be temporary and is not anticipated to exceed existing capacity.  
3 Electrical power for the Proposed Action would be supplied by the Hawaiian Electrical Company, which  
4 currently serves KPSTS. Upon completion of demolition and construction activities, there would be a  
5 long-term, minor, direct, beneficial impact on the electrical system from a decrease in demand.

6 **Solid Waste.** Short-term, negligible, direct and indirect, adverse impacts on solid waste management  
7 would be expected from implementing the Proposed Action. Any increases in solid waste associated with  
8 demolition and construction activities would be minimal and temporary in nature, and would be disposed  
9 of in accordance with relevant Federal, state, and local regulations. Demolition and construction  
10 materials would be recycled or reused to the greatest extent possible. Recyclable materials would be  
11 taken to several different locations including a metals recycling facility (e.g., Schnitzer Steel), a clean  
12 concrete recovery (e.g., West O'ahu Aggregate), and a green wastes facility (e.g., Hawaiian Earth  
13 Products). Demolition and construction debris that could not be recycled would be taken to the PVT  
14 landfill for non-recoverable materials (e.g., drywall, roofing) and to the H-Power Plant for combustible  
15 materials (Cruz 2011b). All other solid waste would be taken off-installation to the City and County of  
16 Honolulu Waimanalo Gulch Landfill. If the Waimanalo Gulch Landfill was not able to accept the debris  
17 due to capacity issues, then an alternative location would need to be identified.

18 The Proposed Action would result in approximately 10,592 ft<sup>2</sup> of total ground disturbance (7,992 ft<sup>2</sup> of  
19 existing buildings planned for demolition and 2,600 ft<sup>2</sup> for the proposed new CE Storage Building). The  
20 estimated total construction debris and demolition debris were calculated using a generation factor of 4.34  
21 pounds per square feet (lbs/ft<sup>2</sup>) and 158 lbs/ft<sup>2</sup>, respectively, which are the average waste generation rates  
22 of nonresidential new construction and demolition documented by the U.S. Environmental Protection  
23 Agency (USEPA). The estimated total debris that would result from construction activities is  
24 approximately 5.6 tons. The estimated total debris that would result from demolition activities is  
25 approximately 624.3 tons.

26 Depending on which landfill would be used (i.e., Waimanalo Gulch Landfill or an alternative location) for  
27 the remaining construction and demolition debris, long-term, minor, direct or indirect, adverse impacts on  
28 solid waste management would be expected.

29 **Transportation.** Short-term, negligible to minor, direct, adverse impacts on transportation would be  
30 expected from implementing the Proposed Action. A potential increase in traffic volume from  
31 construction vehicles would be expected; however, this would be temporary, and traffic volume would  
32 return to normal upon completion of demolition and construction activities. Temporary construction  
33 staging areas for construction machinery, parking areas for construction vehicles, and access roads would  
34 be used on site during demolition and construction activities of the Proposed Action. Therefore, there  
35 would be no impacts on currently used parking areas on KPSTS during demolition and construction  
36 activities.

37 Appropriate signage would be installed to direct construction traffic. No long-term, direct or indirect,  
38 adverse impacts on transportation would be expected because there would be no decreases or increases in  
39 personnel.

#### 40 **Hazardous Materials and Wastes**

41 **Hazardous Materials and Wastes.** Short-term, negligible to minor, adverse impacts would be expected  
42 from implementing the Proposed Action. Construction activities would require the use of certain  
43 hazardous materials (e.g., paints, welding gases, solvents, preservatives, sealants), and demolition  
44 activities would generate minor amounts of hazardous wastes. These activities would not be expected to

1 exceed the capacities of existing hazardous waste disposal facilities. Hazardous wastes would be handled  
2 under the existing DOD RCRA-compliant waste management programs and, therefore, would not be  
3 expected to increase the risks of exposure to workers and installation personnel. The local contractor  
4 selected for transporting hazardous wastes off site to a permitted disposal area would be required to  
5 demonstrate that they have properly secured all hazardous wastes prior to transport. Prior to  
6 commencement of construction activities, the contractor would be required to obtain the necessary  
7 construction permits. No long-term, direct or indirect, adverse impacts would be expected.

8 ***Asbestos-Containing Material.*** Short-term, negligible to minor, adverse, and long-term, beneficial  
9 impacts would be expected. It is anticipated that the demolition of the nine buildings would generate  
10 ACM wastes because of their age. Any ACM encountered during building demolition activities would be  
11 handled in accordance with established USAF policy. USAF regulations prohibit the use of ACM for  
12 new construction. If friable ACM would need to be removed, an asbestos removal permit would be  
13 obtained prior to initiation of demolition activities. Friable ACM would be removed and disposed of at  
14 an asbestos-permitted landfill. The removal of ACM during demolition activities would result in  
15 long-term, beneficial impacts by reducing exposure to personnel.

16 ***Lead-Based Paint.*** Short-term, negligible to minor, adverse, and long-term, beneficial impacts would be  
17 expected. It is anticipated that the demolition of the nine buildings would generate LBP wastes because  
18 of their age. Any LBP encountered during building demolition activities would be handled in accordance  
19 with established USAF policy. LBP would be removed and disposed of at an LBP-permitted landfill.  
20 The removal of LBP during demolition activities would result in long-term, beneficial impacts by  
21 reducing exposure to personnel.

22 ***Radon.*** No impacts would be expected from implementing the Proposed Action, as KPSTS is in Federal  
23 USEPA Radon Zone 3, which is the lowest priority zone.

24 ***Pesticides.*** No impacts would be expected from implementing the Proposed Action. Restricted use  
25 pesticides are not generally used at KPSTS and there are no chemical pesticides stored at KPSTS. All  
26 pesticides and herbicides would be handled and applied according to Federal, state, and local regulations;  
27 KPSTS Integrated Pest Management Plan (IPMP); and the Navy Public Works Center (PWC) Pearl  
28 Harbor Pest Management Plan.

29 ***Aboveground and Underground Storage Tanks.*** No impacts from or on existing underground storage  
30 tanks (USTs) or aboveground storage tanks (ASTs) would be expected. There are no known currently  
31 open leaking UST cases at or within the vicinity of any of the nine buildings to be demolished. If any  
32 petroleum-contaminated soil, not associated with Environmental Restoration Program (ERP) Site ST001,  
33 was subsequently discovered during construction activities, the contractor would be required to  
34 immediately stop work, report the discovery to the installation, and implement the appropriate safety  
35 precautions. Commencement of field activities could not continue in this area until the issue was  
36 investigated. ASTs and USTs are not expected to impact or be impacted by the nine buildings to be  
37 demolished or the site for the construction of the proposed CE Storage Building. The tanks would  
38 continue to be used with appropriate BMPs in place (e.g., secondary containment, leak detection systems,  
39 alarm systems). The former UST associated with ERP Site ST001 is discussed in further detail in the  
40 subsequent paragraphs.

41 ***Environmental Restoration Program.*** Short-term, negligible to minor, adverse impacts could be  
42 expected from ERP sites. Demolition activities at Buildings 32, 33, 37, and 39 would be within the  
43 immediate vicinity of ERP Site ST001. There could be the potential for encountering contaminated soils  
44 from ERP Site ST001 during demolition activities; however, the Final Remedial Investigation (RI) report  
45 stated that potential risks posed to human health are within acceptable levels at site ST001 and do not

1 require further action. Project planning would include soil and groundwater sampling, as appropriate,  
2 prior to commencement of demolition activities. If results of the sampling were to indicate the presence  
3 of additional contamination, remediation efforts would take place prior to commencement of demolition  
4 activities. Additionally, the handling, storage, transportation, and disposal of hazardous substances would  
5 be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and  
6 KPSTS management procedures. Therefore, negligible to minor impacts would be expected.

## 7 **Socioeconomic Resources and Environmental Justice**

8 **Demographics.** Temporary or permanent relocation of construction workers to meet the demand for the  
9 Proposed Action would not be expected. No new personnel are anticipated to be hired or transferred to  
10 KPSTS as a result of the Proposed Action. Demand for housing in the area surrounding KPSTS would  
11 not be impacted as a result of the Proposed Action. The number of new residents who would move to the  
12 area as result of the Proposed Action would be negligible; therefore, short- and long-term, negligible,  
13 beneficial impacts on demographics would be expected.

14 **Employment Characteristics.** The number of construction workers necessary for the Proposed Action is  
15 estimated to be less than 1 percent of all construction workers, which is not large enough to outstrip the  
16 supply of the industry. Indirect beneficial impacts would be expected from the increase in payroll, tax  
17 revenues, purchase of materials, and purchase of goods and services in the area, resulting in short-term,  
18 minor, beneficial impacts on employment in the Honolulu Metropolitan Statistical Area (MSA).

19 The temporary increase of construction personnel would represent a small increase in the total number of  
20 persons working on site at KPSTS and no additional facilities (e.g., housing, transportation) would be  
21 necessary to accommodate the workforce. Changes to employment and expenditures resulting from the  
22 Proposed Action would be short-term, negligible, and beneficial.

23 **Environmental Justice.** Demolition and construction activities would be located entirely within KPSTS.  
24 Because there are no residential properties within 1 mile of KPSTS, no minority population would be  
25 disproportionately impacted by implementing the Proposed Action. Adverse impacts on minority, low-  
26 income, and youth populations would not be expected.

## 27 **Cultural Resources**

28 **Visual Resources.** Long-term, minor, beneficial impacts on visual resources would be expected from  
29 implementation of the Proposed Action. The demolition of nine existing buildings at KPSTS would  
30 reduce the number of man-made structures currently in the viewshed, and the visual quality of the  
31 landscape would be enhanced. No impacts on visual resources would be expected from the newly  
32 constructed CE Storage Building, as it would not be visible from Keawa'ula Beach within Ka'ena Point  
33 State Park, an area that is frequented by Native Hawaiian fishermen seeking marine resources. The new  
34 CE Storage Building also would not be visible from the *Moka'ena Heiau*, an ancient Hawaiian temple.

35 **Archaeological and Traditional Cultural Resources.** Two archaeological sites (Site Nos. 50-80-03-3718  
36 and 50-80-03-3719) are in the Control Area at KPSTS where the construction of the CE Storage Building  
37 and the demolition of Buildings 14, 16, 17, 18, and 21 would occur. Site No. 50-80-03-3718 is a  
38 traditional Hawaiian site that has been determined to be eligible for listing in the NRHP under Criterion  
39 D. The site is on a knoll between Buildings 10 and 20. Site No. 50-80-03-3719 includes stone/brick  
40 debris and could be associated with the construction of Building 20. In 2007, this site was recommended  
41 for removal from site records as it was no longer considered an archaeological site. No impacts on Site  
42 No. 50-80-03-3718 would be expected if the knoll area between Buildings 21, 16, 17, and 18 is avoided,

1 staging areas and temporary parking areas are located away from the site, and surface disturbance  
2 (i.e., removing trees and vegetation) in the vicinity of the site is avoided.

3 The potential exists for the unanticipated discovery of cultural resources and human remains during  
4 ground-disturbing activities related to the Proposed Action. Consequently, the USAF would develop an  
5 Inadvertent Discovery Plan that details responsibilities for reporting in the event of a discovery during  
6 these activities and compliance with 36 CFR 800.13. The plan would also include mitigation procedures  
7 to be implemented in the event of a significant unanticipated find. If human remains are discovered, the  
8 USAF would stop work and contact the county coroner and a professional archaeologist that meets the  
9 Secretary of the Interior's Professional Qualifications Standards in archaeology or history to determine  
10 the significance of the discovery.

11 ***Architectural Resources.*** Because KPSTS operated as an integrated tracking station for the Corona  
12 Program, impacts of the Proposed Action are evaluated relative to both the individual resources affected  
13 and the potential district as a whole. Long-term, minor to moderate, direct, adverse impacts would be  
14 expected on the potential historic district at KPSTS from demolition of the nine buildings and  
15 construction of a new CE Storage Building. All of the buildings proposed for demolition are associated  
16 with the Corona Program and the potential historic district. The introduction of a new CE Building at  
17 KPSTS could also impact the overall integrity of the potential historic district. Although KPSTS is  
18 potentially eligible for inclusion on the National Register as a historic district under the Cold War  
19 designation, the nine buildings proposed for demolition are infrastructure of a nondistinctive type and  
20 generally would not be interpreted as eligible for the National Register as individual resources; therefore,  
21 no adverse impacts would be expected on the individual resources.

22 Because the Proposed Action would result in adverse impacts on the potential historic district at KPSTS,  
23 proposed mitigation could include a comprehensive study of the built resources on KPSTS, history of  
24 KPSTS, and HABS documentation of the potential historic district at KPSTS. Additional mitigation  
25 could include oral history interviews of personnel associated with the Corona Program who were  
26 stationed at KPSTS or interpretation of the history of the Corona Program and KPSTS's contribution to  
27 the program through onsite signage at KPSTS and public areas in the vicinity of KPSTS. Mitigation  
28 measures developed in consultation with the Hawai'i SHPD, Native Hawaiian Organizations, and other  
29 stakeholders would be outlined in a Section 106 Memorandum of Agreement (MOA). The MOA also  
30 would include the measures to avoid any actions that might cause surface disturbance to the knoll where  
31 Site No. 50-80-03-3718 is located and the Inadvertent Discovery Plan for unanticipated finds.

## 32 **No Action Alternative**

33 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
34 new CE Storage Building at KPSTS. The burden and cost associated with maintaining the existing  
35 underutilized facilities that are in poor condition would not be alleviated; the amount of impervious  
36 surfaces at KPSTS would not be decreased; and the storage and maintenance facilities would not be  
37 consolidated. The No Action Alternative would not meet the purpose of and need for the action.

## 38 **Cumulative Effects**

39 Several projects on KPSTS and another in an area surrounding KPSTS have been identified as having the  
40 potential for cumulative effects when considered with the Proposed Action. Projects on KPSTS, which  
41 are described in detail in the following paragraphs, include (1) completing the Remote Block Change  
42 (RBC) upgrade of the Hawai'i Tracking Station (HTS) A-Side Antenna, (2) constructing a new  
43 communications antenna for the 50th Space Wing (50 SW), (3) upgrading the existing water system  
44 infrastructure for KPSTS, (4) constructing additional antennas for the Air Force Weather Agency

1 (AFWA), and (5) installing the Improved Solar Observing Optical Network (ISOON) to upgrade the  
2 Solar Electro-Optical Network. Finally, constructing predator-proof fencing to prevent feral predators  
3 such as dogs, cats, mongoose, and rats from entering 59 acres of coastal habitat within Ka'ena Point NAR  
4 is also discussed. No other recently completed, currently underway, or reasonably foreseeable future  
5 projects on lands surrounding KPSTS, including Ka'ena Point NAR, Pahole NAR, Ka'ena Point State  
6 Park, Kuaokalā Game Management Area, and Mokolē'ia Forest Reserve, were identified.

7 Some ground-disturbing activities would occur with each project. The level of impacts would be  
8 proportional to the size of the construction disturbance. All projects requiring heavy equipment to  
9 construct, modify, or demolish buildings or install new telescopes or antennas could result in short-term  
10 increased noise, increased air emissions, potential for erosion and transport of sediment, generation of  
11 small amounts of hazardous materials and wastes, and generation of construction and demolition waste.  
12 Additionally, all construction-related activities generally could result in minor, beneficial effects as a  
13 result of job creation and materials procurement. Furthermore, it should be assumed that demolition and  
14 renovation activities in older buildings have the potential to disturb ACM or LBP and the appropriate  
15 identification, handling, removal, and disposal of those materials would occur in accordance with Federal,  
16 state, and local regulations and guidance. Cumulative construction effects are not considered in this  
17 analysis in detail because these projects have fairly small footprints; therefore, they would have to be  
18 occurring at the same time and in close proximity to generate cumulative effects. The following projects  
19 are in reasonably close proximity; if the timelines for ground-disturbing activities coincided, then minor,  
20 short-term, cumulative effects could occur:

- 21 • It is possible that demolition of Building 21 (under the Proposed Action) and demolition of  
22 Building 20 and Antenna No. 14111 (to support the new communications antenna) could occur  
23 concurrently. These three facilities are clustered together.
- 24 • Demolition of Buildings 32 and 33 are in the immediate vicinity of Facility No. 39006, a legacy  
25 antenna that will likely be demolished following construction of the new RBC facility. Buildings  
26 37 and 39 are approximately 300 feet east of Facility No. 39006.
- 27 • Demolition of Buildings 14, 16, 17, and 18 and construction of the CE storage facility would be  
28 approximately 600 feet east of the new RBC facility. Building 10 is in the middle of these two  
29 project areas.
- 30 • The water infrastructure system upgrades include numerous replacements, repairs, upgrades, and  
31 augmentations throughout KPSTS, so it is possible ground-disturbing activities of this project  
32 could coincide spatially and temporally with the Proposed Action or any other project on KPSTS.

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**DRAFT**  
**ENVIRONMENTAL ASSESSMENT**  
**ADDRESSING THE DEMOLITION OF NINE BUILDINGS AND CONSTRUCTION OF**  
**A CIVIL ENGINEERING STORAGE BUILDING**  
**AT**  
**KA'ENA POINT SATELLITE TRACKING STATION**  
**O'AHU, HAWAI'I**

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# 1. Purpose of and Need for the Proposed Action

## 1.1 Introduction

This Environmental Assessment (EA) describes the U.S. Air Force’s (USAF) proposal to demolish nine buildings and construct a Civil Engineering (CE) storage facility (“CE Storage Building”) at Ka’ena Point Satellite Tracking Station (KPSTS), O’ahu, Hawai’i. This section presents the project location, history and background information, the purpose of and need for the Proposed Action, a summary of key environmental compliance requirements, and an introduction to the organization of this document.

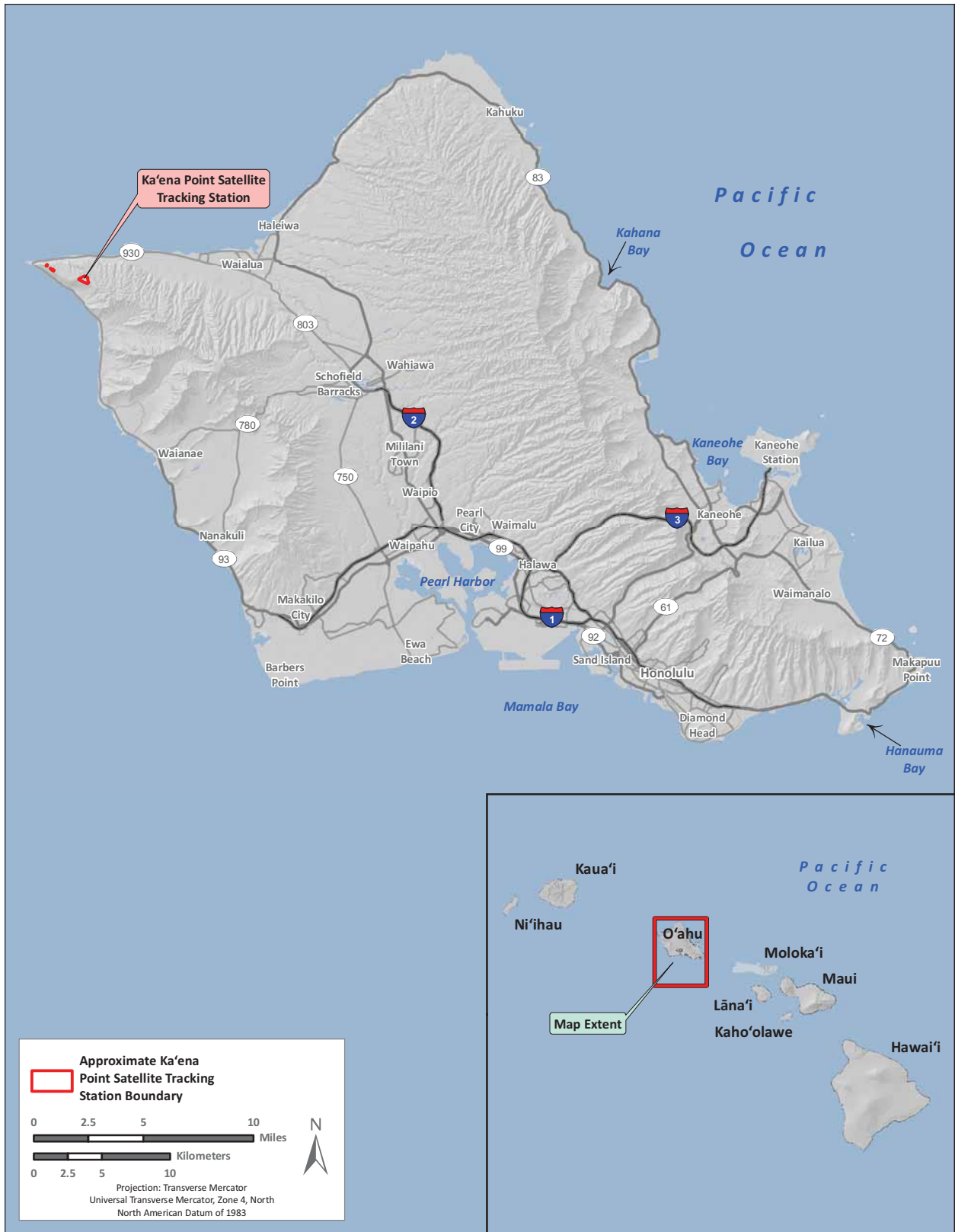
The EA process is carried out in compliance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508); Department of Defense (DOD) Directive 6050.1, *Environmental Considerations in DOD Actions*; and Air Force Instruction (AFI) 32-7061 implementing regulation for NEPA, the *Environmental Impact Analysis Process* (EIAP), Title 32 CFR Part 989, as amended.

## 1.2 Project Location

KPSTS is on Ka’ena Point at the westernmost tip of the Island of O’ahu, Hawai’i, overlooking the Pacific Ocean (see **Figure 1-1**). KPSTS is positioned above Keawa’ula Bay on the Kuaokalā Ridge, at the northwestern end of the Wai’anae Mountain Range. KPSTS is 7 miles north of Mākaha, 7 miles west of Wai’alua, and 40 miles west of Honolulu (AFCEE 2009). Approximately 75 personnel work at KPSTS, including contractors, security forces, and DOD civilian and military personnel.

The original site for KPSTS consisted of 106 acres of land leased in 1958 from the Territory of Hawai’i and private landowners (KPSTS 2008). In 1994, a new lease was executed in response to growing mission needs, increasing the total leased area to approximately 200 acres. Some of the leased land has since been returned to the State of Hawai’i. KPSTS now occupies approximately 153 acres of land leased from the State of Hawai’i, including easements and rights-of-way. Of the 153 acres, approximately 83 include fenced facilities, roadways, and a 50-foot buffer zone. KPSTS consists of several building clusters supporting satellite tracking radio communications facilities connected by an access road extending approximately 2 miles along Kuaokalā Ridge. The Kuaokalā Ridge drops off approximately 1,000 feet to the Pacific Ocean along the western and southern sides of KPSTS. Toward the eastern portion of KPSTS, Kuaokalā Ridge merges with the western end of the Wai’anae Mountain Range.

There is no resident population within 1 mile of KPSTS. On the windward coast (north-facing shores), the YMCA Camp Erdman complex is approximately 1.3 miles from the project area. The nearest resident population of the Mokulē’ia community is approximately 3 miles east of KPSTS, across from Dillingham Air Field. The nearest residential zoned properties in Mokulē’ia exist approximately 4 miles east of KPSTS. The nearest civilian community on the leeward side (south-facing shores) is Mākaha, approximately 7 miles south of KPSTS. Within 5 miles of the installation there are a few sparsely scattered residences, small farms, and military training grounds. KPSTS is part of the City and County of Honolulu, on the Island of O’ahu. The area surrounding KPSTS is composed of two Natural Area Reserves (NARs), the Ka’ena Point NAR and Pahole NAR; a state park, the Ka’ena Point State Park; and a State of Hawai’i Game Management Area, the Kuaokalā Game Management Area. The Hawai’i Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife manages most of the land north of KPSTS and the Division of State Parks manages the land south of KPSTS. Much of the land to the north and east of KPSTS has been under grazing leases operated by the Hawai’i DLNR, Division of Land Management.



1

2

Figure 1-1. KPSTS and Surrounding Areas

1 **1.3 History and Background**

2 **1.3.1 Ka'ena Point Satellite Tracking Station**

3 KPSTS was established in 1958 to support the Discover Satellite (Corona) Program, which was in  
4 operation from August 1960 to May 1972. The program was declassified (i.e., secrecy restrictions were  
5 removed) in February 1995. The Corona Program developed and operated the first satellites for  
6 photo-reconnaissance and is recognized for many “technological and scientific firsts,” including, the  
7 mid-air recovery of vehicles returning from space, mapping Earth from space, stereo-optical data from  
8 space, and multiple reentry vehicles from space. The satellites for the Corona Program were launched  
9 into polar orbits by USAF Thor boosters and flew at altitudes of approximately 100 nautical miles to  
10 photograph selected target areas. The exposed film was returned to earth in capsules. The capsules were  
11 ejected from the satellites, retrieved in midair by USAF aircraft over the Pacific Ocean, and airlifted to  
12 processing facilities (NRO undated). Photoreconnaissance data produced by the Corona Program  
13 contributed significantly to Cold War history.

14 USAF activity at KPSTS has increased continuously since its establishment (AFCEE 1996). Through the  
15 years, KPSTS has also supported other DOD space programs, including a satellite communications  
16 network (i.e., Advent), the Missile Detection and Alarm System, the Satellite and Missile Observation  
17 System, and the North American Aerospace Defense command. In 1968, a Space Ground Link  
18 Subsystem (SGLS) antenna was installed. In 1971 and 1972, a second SGLS antenna and AN/FPQ-14  
19 radar were installed (AFCEE 2010).

20 In June 1997, Detachment 6, 750th Space Group (750 SGP) was redesignated as Detachment 4 (Det 4),  
21 22nd Space Operations Squadron (22 SOPS) of the 50th Space Wing (50 SW) due to the realignment of  
22 the 750 SGP (KPSTS 2008). Until 2003, KPSTS was under the stewardship of the 15th Airlift Wing  
23 (formerly the 15th Air Base Wing) at Hickam Air Force Base (AFB) O'ahu, Hawai'i. In October 2010,  
24 Det 4, 22 SOPS was redesignated as Detachment 3 (Det 3), 21st Space Operations Squadron (21 SOPS).  
25 KPSTS is currently managed and operated by Det 3, 21 SOPS of the 50 SW, 14th Air Force, and U.S. Air  
26 Force Space Command. The 50 SW, based at Schriever AFB, Colorado, is responsible for the on-orbit  
27 control and evaluation of DOD space vehicles (AFCEE 2010).

28 KPSTS is designed as a radio receiving and transmitting facility that is separated from populated areas in  
29 order to eliminate interference in the radio bands of interest. KPSTS included antennas for acquisition,  
30 telemetry reception, and space vehicle command (AFCEE 2010). The radio antennas at KPSTS are  
31 situated in an array calculated to ensure sufficient distance between them to minimize radio frequency  
32 interference. The current mission of KPSTS is to provide uninterrupted support (i.e., telemetry, tracking,  
33 command, and data retrieval functions) for DOD space vehicles and other high-priority space programs  
34 supported by the Air Force Satellite Control Network (AFSCN). The AFSCN is a worldwide system that  
35 tracks and controls American military satellites and receives and processes transmitted data. Dedicated  
36 control segments support individual satellite systems, but a common user element provides support to all  
37 satellites belonging to the DOD. The common user element presently consists of two control nodes, two  
38 scheduling facilities (one at each node), eight remote tracking sites, and the associated communications  
39 links (eyeball-series.org 2006).

40 KPSTS is one of eight satellite tracking stations that make up the common user segment of the AFSCN,  
41 providing launch and on-orbit operational support to approximately 80 satellites. KPSTS also provides  
42 support to the Defense Meteorological Satellite Program and operates a monitoring station for the Global  
43 Positioning System (AFCEE 2010). These DOD space systems provide prevailing weather and precise  
44 navigation data to operational users (AFCEE 2009).

1 Over the years, upgrades have been made to the Automated Remote Tracking Station program, which has  
2 allowed tracking stations to become more automated with updated equipment. The updated equipment  
3 improves reliability, increases operational capacity of the tracking stations, and allows for automation of  
4 many of the functions performed. Automation and improved reliability has led to reduced manpower  
5 requirements for operating and maintaining tracking stations, leading to reduced operations and  
6 maintenance costs. Continual improvements and upgrades are needed to consolidate sustainment of the  
7 AFSCN with ongoing development, systems engineering, and integration (eyeball-series.org 2006).

## 8 **1.4 Purpose of and Need for the Proposed Action**

9 The purpose of the Proposed Action is to demolish underutilized facilities that are in poor condition at  
10 KPSTS, which would, thereby, alleviate the burden associated with maintaining these buildings. In  
11 addition, the purpose of the Proposed Action is to provide KPSTS with a new CE Storage Building. The  
12 Proposed Action is needed to consolidate the storage facilities and lessen the burden associated with  
13 maintaining underutilized facilities that are in poor condition at KPSTS.

## 14 **1.5 Summary of Key Environmental Compliance Requirements**

### 15 **1.5.1 National Environmental Policy Act**

16 NEPA is a Federal statute requiring the identification and analysis of potential environmental impacts  
17 associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help  
18 decisionmakers make well-informed decisions based on an understanding of the potential environmental  
19 consequences and take actions to protect, restore, or enhance the environment. NEPA established the  
20 CEQ that was charged with the development of implementing regulations and ensuring Federal agency  
21 compliance with NEPA.

22 The CEQ regulations mandate that all Federal agencies use a prescribed structured approach to  
23 environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary  
24 and systematic approach in their decisionmaking process. This process evaluates potential environmental  
25 consequences associated with a proposed action and considers alternative courses of action.

26 The process for implementing NEPA is outlined in 40 CFR, Parts 1500–1508, *Regulations for*  
27 *Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was  
28 established under NEPA to implement and oversee Federal policy in this process. The CEQ regulations  
29 specify that an EA be prepared to provide evidence and analysis for determining whether to prepare a  
30 Finding of No Significant Impact (FONSI) or whether the preparation of an Environmental Impact  
31 Statement (EIS) is necessary. The EA can aid in an agency’s compliance with NEPA when an EIS is  
32 unnecessary and facilitate preparation of an EIS when one is required.

33 Air Force Policy Directive 32-70, *Environmental Quality*, states that the USAF will comply with  
34 applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF’s  
35 implementing regulation for NEPA is EIAP, 32 CFR Part 989, as amended.

36 Upon completion of the EA process, the USAF will determine whether the Proposed Action would result  
37 in significant impacts. If such impacts are predicted, then the USAF would need to decide whether to  
38 provide mitigation to reduce impacts below the level of significance, undertake the preparation of an EIS,  
39 or abandon the Proposed Action. This EA will also be used to guide the USAF in implementing the  
40 Proposed Action in a manner consistent with the USAF standards for environmental stewardship should  
41 the Proposed Action be approved for implementation.

1 **1.5.2 Hawai‘i Environmental Policy Act**

2 The Hawai‘i Environmental Policy Act (HEPA) is a statute of the State of Hawai‘i that requires an  
3 analysis of potential environmental impacts for actions that propose any of the following:

- 4 • The use of state or county lands or state or county funds
- 5 • Any use within any land classified as a conservation district under Chapter 205, Hawai‘i  
6 Administrative Rules (HAR)
- 7 • Any use within a shoreline area, as defined in the Hawai‘i Revised Statutes (HRS) §205A-41
- 8 • Any use within any historic site, as designated in the National Register of Historic Places (NRHP)  
9 or Hawai‘i Register
- 10 • Any use within the Waikiki area of O‘ahu (“Waikiki Special District”)
- 11 • Any amendments to existing county general plans where the amendment would result in  
12 designations other than agriculture, conservation, or preservation
- 13 • Any reclassification of any land classified as a conservation district under Chapter 205, HAR
- 14 • The construction of new, or the expansion or modification of existing, helicopter facilities within  
15 the State of Hawai‘i
- 16 • The development of a wastewater treatment unit that serves more than 50 single-family dwellings  
17 (HRS §343-5).

18 The process for implementing HEPA is codified in Chapter 343 of the HRS, *Environmental Impact*  
19 *Statements*. The purpose of HEPA is to establish a system of environmental review that will ensure that  
20 environmental concerns are given appropriate consideration in decisionmaking along with economic and  
21 technical considerations. HEPA finds that (1) the quality of humanity’s environment is critical to  
22 humanity’s well being; (2) humanity’s activities have broad and profound effects upon the interrelations  
23 of all components of the environment; (3) an environmental review process will integrate the review of  
24 environmental concerns with the state, counties, and decisionmakers; and (4) the process of reviewing  
25 environmental effects is desirable because environmental consciousness is enhanced, cooperation and  
26 coordination are encouraged, and public participation during the review process benefits all parties  
27 involved (HRS §343-1).

28 HEPA directed the Environmental Council to establish rules on procedures to exempt actions that have  
29 minimal or no significant effects on the environment, prescribe the contents of an EA, prescribe the  
30 procedure for processing and accepting EIS documents, and establish criteria to determine when an EIS is  
31 acceptable (HRS §343-6). This EA meets or exceeds the content required for HEPA compliance, and  
32 USAF follows the agency and public notice requirements for HEPA EAs as outlined by the Hawai‘i  
33 Office of Environmental Quality Control.

34 **1.5.3 Applicable Environmental and Regulatory Compliance**

35 To comply with NEPA, the planning and decisionmaking process for Federal actions involves a study of  
36 relevant environmental statutes and regulations. The NEPA process, however, does not replace  
37 procedural or substantive requirements of other environmental statutes and regulations. It addresses them  
38 collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view  
39 of major environmental issues and requirements associated with a proposed action. According to CEQ  
40 regulations, the requirements of NEPA must be integrated “with other planning and environmental review

1 procedures required by law or by agency so that all such procedures run concurrently rather than  
2 consecutively.”

3 Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with  
4 applicable Federal, state, and local environmental laws and regulations, including NEPA. Through the  
5 analysis conducted as part of this EA, the Proposed Action and alternatives will be assessed to ensure  
6 compliance with all applicable laws and regulations, such as the Clean Air Act (CAA); the Clean Water  
7 Act (CWA); the Endangered Species Act (ESA); the National Historic Preservation Act (NHPA); the  
8 Archaeological Resources Protection Act; the Solid Waste Disposal Act; and AFI 91-301, *Air Force  
9 Occupational and Environmental Safety, Fire Protection, and Health Program*. **Appendix A** contains a  
10 representative listing and a more detailed description of laws, regulations, and Executive Orders (EOs)  
11 associated with various resource areas that might apply to the Proposed Action.

12 **National Historic Preservation Act.** The NHPA was enacted in 1966 and amended in 1970 and 1980.  
13 This Federal law provides for the NRHP to include districts, sites, buildings, structures, and objects  
14 significant in American history, architecture, archaeology, and culture. Such places could have national,  
15 state, or local significance. The NHPA establishes standards for state programs and requires states to  
16 establish mechanisms for Certified Local Governments to participate in the National Register nomination  
17 and funding programs. Section 106 of the NHPA requires that Federal agencies having direct or indirect  
18 jurisdiction over a proposed Federal, federally assisted, or federally licensed undertaking, take into  
19 account the effect of the undertaking on any district, site, building, structure, or object included in or  
20 eligible for inclusion in the NRHP, and afford the Advisory Council on Historic Preservation a reasonable  
21 opportunity to comment with respect to the undertaking, prior to approval of the expenditure of funds or  
22 the issuance of a license. Section 110 of the NHPA directs the heads of all Federal agencies to assume  
23 responsibility for the preservation of NRHP-listed or -eligible historic properties owned or controlled by  
24 their agency. Federal agencies are directed to locate, inventory, and nominate properties to the NRHP, to  
25 exercise caution to protect such properties, and to use such properties to the maximum extent practicable  
26 (ACHP 2009).

27 The North Shore and Wai‘anae Sustainable Communities Plans (SCPs) are two of the eight  
28 community-oriented plans intended to help guide public policy, investment, and decisionmaking through  
29 2020 for the North Shore and Wai‘anae areas.

30 **North Shore Sustainable Communities Plan.** The North Shore SCP was prepared in accordance with  
31 seven other community plans addressing the needs of the planning regions of the Island of O‘ahu. The  
32 North Shore region has an abundance of visual resources including vast open spaces, scenic shorelines,  
33 and backdrops of the Wai‘anae and Ko‘olau Mountain Ranges and the coastal pali. Guidelines in the  
34 North Shore SCP that pertain to scenic resources and scenic views are as follows (Honolulu DPP 2000a):

- 35 • Conduct planning with attention to preservation of natural open space, protecting coastal and  
36 mauka views from public roadways, and conserving important viewsheds.
- 37 • Evaluate the impact of land use proposals on the visual quality of the landscape, including  
38 viewplane and open space considerations.
- 39 • Locate any future overhead utilities on the mauka side of the public coastal highway. Whenever  
40 possible, overhead utility lines and poles that significantly obstruct public views should be  
41 relocated or placed underground.
- 42 • Encourage interagency and private sector participation and cooperation in the creation,  
43 maintenance, and enhancement of views and visual resources on the North Shore.



1 **Wai‘anae Sustainable Communities Plan.** The vision for Wai‘anae incorporates community living  
2 firmly embedded in rural and natural landscapes. Wai‘anae is considered by many people, including both  
3 residents and visitors, as one of the most scenic regions on the Island of O‘ahu. Major elements of the  
4 Wai‘anae landscape include the ocean; the white sand beach; green valleys; the rugged pu‘u and ridges  
5 along the coast, including Pu‘u Heleakala, Pu‘u O Hulu, Pu‘u Mailiilii, and Paheehee Ridge; and the  
6 peaks of the Wai‘anae Range. The preservation of open space should be a high priority consideration for  
7 all public programs and projects that could affect the coastal lands, valleys, and mountains of the  
8 Wai‘anae District. The environmental impact analysis for any proposed project, whether public or  
9 private, that could be planned for coastal, valley, or mountain sites within the Wai‘anae District should  
10 include a detailed analysis of the project’s potential impact on open space and scenic beauty (Honolulu  
11 DPP 2000b).

12 The Coastal Zone Management Act (CZMA) requires Federal agencies to ensure their actions within or  
13 outside the coastal zone that might affect land, water, or natural resources of the coastal zone are to be  
14 consistent to the extent practicable with the enforceable policies of the state’s coastal zone management  
15 programs.

16 This EA will analyze the following general impact topics: noise, air quality, land use (including  
17 recreation), geological resources, water resources, coastal zone management, biological resources, health  
18 and safety, utilities and infrastructure (including transportation), hazardous materials and wastes,  
19 socioeconomic resources and environmental justice, and cultural and visual resources.

## 20 **1.6 Interagency and Intergovernmental Coordination for Environmental Planning** 21 **and Public Involvement**

22 NEPA requirements help ensure that environmental information is made available to the public during the  
23 decisionmaking process and prior to actions being taken. A premise of NEPA is that the quality of  
24 Federal decisions will be enhanced if proponents provide information to the public and involve the public  
25 in the planning process. CEQ regulations implementing NEPA specifically state, “There shall be an early  
26 and open process for determining the scope of issues to be addressed and for identifying the significant  
27 issues related to a proposed action. This process shall be termed scoping.” The Intergovernmental  
28 Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal  
29 agencies to cooperate with and consider territorial and local views when implementing a Federal  
30 proposal. AFI 32-7060 requires the USAF to implement a process known as *Interagency and*  
31 *Intergovernmental Coordination for Environmental Planning* (IICEP), which is used to facilitate agency  
32 coordination.

33 Through the IICEP process, KPSTS notified relevant Federal, state, and local agencies of the Proposed  
34 Action and provided them sufficient time to make known their environmental concerns specific to the  
35 action. The IICEP process also provided KPSTS with the opportunity to cooperate with and consider  
36 state and local views in implementing the Federal proposal. All IICEP materials related to this EA are  
37 provided in **Appendix B**.

38 Once the Draft EA is finalized, a Notice of Availability will be published in the *Honolulu Star Advertiser*  
39 announcing the availability of the Draft EA for public review. Copies of the Draft EA and FONSI will  
40 also be sent to the following local libraries: the Hawai‘i State Library, Aiea Public Library, Salt  
41 Lake/Moanalua Public Library, Wai‘anae Public Library, and Wai‘alua Public Library. Public and  
42 agency comments on the Draft EA will be considered prior to a decision being made as to whether or not  
43 to sign a FONSI.

1 **1.7 Organization of this Document**

2 This EA is organized into six sections, plus appendices. **Section 1** provides the background information,  
3 project location, and purpose of and need for the Proposed Action. **Section 2** contains a description of the  
4 Proposed Action and alternatives, including the No Action Alternative. **Section 3** contains a description  
5 of the environmental resources and baseline conditions that could potentially be affected by the Proposed  
6 Action and alternatives, and will present an analysis of the potential environmental consequences of  
7 implementing the Proposed Action and the No Action Alternative. **Section 4** includes an analysis of the  
8 potential cumulative impacts at KPSTS. **Section 5** lists the preparers of this document. **Section 6** lists  
9 the references used in the preparation of this document. **Appendix A** contains applicable laws,  
10 regulations, policies, and planning criteria potentially relevant to NEPA analysis. **Appendix B** includes  
11 all IICEP materials currently available and will be expanded to include all public review materials.  
12 **Appendix C** contains site photos of the nine buildings proposed for demolition at KPSTS.

## 2. Description of Proposed Action and Alternatives

This section provides detailed information on the Proposed Action and alternatives considered, including the No Action Alternative. As discussed in **Section 1.5.1**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, as defined in **Section 1.4**. In addition, CEQ regulations also specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations.

### 2.1 Proposed Action

Under the Proposed Action, the USAF would demolish nine existing buildings and construct a new CE Storage Building at KPSTS. Demolition of the existing facilities and construction of a new CE Storage Building would be completed in phases during a 12-month period. Upon completion of demolition activities, the land areas associated with the demolished facilities would be restored (i.e., revegetated), as appropriate. **Table 2-1** presents a summary of the nine existing buildings, including their building number, location, current use, and original construction date. **Figure 2-1** shows the locations of the nine buildings proposed for demolition. Photographs of the nine buildings proposed for demolition are provided in **Appendix C**. All of the existing buildings proposed for demolition are currently underutilized, in poor condition, and potentially contain lead-based paint (LBP) and asbestos-containing materials (ACM). KPSTS is currently conducting an LBP and asbestos survey for all of the existing facilities at KPSTS. For purposes of the EA, it is assumed that all of the buildings proposed for demolition could contain LBP and ACM.

As stated in **Section 1.3.1**, KPSTS was established in 1958 to support the Discover Satellite (Corona) Program, and photoreconnaissance data produced by the Corona Program contributed significantly to Cold War history. According to the *Ka'ena Point Satellite Tracking Station Integrated Cultural Resources Management Plan (ICRMP)* (KPSTS 2009), there are archaeological sites and Native Hawaiian sites at KPSTS that are eligible for the NRHP. The ICRMP suggests that KPSTS contains significant Cold War-related buildings, features, and landscape. In particular, the ICRMP identifies significant architectural resources that were constructed between 1959 and 1968. The ICRMP also identifies the need for a comprehensive inventory and NRHP eligibility evaluation of the buildings and landscape at KPSTS, and suggests consultation with Native Hawaiian Organizations. As shown in **Table 2-1**, all nine buildings proposed for demolition have an original construction date between 1959 and 1968. Under Section 110 of the NHPA, Federal agencies are required to inventory resources under their purview to the NHPA. In accordance with the NHPA, determinations regarding the potential impacts of an undertaking on historic properties are presented to the State Historic Preservation Division (SHPD).

A comprehensive evaluation of potentially historic, Cold War-Era properties and one known World War II-Era property at KPSTS has not been completed. On March 30, 2011, KPSTS consulted with the Hawai'i SHPD regarding the determination of eligibility for Buildings 20, 21, and 14111 at KPSTS. The USAF has determined that KPSTS is potentially eligible for listing on the NRHP as a district, since it likely meets Cold War Criterion "b" and NRHP Criterion "a." Specifically, KPSTS is potentially eligible for listing on the NRHP as a district due to its role as one of the many satellite tracking stations in the AFSCN during the Corona Program and its contribution to overall intelligence gathering during the Cold War. On May 13 2011, KPSTS coordinated with the Hawai'i SHPD, through the IICEP process (previously described in **Section 1.6**), regarding the demolition of nine existing buildings and construction of a new CE Storage Building at KPSTS. On July 1, 2011, KPSTS received concurrence

1

**Table 2-1. Summary of Existing Buildings Proposed for Demolition**

<b>Building Number</b>	<b>Original Construction Date</b>	<b>Location</b>	<b>Building Description/Use</b>
14	1959	Administrative Area: East of Building 10 and Southwest of Building 19	Hazardous materials storage shed
16	1965	Administrative Area: East of Building 10 and Northeast of Building 13	Landscaping equipment storage shed
17	1966	Administrative Area: East of Building 10 and North of Building 16	Supply and equipment storage shed and small parking area
18	1968	Administrative Area: East of Building 10 and South of Building 17	Supply and equipment storage shed and small parking area
21	1959	East of Building 20	Former guard house; currently vacant
32	1959	B-Side Area	Materials storage facility containing hazardous materials and paints
33	1958	B-Side Area	Civil engineering shop and offices and asphalt parking area
37	1972	B-Side Area, adjacent to Environmental Restoration Program (ERP) Site ST001	Former maintenance facility; currently a storage facility
39*	1965	B-Side Area, adjacent to ERP Site ST001	Former power plant; currently a storage facility with concrete pads on the eastern and western sides of the facility

Note: \* There are two active 20,000-gallon diesel underground storage tanks (USTs) east of Building 39 that serve the current power plant (Building 38) (AFCEE 2010). These two USTs would remain in place and would continue to serve the current power plant upon completion of demolition of Building 39.

2 from the Hawai'i SHPD that, although KPSTS is potentially eligible for inclusion on the National  
 3 Register under the Cold War designation, the nine buildings proposed for demolition are infrastructure of  
 4 a nondistinctive type and generally would not be interpreted as eligible for the National Register (see  
 5 **Appendix B**).

6 A number of construction vehicles would be required for the Proposed Action. Temporary staging areas  
 7 for construction machinery and temporary parking areas for construction vehicles would be used during  
 8 the Proposed Action. It is not anticipated that the Proposed Action would require the removal of trees at  
 9 KPSTS. However, minimal trimming of trees could be required prior to commencement of demolition  
 10 activities to provide space for vehicles in the demolition and construction areas. Due to the proximity of  
 11 several federally listed plant species and designated critical habitat, a qualified biologist would survey  
 12 these areas prior to any tree trimming or vegetation removal. If it is determined that any federally listed  
 13 species are observed within any of the projected footprints, the U.S. Fish and Wildlife Service (USFWS)  
 14 would be contacted for their guidance pursuant to Section 7 of the ESA. Any additional areas disturbed  
 15 as a result of the Proposed Action would be replanted with approved grass mixtures and vegetation upon  
 16 completion of demolition and construction activities.

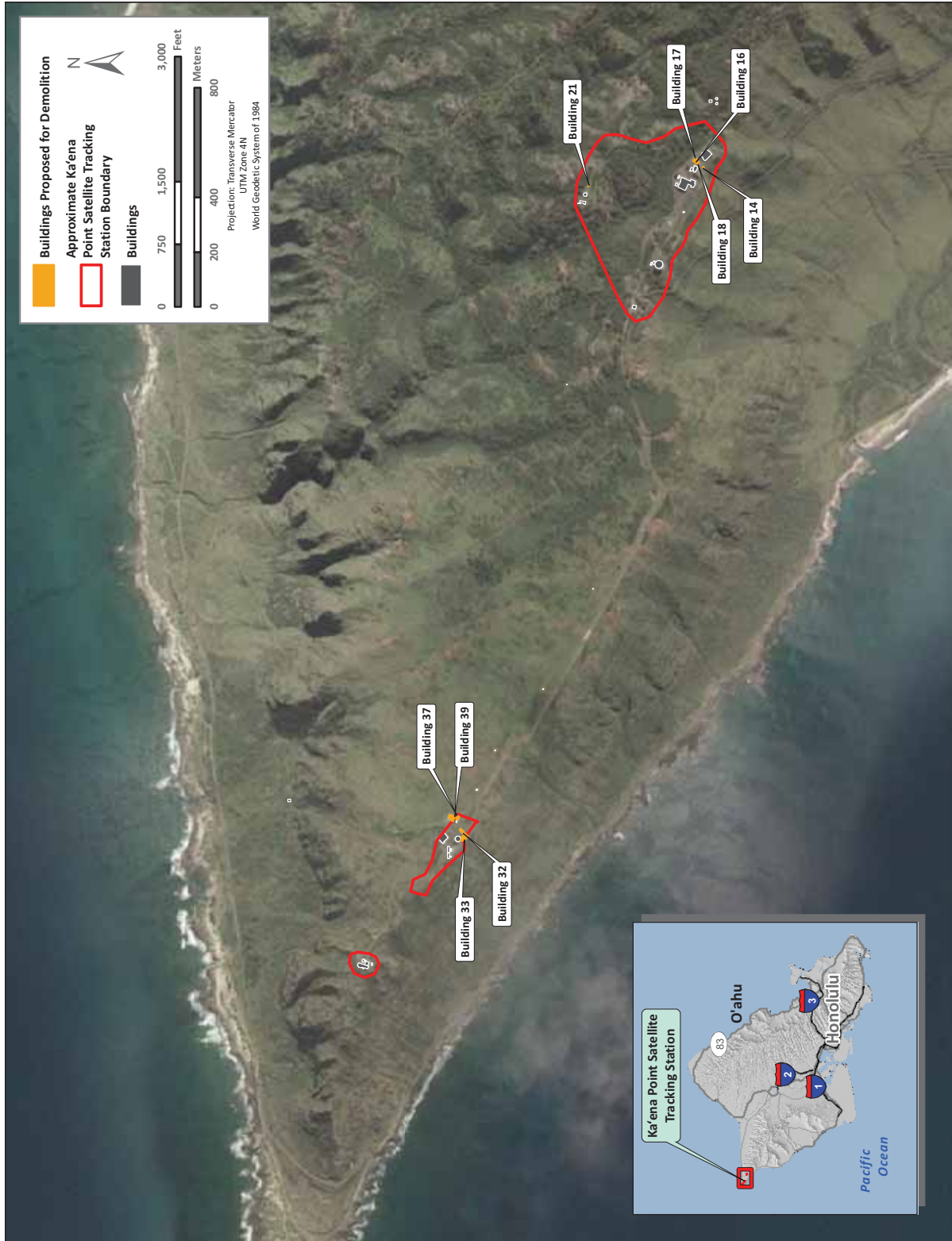


Figure 2-1. Locations of Buildings Proposed for Demolition at KPSTS

1

1 The new CE Storage Building would be approximately 2,600 square feet (ft<sup>2</sup>) and would be constructed in  
 2 the area where Buildings 16, 17, and 18 were previously located. The new CE Storage Building would  
 3 replace Buildings 14, 16, 17, and 18 and would be used as a consolidated storage and maintenance  
 4 facility. Construction activities and materials would promote as many Leadership in Energy and  
 5 Environmental Design (LEED) points as possible to demonstrate good environmental stewardship.

6 Upon completion of the Proposed Action, there would be an overall decrease in impervious surface area  
 7 at KPSTS (approximately 5,392 ft<sup>2</sup>). The decrease in impervious surfaces would provide more surface  
 8 area for storm water permeation into the ground and would, thereby, permanently decrease sheet flow  
 9 runoff into the storm water drainage system. **Table 2-2** summarizes the change in impervious surfaces  
 10 that would occur at KPSTS as a result of the proposed demolition and construction activities.

11 **Table 2-2. Change in Impervious Surfaces Associated with the Proposed Action**

Building Number	Footprint (ft <sup>2</sup> )
<b>Demolition</b>	
14	100
16	112
17	615
18	400
21	36
32	472
33	2,120
37	1,000
39	3,137
<b>Total Decrease in Impervious Surfaces</b>	<b>7,992</b>
<b>Construction</b>	
New CE Storage Building	2,600
<b>Total Increase in Impervious Surfaces</b>	<b>2,600</b>
<b>Net Change in Impervious Surfaces</b>	<b>-5,392</b>

12 **2.2 No Action Alternative**

13 CEQ regulations require consideration of the No Action Alternative. The No Action Alternative serves as  
 14 a baseline against which the impacts of the Proposed Action and other potential action alternatives can be  
 15 evaluated. Under the No Action Alternative, the USAF would not demolish nine existing buildings or  
 16 construct a new CE Storage Building at KPSTS. The burden and cost associated with maintaining the  
 17 existing underutilized facilities that are in poor condition would not be alleviated; the amount of  
 18 impervious surfaces at KPSTS would not be decreased; and the storage and maintenance facilities would  
 19 not be consolidated. The No Action Alternative would not meet the purpose of and need for the action, as  
 20 described in **Section 1.4**.

## 2.3 Alternatives Considered but Eliminated from Detailed Analysis

Under NEPA, consideration and analysis of reasonable alternatives to the Proposed Action are required in an EA. Considering alternatives helps to avoid unnecessary impacts and allows for an analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be suitable for decisionmaking (i.e., any necessary preceding events have taken place), capable of implementation, and satisfactory with respect to meeting the purpose of and need for the action.

### 2.3.1 Alternative for New Construction in the Area of Buildings 32 and 33

Under this alternative, all activities described under the Proposed Action would occur (see **Section 2.1**), with the exception of the construction of a new CE Storage Building in the area where Buildings 16, 17, and 18 were previously located. The new CE Storage Building would be constructed in the area where Buildings 32 and 33 were previously located, and the area associated with Buildings 16, 17, and 18 would be restored (i.e., revegetated), as appropriate.

Upon completion of renovations to Building 19 at KPSTS in 2011, the Civil Engineering Operations (CEO) personnel will be relocated to Building 19 so that they are collocated with command/management staff to allow for an increase in communications and oversight. Building 19 is approximately 2 miles from Buildings 32 and 33. If the new CE Storage Building were constructed in the area of Buildings 32 and 33, it would prove inefficient for CEO personnel, as they would have to travel 2 miles to the new CE Storage Building and 2 miles back to Building 19 several times each day.

Due to the high level of invasive and nonnative species found on the installation, invasive species management is a large part of the habitat management activities at KPSTS. Invasive species are alien species (not native to the ecosystem) whose introduction does, or is likely to, cause economic or environmental harm, or harm to human health. KPSTS has developed the following goals for habitat management at the installation (AFCEE 2009):

- Protect and restore native habitat diversity
- Enhance habitat for native species by removing invasive vegetation.

It is likely that the amount of native vegetation in the area of Buildings 32 and 33 is higher than in the area of Buildings 16, 17, and 18 due to the predominance of invasive species and landscaping plants present in the area of Buildings 16, 17, and 18.

In addition, several native Hawaiian organizations maintain interest in the cultural aspects of the installation (e.g., traditional Hawaiian remnant surface features, a *heiau* [ancient Hawaiian temple], historic ranching features, World War II features). KPSTS has consulted with these native Hawaiian organizations and developed goals to reduce and consolidate the overall footprint of the installation, including reducing the buildings in the area of Buildings 32 and 33.

For the reasons stated above, this alternative was eliminated from further detailed analysis in this EA.

### 2.3.2 Alternative for New Construction at the Former Power Plant Site

Under this alternative, all activities described under the Proposed Action would occur (see **Section 2.1**), with the exception of the construction of a new CE Storage Building in the area where Buildings 16, 17, and 18 were previously located. The new CE Storage Building would be constructed in the area where

1 Building 39 was previously located, and the area associated with Buildings 16, 17, and 18 would be  
2 restored (i.e., revegetated), as appropriate. Building 39, which formerly housed a power plant used for  
3 backup electrical supply for KPSTS, is in the area of ERP Site ST001.

4 ERP Site ST001 formerly contained a 25,000-gallon underground storage tank (UST) and its associated  
5 piping. The former UST was on top of a hillside, approximately 125 feet upslope of Building 39, and was  
6 in use from 1965 to 1978. The former UST stored and delivered fuel via underground piping to a  
7 600-gallon former aboveground storage tank (AST) at the southeastern corner of Building 39. A fuel leak  
8 of approximately 1,800 gallons reportedly occurred in 1972. It is not known whether the release occurred  
9 from the UST, underground piping, or both components of the fuel storage and delivery system. The area  
10 of contamination starts atop a hillside approximately 125 feet southeast of Building 39 and lies in a  
11 narrow corridor to an area adjacent to Building 39. Both the UST and AST have been removed; however,  
12 the piping associated with the UST was left in place and is approximately 5.5 feet deep along the slope  
13 between the former UST and Building 39 and approximately 3 feet deep from the base of the slope to  
14 Building 39. In May 2010, a remedial investigation (RI) was conducted at ERP Site ST001, as previous  
15 investigations showed that elevated concentrations of total petroleum hydrocarbons (TPH) and polycyclic  
16 aromatic hydrocarbons (PAH) were present in the soil and perched groundwater at the site. The RI  
17 included surface and subsurface soil sampling, perched groundwater sampling, and soil gas sampling.  
18 Results from the RI indicated the following (AFCEE 2010):

- 19 • Soil contamination is mainly present in an isolated area near Buildings 37 and 39
- 20 • Contamination in surface soil (i.e., less than 3 feet below ground surface) is present near the  
21 former AST location
- 22 • Contamination in subsurface soil is present along the lower portion of the former piping
- 23 • No contamination was identified in perched groundwater or soil gas.

24 It was concluded that potential risks posed to human health are within acceptable levels at ERP Site  
25 ST001 and do not require further action (AFCEE 2010). However, leveling the area for the construction  
26 of a new CE Storage Building would result in extensive soil disturbance. Because there is known surface  
27 and subsurface soil contamination near and adjacent to Building 39, this alternative was eliminated from  
28 further detailed analysis in this EA.



### 3. Affected Environment and Environmental Consequences

All potentially relevant resource areas were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and EIAP 32 CFR Part 989 guidelines, the following discussion of the affected environment and environmental consequences focuses only on those resource areas considered potentially subject to impacts and with potentially significant environmental issues. This section includes noise, air quality, land use (including recreation), geological resources, water resources, coastal zone management, biological resources, health and safety, utilities and infrastructure (including transportation), hazardous materials and wastes, socioeconomic resources and environmental justice, and cultural and visual resources.

This section presents a description of the environmental resources and baseline conditions that could potentially be affected from implementing the Proposed Action. In addition, this section presents an analysis of the potential environmental consequences of implementing the Proposed Action, and the consequences of selecting the No Action Alternative. Each alternative was evaluated for its potential effects on physical, biological, and socioeconomic resources in accordance with CEQ guidelines at 40 CFR Part 1508.8.

The following discussion elaborates on the nature of the characteristics that might relate to various impacts:

- **Short-term or long-term.** These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic.
- **Direct or indirect.** A direct impact is caused by and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- **Negligible, minor, moderate, or major.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate impact is readily apparent. A major impact is one that is severely adverse or exceptionally beneficial.
- **Adverse or beneficial.** An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.
- **Context.** The context of an impact can be localized or more widespread (e.g., regional).
- **Intensity.** The intensity of an impact is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Impacts are also considered in terms of their potential for violation of Federal, state, or local environmental laws; their controversial nature;

1 the degree of uncertainty or unknown impacts, or unique or unknown risks; if there are  
2 precedent-setting impacts; and their cumulative effects (see **Section 4**).

3 The impact analyses consider all alternatives discussed in **Section 2** that have been identified as  
4 reasonable for meeting the purpose of and need for action. These alternatives include the following:

- 5 • The Proposed Action (described in **Section 2.1**)
- 6 • The No Action Alternative (described in **Section 2.2**).

7 **Sections 3.1** through **3.12** discuss potential environmental and socioeconomic impacts on the affected  
8 environment.

## 9 **3.1 Noise**

### 10 **3.1.1 Definition of the Resource**

11 Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain  
12 on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance  
13 while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it  
14 interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can  
15 be intermittent or continuous, steady or impulsive, and can involve any number of sources and  
16 frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound  
17 levels varies according to the source type, characteristics of the sound source, distance between source  
18 and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will  
19 determine if the sound is viewed as music to one's ears or as annoying noise. Affected receptors are  
20 specific (e.g., schools, churches, or hospitals) or broad (e.g., nature preserves or designated districts) areas  
21 in which occasional or persistent sensitivity to noise above ambient levels exists.

### 22 **Noise Metrics and Regulations**

23 Although human response to noise varies, measurements can be calculated with instruments that record  
24 instantaneous sound levels in decibels. A-weighted decibel (dBA) is used to characterize sound levels  
25 that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency range to  
26 what the average human ear can sense when experiencing an audible event. The threshold of audibility is  
27 generally within the range of 10 to 25 dBA for normal hearing. The threshold of pain occurs at the upper  
28 boundary of audibility, which is normally in the region of 135 dBA (USEPA 1981b). **Table 3-1**  
29 compares common sounds and shows how they rank in terms of the effects of hearing. As shown, a  
30 whisper is normally 30 dBA and considered to be very quiet while an air conditioning unit 20 feet away is  
31 considered an intrusive noise at 60 dBA. Noise levels can become annoying at 80 dBA and very  
32 annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (USEPA 1981a).

33 **Federal Regulations.** Under the Noise Control Act of 1972, the Occupational Safety and Health  
34 Administration (OSHA) established workplace standards for noise. The minimum requirement states that  
35 constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound  
36 level to which workers can be constantly exposed is 115 dBA and exposure to this level must not exceed  
37 15 minutes within an 8-hour period. The OSHA standards limit instantaneous exposure, such as impact  
38 noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing  
39 protection equipment that will reduce sound levels to acceptable limits.

1

**Table 3-1. Sound Levels and Human Response**

Noise Level (dBA)	Common Sounds	Effect
10	Just audible	Negligible*
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet) or city traffic	Very annoying Hearing damage (8 hours)
100	Garbage truck	Very annoying*
110	Pile drivers	Strained vocal effort*
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Source: USEPA 1981a

Note: \*HDR extrapolation

2 According to the USAF, the Federal Aviation Administration, and the U.S. Department of Housing and  
 3 Urban Development criteria, residential units and other noise-sensitive land uses are “clearly  
 4 unacceptable” in areas where the noise exposure exceeds 75 dBA, “normally unacceptable” in regions  
 5 exposed to noise between 65 and 75 dBA, and “normally acceptable” in areas exposed to noise of 65 dBA  
 6 or under. For outdoor activities, the U.S. Environmental Protection Agency (USEPA) recommends 55  
 7 dBA as the sound level below which there is no reason to suspect that the general population would be at  
 8 risk from any of the effects of noise (USEPA 1974).

9 **State Regulations.** Noise regulations for the State of Hawai‘i are provided in HAR Title 11, Chapter 46  
 10 *Community Noise Control* (State of Hawai‘i 1996). The purpose of the regulation is to define the  
 11 maximum permissible noise levels; provide for the prevention, control, and abatement of noise pollution  
 12 in the state; and establish noise quality standards to protect public health and welfare. The maximum  
 13 permissible levels provided in **Table 3-2** apply to “excessive noise sources” in the zoning districts that are  
 14 shown. An excessive noise source is defined, by state regulations, as stationary noise sources and  
 15 equipment related to agricultural, construction, and industrial activities. HAR 11-46 specifically prohibits  
 16 the use of construction equipment without a muffler.

17 According to HAR 11-46, a permit from the Director of the State of Hawai‘i Department of Health  
 18 (DOH) is required to operate any excessive noise source. The permitting process takes several factors  
 19 into consideration, including the noise-control technology provided by the applicant, whether the  
 20 proposed activity is in the public interest, the timeline of the proposed activity, and the disclosure of noise  
 21 impacts by the applicant, specifically for nighttime activity.

1

**Table 3-2. State of Hawai‘i Maximum Noise Levels**

Zoning District	Noise Level (dBA)	
	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Residential, Conservation, Preservation, Public Space, Open Space, or Similar Type	55	45
Multi-Family Dwelling, Apartment, Business, Commercial, Hotel, Resort, or Similar Type	60	50
Agriculture, Country, Industrial, or Similar Type	70	70

Source: State of Hawai‘i 1996

2 Permits are not issued for proposed construction activities that would exceed the maximum permissible  
3 noise levels during the following times (State of Hawai‘i 1996):

- 4 • Before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday
- 5 • Before 9:00 a.m. and after 6:00 p.m. on Saturdays
- 6 • Anytime on Sundays and on holidays.

7 According to HAR 11-46 a variance is required to operate an excessive noise source that emits or might  
8 emit noise levels in excess of the maximum levels provided in **Table 3-1**, or if operation of the excessive  
9 noise source does not conform to the requirements of the standard permit. The variance request process is  
10 generally more stringent than the permitting process and includes public participation requirements.  
11 Please see HAR 11-46-8 for more information on the State of Hawai‘i variance procedures (State of  
12 Hawai‘i 1996).

13 **Construction Sound Levels**

14 Building demolition and construction work can cause an increase in sound that is above the ambient level.  
15 A variety of sounds are emitted from loaders, trucks, saws, and other work equipment. **Table 3-3** lists  
16 noise levels associated with common types of construction equipment. Construction equipment usually  
17 exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a  
18 quiet suburban area.

19 **3.1.2 Existing Conditions**

20 The ambient noise environment at KPSTS is affected mainly by atmospheric noise; industrial equipment  
21 such as heating, ventilation, and air conditioning (HVAC) systems; and automobile traffic. Atmospheric  
22 noise at KPSTS is primarily caused by wind, which has been measured at a constant velocity of up to  
23 19 miles per hour (Hawai‘i DBEDT 2004). Due to the installation mission, KPSTS maintains a back-up  
24 power generating plant and a power distribution plant. The installation also has HVAC systems,  
25 including industrial blowers required to maintain pressure within the radomes, to artificially regulate  
26 temperature and humidity levels. Automobile traffic at KPSTS consists mostly of passenger vehicles  
27 with an occasional heavy-duty vehicle traveling on the roads.

1

**Table 3-3. Predicted Noise Levels for Construction Equipment**

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
<b>Clearing and Grading</b>	
Bulldozer	80
Grader	80–93
Truck	83–94
Roller	73–75
<b>Excavation</b>	
Backhoe	72–93
Jackhammer	81–98
<b>Building Construction</b>	
Concrete mixer	74–88
Welding generator	71–82
Pile driver	91–105
Crane	75–87
Paver	86–88

Source: USEPA 1971

2 **3.1.3 Environmental Consequences**

3 **3.1.3.1 Evaluation Criteria**

4 Noise impact analyses typically evaluate potential changes to the existing noise environment that would  
 5 result from implementation of a proposed action. Potential changes in the acoustical environment can be  
 6 beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels or  
 7 reduce the ambient sound level), negligible (i.e., if the total number of sensitive receptors to unacceptable  
 8 noise levels is essentially unchanged), or adverse (i.e., if they result in increased sound exposure to  
 9 unacceptable noise levels or ultimately increase the ambient sound level). Projected noise effects were  
 10 evaluated qualitatively for the alternatives considered. There are no schools, churches, or hospitals within  
 11 several miles (i.e., approximately 4 miles) of the construction or demolition sites.

12 **3.1.3.2 Proposed Action**

13 **Construction and Demolition Noise.** The sources of noise under the Proposed Action that could impact  
 14 populations include demolition and construction activities, collectively referred to as “construction”  
 15 hereinafter.

16 The project components of the Proposed Action consist of the demolition of nine buildings and the  
 17 construction of the CE Storage Building as discussed in **Section 2.1**. Noise from construction activities  
 18 varies depending on the type of equipment being used, the area that the action would occur in, and the  
 19 distance from the noise source. To predict how construction activities would impact adjacent populations,  
 20 noise from the probable construction was estimated. For example, as shown in **Table 3-3**, construction  
 21 usually involves several pieces of equipment (e.g., crane and welder) that can be used simultaneously.

1 From construction activities, the cumulative noise from the construction equipment, during the busiest  
2 day, was estimated to determine the total impact of noise from construction activities at a given distance.  
3 Examples of expected construction noise, during daytime hours, at specified distances are shown in **Table**  
4 **3-4**. These sound levels were predicted at 100, 200, 400, 800, 1,000, and 1,200 feet from the source of  
5 the noise.

6 **Table 3-4. Predicted Noise Levels from Construction Activities**

Distance from Noise Source	Predicted Noise Level
100 feet	89 dBA
200 feet	83 dBA
400 feet	77 dBA
800 feet	71 dBA
1,000 feet	65 dBA
1,200 feet	61 dBA

7 The noise from construction equipment would be localized, short-term, and intermittent during machinery  
8 operations. Heavy construction equipment would be used periodically during construction; therefore,  
9 noise levels from the equipment would fluctuate throughout the day. The proposed construction would be  
10 expected to result in noise levels comparable to those indicated in **Table 3-4**.

11 Populations potentially affected by increased noise levels from construction activities under the Proposed  
12 Action would include USAF and maintenance personnel accessing the existing buildings that are adjacent  
13 to those proposed for demolition (see **Table 2-1**) and the existing buildings adjacent to the proposed CE  
14 Storage Building. These individuals would be expected to experience noise levels comparable to those  
15 indicated in **Table 3-4**, depending on their proximity to construction activities. However, noise  
16 generation would last only for the duration of construction activities and would be isolated to normal  
17 working hours (i.e., between 7:00 a.m. and 5:00 p.m.). Construction noise would also diminish as  
18 construction activities moved farther away from the receptor. Consequently, construction activities  
19 associated with the Proposed Action would result in short-term, minor, direct, adverse impacts on the  
20 ambient noise environment in the vicinity of construction activities.

21 A permit for operation of “excessive noise sources” (i.e., construction equipment) would be obtained for  
22 the Proposed Action in compliance with the State of Hawai‘i Community Noise regulations.  
23 Construction noise levels would exceed the State of Hawai‘i maximum permissible sound levels  
24 (see **Table 3-2**) of 55 dBA during the daytime (7:00 a.m. to 10 p.m.) on the adjacent land (Ka‘ena Point  
25 State Park and Kuaokalā Game Management Area). The Park and Management Area are included in the  
26 conservation zoning district. Therefore, a variance would be obtained for construction activities.  
27 Equipment operating procedures (such as the mandatory use of mufflers), permissible hours of operation,  
28 and potentially public participation requirements would be implemented in compliance with state  
29 regulations.

30 Construction workers would be working in close proximity to construction equipment and could  
31 potentially be exposed to noise levels above 90 dBA. This is above the permissible noise exposure level  
32 as defined by OSHA in 29 CFR 1910.95. These levels would be reduced to permissible levels through  
33 feasible administrative or engineering controls, or the use of Best Management Practices (BMPs) such as  
34 the use of hearing protection equipment. Therefore, noise impacts on construction workers would be in  
35 compliance with applicable OSHA standards.

1 ***Vehicular Noise.*** Short-term, minor, direct, adverse impacts on the ambient noise environment would be  
2 expected as a result of the increase in construction vehicle traffic under the Proposed Action.  
3 Construction traffic would be expected to use Farrington Highway to access the KPSTS security gate.  
4 Once on KPSTS property the construction vehicles would use Satellite Tracking Station Road to access  
5 the temporary parking and construction staging areas for the Proposed Action. The additional traffic  
6 resulting from construction vehicles would likely cause minor increases in noise levels on noise-sensitive  
7 populations adjacent to these roadways.

### 8 **3.1.3.3 No Action Alternative**

9 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
10 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.1.2**, would  
11 remain the same. No impacts on the noise environment would be expected from implementation of the  
12 No Action Alternative.

## 13 **3.2 Air Quality**

### 14 **3.2.1 Definition of the Resource**

15 In accordance with Federal CAA requirements, the air quality in a given region or area is measured by the  
16 concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the  
17 types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface  
18 topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

19 ***Ambient Air Quality Standards.*** Under the CAA, the USEPA developed numerical concentration-based  
20 standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been  
21 determined to affect human health and the environment. The NAAQS represent the maximum allowable  
22 concentrations for ozone (O<sub>3</sub>) measured as either volatile organic compounds (VOCs) or total nitrogen  
23 oxides (NO<sub>x</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate  
24 matter (including particulate matter equal to or less than 10 microns in diameter [PM<sub>10</sub>] and particulate  
25 matter equal to or less than 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead (Pb) (40 CFR Part 50). The CAA  
26 also gives the authority to states to establish air quality rules and regulations. The State of Hawai‘i has  
27 adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for  
28 criteria pollutants. In some cases, the SAAQS are more stringent than the Federal primary standards.  
29 **Table 3-5** presents the USEPA NAAQS and SAAQS.

30 ***Attainment vs. Nonattainment and General Conformity.*** The USEPA classifies the air quality in an air  
31 quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of  
32 criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated  
33 as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria  
34 pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS;  
35 nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area  
36 was previously designated nonattainment but is now attainment; and an unclassified air quality  
37 designation by USEPA means that there is not enough information to appropriately classify an AQCR, so  
38 the area is considered attainment. The USEPA has delegated the authority for ensuring compliance with  
39 the NAAQS in Hawai‘i to the State of Hawai‘i DOH Clean Air Branch. In accordance with the CAA,  
40 each state must develop a State Implementation Plan (SIP), which is a compilation of regulations,  
41 strategies, schedules, and enforcement actions designed to move the state into compliance with all  
42 NAAQS.

1

**Table 3-5. National and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	State	
CO	8-hour <sup>a</sup>	9 ppm (10 mg/m <sup>3</sup> )	4.4 ppm (5 mg/m <sup>3</sup> )	None
	1-hour <sup>a</sup>	35 ppm (40 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	None
Pb	Quarterly average	--	1.5 µg/m <sup>3</sup>	Same as Primary
	Rolling 3-Month Average	0.15 µg/m <sup>3</sup> <sup>b</sup>	--	Same as Primary
NO <sub>2</sub>	Annual Arithmetic Mean	53 ppb <sup>c</sup>	40 ppb	Same as Primary
	1-hour	100 ppb <sup>d</sup>	--	None
PM <sub>10</sub>	24-hour <sup>e</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as Primary
	Annual Average	--	50 µg/m <sup>3</sup>	None
PM <sub>2.5</sub>	Annual Arithmetic Mean <sup>f</sup>	15 µg/m <sup>3</sup>	--	Same as Primary
	24-hour <sup>g</sup>	35 µg/m <sup>3</sup>	--	Same as Primary
O <sub>3</sub>	8-hour <sup>h</sup>	0.075 ppm (2008 Standard)	0.08 ppm	Same as Primary
	8-hour <sup>i</sup>	0.08 ppm (1997 Standard)	--	Same as Primary
	1-hour <sup>j</sup>	0.12 ppm	--	Same as Primary
SO <sub>2</sub>	Annual Arithmetic Mean	0.03 ppm	0.03 ppm	0.5 ppm (3-hour) <sup>a</sup>
	24-hour <sup>a</sup>	0.14 ppm	0.14 ppm	0.5 ppm (3-hour) <sup>a</sup>
	3-hour	--	0.5 ppm	0.5 ppm
	1-hour	75 ppb <sup>k</sup>	--	None
Hydrogen Sulfide	1-hour	--	25 ppb	None

Sources: USEPA 2010a, Hawai'i DOH 2010

Notes: Parenthetical values are approximate equivalent concentrations.

- a. Not to be exceeded more than once per year.
- b. Final rule signed 15 October 2008. The 1978 lead standard (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- c. The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
- d. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective 22 January 2010).
- e. Not to be exceeded more than once per year on average over 3 years.
- f. To attain this standard, the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m<sup>3</sup>.
- g. To attain this standard, the 3-year average of the weighted annual of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup> (effective 17 December 2006).
- h. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective 27 May 2008).
- i.
  - a. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
  - b. The 1997 standard – and the implementation rules for that standard – will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
  - c. USEPA is in the process of reconsidering these standards (set in March 2008).
- j.
  - a. USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard (anti-backsliding).
  - b. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
- k. Final rule signed on 2 June 2010. To attain this standard, the 3-year average of the 99th percentile of daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Key: ppm = parts per million; ppb = parts per billion; mg/m<sup>3</sup> = milligrams per cubic meter; µg/m<sup>3</sup> = micrograms per cubic meter



1 The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal  
2 Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not  
3 cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations  
4 of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other  
5 milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to  
6 significant actions in nonattainment or maintenance areas.

7 **Federal Prevention of Significant Deterioration.** Federal Prevention of Significant Deterioration (PSD)  
8 regulations apply in attainment areas to a major stationary source, (i.e., source with the potential to emit  
9 250 tons per year [tpy] of any criteria pollutant), and a significant modification to a major stationary  
10 source, (i.e., change that adds 15 to 40 tpy to the facility's potential to emit depending on the pollutant).  
11 Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHGs).  
12 PSD regulations can also apply to stationary sources if (1) a proposed project is within 10 kilometers of  
13 national parks or wilderness areas (i.e., Class I Areas) and (2) regulated stationary source pollutant  
14 emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the  
15 Class I area of 1 microgram per cubic meter ( $\mu\text{g}/\text{m}^3$ ) or more (40 CFR 52.21[b][23][iii]). A Class I area  
16 includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks  
17 larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments,  
18 limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's  
19 Class designation (40 CFR 52.21[c]).

20 **Title V Requirements.** Title V of the CAA Amendments of 1990 requires states and local agencies to  
21 permit major stationary sources. A Title V major stationary source has the potential to emit more than  
22 100 tpy of any one criteria air pollutant, 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any  
23 combination of HAPs. The purpose of the permitting rule is to establish regulatory control over large,  
24 industrial-type activities and monitor their impact on air quality. Section 112 of the CAA defines the  
25 sources and kinds of HAPs.

26 **Greenhouse Gas Emissions.** GHGs are gaseous emissions that trap heat in the atmosphere. These  
27 emissions occur from natural processes and human activities. The most common GHGs emitted from  
28 natural processes and human activities include carbon dioxide ( $\text{CO}_2$ ), methane, and nitrous oxide. GHGs  
29 are primarily produced by the burning of fossil fuels and through industrial and biological processes. On  
30 22 September 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG  
31 emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate  
32 data on  $\text{CO}_2$  and other GHG emissions that can be used to inform future policy decisions. In general, the  
33 threshold for reporting is 25,000 metric tons or more of  $\text{CO}_2$  equivalent emissions per year but excludes  
34 mobile source emissions. The first emissions report is due in 2011 for 2010 emissions. GHG emissions  
35 will also be factors in PSD and Title V permitting and reporting, according to a USEPA rulemaking  
36 issued on 3 June 2010 (75 Federal Register [FR] 31514). GHG emissions thresholds of significance for  
37 permitting of stationary sources are 75,000 tons  $\text{CO}_2$  equivalent per year and 100,000 tons  $\text{CO}_2$  equivalent  
38 per year under these permit programs.

39 EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed in  
40 October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within  
41 EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan  
42 (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to  
43 identify, among other things, "agency activities, policies, plans, procedures, and practices" and "specific  
44 agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics"  
45 relevant to the implementation of EO 13514. On 26 August 2010, the DOD released its SSPP to the  
46 public. This implementation plan describes specific actions the DOD will take to achieve its individual  
47 GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs

segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or controlled by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities but from sources that are not owned or directly controlled by the agency. The GHG goals in the DOD SSPP include reducing Scope 1 and Scope 2 GHG emissions by 34 percent by 2020, relative to Fiscal Year (FY) 2008 emissions, and reducing Scope 3 GHG emissions by 13.5 percent by 2020, relative to FY 2008 emissions. The first GHG air quality emissions report is due in 2011 for 2010 emissions.

### 3.2.2 Existing Conditions

KPSTS is on the Island of O‘ahu, Hawai‘i, in Honolulu County, which is within the State of Hawai‘i AQCR (USEPA 2002a). The State of Hawai‘i AQCR has been designated as unclassified/attainment for all criteria pollutants (USEPA 2002b). According to 40 CFR Part 81, no Class I areas are located within 10 kilometers of KPSTS (USEPA 2011b)

The most recent emissions for Honolulu County and the Hawai‘i AQCR are shown in **Table 3-6**. For purposes of this analysis, Honolulu County is considered the local area of influence and the Hawai‘i AQCR is considered the regional area of influence.

**Table 3-6. Local and Regional Air Emissions Inventory for the Proposed Action (2002)**

	<b>NO<sub>x</sub> (tpy)</b>	<b>VOC (tpy)</b>	<b>CO (tpy)</b>	<b>SO<sub>2</sub> (tpy)</b>	<b>PM<sub>10</sub> (tpy)</b>	<b>PM<sub>2.5</sub> (tpy)</b>
Honolulu County	38,057	28,559	165,026	19,597	15,284	4,100
State of Hawai‘i AQCR	61,833	44,190	265,776	31,000	30,206	7,360

Source: USEPA 2002c

The Proposed Action is subject to rules and regulations developed by the Hawai‘i DOH Clean Air Branch. KPSTS has been issued a Synthetic Minor Permit, thus its emissions are restricted by the federally enforceable permit limits. In 2004, it was determined that KPSTS should apply for an air permit to allow operation of its power plant generators as nonemergency sources. The application was completed and the Hawai‘i DOH issued the permit in 2006, allowing KPSTS to operate the diesel-powered generators for up to 100,000 gallons of fuel usage annually. KPSTS monitors the permit conditions and has maintained compliance, submitted its required periodic reports, and has been inspected by the Hawai‘i DOH with no violations found (AFCEE 2009).

### 3.2.3 Environmental Consequences

#### 3.2.3.1 Evaluation Criteria

The environmental consequences to local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS “attainment” areas would be considered significant if the net increases in pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Exceed any Evaluation Criteria established by a SIP or permit limitations.

1 Federal PSD regulations define air pollutant emissions to be significant if the source is within  
2 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any  
3 regulated pollutant in the Class I area of  $1 \mu\text{g}/\text{m}^3$  or more (40 CFR Part 52.21[b][23][iii]). As noted in  
4 **Section 3.2.2**, according to 40 CFR Part 81, there are no Class I areas in the vicinity of KPSTS.  
5 Therefore, Federal PSD regulations would not apply to the Proposed Action.

### 6 **3.2.3.2 Proposed Action**

7 Short-term, minor, adverse impacts on local air quality and short-term, negligible, adverse impacts on  
8 regional air quality would be expected. The Proposed Action would generate air pollutant emissions from  
9 construction and demolition activities. These emissions would be produced only for the duration of  
10 construction and demolition activities, which is expected to be approximately 240 workdays or 1 calendar  
11 year.

12 Construction of the CE Storage Building and demolition of nine existing buildings would generate air  
13 pollutant emissions from site-disturbing activities such as grading, filling, compacting, and trenching and  
14 operation of construction and demolition equipment and generators. Construction and demolition  
15 activities would also generate particulate emissions as fugitive dust from ground-disturbing activities and  
16 from the combustion of fuels in construction and demolition equipment. Fugitive dust emissions would  
17 be greatest during the initial site preparation activities and would vary from day to day depending on the  
18 construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled  
19 fugitive dust emissions from a construction site is proportional to the area of land being worked and the  
20 level of construction activity. Construction and demolition activities would incorporate BMPs and  
21 control measures (e.g., frequent use of water for dust-generating activities) to minimize fugitive particular  
22 matter emissions. Additionally, the construction vehicles would be well-maintained and could use diesel  
23 particle filters to reduce emissions.

24 Construction workers commuting daily to and from the construction site in their personal vehicles would  
25 also result in criteria pollutant emissions. Because levels of criteria pollutants in Honolulu County are  
26 consistently well below Federal and state air quality standards and because the prevailing winds rapidly  
27 dissipate pollutants, short-term increases in levels of criteria pollutants from the Proposed Action are not  
28 anticipated to be significant. The levels of emissions from the Proposed Action would be low enough that  
29 they would not be expected to result in any of the three significance scenarios discussed in **Section**  
30 **3.2.3.1**. No long-term effects on air quality would be expected from the Proposed Action. Estimated  
31 emissions from the Proposed Action are summarized in **Table 3-7**. **Appendix D** contains detailed  
32 calculations and the assumptions used to estimate the air emissions.

33 **Greenhouse Gas Emissions.** Short-term, negligible, adverse impacts on GHG emissions would be  
34 expected. Construction and demolition activities associated with the Proposed Action would contribute  
35 directly to emissions of GHGs from the combustion of fossil fuels. Because  $\text{CO}_2$  emissions account for  
36 approximately 92 percent of all GHG emissions in the United States, they are used for analyses of GHG  
37 emissions in this assessment.

38 The U.S. Department of Energy, Energy Information Administration estimates that in 2008 gross  $\text{CO}_2$   
39 emissions in the State of Hawai'i were 19.7 million metric tons and in 2008 gross  $\text{CO}_2$  emissions in the  
40 entire United States were 5,814.4 million metric tons (DOE/EIA 2010). It is anticipated that the Proposed  
41 Action would emit 564.1 metric tons of  $\text{CO}_2$  (or 621.9 United States tons). Total annual  $\text{CO}_2$  emissions  
42 from the Proposed Action would be 0.00286 percent of the State of Hawai'i 2008  $\text{CO}_2$  emissions and  
43 0.000010 percent of the entire United States 2008  $\text{CO}_2$  emissions. Therefore, the Proposed Action would  
44 represent a negligible contribution towards statewide and national GHG inventories. GHG emissions  
45 from the Proposed Action would be produced only for the duration of construction and demolition  
46 activities.

1 **Table 3-7. Estimated Annual Air Emissions Resulting from the Proposed Action**

Activity	NO <sub>x</sub> tpy	VOC tpy	CO tpy	SO <sub>2</sub> tpy	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	CO <sub>2</sub> tpy
Combustion Emissions	4.930	0.431	2.167	0.380	0.353	0.342	558.795
Fugitive Dust Emissions	-	-	-	-	0.277	0.028	-
Construction Commuter Emissions	0.053	0.053	0.476	0.001	0.005	0.003	63.111
<b>Total Annual Construction and Demolition Emissions</b>	<b>4.983</b>	<b>0.483</b>	<b>2.643</b>	<b>0.380</b>	<b>0.635</b>	<b>0.373</b>	<b>621.906</b>
<b>Percent of State of Hawai'i AQCR Inventory</b>	<b>0.008%</b>	<b>0.001%</b>	<b>0.001%</b>	<b>0.001%</b>	<b>0.002%</b>	<b>0.005%</b>	<b>0.0028%*</b>

Source: DOE/EIA 2010

Note: \* Percent of State of Hawai'i s 2008 CO<sub>2</sub> emissions.

2 **3.2.3.3 No Action Alternative**

3 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
 4 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.2.2**, would  
 5 remain the same. No impacts on local or regional air quality would be expected from implementation of  
 6 the No Action Alternative.

7 **3.3 Land Use and Recreation**

8 **3.3.1 Definition of the Resource**

9 The term “land use” refers to real property classifications that indicate either natural conditions or the  
 10 types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local  
 11 zoning laws. However, there is no nationally recognized convention or uniform terminology for  
 12 describing land use categories. As a result, the meanings of various land use descriptions, “labels,” and  
 13 definitions vary among jurisdictions. Natural conditions of property can be described or categorized as  
 14 unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide  
 15 variety of land use categories resulting from human activity. Descriptive terms often used include  
 16 residential, commercial, industrial, agricultural, institutional, and recreational. USAF installation land use  
 17 planning commonly uses 12 general land use categories: Airfield, Aircraft Operations and Maintenance,  
 18 Industrial, Administrative, Community (Commercial), Community (Service), Medical, Housing  
 19 (Accompanied), Housing (Unaccompanied), Outdoor Recreation, Open Space, and Water (USAF 1998).

20 Two main objectives of land use planning are to ensure orderly growth and compatible uses among  
 21 adjacent property parcels or areas. According to Air Force Pamphlet (AFPAM) 32-1010, *Land Use*  
 22 *Planning*, land use planning is the arrangement of compatible activities in the most functionally effective  
 23 and efficient manner. Compatibility among land uses fosters the societal interest of obtaining the highest  
 24 and best uses of real property. Tools supporting land use planning within the civilian sector include  
 25 written master plans/management plans, policies, and zoning regulations. The USAF comprehensive  
 26 planning process also uses master planning and functional analysis, which determines the degree of

1 connectivity among installation land uses and between installation and off-installation land uses, to  
2 determine future installation development and facilities planning (USAF 1998).

3 In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential  
4 effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms  
5 of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors  
6 include matters such as existing land use at the project site, the types of land uses on adjacent properties  
7 and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.”

### 8 **3.3.2 Existing Conditions**

9 **Land Use.** KPSTS is situated on a high ridge overlooking the Pacific Ocean occupying approximately  
10 153 acres of leased land from the State of Hawai‘i, including easements and rights-of-way  
11 (see **Figure 2-1**). Of the 153 acres, approximately 83 acres include fenced facilities, roadways, and a  
12 50-foot buffer zone; and the remaining 70 acres is unused open space (AFCEE 2009). The installation  
13 consists of several building clusters of satellite tracking radio communications facilities connected by an  
14 access road extending approximately 2 miles along Kuaokalā Ridge (AFSPC 2005). Only two of the  
15 basic land use categories listed in AFPAM 32-1010 exist at KPSTS, (Light) Industrial and Open Space.  
16 Light industrial land uses encompass most of the installation that is not in semi-natural open space. The  
17 light industrial land use includes administration buildings, computer processing and satellite tracking  
18 buildings, antennas, and ancillary structures such as maintenance shops and pumphouses. The primary  
19 land use considerations in the Light Industrial area are personnel access and military security. The open  
20 space area at KPSTS includes unimproved areas surrounding the installation, antenna separation, and  
21 rights-of-way. The primary land use considerations in the Open Space area are securing station  
22 boundaries and preventing interference with antennas (AFCEE 1996). Most activities at the installation  
23 are confined to mission support within administrative, computer processing, and satellite tracking  
24 buildings; grounds maintenance; and surveillance and maintenance of the antennas and their linkages  
25 (AFCEE 2009).

26 Although the USAF has jurisdiction over KPSTS, land use in Hawai‘i is governed by a twofold system of  
27 state and county laws. The State of Hawai‘i Land Use Commission regulates land use through  
28 classification of state lands into four zoning districts: Urban, Agricultural, Conservation, and Rural.  
29 KPSTS is within the Conservation and Agricultural districts; most of the KPSTS land containing  
30 buildings is within the Conservation district (Honolulu DPP 2011a, Hawai‘i LUC 2008).

31 The City and County of Honolulu guides and directs land use and growth through a three-tier system that  
32 includes the O‘ahu General Plan, SCPs, and ordinances. KPSTS is within the Wai‘anae and North Shore  
33 Community planning regions; the corresponding SCPs (Wai‘anae SCP and North Shore SCP) identify  
34 policies and guidelines for each region.

35 **Wai‘anae SCP.** As identified in the Wai‘anae SCP, the vision for the future of the Wai‘anae region is  
36 focused on maintaining and enhancing the region’s ability to sustain its unique character, current  
37 population, growing families, rural lifestyle, and economic livelihood, which contribute to the region’s  
38 vitality and future potential. The Wai‘anae SCP does not specifically address KPSTS; however, it  
39 designates the area where KPSTS is located as Preservation land use, which is different from the  
40 Preservation land use district designated by the Hawai‘i Land Use Commission. This is in keeping with  
41 the Wai‘anae Concept that indicates this military land should be preserved as agricultural/open space and  
42 mountain preservation areas. In addition, the Wai‘anae SCP indicates there should be ongoing  
43 cooperation between the military and the City of Honolulu to protect and preserve important cultural and  
44 natural resources found on the military lands (Honolulu DPP 2000b). The Wai‘anae SCP is currently

1 undergoing a 5-year review to revalidate the SCP vision; make appropriate adjustments to policies,  
2 principles, and guidelines; and evaluate how implementation can be improved.

3 *North Shore SCP.* The vision identified in the North Shore SCP focuses on retaining the unique qualities  
4 that have defined the region's attractiveness to residents and visitors alike: scenic open spaces, coastal  
5 resources, and the community's cultural and plantation heritage. Similar to the Wai'anae SCP, the North  
6 Shore SCP does not specifically address KPSTS, but it does identify general guidelines applicable to  
7 military lands. These guidelines include encouraging the coordination of all government agencies (city,  
8 state, and Federal) with the U.S. military, especially with respect to environmentally sensitive areas;  
9 encouraging the military to provide appropriate infrastructure services to support military uses on their  
10 lands and minimize potential impacts on the region; and encouraging low-rise military facilities that  
11 support educational and recreational programs and are compatible with the region on military reservation  
12 lands (Honolulu DPP 2000a).

13 *Preservation Districts.* A preservation district is a zoning district that has been established to protect,  
14 preserve, and manage parklands, wilderness areas, open spaces, beach reserves, scenic areas, historic  
15 areas, forests, grazing lands, and lands of scenic and other natural resource value. All lands within a  
16 state-designated conservation district are generally zoned within the Restricted Preservation District (P-1  
17 District). The Honolulu Land Use Ordinance designates most of KPSTS within the P-1 District; however,  
18 portions are zoned within the General Preservation District (P-2 District). Specifically, Buildings 14, 16,  
19 17, 18, 21, and 33 are within the P-1 District and Buildings 27 and 39 are within the P-2 District. Most of  
20 the land north of KPSTS is designated in the P-2 District, while most of the land south of KPSTS is  
21 designated in the P-1 District (Honolulu CCS 2011, Honolulu DPP 2011b).

22 The areas surrounding KPSTS are mostly unimproved forest and shrublands. Due to the spread-out  
23 configuration of facilities at KPSTS, there is considerable interface between the installation and the  
24 surrounding land managed by the state (AFCEE 2009). The Hawai'i DLNR, Division of Forestry and  
25 Wildlife manages most of the land north of KPSTS, and the Hawai'i DLNR, Division of State Parks  
26 manages the lands to the south (AFSPC 2005). KPSTS is in the vicinity of two state NARs: Ka'ena Point  
27 NAR to the west of KPSTS and Pahole NAR to the northeast of KPSTS. Much of the land to the north  
28 and east of KPSTS had previously been under grazing leases issued by the Hawai'i DLNR, Division of  
29 Land Management (AFCEE 1996). Ka'ena Point State Park, an 853-acre strip of land that wraps 9 miles  
30 around the western point of O'ahu between Dillingham Airfield and Makua Military Reservation, is  
31 directly south of KPSTS along the shore of Ka'ena Point. Other land uses within 5 miles of KPSTS  
32 include a few sparsely scattered residences, small farms, and military training grounds (AFCEE 1996).

33 **Recreation.** The community areas neighboring KPSTS recreationally use the nearby Ka'ena Point public  
34 beach areas, and the natural areas that surround KPSTS.

35 Ka'ena Point State Park is a recreational area used year-round for hiking, shore fishing, surfing,  
36 picnicking, and wildlife watching, and is directly south of KPSTS along the southwestern shore of Ka'ena  
37 Point. The Ka'ena Point NAR is at the shoreline of Ka'ena Point, approximately 1 mile west of the  
38 westernmost antenna on KPSTS. Ka'ena Point NAR is accessible to the public by foot or bicycle, and its  
39 primary uses include recreation, hiking, nature study, education, and the observation of wildlife. Shore  
40 fishing, spear fishing, and gathering of marine resources have traditionally been important uses of the  
41 Ka'ena coast (Hawai'i DOFAW 2009). KPSTS is not included in these recreational areas, but serves as a  
42 corridor for access to the Kuaokalā trail and lands to the north and east of KPSTS.

43 The areas to the north and east of KPSTS include the Kuaokalā Game Management Area, which is  
44 directly adjacent to the north of KPSTS, and the Mokulē'ia Forest Reserve, which is northeast of KPSTS.  
45 Both of these areas are owned by the State of Hawai'i and used by recreational hunters and hikers who

1 are allowed to cross KPSTS property to access state lands. These areas are periodically stocked with  
2 game species for hunting. Pahole NAR is 4 miles southeast of KPSTS, and scientific research, hiking (on  
3 designated trails), camping, public hunting (during designated seasons), and cultural practices are  
4 generally permitted (Hawai'i DOFAW 2003).

### 5 **3.3.3 Environmental Consequences**

#### 6 **3.3.3.1 Evaluation Criteria**

7 The significance of potential land use impacts is based on the level of land use sensitivity in areas affected  
8 by a proposed action and the compatibility of proposed actions with existing conditions. In general, a  
9 land use impact would be significant if it were to cause the following:

- 10 • Be inconsistent or in noncompliance with existing land use plans or policies
- 11 • Preclude the viability of existing land use
- 12 • Preclude continued use or occupation of an area
- 13 • Be incompatible with adjacent land use to the extent that public health or safety is threatened
- 14 • Conflict with planning criteria established to ensure the safety and protection of human life and  
15 property.

#### 16 **3.3.3.2 Proposed Action**

17 Implementation of the Proposed Action would not be expected to result in adverse impacts on land use  
18 plans or policies. The Proposed Action would be compatible and comply with the policies and guidelines  
19 set forth in the North Shore and Wai'anae SCPs (see **Section 1.5.3**), especially with respect to  
20 preservation of natural resources and open space. The Proposed Action would demolish nine buildings  
21 and construct one new CE Storage Building resulting in an overall decrease in impervious surface area at  
22 KPSTS by approximately 5,392 ft<sup>2</sup>. The Proposed Action would, therefore, increase open space by more  
23 than 5,000 ft<sup>2</sup>. The demolition and construction activities would not infringe on any open space land  
24 outside of KPSTS. The Proposed Action would result in long-term, minor, beneficial impacts on the  
25 Wai'anae and North Shore SCPs due to the increase of land devoted to open space.

26 All demolition and construction activities under the Proposed Action would occur within the boundaries  
27 of KPSTS. The Proposed Action would not introduce incompatible land uses at KPSTS. Because  
28 KPSTS already houses storage facilities, the Proposed Action would be compatible with existing  
29 surrounding uses at KPSTS, including Light Industrial and Open Space. The Proposed Action would not  
30 preclude the viability of existing land use within KPSTS or the continued use or occupation of any areas  
31 adjacent to the demolition or construction work sites.

32 The use of lands within a conservation district is regulated by Chapter 13-5, HAR, *Conservation District*;  
33 and Chapter 183C, HRS, *Conservation District*, which identify land uses that require Conservation  
34 District Use Permits. On 13 May 2011, the USAF coordinated with the Department of Land and Natural  
35 Resources (Commission on Water Resource Management, Land Division - O'ahu District, Office of  
36 Conservation and Coastal Lands, and Division of State Parks) regarding the Proposed Action (see  
37 **Appendix B**). No comments were received from the DLNR, and it was determined that the USAF would  
38 not be required to obtain a Conservation District Use Permit for implementation of the Proposed Action.

39 All demolition and construction activities under the Proposed Action would occur within the boundaries  
40 of KPSTS; therefore, no adverse impacts on recreational resources would be expected. However, access

1 to state lands near KPSTS could be temporarily delayed due to construction vehicles traveling to KPSTS  
2 or due to restriction of areas around project work sites for safety reasons. Therefore, short-term,  
3 negligible, adverse impacts on access to recreation areas could result from demolition or construction  
4 activities associated with the Proposed Action.

### 5 **3.3.3.3 No Action Alternative**

6 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
7 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.3.2**, would  
8 remain the same. No impacts on off-installation or on-installation land use or recreation would be  
9 expected from implementation of the No Action Alternative.

## 10 **3.4 Geological Resources**

### 11 **3.4.1 Definition of the Resource**

12 Geological resources consist of the Earth's surface and subsurface materials. Within a given  
13 physiographic province, these resources typically are described in terms of geology, topography and  
14 physiography, soils, and, where applicable, geologic hazards and paleontology.

15 **Geology.** Geology is the study of the Earth's composition and provides information on the structure and  
16 configuration of surface and subsurface features. Such information derives from field analysis based on  
17 observations of the surface and borings to identify subsurface composition.

18 **Topography.** Topography and physiography pertain to the general shape and arrangement of a land  
19 surface, including its height and the position of its natural and human-made features.

20 **Soils.** Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically  
21 are described in terms of their complex type, slope, and physical characteristics. Differences among soil  
22 types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect  
23 their abilities to support certain applications or uses. In appropriate cases, soil properties must be  
24 examined for their compatibility with particular construction activities or types of land use.

25 **Prime Farmland.** Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of  
26 1981. Prime farmland is defined as land that has the best combination of physical and chemical  
27 characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these  
28 uses. The soil qualities, growing season, and moisture supply are needed for a well-managed soil to  
29 produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture,  
30 rangeland, or other land, but not urban built-up land or water. The intent of the FPPA is to minimize the  
31 extent that Federal programs contribute to the unnecessary conversion of farmland to nonagricultural  
32 uses. The Act also ensures that Federal programs are administered in a manner that, to the extent  
33 practicable, will be compatible with private, state, and local government programs and policies to protect  
34 farmland.

35 The implementing procedures of the FPPA and Natural Resources Conservation Service (NRCS) require  
36 Federal agencies to evaluate the adverse impacts (direct and indirect) of their activities on prime and  
37 unique farmland, and farmland of statewide and local importance, and to consider alternative actions that  
38 could avoid adverse impacts. Determination of whether an area is considered prime or unique farmland  
39 and potential impacts associated with a proposed action are based on preparation of the farmland  
40 conversion impact rating form AD-1006 for areas where prime farmland soils occur and by applying  
41 criteria established at Section 658.5 of the FPPA (7 CFR Part 658). The NRCS is responsible for



1 overseeing compliance with the FPPA and has developed the rules and regulations for implementation of  
2 the Act (see 7 CFR Part 658, July 5, 1984).

3 **Geological Hazards.** Geologic hazards are defined as a natural geologic event that can endanger human  
4 lives and threaten property. Examples of geologic hazards include volcanic eruptions, earthquakes,  
5 landslides, rock falls, ground subsidence, and avalanches.

### 6 **3.4.2 Existing Conditions**

7 **Geology.** The Hawaiian Islands formed, and are still forming, through episodic undersea volcanic  
8 eruptions, which gradually elevated the islands to above the ocean's surface. Consequently, the geology  
9 of the islands is composed of volcanic deposits such as basalts, pumice, and andesite. Ka'ena Point is  
10 characterized by basalts of the Wai'anae Volcanic Series. Basalts form the oldest layer of this series,  
11 which is overlain by more than 6,000 feet of andesite flows. Surface deposits consist of rocks weathered  
12 in place that have formed saprolitic soils. Saprolite is a clay-rich decomposed rock formed by chemical  
13 weathering of igneous or metamorphic rock. Rock outcrops are present in gully walls and escarpment  
14 faces (AFCEE 2009).

15 **Topography.** Ka'ena Point is the westernmost point on the Island of O'ahu, situated on Kuaokalā Ridge.  
16 Kuaokalā Ridge is on a plateau that precipitously drops approximately 1,000 feet to the Pacific Ocean  
17 along the western and southern portions of the installation. To the north, the ridge is dissected by several  
18 steep, short canyons called gulches. To the east, the Kuaokalā Ridge merges with the Wai'anae Mountain  
19 Range. Elevations at KPSTS range from approximately 800 feet above mean sea level (MSL) at the  
20 western boundary to more than 1,400 feet above MSL to the southeast (AFCEE 2009).

21 **Soils.** Soils mapped in the vicinity of KPSTS are primarily representative of the Māhana series, with  
22 some rocky areas mapped as rock land. The Māhana soil series consists of very deep, well-drained soils  
23 that formed from weathered volcanic ash. The most prevalent soil unit near the installation is the  
24 Māhana-Badland complex, consisting of 40 to 70 percent Māhana soils and 30 to 60 percent Badland  
25 soils. Badland soils are found on steep, nearly barren land where soils formed from soft or hard saprolite.  
26 Māhana soils in this complex have a silty clay loam texture. Rock land occurs on nearly level to steep  
27 land types with exposed rock covering 25 to 90 percent of the surface (AFCEE 2009).

28 Generally, soils mapped at the proposed demolition and construction sites are loamy and well-drained.  
29 The soil units mapped at Buildings 32, 33, 37, and 39 are composed of the Māhana-Badland Complex,  
30 which consists of a well-drained silty clay loam with 20 to 70 percent slopes, and the Māhana silty clay  
31 loam with 6 to 12 percent slopes. The soil units mapped at Buildings 14, 16, 17, 18, and 21 are also  
32 composed of the Māhana-Badland Complex and Māhana silty clay loam with 12 to 20 percent slopes and  
33 rock land. The rock land soil unit is composed of silty clay, with depths to basaltic bedrock of 8 to  
34 20 inches. This unit has slopes of 5 to 70 percent and is well-drained. Soil limitations were determined  
35 based on data available in the Natural Resources Conservation Service (NRCS) web soil survey  
36 (USDA/NRCS 2011). Engineering limitations were considered for potential minor shallow excavations  
37 to account for utility work at the site for the construction of the new CE Storage Building. The Māhana-  
38 Badland Complex and the Māhana silty clay loam are rated as "very limited" for shallow excavations due  
39 to slope and cutbank caving. Rock land is rated as "very limited" due to shallow depth to bedrock and  
40 slope.

41 **Prime Farmland.** None of the soils mapped at the proposed demolition and construction sites are  
42 considered to be prime farmland soils.

1 **Geological Hazards.** The potential for damaging seismic activity at the installation is low. The  
2 U.S. Geological Survey (USGS) has produced seismic hazard maps based on current information about  
3 the rate at which earthquakes occur in different areas and on how far strong shaking extends from the  
4 quake source. The hazard maps show the levels of horizontal shaking that have a 2 in 100 chance of  
5 being exceeded in a 50-year period. Shaking is expressed as a percentage of the force of gravity (percent  
6 g) and is proportional to the hazard faced by a particular type of building. In general, little or no damage  
7 is expected at values less than 10 percent g, moderate damage could occur at 10 to 20 percent g, and  
8 major damage could occur at values greater than 20 percent g. The seismic hazard map for Hawai'i  
9 shows that the region of the Proposed Action has a seismic hazard rating of approximately 0 percent g  
10 (USGS 1998).

11 Two shield volcanoes are present on the Island of O'ahu, Ko'olau and Wai'anae. The Wai'anae Volcano  
12 is in western O'ahu and Ko'olau Volcano is in eastern O'ahu. Both volcanoes are considered to be  
13 extinct. Although the Island of O'ahu is removed from the seismic hazards and active volcanism of the  
14 Big Island, geologic hazards of concern include landslides, rockfalls, and high waves associated with  
15 strong storms or tsunamis (USGS 2002). With the Māhana silty clay loam soil, runoff is rapid and the  
16 erosion hazard is "moderate to very severe."

### 17 **3.4.3 Environmental Consequences**

#### 18 **3.4.3.1 Evaluation Criteria**

19 Protection of unique geological features, minimization of soil erosion, and the siting of facilities in  
20 relation to potential geologic hazards are considered when evaluating the potential impacts of a proposed  
21 action on geological resources. Generally, adverse impacts can be avoided or minimized if proper  
22 construction techniques, erosion-control measures, and structural engineering design are incorporated into  
23 project development.

24 Impacts on geology and soils would be significant if they would alter the lithology, stratigraphy, and  
25 geological structures that control the quality and availability of groundwater, distribution of aquifers and  
26 confining beds; or change the soil composition, structure, or function (including prime farmland and other  
27 unique soils) within the environment.

#### 28 **3.4.3.2 Proposed Action**

29 Short- and long-term, negligible, adverse, and long-term, beneficial impacts on geology and soils would  
30 be expected from implementation of the Proposed Action. Short-term impacts would be expected from  
31 construction and demolition activities consisting of minor clearing of vegetation, grading, and  
32 recontouring. The primary impacts would be soil compaction, disturbance, and erosion. Minor clearing  
33 of vegetation would slightly increase erosion and sedimentation potential. Erosion-and-sediment-control  
34 plans (ESCPs) would be developed and implemented both during and following site development to  
35 contain soil and runoff on site, and would reduce potential for adverse impacts associated with erosion  
36 and sedimentation and transport of sediments in runoff. Because the soils mapped have been determined  
37 to be very limited for shallow excavations, site-specific soil surveys should be conducted prior to  
38 implementing the Proposed Action. These site-specific soil surveys would determine the breadth and  
39 severity of engineering limitations. Additional considerations should include appropriate design  
40 considerations or BMPs to offset potential adverse impacts.

41 Long-term impacts would be expected to be negligible. Soils would be compacted and soil structure  
42 would be disturbed and modified. Loss of soil structure due to compaction from foot and vehicle traffic  
43 could result in changes in drainage patterns. However, these impacts would be considered negligible, as

1 the majority of soils at the proposed demolition and construction sites have been previously disturbed or  
2 modified. Soil erosion- and sediment-control measures would be included in site plans to minimize  
3 long-term erosion and sediment production at each site. Soil productivity, which is the capacity of the  
4 soil to produce vegetative biomass, would decline in disturbed areas and would be eliminated in those  
5 areas within the footprint of building structures.

6 Once construction and demolition activities have been completed, revegetation would occur in disturbed  
7 areas, resulting in decreased soil erosion and sedimentation rates. Additionally, impervious surfaces  
8 would decrease by approximately 5,392 ft<sup>2</sup> with implementation of the Proposed Action and would  
9 provide more surface area for storm water permeation into the ground, resulting in long-term, beneficial  
10 impacts.

11 The potential for rockfalls exists at the proposed construction and demolition locations; rockfalls could  
12 occur during construction activities. However, the local contractor selected to perform construction  
13 activities would be required to implement appropriate engineering controls at the proposed construction  
14 and demolition sites during construction and demolition activities to prevent rockfalls from occurring.

### 15 **3.4.3.3 No Action Alternative**

16 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
17 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.4.2**, would  
18 remain the same. No impacts on geology or soils would be expected from implementation of the No  
19 Action Alternative.

## 20 **3.5 Water Resources**

### 21 **3.5.1 Definition of the Resource**

22 Water resources are natural and man-made sources of water that are available for use by and for the  
23 benefit of humans and the environment. Water resources relevant to KPSTS's location in Hawai'i include  
24 groundwater, surface water, and floodplains.

25 Groundwater is water that exists in the saturated zone beneath the earth's surface and includes  
26 underground streams and aquifers. It is an essential resource that functions to recharge surface water and  
27 is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms  
28 of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic  
29 formations.

30 Groundwater quality and quantity are regulated under several different programs. The Federal  
31 Underground Injection Control regulations, authorized under the Safe Drinking Water Act (SDWA),  
32 require a permit for the discharge or disposal of fluids into a well. The Federal Sole Source Aquifer  
33 regulations, also authorized under the SDWA, protect aquifers that are critical to water supply. The  
34 Hawai'i DOH Safe Water Drinking Branch is responsible for protecting Hawai'i's drinking water sources  
35 (surface water and groundwater) from contamination and ensures that owners and operators of public  
36 water systems provide safe drinking water to the community (Hawai'i DOH 2011).

37 Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is  
38 important for its contributions to the economic, ecological, recreational, and human health of a  
39 community or locale.

1 Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal  
2 waters. The living and nonliving parts of natural floodplains interact with each other to create dynamic  
3 systems in which each component helps to maintain the characteristics of the environment that supports it.  
4 Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance,  
5 groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often  
6 home to a diverse array of plants and animals. Floodplains provide a broad area to dissipate and  
7 temporarily store floodwaters. This reduces flood peaks and waterway velocities and the potential for  
8 erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow  
9 reaches the main water body.

10 Floodplains are subject to periodic inundation due to rain or melting snow. Risk of flooding typically  
11 depends on local topography, the frequency and magnitude of precipitation events, and the size of the  
12 watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management  
13 Agency (FEMA), which defines the 100-year floodplain as the area that has a one percent chance of  
14 inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be in  
15 either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable  
16 records. Federal, state, and local regulations often limit floodplain development to passive uses, such as  
17 recreational and preservation activities, to reduce the risks to human health and safety.

18 EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action  
19 would occur within a floodplain. This determination typically involves consultation of FEMA Flood  
20 Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of  
21 the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the  
22 agency determines that there is no practicable alternative.

23 Waters of the United States are defined within the CWA, as amended, and jurisdiction is addressed by the  
24 USEPA and the U.S. Army Corps of Engineers (USACE). These agencies assert jurisdiction over  
25 (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of  
26 traditional navigable waters that are relatively permanent where the tributaries typically flow year-around  
27 or have continuous flow at least seasonally (.e.g., typically 3 months), and (4) wetlands that directly abut  
28 such tributaries. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief  
29 of Engineers, to issue permits for the discharge of dredge or fill into waters of the United States, including  
30 wetlands. Encroachment into waters of the United States and wetlands requires a permit from the state  
31 and the Federal government. A water body can be deemed impaired if water quality analyses conclude  
32 that exceedances of water quality standards, established by the CWA, occur. The CWA requires that  
33 states establish a Section 303(d) list to identify impaired waters and establish Total Maximum Daily  
34 Loads (TMDLs) for the source(s) causing the impairment. A TMDL is the maximum amount of a  
35 substance that can be assimilated by a water body without causing impairment. The CWA also mandated  
36 the National Pollutant Discharge Elimination System (NPDES).

37 The USEPA published the technology-based Final Effluent Limitations Guidelines (ELGs) and New  
38 Performance Standards for the Construction and Development Point Source Category on 1 December  
39 2009 to control the discharge of pollutants from construction sites. The Rule became effective on  
40 1 February 2010. After this date, all USEPA- or state-issued Construction General Permits were to be  
41 revised to incorporate the ELG requirements with the exception of the numeric limitation for turbidity,  
42 which has been suspended while the USEPA further evaluates this limitation. The USEPA currently  
43 regulates large and small (greater than 1 acre) construction activities through the 2008 Construction  
44 General Permit (CGP), which is scheduled to expire on 30 June 2011. However, the USEPA is in the  
45 process of extending this expiration date until 31 January 2012 to give the agency more time to evaluate  
46 the turbidity effluent limitation and revise the CGP to incorporate the ELG requirements.

1 Therefore, until the revised CGP to incorporate ELG requirements is finalized, all new construction sites  
2 would need to continue to meet the requirements outlined in the 2008 CGP including technology-based  
3 and water quality-based effluent limits that apply to all discharges unless otherwise specified in the CGP.  
4 Permittees must select, install, and maintain effective erosion- and sedimentation-control measures as  
5 identified and as necessary to comply with the 2008 CGP including the following:

- 6 • Sediment controls, such as sediment basins, sediment traps, silt fences, and vegetative buffer  
7 strips
- 8 • Offsite sediment tracking and dust control
- 9 • Surface water runoff management
- 10 • Erosive surface water velocity control
- 11 • Post-construction storm water management
- 12 • Construction and waste materials management
- 13 • Non-construction waste management
- 14 • Erosion control and stabilization
- 15 • Spill/release prevention.

16 Construction activities, such as clearing, grading, trenching, and excavating, disturb soils and sediment.  
17 If not managed properly, disturbed soils and sediments can easily be washed into nearby water bodies  
18 during storm events resulting in reduced water quality. Section 438 of the Energy Independence and  
19 Security Act (EISA) (42 United States Code [U.S.C.] 17094) establishes into law new storm water design  
20 requirements for Federal construction projects that disturb a “footprint” of greater than 5,000 ft<sup>2</sup> of land.  
21 EISA Section 438 requirements are independent of storm water requirements under the CWA. The  
22 project “footprint” consists of all “horizontal hard surface” and disturbed areas associated with project  
23 development.

24 Under these requirements, predevelopment site hydrology must be maintained or restored to the  
25 maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow.  
26 Predevelopment hydrology shall be modeled or calculated using recognized tools and must include  
27 site-specific factors such as soil type, ground cover, and ground slope. Site design shall incorporate storm  
28 water retention and reuse technologies such as bioretention areas, permeable pavements,  
29 cisterns/recycling, and green roofs to the maximum extent technically feasible.

30 Post-construction analyses would be conducted to evaluate the effectiveness of the as-built storm water  
31 reduction features (DOD 2010a). These regulations were incorporated into applicable DOD Unified  
32 Facilities Criteria in April 2010, which stated that low-impact development (LID) features would need to  
33 be incorporated in new construction activities to comply with the restrictions on storm water management  
34 promulgated by EISA Section 438. LID is a storm water management strategy designed to maintain site  
35 hydrology and mitigate the adverse impacts of storm water runoff and nonpoint source pollution. LIDs  
36 can manage the increase in runoff between pre- and post-development conditions on the project site  
37 through interception, infiltration, storage, or evapotranspiration processes before the runoff is conveyed to  
38 receiving waters. Examples of the methods include bioretention, permeable pavements,  
39 cisterns/recycling, and green roofs (DOD 2010b). Additional guidance is provided in the USEPA’s  
40 *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under*  
41 *Section 438 of the Energy Independence and Security Act* (USEPA 2009).

1 **3.5.2 Existing Conditions**

2 **Groundwater.** KPSTS overlies two hydrogeologic zones, the Mokolē'ia Inland Zone on the north side of  
3 KPSTS and the Wai'anae Range Leeward Slopes Zone on the south side. The dividing line between the  
4 two roughly corresponds to the Wai'anae Range crest that extends along the west side of O'ahu, nearly  
5 bisecting the land on which KPSTS is located. There is minimal difference between the two  
6 hydrogeologic zones. Both consist of deeply dissected Wai'anae slopes, in some places capped by  
7 massive members, and, to the north, thin-bedded, highly dike-intruded lava flows (AFCEE 1996).

8 Groundwater is dike-impounded in the upper reaches of KPSTS or occurs as basal water dike-free lavas  
9 near the coastline. Small perched water bodies might be present locally. The direction of groundwater  
10 movement is generally seaward. Formerly, KPSTS received its water supply through a pipeline from  
11 Dillingham Military Reservation. A well was installed along Manini Gulch to replace this supply. The  
12 surface elevation at the well is approximately 1,146 feet above MSL. The basal water elevation is  
13 indicated to be 13.7 feet above MSL, approximately 1,130 feet below the land surface. KPSTS currently  
14 obtains nonpotable water from the well on the installation (AFCEE 1996).

15 **Surface Water.** The majority of KPSTS lies within the Manini Gulch and Alau Gulch watersheds, which  
16 drain north-northwest into the Pacific Ocean. The remaining portion of KPSTS lies within the  
17 Kaluakauila watershed, which drains south-southwest into the Pacific Ocean. **Figure 3-1** shows the  
18 surface hydrology in the region surrounding KPSTS. There are no water courses or wetlands within  
19 boundaries of KPSTS (AFCEE 2009). The nearest intermittent streams are two ephemeral coastal  
20 streams that drain toward the northern coast of Ka'ena Point on the northern side of KPSTS, and  
21 Kaaluakauila Stream, on the southern side of KPSTS. These streams form in the Alau and Manini  
22 Gulches (AFCEE 2009).

23 Surface drainage from KPSTS flows downslope to the north, west, and south following topography to the  
24 Pacific Ocean (AFCEE 1996). Areas that generate storm water runoff at KPSTS are generally paved  
25 areas that produce sheet flow runoff. Some locations have gutters, drop inlets, culverts, and outfalls to  
26 direct runoff away from buildings and other facilities. Storm water during typical rainfall events drains  
27 to, accumulates in, and ultimately passes through low-lying areas (swales and gulches) and so does not  
28 discharge directly into the Pacific Ocean. There is no storm sewer infrastructure at KPSTS that connects  
29 to a separate municipal storm sewer system (MS4). The Hawai'i DOH determined that KPSTS should be  
30 regulated as a small MS4. KPSTS filed a Notice of Intent, submitted its Storm Water Management Plan  
31 (SWMP), and received a Notice of General Permit Coverage by the Hawai'i DOH. KPSTS applied for  
32 renewal of the Notice of General Permit Coverage in 2007. As a General Permit holder, KPSTS has  
33 developed and implemented an SWMP, and enforces it to reduce the discharge of pollutants to the  
34 maximum extent practicable. The SWMP describes the BMPs and minimum control measures that will  
35 be implemented to protect water quality. Storm water control measures are only applicable to  
36 construction projects that disturb greater than or equal to 1 acre, or that are part of a larger construction  
37 plan or development that disturbs 1 acre or more (50 SW 2007).

38 40 CFR Part 122.34(b) stipulates, and the SWMP requires, that minimum control measures for an NPDES  
39 MS4 permit include (1) public education and outreach on storm water impacts, (2) public involvement  
40 and participation, (3) illicit discharge detection and elimination, (4) construction site storm water runoff  
41 control, (5) post-construction storm water management in new development and redevelopment, and  
42 (6) pollution prevention and good housekeeping for operations (AFCEE 2009).

43 Buildings 14, 16, 17, and 18, are within the Kaluakauila watershed and storm water would flow south into  
44 a swale that drains into the Pacific Ocean. Storm water around Building 21 would drain north-northwest

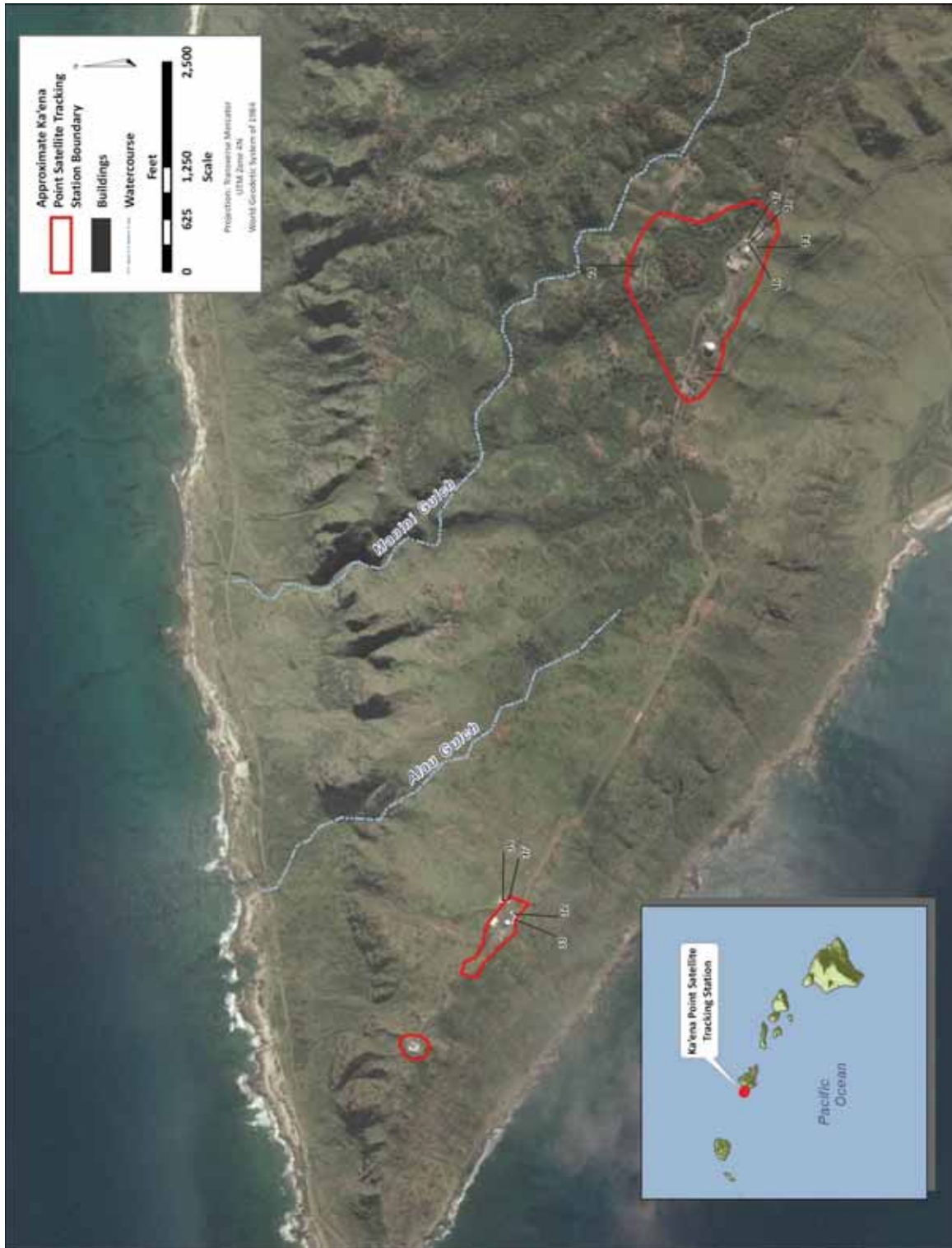


Figure 3-1. Water Resources at KPSTS

1 into a swale that drains into Manini Gulch, which flows northwest and eventually empties into the Pacific  
2 Ocean.

3 Buildings 32, 33, 37, and 39 are within the Alau Gulch watershed and storm water would drain north-  
4 northwest into a swale that drains into the Pacific Ocean.

5 KPSTS discharges storm water to 11 receiving waters under its NPDES general permit. These are Alau  
6 Gulch, Manini Gulch, Ka'ena Gulches (Nos. 1 through 8), and Ka'ena Swale No. 1 (50 SW 2007). All 11  
7 receiving waters are classified as Inland Class 2 waters. The objective of the Inland Class 2 waters is to  
8 protect their use for recreational purposes, agricultural and industrial water supplies, shipping, navigation,  
9 and the support and propagation of aquatic life.

10 **Floodplains.** According to the FEMA FIRMs for Honolulu County (30 September 30 2004), KPSTS is  
11 within Zone D, which is an area with possible but undetermined flood hazards. No flood hazard analysis  
12 has been conducted for this area (FEMA 2011). Flooding on the Island of O'ahu is generally associated  
13 with severe rainstorms, high waves, and tsunamis, and the island is subject to severe tropical storms and  
14 hurricanes. Since the majority of the facilities of KPSTS are situated along the Kuaokalā Ridge at  
15 elevations ranging from 800 feet above MSL to greater than 1,400 feet above MSL, the potential for  
16 coastal flooding is low. Manini Gulch is the only watercourse that could pose a flood hazard to KPSTS  
17 facilities. The specific flood hazard posed by Manini Gulch has not been delineated (AFCEE 1996).

### 18 **3.5.3 Environmental Consequences**

#### 19 **3.5.3.1 Evaluation Criteria**

20 Evaluation criteria for impacts on water resources are based on water availability, quality, and use;  
21 existence of floodplains; and associated regulations. A proposed action would have significant impacts  
22 on water resources if it were to do one or more of the following:

- 23 • Substantially reduce water availability or supply to existing users
- 24 • Create an overdraft of groundwater basins
- 25 • Exceed safe annual yield of water supply sources
- 26 • Substantially adversely affect water quality
- 27 • Endanger public health by creating or worsening health hazard conditions
- 28 • Threaten or damage unique hydrologic characteristics
- 29 • Violate established laws or regulations adopted to protect water resources.

30 The potential effect of flood hazards on a proposed action is important if such an action occurs in an area  
31 with a high probability of flooding.

#### 32 **3.5.3.2 Proposed Action**

33 Under the Proposed Action, nine existing buildings would be demolished and a new CE Storage Building  
34 would be constructed in the areas where Buildings 16, 17, and 18 were previously located. Construction  
35 activities are not anticipated to require groundwater for dust suppression. Heavy equipment  
36 (e.g., bulldozers, backhoes, dump trucks, concrete mixers, cranes) is anticipated to be on site throughout  
37 the duration of the demolition and construction activities. Fuels, hydraulic fluids, oils, and lubricants  
38 would be stored on site to support contractor vehicles and machinery. No other hazardous materials are  
39 anticipated to be stored on site during the Proposed Action. Construction personnel would follow  
40 appropriate BMPs to protect against potential petroleum or hazardous material spills. Good



1 housekeeping, maintenance of equipment, and containment of fuels and other potentially hazardous  
2 materials would be conducted to minimize the potential for a release of these fluids into groundwater or  
3 surface waters.

4 Since the Proposed Action would disturb less than 1 acre of land, KPSTS is not required to follow the  
5 minimum control measures outlined in its SWMP. However, KPSTS is subject to the new storm water  
6 design requirements of Section 438 of the EISA that require predevelopment site hydrology to be  
7 maintained or restored to the maximum extent technically feasible with respect to temperature, rate,  
8 volume, and duration of flow. Therefore, only negligible, short-term, adverse impacts on surface water  
9 would be expected from implementing the Proposed Action. Short-term impacts could occur from  
10 temporarily increased soil erosion from ground disturbances and potential leaks or spills of petroleum or  
11 hazardous materials during demolition and construction; however, erosion and sedimentation control  
12 measures as identified in the 2008 CGP would be implemented for the duration of the Proposed Action.  
13 Long-term, adverse impacts on the storm water system would not be expected, as hydrologic conditions  
14 of the post-construction project area should mimic predevelopment site hydrology. In addition,  
15 long-term, beneficial impacts would be expected from the demolition of nine existing buildings  
16 (approximately 7,992 ft<sup>2</sup>), which would result in an overall decrease in impervious surface area. With the  
17 demolition of nine existing facilities and the construction of a new CE Storage Building, the total amount  
18 of impervious surfaces on KPSTS would decrease by 5,392 ft<sup>2</sup>.

### 19 3.5.3.3 No Action Alternative

20 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
21 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.5.2**, would  
22 remain the same. No impacts on water resources would be expected from implementation of the No  
23 Action Alternative.

## 24 3.6 Coastal Zone Management

### 25 3.6.1 Definition of the Resource

26 The CZMA of 1972 (16 U.S.C. 1451 et seq.) declares a national policy to preserve, protect, and develop,  
27 and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone  
28 refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal areas,  
29 salt marshes, wetlands, and beaches, and include the Great Lakes. The CZMA encourages states to  
30 exercise their full authority over the coastal zone through the development of land and water use  
31 programs in cooperation with Federal and local governments. States can apply for grants to help develop  
32 and implement management programs to achieve wise use of the land and water resources of the coastal  
33 zone. Development projects affecting land or water use or natural resources of a coastal zone must ensure  
34 the project is, to the maximum extent practicable, consistent with the state's coastal zone management  
35 program.

36 In accordance with CZMA 15 CFR Section 930.33 (a)(3)(i), a Federal agency may review their activities,  
37 other than development projects within the coastal zone, to identify *de minimis* activities, and request  
38 state agency concurrence that these *de minimis* activities should not be subject to further state review.  
39 *De minimis* activities are activities that are expected to have insignificant direct or indirect (cumulative  
40 and secondary) coastal effects and which the state agency concurs are *de minimis*. The state agency is  
41 required to provide for public participation under Section 306(d)(14) of the CZMA when reviewing the  
42 Federal agency's *de minimis* activity request.

## 3.6.2 Existing Conditions

The Hawai'i Office of Planning is the lead agency for the Hawai'i Coastal Zone Management (CZM) Program, which was approved by the National Oceanic Atmospheric Administration in 1978. The entire State of Hawai'i is included within the Hawai'i CZM Program (NOAA 2007). However, federally owned, leased, or controlled facilities and areas are excluded from the state's CZM Program. As such, KPSTS is not subject to the Hawai'i CZM Program. However, Federal agency activities that have the potential to directly or indirectly affect a state's coastal zone resources are subject to CZMA consistency review.

On 28 October 2010, the State of Hawai'i Department of Business, Economic Development, and Tourism: Office of Planning provided concurrence for a list of *de minimis* activities and corresponding list of conditions and mitigation measures under the CZMA. The *de minimis* activities were determined by the State of Hawai'i to have insignificant direct or indirect (cumulative and secondary) coastal effects and would not be subject to further review by the Hawai'i CZM Program on the basis and condition that the listed *de minimis* activities would be subject to and bound by full compliance with the corresponding list of conditions and mitigation measures. The Hawai'i Office of Planning provided the public an opportunity to review the CZM Program and *de minimis* list from 8 to 25 October 2010, in accordance with Section 306(d)(14) of the CZMA. No public comments were received (Hawai'i DPP 2010). On 10 June 2011, the USAF submitted a letter to the Hawai'i Office of Planning to provide notification and obtain concurrence on the use of the *de minimis* exemptions and conditions/mitigations for the Proposed Action. Two CZM *de minimis* exemptions (Nos. 1 and 7) apply to the construction and demolition activities associated with the Proposed Action. On 13 June 2011, the Hawai'i Office of Planning provided concurrence with the use of the *de minimis* list for the Proposed Action. Therefore, a Coastal Consistency Negative Determination would not be required for this EA. The *de minimis* list and all correspondence with the Hawai'i Office of Planning is presented in **Appendix B**.

**Table 3-8** outlines the *de minimis* activities relevant to the Proposed Action that are identified in the *United States Air Force KPSTS De Minimis Actions and Conditions/Mitigation Measures List* (Hawai'i DPP 2010). **Table 3-9** outlines the corresponding conditions and mitigation measures relative to the *de minimis* number identified in **Table 3-8**.

A Special Management Areas (SMA) is the land extending inland from the shoreline as delineated on maps filed with the Hawai'i Office of Planning as of June 8, 1977, or as amended pursuant to HRS §205A-23. Special controls on developments within an area along the shoreline are necessary to avoid permanent losses of valuable resources and the foreclosure of management options, and to ensure that adequate access, by dedication or other means, to publicly owned or used beaches, recreational areas, and natural reserves is provided (HRS §205A-22).

## 3.6.3 Environmental Consequences

### 3.6.3.1 Evaluation Criteria

Impacts on coastal zone resources are based on the potential of a proposed action to have a direct, indirect, cumulative, or secondary effect on any coastal zone resource under a state's CZM Program. *De minimis* activities are expected to have insignificant direct or indirect (cumulative and secondary) coastal effects and therefore, would be expected to have no effect on coastal zone resources.

1 **Table 3-8. *de minimis* Activities Relevant to the Proposed Action at KPSTS**

<i>De Minimis</i> Number	Proposed Action	Description	Conditions and Mitigation Measures
1	New Construction	Construction of new facilities and structures wholly within the USAF KPSTS-controlled areas, that are similar to present use, and when completed, the use or operation of which complies with existing regulatory requirements.	1, 2, 3, 4, 6, 7, 8,10
7	Demolition	Demolition and disposal involving buildings or structures when done in accordance with applicable regulations and within USAF KPSTS-controlled property.	1, 2, 4, 5, 7, 8, 10

Source: USAF 2010

2 **Table 3-9. Conditions and Mitigation Measures for *de minimis* Activities at KPSTS**

Number	Project General Conditions and Mitigation Measures
1	USAF KPSTS-controlled property refers to leased land areas, rights-of-way, easements, roads, safety zones, and danger zones under active USAF control.
2	No contamination (e.g., trash or debris disposal, alien species introductions) of adjacent environments shall result from project-related activities.
3	Fueling of project-related vehicles and equipment should take place away from waterways and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on site, if appropriate, to facilitate cleanup of accidental petroleum releases.
4	Any soils exposed as part of the project shall be protected from erosion (e.g., with plastic sheeting, filter fabric) after exposure and stabilized as soon as practicable (e.g., with vegetative matting, hydroseeding).
5	If applicable, Section 106 of the NHPA consultation requirements must be met. Also, the USAF must follow guidelines in the area specific Integrated Cultural Resources Management Plan.
6	USAF KPSTS shall evaluate the possible impact of the action on the species and habitats protected under the ESA. If the USAF determines that no such species or habitats would be affected by the action, then USFWS concurrence is not required. Should it be determined by the USAF or the USFWS that the action may affect any such species or habitat, then informal or formal consultation would be initiated by the USAF as required by Section 7 (Interagency Coordination) of the ESA.
7	If any listed species should enter the area during conduct of construction activities, all activities should cease and until the animal(s) depart the area.
8	NEPA review process would be completed.
10*	As a general rule, a CZM Federal consistency review application should be submitted for any projects for which an EA is prepared.

Source: USAF 2010

Note: \*In May 2011, the USAF received approval from the Hawai'i Office of Planning for use of the *de minimis* list in association with the activities under the Proposed Action in this EA.

1 **3.6.3.2 Proposed Action**

2 Under the Proposed Action, nine existing buildings would be demolished and a CE Storage Building  
3 would be constructed. There is the potential that hazardous waste cleanup would be required from  
4 demolition of the buildings. These activities are covered under the KPSTS *de minimis* activity list  
5 (see **Table 3-8**). If the appropriate conditions and mitigation measures are met and implemented under  
6 the Proposed Action (see **Table 3-9**), no short-term, long-term, direct or indirect, adverse impacts on  
7 coastal zone resources would be expected. Additionally, a CZMA determination for the project would  
8 not be required.

9 According to the existing lease agreements between KPSTS and the State of Hawai‘i, Board of Land and  
10 Natural Resources, the nine existing buildings proposed for demolition and the construction of a new CE  
11 Storage Building would be outside of the SMA and all construction and demolition activities associated  
12 with the Proposed Action would be conducted on lands leased to the USAF, for its exclusive use.  
13 Therefore, no impacts on the SMA would be expected with implementation of the Proposed Action.

14 **3.6.3.3 No Action Alternative**

15 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
16 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.6.2**, would  
17 remain the same. No impacts on coastal zone management would be expected from implementation of  
18 the No Action Alternative.

19 **3.7 Biological Resources**

20 **3.7.1 Definition of the Resource**

21 Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands,  
22 forests, and wetlands) in which they exist. Protected and sensitive biological resources include  
23 ESA-listed species (threatened or endangered) and those proposed for ESA-listing as designated by the  
24 USFWS (terrestrial and freshwater organisms) and National Marine Fisheries Service (marine organisms),  
25 and migratory birds. Migratory birds are also protected species under the Migratory Bird Treaty Act  
26 (MBTA) of 1918 (16 U.S.C. 703–712), as amended, and EO 13186, *Responsibilities of Federal Agencies*  
27 *to Protect Migratory Birds*. Sensitive habitats include those areas designated by the USFWS (or National  
28 Marine Fisheries Service) as critical habitat protected by the ESA and as sensitive ecological areas  
29 designated by state or other Federal rulings. Sensitive habitats also include wetlands, plant communities  
30 that are unusual or limited in distribution, and important seasonal use areas for wildlife (e.g., migration  
31 routes, breeding areas, crucial summer and winter habitats).

32 The ESA (16 U.S.C. 1531 et seq.) establishes a Federal program to protect and recover imperiled species  
33 and the ecosystems upon which they depend. The ESA requires Federal agencies, in consultation with the  
34 USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued  
35 existence of any listed species or result in the destruction or adverse modification of designated critical  
36 habitat of such species. Under the ESA, “jeopardy” occurs when an action is reasonably expected,  
37 directly or indirectly, to diminish the number, reproduction, or distribution of a species so that the  
38 likelihood of survival and recovery in the wild is appreciably reduced. An “endangered species” is  
39 defined by the ESA as any species in danger of extinction throughout all or a significant portion of its  
40 range. A “threatened species” is defined by the ESA as any species likely to become an endangered  
41 species in the foreseeable future. The ESA also prohibits any action that causes a “take” of any listed  
42 species. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or  
43 attempt to engage in any such conduct.” Federal species of concern are not protected by law; however,

1 these species could become listed, and therefore are given consideration when addressing impacts from a  
2 proposed action. Listed plants are not protected from take, although it is illegal to collect or maliciously  
3 harm them on Federal land.

4 Critical habitat is designated if the USFWS determines that the habitat is essential to the conservation of a  
5 threatened or endangered species. In consultation for those species with critical habitat, Federal agencies  
6 must ensure that their activities do not adversely modify critical habitat to the point that it will no longer  
7 aid in the species' recovery. In many cases, this level of protection is similar to that already provided to  
8 species by the "jeopardy standard," as previously discussed. However, areas that are currently  
9 unoccupied by the species, but which are needed for the species' recovery, are protected by the  
10 prohibition against adverse modification of critical habitat.

11 The MBTA and EO 13186 require Federal agencies to minimize or avoid impacts on migratory birds.  
12 Unless otherwise permitted by regulations, the MBTA makes it unlawful to (or attempt to) pursue, hunt,  
13 take, capture, or kill any migratory bird, nest, or egg. If design and implementation of a Federal action  
14 cannot avoid measurable negative impacts on migratory birds, EO 13186 directs the responsible agency to  
15 develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the USFWS that  
16 shall promote the conservation of migratory bird populations.

17 Wetlands are important natural systems and habitats because of the diverse biological and hydrologic  
18 functions they perform. These functions include water quality improvement, groundwater recharge and  
19 discharge, pollution mitigation, nutrient cycling, unique plant and wildlife habitat provision, storm water  
20 attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of  
21 waters of the United States under Section 404 of the CWA. The term "waters of the United States" has a  
22 broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats  
23 (including wetlands). The USACE defines wetlands as "those areas that are inundated or saturated with  
24 ground or surface water at a frequency and duration to support, and that under normal circumstances do  
25 support, a prevalence of vegetation typically adapted to life in saturated conditions" (33 CFR Part 329).

### 26 **3.7.2 Existing Conditions**

27 **Vegetation.** KPSTS is in a relatively dry, lowland climate. As is common in many mid- to lowland areas  
28 in Hawai'i, much of the native vegetation around the installation has been removed by forest cutting and  
29 grazing and has been replaced largely by introduced species. These species are now the predominate  
30 vegetation on the installation and on most of O'ahu. Extensive barren areas on the installation probably  
31 resulted from human disturbance of the vegetative cover, wildfire, and erosion, and have been worsened  
32 by the constant trade winds that hit the ridgetops. Four distinct habitats have been identified at KPSTS:  
33 turf, second-growth forest, shrubland, and grassland/shrubland mosaic (AFCEE 1996). No  
34 native-dominated vegetative cover types occur within the fenced portions of KPSTS. Native species  
35 occur scattered throughout the disturbed cover types surrounding the installation. Native vegetation is  
36 most prevalent in the rock outcroppings on steep slopes near the west end of KPSTS, presumably due to  
37 the low level of human disturbance in these areas (USAF 1993b). **Table 3-10** provides descriptions of  
38 the native vegetative species within and surrounding the installation.

39 The grounds surrounding the facilities on KPSTS, including those proposed for demolition under the  
40 Proposed Action, are developed and landscaped and consequently generally lack other vegetation cover  
41 types. In these areas, the vegetation is characterized by maintained lawn with a few plantings of  
42 ornamental herbaceous plants and shrubs (AFCEE 1996). A more naturalized area with shrubland and  
43 forested habitat occurs adjacent to a narrow roadway behind Buildings 16 and 17. Photographs of  
44 Buildings 16 and 17 are presented in **Appendix C**.

1 **Table 3-10. Native Vegetation Species on KPSTS and in the Surrounding Region**

Scientific Name	Common Name	Description/Habitat
<i>Artemisia australis</i>	‘Ahinahina O‘ahu wormwood	A shrub found on exposed windward-facing slopes and cliff faces.
<i>Bidens amplexans</i>		A forb/subshrub found on windward-facing slopes.
<i>Canthium odoratum</i>	Alahe‘e shiny-leaved canthium	A shrub scattered throughout Koa-Haole Shrubland vegetation type on leeward-facing slopes around site installation perimeter and near west end of installation on windward-facing slopes.
<i>Chenopodium oahuense</i>	‘Aweoweo	A shrub on windward-facing slopes. Behaves as a colonizer on old lava flows following site disturbance.
<i>Dodonaea viscosa</i>	‘A‘ali‘i Florida hopbush	A medium-sized shrub found on all the main islands except Kaho‘olawe in nearly every habitat ranging from almost sea level to 7,500 feet. It is often found in open areas such as ridges and is an early colonizer of lava fields and pastures.
<i>Doryopteris decipiens</i>	Triangleleaf lipfern	A fern found on windward-facing slopes.
<i>Eragrostis variabilis</i>	Emoloa (Kawelu)	A native bunchgrass found on windward-facing slopes.
<i>Heteropogon contortus</i>	Piligrass	A grass found in shallow pockets that have developed in rock outcroppings in leeward areas.
<i>Myoporum sandwicense</i>	False sandalwood	A shrub on windward-facing slopes.
<i>Plectranthus parviflorus</i>	Succulent-leaved spur flower	A forb found on windward-facing slopes. Occurs on dry, exposed, often rocky locations.
<i>Sida fallax</i>	‘Ilima	A shrub on windward-facing slopes and shallow pockets that have developed in rock outcroppings in leeward areas.

Sources: AFCEE 1996, AFSPC 2005, UH Manoa 2001

2 **Wildlife.** Although KPSTS has a diversity of habitat features, it provides limited opportunity for wildlife  
 3 to inhabit the installation because of its relatively small size. However, due to the dominance of natural  
 4 areas in the surrounding region, the installation can provide an important corridor between habitats. The  
 5 installation’s habitats are primarily used by a variety of exotic species rather than by native species. Four  
 6 distinct habitats occur at KPSTS: (1) turf, (2) second-growth forest, (3) shrubland, and  
 7 (4) grassland/shrubland mosaic. Turf areas, including lawn and roadside buffers with ornamental shrubs,  
 8 are widely used by nonnative bird species such as sparrows, doves, game birds, and other ground-feeders.  
 9 Second-growth forest and shrubland at KPSTS are often intermixed and are used by a variety of  
 10 nonnative species for foraging, nesting, and cover. The western end of KPSTS is primarily composed of  
 11 a mosaic of grassland and shrubland used mainly by introduced land birds (AFCEE 1996).

12 During the 1996 field survey at KPSTS, 1 migratory shorebird, 2 seabirds, and 20 introduced land birds  
 13 were observed. Several Pacific golden-plovers (*Pluvialis fulva*), a migratory shorebird, were observed  
 14 along Road C between the KPSTS facilities during the 1996 field survey (AFCEE 1996). Two seabirds,  
 15 the Laysan albatross (*Phoebastria immutabilis*) and white-tailed tropicbird (*Phaethon lepturus*), also  
 16 classified as species of greatest conservation need in Hawai‘i (Hawai‘i DOFAW 2005), were also

1 observed during the survey flying over the installation. Laysan albatross nesting colonies have been  
2 documented in the vicinity, including one downslope of the installation at the Ka'ena Point NAR, and one  
3 upslope of KPSTS (AFCEE 1996). Anecdotal observations of the endemic pueo, or Hawaiian short-eared  
4 owl (*Asio flammeus sandwichensis*), have been made on or near KPSTS (AFCEE 2009).

5 No native mammalian species have been documented within KPSTS. Examples of nonnative mammalian  
6 species that occur on KPSTS include feral pigs (*Sus scrofa*), cats (*Felis domesticus*), mongoose  
7 (*Herpestes auropunctatus*), rats (*Rattus* sp.), feral goats (*Capra hircus*), and domestic dogs (*Canis lupus*  
8 *familiaris*). Lizards and geckos are observed frequently on KPSTS. However, a formal survey has not  
9 been conducted to identify the population. No federally protected reptiles or amphibians are expected to  
10 occur on KPSTS. There are no surface waters within KPSTS to support fish populations (AFCEE 2009).

11 **Protected and Sensitive Species.** A field study conducted in 1996 found no rare, threatened, or  
12 endangered plant species on KPSTS (AFCEE 1996). Seven endangered plant species have potential to  
13 occur in the vicinity of KPSTS (e.g., Ka'ena Point) (USFWS 2003, Mehrhoff 2010). These plant species  
14 are summarized in **Table 3-11**. Six of these seven species have designated critical habitat within the  
15 vicinity of Ka'ena Point. Critical habitat for the haha (*Cyanea humboltiana*) is designated on the slopes  
16 of the Kuaokalā Ridge on Ka'ena Point, including the slopes south of the buildings proposed for  
17 demolition in the B-Side Area of KPSTS (USFWS 2003).

18 The majority of the endangered plant species within the vicinity of Ka'ena Point are associated with  
19 habitats occurring on steep slopes and cliffs or in coastal areas (USFWS 2003). No threatened or  
20 endangered plant species are expected to occur within the vegetated areas adjacent to the buildings  
21 proposed for demolition. These adjacent areas are composed predominantly of developed areas  
22 (i.e., impervious surfaces) and mowed turf on relatively level topography.

23 Although no known occurrence of threatened or endangered animal species has been documented on  
24 KPSTS, incidental occurrences of these species could occur on KPSTS due to the installation's proximity  
25 to Ka'ena Point NAR, Pahole NAR, and other state-owned natural areas (AFCEE 2009). A list of  
26 federally threatened, endangered, and candidate animal species and species of concern that have the  
27 potential to occur at KPSTS, Ka'ena Point NAR, and Pahole NAR is presented in **Table 3-12**. In the  
28 State of Hawai'i, the majority of federally listed threatened and endangered species are given the same  
29 status by the state.

30 The endangered Hawaiian monk seal (*Monachus schauinslandi*), Hawaiian hoary bat (*Lasiurus cinereus*  
31 *semotus*), O'ahu 'elepaio (*Chasiempis sandwichensis ibidis*), O'ahu tree snails (the entire genus  
32 *Achatinella*, consisting of 41 species), and the threatened green sea turtle (*Chelonia mydas*) are not  
33 expected to occur at or near the project areas. The Hawaiian monk seal and green sea turtle are coastal  
34 species and there is no coastal habitat at or adjacent to the project areas. Although the Hawaiian monk  
35 seal has been documented in the vicinity of KPSTS, including downslope of the installation at the Ka'ena  
36 Point NAR, the distance and differences in elevation between the coastline and project sites are  
37 substantial. Buildings 32, 33, 37, and 39 are approximately 0.25 miles northeast and 1,000 feet higher in  
38 elevation than the nearest coastline. The site of the proposed CE Storage Building is approximately  
39 0.75 miles northeast and 1,400 feet higher in elevation than the nearest coastline. The project areas are  
40 outside of the O'ahu 'elepaio's range and USFWS-designated critical habitat. All O'ahu tree snail species  
41 are arboreal, living in native trees and bushes where they feed on fungi on the leaves and trunks.  
42 Currently, O'ahu tree snails are restricted to remnant native forest on the highest ridges of the Ko'olau  
43 and Wai'anae ranges on O'ahu (Hawai'i DOFAW 2005). As no remnant native forest occurs within the  
44 project areas, O'ahu tree snails are not expected to occur within the sites proposed for demolition and  
45 construction.

1 **Table 3-11. Endangered Plant Species Potentially Occurring in the Vicinity of KPSTS**

Scientific Name	Hawaiian/ Common Name	Federal Status	Habitat/Occurrence on the Island of O‘ahu
<i>Achyranthes splendens</i>	Round-leaved chaff-flower	E	Grows at low elevations, generally from sea level to 100 feet, in open dry areas on rocky soil or coralline plains. Two populations are known to occur on O‘ahu at the Barbers Point area of the Ewa Plains and Ka‘ena Point.
<i>Centaurium sebaeoides*</i>	Awiwi	E	Volcanic or clay soils or on cliffs in arid coastal areas, or on coral plains below 1,207 feet in elevation. Two known occurrences of this species remain on O‘ahu at Ka‘ena Point and Koko Head on state, city, and county lands.
<i>Chamaesyce celastroides</i> var. <i>kaenana*</i>	‘Akoko	E	Coastal areas and in mesic forests up to 2,000 feet in elevation. Known occurrences on O‘ahu occur at Ka‘ena Point, Keawa‘ula, Alau Gulch, Wai‘anae Kai, and Kahanahaiki on state and Federal lands.
<i>Cyanea humboldtiana*</i>	Haha	E	Wet <i>Metrosideros polymorpha</i> – <i>Dicranopteris linearis</i> lowland shrubland between 856 and 3,146 feet in elevation. There are nine known occurrences of populations on O‘ahu at Konahuanui summit, Moanalua-Kaneohe summit, Wailupe summit, Poamoho Trail, Opaepala Gulch, Maakua Gulch, Kaluanui, and Lulumahu Gulch.
<i>Cyperus trachysanthos*</i>	Pu‘uka‘a	E	Seasonally wet sites (i.e., mud flats, wet clay soil, seasonal ponds, and wet cliff seeps) on seepy flats, coastal cliffs, or talus slopes at elevations between 20 and 609 feet. Known occurrences on O‘ahu occur at Ka‘ena Point NAR, nearby Manini Gulch, Diamond Head, Makapuu, Queens Beach, and the Kawainui Marsh area, on Federal, state, and private lands.
<i>Schiedea kealiae*</i>	Ma‘oli‘oli	E	Steep slopes and cliff faces and bases in dry remnant <i>Erythrina sandwicensis</i> forest at elevations between 151 and 1,118 feet. Four population occurrences are known on O‘ahu on the cliffs above Dillingham Airfield and Camp Erdman and at Ka‘ena Point at the northern end of the Wai‘anae Mountains.
<i>Sesbania tomentosa*</i>	O‘ahu riverhemp (‘Ohai)	E	Coastal areas and soil pockets on lava up to an elevation of 900 feet. Known from three occurrences within the Ka‘ena Point NAR and from Keawa‘ula on state and private lands.

Sources: USFWS 2003, USFWS 2009, Mehrhoff 2010

Note: \* Critical habitat for this species is designated on O‘ahu near Ka‘ena Point.

Key: E = Endangered



1 **Table 3-12. Federally Listed Animal Species Potentially Occurring in the Vicinity of KPSTS**

Species		Federal Status
Scientific Name	Common/Hawaiian Name	
<b>Mammals</b>		
<i>Lasiurus cinereus semotus</i>	Hawaiian hoary bat	E
<i>Monachus schauinslandi</i>	Hawaiian monk seal (‘Īlioholoikauaua) <sup>a</sup>	E
<b>Birds</b>		
<i>Chasiempis sandwichensis ibidis</i>	O‘ahu ‘elepaio <sup>a</sup>	E
<i>Phoebastria immutabilis</i>	Laysan albatross <sup>b</sup>	SOC
<i>Phoebastria nigripes</i>	Black-footed albatross <sup>b</sup>	SOC
<b>Reptiles</b>		
<i>Chelonia mydas</i>	Green sea turtle (Honu)	T
<b>Invertebrates</b>		
<i>Achatinella</i> spp.	O‘ahu tree snail (Pupu Kani Oe) <sup>a</sup>	E
<i>Amastra rubens</i>	Amastrid land snail <sup>a</sup>	SOC
<i>Leptachina</i> sp.	None (snail) <sup>a</sup>	SOC
<i>Pleuropoma sandwichiensis</i>	Helicinid land snail <sup>a</sup>	SOC

Sources: Hawai‘i DOFAW 2003, Hawai‘i DOFAW 2009, USFWS 2011, Mehrhoff 2010

Notes:

a. Species observed at Pahole NAR

b. Species observed at Ka‘ena Point NAR

Key: E = Endangered; T = Threatened; SOC = Species of Concern

2 The Hawaiian hoary bat, federally listed as endangered, has not been recorded on KPSTS, and the  
 3 Hawai‘i Division of Forestry and Wildlife (DOFAW) reports that this species might currently be  
 4 extirpated from O‘ahu (Hawai‘i DOFAW 2005). Past incidental sightings of Hawaiian hoary bats on O‘ahu  
 5 were concentrated primarily in the southeastern portion of the island and scattered within the central  
 6 portion of the island. No incidental sightings have been recorded within the vicinity of Ka‘ena Point.  
 7 However, the USFWS reports that marginal Hawaiian hoary bat foraging and roosting habitat is present  
 8 on KPSTS (Mehrhoff 2010). Water courses and edges (e.g., coastlines and forest/pasture boundaries)  
 9 appear to be important foraging areas to Hawaiian hoary bats. Hoary bats roost in both exotic and native  
 10 woody vegetation from 3 to 29 feet above ground level (Hawai‘i DOFAW 2005). Breeding hoary bats  
 11 leave their young unattended in “nursery” trees and shrubs when they forage. The breeding season of the  
 12 hoary bats occurs April to August (Mehrhoff 2010). Evidence of breeding hoary bat populations  
 13 (e.g., pregnant or lactating individuals) is limited to the islands of Kaua‘i and Hawai‘i (Hawai‘i DOFAW  
 14 2005).

15 Migratory bird species potentially occurring on or near KPSTS are shown in **Table 3-13**. Several Pacific  
 16 golden-plovers, a migratory shorebird, were observed along Road C between the KPSTS facilities during  
 17 the 1996 survey (AFCEE 1996).

1

**Table 3-13. Migratory Bird Species Potentially Occurring at or near KPSTS**

Scientific Name	Common Name (Hawaiian Name)	Breeds or Winters in Hawai'i
<i>Arenaria interpres</i>	Ruddy turnstone ('Akekeke)	Winters
<i>Calidris alba</i>	Sanderling (Huna kai)	Winters
<i>Diomedea immutabilis</i>	Laysan albatross (Mōlī)	Breeds
<i>Fregata minor palmerstoni</i>	Great frigatebird ('Iwa)	Breeds
<i>Heteroscelus incanus</i>	Wandering tattler (Ulili)	Winters
<i>Phaethon lepturus dorotheae</i>	White-tailed tropicbird (Koa'e kea)	Breeds
<i>Pluvialis fulva</i>	Pacific golden-plover (Kōlea)	Winters
<i>Puffinus pacificus</i>	Wedge-tailed shearwater ('Ua'u kani)	Breeds

Sources: AFCEE 1996, Hawai'i DOFAW 2005

2 Four of the migratory bird species potentially occurring near KPSTS breed in Hawai'i, including Laysan  
 3 albatross, great frigatebird (*Fregata minor palmerstoni*), white-tailed tropicbird, and wedge-tailed  
 4 shearwater (*Puffinus pacificus*). Laysan albatross typically select nest sites relatively close to vegetation  
 5 in flat open areas or steep rocky areas. Nests vary from a scrape to a ring-like structure composed of  
 6 sand, vegetation, and debris. One of the largest breeding colonies on the main Hawaiian Islands occurs at  
 7 the Ka'ena Point NAR, at the westernmost tip of O'ahu, immediately west of KPSTS. Great frigatebirds  
 8 nest in colonies, often with other species, ranging from tens to thousands of pairs, and construct platform  
 9 nests in low bushes. They build nests in the tops of various species of bushes and trees. White-tailed  
 10 tropicbirds place nests (with little, if any, material) in hard-to-reach locations on cliffs and in caves.  
 11 Wedge-tailed shearwaters could potentially cross KPSTS when traveling between the sea and their  
 12 breeding sites. A small colony is known to use Ka'ena Point. Nesting habitat typically occurs on low,  
 13 flat islands and sand spits with little or no vegetation. However, wedge-tailed shearwaters will also use  
 14 slopes of extinct volcanoes and old volcanic craters with no tall woody plants to excavate burrows.  
 15 Burrows require firm soil or some vegetation to hold soil together (Hawai'i DOFAW 2005).

16 **Wetlands.** A wetland inventory was undertaken during a 1996 field survey to determine the location and  
 17 approximate boundaries of any potential jurisdictional wetlands that might occur on KPSTS. The field  
 18 inventory confirmed that no wetlands occur on or adjacent to KPSTS. The closest wetlands lie along the  
 19 marine shoreline at the bottom of steep cliffs, approximately 1,000 to 1,300 feet lower than the  
 20 installation (AFCEE 1996).

21 **3.7.3 Environmental Consequences**

22 **3.7.3.1 Evaluation Criteria**

23 The factors considered when determining the significance of impacts on biological resources is based on  
 24 (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the  
 25 proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity  
 26 of the resource to proposed activities, and (4) the duration of ecological effects. A habitat perspective is  
 27 used to provide a framework for analysis of general classes of impacts on biological resources  
 28 (i.e., removal of critical habitat, noise, human disturbance). Biological resources might be affected  
 29 directly by ground disturbance and habitat removal, or indirectly through such changes as increased  
 30 construction noise.

1 Under the ESA (16 U.S.C. 1531 et seq.), Federal agencies must ensure that actions they authorize, fund,  
2 or carry out are not likely to jeopardize the continued existence of any listed species or result in the  
3 destruction or adverse modification of designated critical habitat of such species. Additionally, the ESA  
4 requires that all Federal agencies avoid “taking” threatened or endangered species. Effects on endangered  
5 species and critical habitats are described as one of three categories: (1) no effect, (2) may affect, but not  
6 likely to adversely affect, and (3) may affect, and is likely to adversely affect. “No effect” means there  
7 would be no impacts, positive or negative, to listed or proposed resources, meaning no listed resources  
8 would be exposed to a proposed action and its environmental consequences. “May affect, but not likely  
9 to adversely affect” means that all effects are beneficial, insignificant, or discountable. Beneficial effects  
10 have contemporaneous positive effects without any adverse effects on the species or habitat. Insignificant  
11 effects relate to the size of the impact and include those effects that are undetectable, not measureable, or  
12 cannot be evaluated. Discountable effects are those extremely unlikely to occur. “May affect, and is  
13 likely to adversely affect” means that the listed resources are likely to be exposed to the action or its  
14 environmental consequences and will respond in a negative manner to the exposure. This determination  
15 could be considered a significant impact and ESA Section 7 consultation with USFWS would be required.

16 Factors to be considered when determining the significance of impacts on biological resources, including  
17 sensitive and protected species, from demolition and construction activities include the following:

- 18 • Disturbances from construction activities (e.g., noise) or removal of habitat is of a sufficient  
19 magnitude to result in rendering habitat unsuitable for a particular wildlife species in the long  
20 term
- 21 • Disturbances from construction activities or removal of habitat disrupts wildlife to a magnitude  
22 that causes a substantial reduction in population size (i.e., population-level effect) from an  
23 increase in mortality or decrease in reproductive output
- 24 • Disturbances from construction activities or removal of habitat jeopardizes the continued  
25 existence of a threatened or endangered species in the area or results in the destruction or adverse  
26 modification of federally designated critical habitat in the affected area.

### 27 **3.7.3.2 Proposed Action**

28 **Vegetation.** Short-term, negligible, adverse impacts on vegetation would be expected from minor  
29 land-clearing activities under the Proposed Action. A negligible amount of vegetation would be required  
30 to be removed or would be damaged during demolition activities. A number of construction vehicles  
31 would be required for the Proposed Action. Temporary staging areas for construction machinery and  
32 temporary parking areas for construction vehicles would be used during the Proposed Action. It is not  
33 anticipated that the Proposed Action would require the removal of trees from or adjacent to the project  
34 areas. However, minimal trimming of shrubs or trees could be required prior to commencement of  
35 demolition activities to provide space for vehicles in the demolition and construction areas, particularly  
36 for the demolition of Buildings 16 and 17. Construction staging areas should be placed within existing  
37 disturbed, preferably paved, areas to the greatest extent practicable to minimize the removal or damage of  
38 bordering tree and shrub vegetation. Staging areas should be placed outside of the dripline (i.e., the area  
39 directly under the outer circumference of the tree branches) of any nearby trees or shrubs in order to  
40 prevent compaction and long-term damage of tree and shrub root systems.

41 Long-term, minor, beneficial effects on vegetation would be expected from an overall decrease in  
42 impervious surfaces and increase in vegetative cover on KPSTS. Upon completion of demolition  
43 activities, the land areas associated with the demolished facilities would be restored (i.e., revegetated), as  
44 appropriate, with approved grass mixtures and vegetation.

1 **Wildlife.** Short-term, negligible, adverse impacts on wildlife due to disturbances from noise, demolition  
2 and construction activities, and heavy equipment use would be expected from the Proposed Action.  
3 Demolition and construction noise could cause wildlife to engage in escape or avoidance behaviors,  
4 resulting in short-term, adverse impacts. The areas of disturbance would be relatively small (i.e., ranging  
5 from 36 ft<sup>2</sup> to 3,137 ft<sup>2</sup>) and demolition and construction projects would be phased over a 12-month  
6 period; therefore, the Proposed Action would only be expected to disturb individuals rather than  
7 populations. Most wildlife species near the project areas would be expected to recover once the  
8 construction noise and disturbances have ceased for the day or project period, as these are existing  
9 disturbed habitats that experience ongoing human activity. Furthermore, all new construction would  
10 occur within currently developed areas and no existing habitat would be removed; therefore, no  
11 long-term, adverse impacts on wildlife would be expected as a result of the Proposed Action.

12 Long-term, minor, beneficial effects on wildlife would be expected from the overall decrease in  
13 impervious surfaces and increase in vegetative cover, which would provide additional potential habitat for  
14 wildlife species common to developed areas (e.g., nonnative sparrows, doves, and other ground-feeders;  
15 and lizards and geckos).

16 **Protected and Sensitive Species.** No federally listed threatened or endangered plant or animal species are  
17 expected to occur at or near the project areas. Therefore, the implementation of the Proposed Action  
18 would have no effect on federally threatened or endangered species. However, due to the potential  
19 proximity of several federally listed plant species and designated critical habitats to KPSTS  
20 (see **Table 3-11**), a qualified biologist would survey the project areas prior to any tree trimming or  
21 vegetation removal. If it is determined that any federally listed species are observed within any of the  
22 projected footprints, the USFWS would be contacted for their guidance pursuant to Section 7 of the ESA.

23 Although it is highly unlikely that the Hawaiian hoary bat would occur on or in the vicinity of KPSTS,  
24 the USFWS recommends that woody plants greater than 15 feet in height should not be removed or  
25 trimmed during the bat birthing and pup rearing season (May 15 through August 15). If vegetation  
26 clearing is proposed during the bat birthing and pup rearing season, USFWS recommends that surveys be  
27 conducted by a knowledgeable biologist to determine if hoary bats are present within the proposed project  
28 footprint (Mehrhoff 2010). Removal of trees and woody vegetation is not anticipated under the Proposed  
29 Action.

30 It is anticipated that construction activities would have a temporary impact on migratory birds transiting  
31 through areas with construction noise; however, since the project areas are not migratory bird nesting  
32 areas, construction noise is unlikely to have negative effects on nesting activities. Bird species most  
33 likely to occur within the vicinity of the project areas are nonnative, year-round resident bird species  
34 (sparrows, doves, game birds, and other ground-feeders), which would not be protected under the MBTA.  
35 Laysan albatross, great frigatebirds, white-tailed tropicbirds, and wedge-tailed shearwaters breed and nest  
36 in the vicinity of Ka'ena Point; however, it is unlikely that they would place nests within or near the  
37 project areas, which are located in developed areas. Nests of these species would most likely be placed  
38 on the cliffs along Kuaokalā Ridge or closer to the coastline downslope of KPSTS (Hawai'i DOFAW  
39 2005).

40 Wedge-tailed shearwaters are known to transit the area and are prone to collisions with objects in  
41 artificially lighted areas (Mehrhoff 2010). Artificial lighting and structures higher than current existing  
42 vegetation, such as the proposed CE Storage Building under the Proposed Action, have the potential to  
43 attract seabirds. In some instances, seabirds end up circling the light source until they either collide with  
44 the structure or fall to the ground due to exhaustion. Once grounded, they are vulnerable to predation or  
45 often struck by vehicles (Mehrhoff 2010). Potential impacts on wedge-tailed shearwaters and other  
46 migratory and sea bird species would be avoided and minimized by downshielding outside lights

1 associated with the proposed CE Storage Building to prevent attraction, avoiding construction during the  
2 night, and providing all project staff with information about seabird injury and mortality.

3 Because of the lack of habitat and the use of construction and lighting BMPs to avoid and minimize  
4 impacts on wedge-tailed shearwaters and other migratory and sea birds, no impacts on migratory birds  
5 would be expected from the implementation of the Proposed Action.

6 **Wetlands.** No impacts on wetlands would occur from the implementation of the Proposed Action  
7 because no wetlands occur within or adjacent to the project area.

### 8 **3.7.3.3 No Action Alternative**

9 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
10 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.7.2**, would  
11 remain the same. No impacts on biological resources would be expected from implementation of the No  
12 Action Alternative.

## 13 **3.8 Human Health and Safety**

### 14 **3.8.1 Definition of the Resource**

15 A safe environment is one in which there is no, or there is an optimally reduced, potential for death,  
16 serious bodily injury or illness, or property damage. Human health and safety addresses both workers'  
17 health and public safety during construction and demolition activities, and during subsequent operations  
18 of those facilities.

19 Construction site safety is largely a matter of adherence to regulatory requirements imposed for the  
20 benefit of employees and implementation of operational practices that reduce risks of illness, injury,  
21 death, and property damage. The health and safety of onsite military and civilian workers are safeguarded  
22 by numerous DOD and USAF regulations designed to comply with standards issued by OSHA and  
23 USEPA. These standards specify the amount and type of training required for industrial workers, the use  
24 of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace  
25 stressors.

26 Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an  
27 accident-prone situation or environment include the presence of the hazard itself together with the  
28 exposed (and possibly susceptible) population. The degree of exposure depends primarily on the  
29 proximity of the hazard to the population. Activities that can be hazardous include transportation,  
30 maintenance and repair activities, and the creation of extremely noisy environments. The proper  
31 operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any  
32 facility or human-use area with potential explosive or other rapid oxidation process creates unsafe  
33 environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical  
34 warning signals such as sirens, bells, or horns.

35 AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH)*  
36 *Program* (USAF 1996), implements AFD 91-3, *Occupational Safety and Health* (USAF 1993a), by  
37 outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF  
38 resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing  
39 risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF  
40 workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

1 **3.8.2 Existing Conditions**

2 **Construction Safety.** The nine existing buildings proposed for demolition (see **Table 2-1**) are currently  
3 underused, in poor condition, and potentially contain ACM and LBP. KPSTS is conducting an LBP and  
4 asbestos survey for all of the existing facilities at KPSTS. For purposes of the EA, it is assumed that all  
5 of the buildings proposed for demolition contain ACM and LBP.

6 **Personnel Safety.** Approximately 75 personnel work at KPSTS, including contractors, security forces,  
7 and DOD civilian and military personnel.

8 The KPSTS mission requires the use of radio frequency radiation (RFR) emitting devices. The USAF has  
9 implemented AFOSH Standard 48-9, *Radio Frequency Radiation Safety Program*, which is used by  
10 safety officers and field engineers to manage their RFR safety program. As part of this program,  
11 installation personnel maintain an up-to-date inventory of RFR emitters, conduct initial and periodic  
12 assessments of RFR emissions, and assist unit commanders in the development of RFR safety awareness  
13 training programs (USAF 1997).

14 As discussed in **Section 3.4.2**, geological hazards also pose a risk to personnel. These include landslides,  
15 rockfalls, and high waves associated with strong storms or tsunamis (USGS 2002). However, only the  
16 potential for rockfalls could increase under the Proposed Action. Therefore, only this type of geological  
17 hazard is discussed further in this section.

18 **Public Safety.** Security forces are present at the installation to prevent public trespassing, and road access  
19 is restricted by two security guard stations (Buildings 1 and 2). On parcels controlled by the USAF,  
20 certain areas and facilities are enclosed by security fences. Other parcels are not fenced in (50 SW 2007).  
21 KPSTS maintains a public access protocol to ensure an environment that is safe and secure for the KPSTS  
22 mission (AFCEE 2009). There is no resident population within 1 mile of KPSTS.

23 The closest available hospital is the Wai‘anae Coast Comprehensive Health Center, approximately  
24 10 miles from KPSTS. KPSTS obtains firefighting services via Mutual Aid Agreement between the  
25 Federal Fire Department on the Island of O‘ahu and the City and County of Honolulu. The Honolulu Fire  
26 Department is the first firefighting agency that responds to KPSTS. The closest Honolulu Fire  
27 Department station is the Wai‘anae Station, which has a response time of approximately 15 minutes.

28 **3.8.3 Environmental Consequences**

29 **3.8.3.1 Evaluation Criteria**

30 If implementation of the Proposed Action were to increase risks associated with the safety of construction  
31 personnel, contractors, military personnel, or the local community, or hinder the ability to respond to an  
32 emergency, it would represent an adverse impact. Impacts were assessed based on the potential impacts  
33 of construction and operational activities

34 **3.8.3.2 Proposed Action**

35 Activities under the Proposed Action that could impact human health and safety include demolition and  
36 construction activities, collectively referred to as “construction.”

37 Short-term, negligible, adverse impacts on contractor, personnel, and public safety would be expected  
38 from potential rockfalls. The local contractor selected to perform construction activities would be  
39 required to implement appropriate engineering controls at the project sites during construction to prevent

1 rockfalls from occurring. If necessary, signs could also be posted to notify construction personnel of the  
2 potential for rockfall hazards.

3 **Construction Safety.** Short-term, minor, adverse impacts on contractor safety would be expected from  
4 construction activities. All contractors performing construction activities are responsible for following  
5 ground safety and Federal OSHA regulations, and are required to conduct construction activities in a  
6 manner that does not increase risk to workers or the public. Occupational Health and Safety programs  
7 address exposure to hazardous and toxic substances, use of personal protective equipment, and use and  
8 availability of Material Safety Data Sheets (MSDS). Occupational Health and Safety is the responsibility  
9 of each employer, as applicable. Employer responsibilities are to review potentially hazardous  
10 workplaces; monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous substances),  
11 physical (e.g., noise propagation, falls), and biological (e.g., infectious waste, wildlife, poisonous plants)  
12 agents; recommend and evaluate controls (e.g., administrative, engineering, personal protective  
13 equipment) to ensure personnel are properly protected or unexposed; and ensure a medical surveillance  
14 program is in place to perform occupational health physicals for those workers subject to any accidental  
15 chemical exposures or those engaged in hazardous waste work.

16 Implementing the Proposed Action would slightly increase the short-term risk associated with  
17 construction contractors performing work at the project sites during the normal workday because the level  
18 of such activity would increase. Contractors would be required to establish and maintain safety programs  
19 for their employees. Contractors would be informed of the facility appropriate for hazardous materials  
20 and wastes, and coordinate the use of these materials with the appropriate authority at the installation. In  
21 particular, it is anticipated that the demolition of the nine buildings would generate ACM and LBP wastes  
22 because of their age. Any LBP or ACM encountered during building demolition activities would be  
23 handled in accordance with established USAF policy. USAF regulations prohibit the use of ACM for  
24 new construction. If friable ACM would need to be removed, an asbestos removal permit would be  
25 obtained prior to initiation of demolition activities. Friable ACM would be removed and disposed of at  
26 an asbestos-permitted landfill. LBP would also be removed and disposed of at an LBP-permitted landfill.

27 **Personnel Safety.** Short-term, negligible, adverse impacts on personnel safety would be expected from  
28 construction activities. Implementing the Proposed Action would slightly increase the short-term risk to  
29 personnel during construction activities. Signs would be used to warn installation personnel when  
30 entering construction areas. The CE Storage Building would be constructed in accordance with  
31 antiterrorism/force protection requirements, and fire hydrants and sprinklers would be installed. As such,  
32 once construction activities have ceased, no adverse impacts on personnel safety would be expected. No  
33 increase in overall RFR would occur under the Proposed Action.

34 The removal of ACM and LBP in the nine buildings proposed for demolition would result in long-term,  
35 beneficial impacts by reducing exposure to personnel.

36 **Public Safety.** Short-term, negligible, adverse impacts on public safety would be expected from  
37 construction activities. Since the majority of the buildings proposed for demolition would be visible from  
38 Keawa'ula Beach, it is possible that members of the general public would approach the site. However,  
39 public safety would not likely be affected due to the safety precautions and access controls established by  
40 KPSTS. Work areas surrounding construction activities would be fenced and appropriate signs would be  
41 posted to further reduce safety risks to outside personnel and the general public. Perimeter fencing would  
42 also be constructed surrounding the proposed construction areas.

### 43 **3.8.3.3 No Action Alternative**

44 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
45 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.8.2**, would

1 remain the same. No impacts on human health and safety would be expected from implementation of the  
2 No Action Alternative.

### 3 **3.9 Utilities and Infrastructure**

#### 4 **3.9.1 Definition of the Resource**

5 Infrastructure consists of the systems and physical structures that enable a population in a specified area  
6 to function and includes utility lines. Infrastructure is wholly human-made, with a high correlation  
7 between the type and extent of infrastructure and the degree to which an area is characterized as “urban”  
8 or developed. The availability of infrastructure and its capacity to support growth are generally regarded  
9 as essential to the economic growth of an area. Utilities and infrastructure generally include water supply,  
10 storm drainage systems, sanitary sewer and wastewater systems, power supply, and solid waste  
11 management.

12 The transportation resource is defined as the system of roadways, highways, and other transportation  
13 facilities and systems that are in the vicinity of a project site and could be potentially affected by a  
14 proposed action. The resource also includes parking, access to the installation, and vehicular movement  
15 within the installation. Transportation represents the movement of humans and commodities from one  
16 place to another. It is directly related to areas of production and habitation and to the system of vehicle  
17 access roads and alternative forms of travel, including rail and air. Primary roadways (e.g., major  
18 interstates) are principal routes designed to move traffic efficiently to adjacent areas. Secondary  
19 roadways or arterials (e.g., major surface streets) are designed to provide access to residential,  
20 commercial, and parking areas and access points for the installation.

#### 21 **3.9.2 Existing Conditions**

22 **Water Supply.** There are approximately 81 shallow wells within 4 miles of KPSTS. Most of these wells  
23 are in the lower valley and coastal areas. Other water supply wells are situated several miles northeast of  
24 KPSTS, near Wailaua. Formerly, KPSTS received its water supply through a pipeline from Dillingham  
25 Military Reservation. A well was installed along Manini Gulch. The surface elevation at the well is  
26 approximately 1,146 feet above MSL. The basal water elevation is indicated to be 13.7 feet above MSL,  
27 approximately 1,130 feet below the land surface. KPSTS currently obtains nonpotable water from the  
28 well on the installation (KPSTS 2010a).

29 **Storm Drainage System.** Storm water systems convey precipitation away from developed sites to  
30 appropriate receiving surface waters. Storm water systems can employ a variety of devices to slow the  
31 rapid movement of runoff and provide the benefit of reducing sediment transport into surface waters.

32 As discussed in **Section 3.5.2**, storm water runoff drains to the north, south, and west to intermittent  
33 streams, low-lying swales, and gulches before it ultimately reaches the Pacific Ocean. Areas of KPSTS  
34 that generate storm water runoff include paved areas that produce sheet flow runoff (e.g., parking spaces).  
35 Some areas of KPSTS have storm water gutters, drop inlets, culverts, and outfalls that direct runoff away  
36 from buildings and facilities (AFCEE 2003, AFCEE 2009).

37 There is no formal storm sewer at KPSTS. The Hawai‘i DOH has determined that KPSTS should be  
38 regulated as an MS4. KPSTS filed a Notice of Intent, submitted its SWMP, and received a Notice of  
39 General Permit Coverage by the Hawai‘i DOH. KPSTS applied for renewal of the Notice of General  
40 Permit Coverage in 2007. As a general permit holder, KPSTS has developed and implemented an SWMP  
41 and enforces its SWMP to reduce the discharge of pollutants to the maximum extent practicable. For  
42 more detailed information regarding the storm drainage system at KPSTS, refer to **Section 3.5.2**.



1 **Sanitary Sewer and Wastewater System.** No industrial wastewater is generated at KPSTS. The  
2 following authorized potential non-storm water discharges are known to occur at KPSTS (AFCEE 2009):

- 3 • Infrequent flushing of water lines.
- 4 • Irrigation of lawns and landscaping; no fertilizers are used.
- 5 • Condensate from air conditioners.
- 6 • Testing of fire hydrants, spillage from filling tanker trucks, and helicopter operations from  
7 portable basins.
- 8 • Sanitation facilities handling wastewater from each building at KPSTS are underground and  
9 include cesspools, septic tanks, and leach fields.
- 10 • Floor drains that serve areas (e.g., lavatories and condensate floor sinks) are known to flow to the  
11 septic tank systems. Floor drains that receive incidental storm water or that serve water heater  
12 vents drain into vegetated swales.
- 13 • Uncontaminated groundwater (e.g., well flushing).

14 **Electrical System.** Electrical power is supplied to KPSTS by the Hawaiian Electrical Company.  
15 Building 38 at KPSTS is a power distribution facility that distributes to the entire installation (KPSTS  
16 2010a).

17 **Solid Waste.** AFI 32-7042, *Solid and Hazardous Waste Compliance*, incorporates the requirements of  
18 Subtitle D, 40 CFR Parts 240 through 244, 257, and 258; applicable Federal regulations; AFIs; and DOD  
19 Directives. It also establishes the requirement for installations to have a solid waste management program  
20 that incorporates a solid waste management plan; procedures for handling, storage, collection, and  
21 disposal of solid waste; record-keeping and reporting; and pollution prevention.

22 In 2010, a total of approximately 16.6 tons of domestic solid waste were generated at KPSTS. Of the  
23 16.6 tons, approximately 92 percent was burned for energy recovery at the Covanta Energy's H-Power  
24 Plant in the nearby City of Kapolei and 8 percent was disposed of at the Waimanalo Gulch Landfill. The  
25 Waimanalo Gulch Landfill began operation in 1989. It is a 200-acre facility owned by the City and  
26 County of Honolulu and is operated under a contract with Waste Management of Hawai'i. The  
27 Waimanalo Gulch Landfill receives an average of 400,000 tons of waste per year (WM 2007). The City  
28 and County of Honolulu are currently reviewing alternative sites on O'ahu to supplement or replace the  
29 Waimanalo Gulch Landfill (Hawai'i DES 2005).

30 Additionally, in 2010, 68 tons of construction and demolition concrete and 65 tons of metals generated at  
31 KPSTS were sent to various recycling/recovery facilities (Cruz 2011a).

32 **Transportation.** The satellite tracking radio communications facilities at KPSTS are connected by a steep  
33 access road, Satellite Tracking Station Road. The nearest major highway to KPSTS is Farrington  
34 Highway (State Route 93). Farrington Highway is a north-south directional highway that runs along the  
35 southwestern ridge of O'ahu. Farrington Highway connects with Satellite Tracking Station Road to the  
36 north and Interstate H-1 to the south, which connects with Honolulu (KPSTS 2010a).

37 Road access to KPSTS is restricted by two security guard stations (Buildings 1 and 2). On parcels  
38 controlled by the Air Force, there are security fences at certain areas or facilities deemed as restricted  
39 control areas. Other areas are not fenced (50 SW 2007).

1    **3.9.3    Environmental Consequences**

2    **3.9.3.1    Evaluation Criteria**

3    Evaluation of potential impacts on infrastructure and infrastructure systems considers primarily whether a  
4    proposed action would exceed capacity or place unreasonable demand on a specific utility. Sustainable  
5    design measures would be incorporated where practicable to reduce use and demand. Additionally,  
6    construction activities and materials would incorporate as many LEED criteria as possible to demonstrate  
7    good environmental stewardship. The construction contractor would coordinate with the CE staff at  
8    KPSTS and local utility companies prior to commencement of any construction activities to determine the  
9    utility locations, such as sewer, telephone, fuel, electric, water lines, or any other underground utilities  
10   that could be encountered during demolition, excavation, and trenching activities. Any permits required  
11   for demolition, excavation, and trenching would be obtained prior to the commencement of ground-  
12   disturbing activities.

13   Impacts on transportation are considered to be adverse if the Proposed Action would result in a substantial  
14   increase in traffic, which is defined as more than 50 trips per hour, on local roadways. Project trip  
15   generation is based on an estimate of the number of equipment and crew members that would be present.

16   **3.9.3.2    Proposed Action**

17    **Water Supply.** Short-term, negligible, direct, adverse impacts on water supply would be expected from  
18    implementing the Proposed Action. Water demand could increase slightly during demolition and  
19    construction activities; however, potential increases in water demand would be temporary and would not  
20    be expected to exceed existing capacity.

21    **Storm Drainage System.** Short-term, minor, direct, adverse and long-term, minor, direct, beneficial  
22    impacts on the storm water drainage system would be expected from implementing the Proposed Action.  
23    Ground disturbance from demolition and construction activities would temporarily increase the potential  
24    for soil erosion and sediment transport during sheet flow runoff. Overall, there would be a long-term net  
25    reduction of 5,392 ft<sup>2</sup> of impervious surface area. This would provide more surface area for storm water  
26    permeation into the ground and subsequently, would permanently decrease sheet flow runoff into the  
27    storm water drainage system.

28    **Sanitary Sewer and Wastewater System.** Short-term, negligible to minor, direct, adverse impacts and  
29    long-term, minor, direct, beneficial impacts on the sanitary sewer and wastewater system would be  
30    expected from implementing the Proposed Action. During general demolition and construction activities,  
31    there would be a slight increase in wastewater. This increase would be temporary and would not be  
32    expected to exceed existing capacity. Upon completion of demolition and construction activities, there  
33    would be an overall long-term, minor, direct, beneficial impact on the sanitary sewer and wastewater  
34    system from a decrease in demand.

35    **Electrical System.** Short-term, minor, direct, adverse and long-term, minor, direct, beneficial impacts on  
36    the electrical system would be expected from implementing the Proposed Action. There would be a  
37    temporary increase in electrical demand during demolition and construction activities; however, the  
38    increase in electricity demand would be temporary and is not anticipated to exceed existing capacity.  
39    Electrical power for the Proposed Action would be supplied by the Hawaiian Electrical Company, which  
40    currently serves KPSTS. Upon completion of demolition and construction activities, there would be a  
41    long-term, minor, direct, beneficial impact on the electrical system from a decrease in demand.

1 **Solid Waste.** Short-term, negligible, direct and indirect, adverse impacts on solid waste management  
 2 would be expected from implementing the Proposed Action. Any increases in solid waste associated with  
 3 demolition and construction activities would be minimal and temporary in nature, and would be disposed  
 4 of in accordance with relevant Federal, state, and local regulations. Demolition and construction  
 5 materials would be recycled or reused to the greatest extent possible. Recyclable materials would be  
 6 taken to several different locations including a metals recycling facility (e.g., Schnitzer Steel), a clean  
 7 concrete recovery (e.g., West O‘ahu Aggregate), and a green wastes facility (e.g., Hawaiian Earth  
 8 Products). Demolition and construction debris that could not be recycled would be taken to the PVT  
 9 landfill for non-recoverable materials (e.g., drywall, roofing) and to the H-Power Plant for combustible  
 10 materials (Cruz 2011b). All other solid waste would be taken off-installation to the City and County of  
 11 Honolulu Waimanalo Gulch Landfill. If the Waimanalo Gulch Landfill is not able to accept the debris  
 12 due to capacity issues, then an alternative location would need to be identified.

13 The Proposed Action would result in approximately 10,592 ft<sup>2</sup> of total ground disturbance (7,992 ft<sup>2</sup> of  
 14 existing buildings planned for demolition and 2,600 ft<sup>2</sup> for the proposed new CE Storage Building). The  
 15 estimated total debris that would result from demolition and construction activities is summarized in  
 16 **Table 3-14.**

17 **Table 3-14. Estimate of Debris Generated from Demolition and Construction Activities**

Building Number	Footprint (ft <sup>2</sup> )	Total Debris (tons)*
<b>Demolition</b>		
14	100	7.9
16	112	8.8
17	615	48.6
18	400	31.6
21	36	2.8
32	472	37.3
33	2,120	167.5
37	1,000	79.0
39	3,137	247.8
<b>Total Demolition Debris</b>		<b>624.3</b>
<b>New Construction</b>		
New CE Storage Building	2,600	5.6
<b>Total New Construction Debris</b>		<b>5.6</b>
<b>Total Debris Generated</b>		<b>629.9</b>

Note: \* The estimated total construction debris and demolition debris were calculated using a generation factor of 4.34 pounds per square feet (lbs/ft<sup>2</sup>) and 158 lb/ft<sup>2</sup>, respectively, which are the average waste generation rates of nonresidential new construction and demolition documented by the USEPA in the *Estimated 2003 Building-Related Construction and Demolition Materials Amounts* (USEPA 2003).

18 Depending on which landfill would be used (i.e., Waimanalo Gulch Landfill or an alternative location) for  
 19 the remaining construction and demolition debris, long-term, minor, direct or indirect, adverse impacts on  
 20 solid waste management would be expected.

1 **Transportation.** Short-term, negligible to minor, direct, adverse impacts on transportation would be  
2 expected from implementing the Proposed Action. A potential increase in traffic volume from  
3 construction vehicles would be expected; however, this would be temporary, and traffic volume would  
4 return to normal upon completion of demolition and construction activities. Temporary construction  
5 staging areas for construction machinery, parking areas for construction vehicles, and access roads would  
6 be used on site during demolition and construction activities of the Proposed Action. Therefore, there  
7 would be no impacts on currently used parking areas on KPSTS during demolition and construction  
8 activities.

9 Appropriate signage would be installed to direct construction traffic. No long-term, direct or indirect,  
10 adverse impacts on transportation would be expected because there would be no decreases or increases in  
11 personnel.

### 12 **3.9.3.3 No Action Alternative**

13 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
14 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.9.2**, would  
15 remain the same. No impacts on utilities, infrastructure, or transportation would be expected from  
16 implementation of the No Action Alternative.

### 17 **3.9.4 3.9.4 Sustainable Design Techniques**

18 EO 13154, *Federal Leadership in Environmental, Energy, and Economic Performance*, dated October 5,  
19 2009 directs Federal agencies to improve water use efficiency and management; implement high  
20 performance sustainable Federal building design, construction, operation, and management; and advance  
21 regional and local integrated planning by identifying and analyzing impacts from energy usage and  
22 alternative energy sources. Section 2(g) requires new construction, major renovation, or repair and  
23 alteration of buildings to comply with the *Guiding Principles for Federal Leadership in High*  
24 *Performance and Sustainable Buildings*. The CEQ regulations at 40 CFR 1502.16(e) directs agencies to  
25 consider the energy requirements and conservation potential of various alternatives and mitigation  
26 measures.

27 Section 503(b) of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation*  
28 *Management*, instructs Federal agencies to conduct their environmental, transportation, and  
29 energy-related activities under the law in support of their respective missions in an environmentally,  
30 economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.  
31 EO 13423 sets goals in energy efficiency, acquisition, renewable energy, toxic chemical reduction,  
32 recycling, sustainable buildings, electronics stewardship, fleets, and water conservation (DOE 2007).  
33 Sustainable design measures such as the use of “green” technology (e.g., photovoltaic panels, solar  
34 collection, heat recovery systems, wind turbines, green roofs, and habitat-oriented storm water  
35 management) would be incorporated where practicable.

36 One mechanism for measuring the sustainability of a proposed project is LEED, developed by the Green  
37 Buildings Council. The LEED Green Buildings Rating System is organized into six major credit  
38 categories (1) sustainable sites, (2) water efficiency, (3) energy and atmosphere, (4) materials and  
39 resources, (5) indoor environmental quality, and (6) innovation and design processes. Most credit  
40 categories have both prerequisites and credits. Credits can be pursued to achieve points, and depending  
41 on the points a project earns, there are four levels of certification under the LEED Rating System  
42 including Certified (lowest level), Silver, Gold, and Platinum (highest level).

1 The LEED credit categories and specific strategies related to those categories regarding infrastructure  
2 include the following:

- 3 • *Sustainable Sites*. The intent of the sustainable sites credit category is to encourage the reuse of  
4 existing buildings and sites, protect the land use, and reduce the adverse environmental impact of  
5 new developments. The specific strategies include reduction of the heat island effect and  
6 implementation of green roofs and efficient storm water design.
- 7 • *Water Efficiency*. The intent of the water efficiency credit category is to encourage water use  
8 reduction. The specific strategies include the use of innovative wastewater technologies and  
9 highly efficient plumbing fixtures and water use reduction.
- 10 • *Energy and Atmosphere*. Energy efficiency, renewable energy, and ozone protection are the main  
11 goals of this credit category. The specific strategies include energy-efficient building systems  
12 (i.e., centralized heating and cooling systems), onsite renewable energy, and green power.
- 13 • *Materials and Resources*. The intent of the materials and resources credit category is to  
14 encourage reducing the life cycle environmental impact of materials. The specific strategies  
15 include the use of recycled materials and local/regional materials.

16 Under the Proposed Action, the USAF would incorporate sustainable design measures where practicable  
17 to reduce use and demand. Additionally, construction activities and materials would incorporate as many  
18 LEED criteria as possible to demonstrate good environmental stewardship. Examples of LEED criteria  
19 include the installation of energy-efficient low-flow or no-flow fixtures to reduce water consumption, use  
20 of energy-efficient building systems such as lighting fixtures and high-efficiency HVAC systems, and  
21 implementation of storm water design features such as bioswales and rain gardens to help channel runoff  
22 and filter water before it is released to receiving waters

### 23 **3.10 Hazardous Materials and Wastes**

#### 24 **3.10.1 Definition of the Resource**

25 A hazardous substance, pursuant to the Comprehensive Environmental Response, Compensation and  
26 Liability Act (CERCLA) (42 U.S.C. 9601(14)), is defined as: “(A) any substance designated pursuant to  
27 Section 1321(b)(2)(A) of Title 33; (B) any element, compound, mixture, solution, or substance designated  
28 pursuant to Section 9602 of this title; (C) any hazardous waste having the characteristics identified under  
29 or listed pursuant to Section 3001 of the Resource Conservation and Recovery Act (RCRA) of 1976, as  
30 amended, (42 U.S.C. 6921); (D) any toxic pollutant listed under Section 1317(a) of Title 33; (E) any HAP  
31 listed under Section 112 of the CAA (42 U.S.C. 7412); and (F) any imminently hazardous chemical  
32 substance or mixture with respect to which the Administrator of the USEPA has taken action pursuant to  
33 Section 2606 of Title 15. The term does not include petroleum, including crude oil or any fraction  
34 thereof, which is not otherwise specifically listed or designated as a hazardous substance, and the term  
35 does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or  
36 mixtures of natural gas and such synthetic gas).”

37 Hazardous materials are defined by 49 CFR Part 171.8 as “hazardous substances, hazardous wastes,  
38 marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous  
39 Materials Table (49 CFR Part 172.101), and materials that meet the defining criteria for hazard classes  
40 and divisions” in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S.  
41 Department of Transportation regulations within 49 CFR Parts 105–180.

1 RCRA defines a hazardous waste in 42 U.S.C. 6903, as “a solid waste, or combination of solid wastes,  
2 which because of its quantity, concentration, or physical, chemical, or infectious characteristics may  
3 (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or  
4 incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or  
5 the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.”

### 6 **3.10.2 Existing Conditions**

7 **Hazardous Materials and Wastes.** AFI 32-7086, *Hazardous Materials Management*, establishes  
8 procedures and standards governing procurement, issuance, use or disposal of hazardous materials and  
9 tracking and record keeping for public safety and for compliance with all laws and regulations.  
10 AFI 32-7080, *Pollution Prevention Program*, incorporates the requirements of all Federal regulations,  
11 AFIs, and DOD Directives for the reduction of hazardous material uses and purchases. The primary  
12 hazardous materials addressed by AFI 32-7080 are ozone-depleting substances and the 17 chemicals  
13 listed under the USEPA Industrial Toxics Program. EO 12088, *Federal Compliance with Pollution*  
14 *Control Standards*, ensures that necessary actions are taken for the prevention, management, and  
15 abatement of environmental pollution from hazardous materials or hazardous waste due to Federal facility  
16 activities. AFI 32-7042, *Solid and Hazardous Waste Compliance*, directs roles and responsibilities with  
17 waste stream management including planning, training, emergency response, and pollution prevention.  
18 The management of hazardous waste is governed by RCRA Subtitle C (40 CFR Parts 260 through 270)  
19 regulations, which are administered by the USEPA.

20 The operation of vehicles and equipment at KPSTS requires the use of a variety of hazardous and  
21 nonhazardous materials including fuels, lubricants, and solvents. There are limited quantities of  
22 petroleum, oils, and lubricants (POL) and other hazardous materials stored at various buildings at KPSTS  
23 (AFCEE 2009).

24 KPSTS is categorized by the USEPA as a conditionally exempt small-quantity generator (CESQG) of  
25 hazardous waste. A CESQG generates 100 kilograms or less per month of hazardous waste, or 1  
26 kilogram or less per month of acutely hazardous waste (USEPA 2010b). Hazardous wastes, including  
27 POL and solvents generated during maintenance operations, are taken off-installation for recycling or  
28 proper disposal (AFCEE 2009).

29 **Asbestos-Containing Materials.** AFI 32-1052, *Facilities Asbestos Management*, provides the direction  
30 for asbestos management at USAF installations. This instruction incorporates by reference, applicable  
31 requirements of 29 CFR Part 669 et seq., 29 CFR Part 1910.1025, 29 CFR Part 1926.58, 40 CFR Part  
32 61.3.80, Section 112 of the CAA, and other applicable AFIs and DOD Directives. AFI 32-1052 requires  
33 installations to develop an asbestos management plan for the purpose of maintaining a permanent record  
34 of the status and condition of ACM in installation facilities, and documenting asbestos management  
35 efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing  
36 how the installation accomplishes asbestos-related projects.

37 Asbestos is regulated by the USEPA under the CAA; Toxic Substances Control Act; CERCLA; and  
38 Century Code 23, *Health and Safety Chapter 25 Air Pollution Control*, with the authority promulgated  
39 under OSHA. Identification of ACM in installation facilities is governed by OSHA under the authority of  
40 the *Occupational Safety and Health Act*, 29 U.S.C. 669 et seq. Section 112 of the CAA regulates  
41 emissions of asbestos fibers to ambient air. Building materials in older buildings are assumed to contain  
42 asbestos. It exists in a variety of forms and can be found in floor tiles, floor tile mastic, roofing materials,  
43 joint compound used between two pieces of wallboard, some wallboard thermal system insulation, and  
44 boiler gaskets. If asbestos is disturbed, fibers can become friable. Common sense measures, such as  
45 avoiding damage to walls and pipe insulation, will help keep the fibers from becoming airborne. Friable

1 ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled,  
2 pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any ACM that does not meet the  
3 criteria for friable ACM.

4 Due their age and construction dates, all nine buildings proposed for demolition are assumed to contain  
5 ACM.

6 **Lead-Based Paint.** Lead is a heavy, ductile metal commonly found simply as metallic lead or in  
7 association with organic compounds, oxides, and salts. It was commonly used in house paint for several  
8 years. The Federal government banned the use of most LBP in 1978. Therefore, it is assumed that all  
9 structures constructed prior to 1978 could contain LBP. Paint chips that fall from the exterior of  
10 buildings can potentially contaminate the soil if the paint contains lead. The USEPA has established  
11 recommendations for maximum lead soil contamination levels. No action is required if the lead  
12 concentration is less than 400 parts per million (ppm) in areas expected to be used by children, or less  
13 than 2,000 ppm in areas where contact by children is less likely. Soil abatement and public notice are  
14 recommended when lead levels exceed 5,000 ppm.

15 USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by  
16 reference the requirements of 29 CFR Part 1910.120, 29 CFR Part 1926, 40 CFR Part 50.12, 40 CFR  
17 Parts 240 through 280, the CAA, and other applicable Federal regulations. In addition, the policy requires  
18 each installation to develop and implement a facility management plan for identifying, evaluating,  
19 managing, and abating LBP hazards. The Residential Lead-Based Paint Hazard Reduction Act of 1992,  
20 Subtitle B, Section 408 (commonly called Title X) regulates the use and disposal of LBP on Federal  
21 facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating  
22 to LBP activities and hazards.

23 Because all nine buildings proposed to be demolished were constructed before 1978, they are assumed to  
24 contain LBP.

25 **Radon.** KPSTS is in Federal USEPA Radon Zone 3, which is the lowest priority zone where the  
26 predicted average indoor radon screening level is less than 2 picoCuries per liter (USEPA 2010c).

27 **Pesticides.** The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulates pesticide use. In  
28 1996, the DOD signed an MOU with the USEPA to reduce the potential risks to human health and the  
29 environment associated with pesticides by adopting Integrated Pest Management (IPM) strategies. The  
30 USEPA defines IPM as “an effective and environmentally sensitive approach to pest management that  
31 relies on a combination of common-sense practices” (USEPA 2011a).

32 USAF installations receive guidance for IPM programs from DOD 4150.07, *DOD Pest Management*  
33 *Program*, and AFI 32-1053, *Pest Management Program*, which meets or exceeds DOD 4150.07 (AFCEE  
34 2009). KPSTS maintains a contract with the Navy Public Works Center (PWC) Pearl Harbor,  
35 approximately 25 miles southeast of KPSTS, for pest management activities at KPSTS. KPSTS  
36 maintains its own *Integrated Pest Management Plan* (IPMP) (KPSTS 2006), in accordance with DOD  
37 4150 and AFI 32-1053. The KPSTS IPMP, in conjunction with the Navy PWC’s Pearl Harbor Pest  
38 Management Plan, guides pest management actions at KPSTS; provides for the safe, effective,  
39 economical, and environmentally acceptable management of pests at KPSTS; and establishes IPM  
40 techniques to be used for managing pests.

41 Pests encountered at KPSTS are typical of the region and include black ants, roaches, centipedes, bees,  
42 wasps, rodents (e.g., mice and rats), spiders, various weed plants, mosquitoes, flies, and fleas. Pest  
43 management activities performed by Navy PWC Pearl Harbor are accomplished on job orders that are

1 initiated by the Station Civil Engineer (KPSTS 2006). Currently, there is use of pesticides, herbicides,  
2 rodenticides, and insecticides to control pest populations at KPSTS. Pesticide usage at KPSTS is minimal  
3 and Restricted Use pesticides are not generally used. Typically, only nonchemical methods or General  
4 Use pesticides from the Standard DOD Pesticide List are used. Pest management activities are  
5 accomplished in a manner that prevents these actions from impacting storm water or groundwater and that  
6 prevents drift of chemical pesticides onto, or runoff into, surface water or drainageways. There are no  
7 chemical pesticides stored at KPSTS (AFCEE 2009).

8 ***Aboveground and Underground Storage Tanks.*** There are two active 500-gallon diesel and gasoline  
9 ASTs at a fueling station near Building 19 at KPSTS, which is in the immediate vicinity of Buildings 14,  
10 16, 17, and 18. The ASTs are routinely filled by fuel transport trucks and include float-type level  
11 indicators to help prevent overfilling, fuel dispensers with automatic shut-offs to prevent overfilling  
12 vehicles, and an auxiliary kill switch (AFCEE 2009). No known issues have been identified with these  
13 ASTs.

14 There are two active 20,000-gallon diesel USTs associated with the power plant (Building 38) at KPSTS,  
15 which is in the immediate vicinity of Buildings 32, 33, 37, and 39. The USTs are fitted with leak  
16 detection systems and there have been no known leaks from the USTs (AFSPC 2009).

17 There was a former 25,000-gallon UST at KPSTS that was installed in 1965 to service the auxiliary  
18 power plant (Building 39), which is in the immediate vicinity of Buildings 32, 33, 37, and 39. In 1972,  
19 there was a leak of approximately 1,800 gallons of diesel fuel into soil in the area of the UST, and the  
20 area was designated as ERP Site ST001 (50 SW 2007). ERP Site ST001 is discussed in further detail in  
21 the subsequent paragraphs.

22 ***Environmental Restoration Program.*** The DOD's ERP requires each installation to identify, investigate,  
23 and clean up hazardous waste disposal or release sites. The objectives of the ERP are to identify and fully  
24 evaluate any areas suspected to be contaminated with hazardous materials caused by past USAF  
25 operations and to eliminate or control any hazards to the public health, welfare, or the environment. The  
26 ERP is a subcomponent of the Defense Environmental Restoration Program that became law under the  
27 Superfund Amendments and Reauthorization Act of 1986.

28 KPSTS has one active ERP site (ERP Site ST001) and eight Areas of Concern (AOCs). The eight AOCs  
29 were identified in 1996. Five of the eight AOCs were determined as No Further Remedial Action  
30 Planned, two were administratively closed, and one (AOC EA02) was incorporated into ERP Site ST001  
31 because of its proximity to ERP Site ST001 and the similarity in chemicals of interest.

32 ERP Site ST001 is associated with a 1,800-gallon leak from a former 25,000-gallon UST and its  
33 associated underground piping (AFCEE 2009, 50 SW 2007, AFSPC 2009). The former UST stored and  
34 delivered fuel via underground piping to a 600-gallon former AST at the southeastern corner of Building  
35 39. The UST was removed between 1976 and 1978. A fuel leak of approximately 1,800 gallons  
36 reportedly occurred in 1972. It is not known whether the release occurred from the UST, underground  
37 piping, or both components of the fuel storage and delivery system. The area of contamination, which  
38 starts atop a hillside approximately 125 feet southeast of Building 39 and lies in a narrow corridor to an  
39 area adjacent to Building 39, was designated as ERP Site ST001. A Preliminary Assessment/Site  
40 Investigation (PA/SI) was conducted in 1996 to investigate the area of the UST, AST, and underground  
41 piping. During the PA/SI, additional fuel spills from the former AST were discovered, and the area of the  
42 AST was designated as AOC EA02 (AFSPC 2009). AOC EA02 was ultimately incorporated into ERP  
43 Site ST001 (50 SW 2007). In 2009, an RI was conducted at ERP Site ST001, and a Final RI report was  
44 submitted in May 2010. The areas of contamination are considered to be surface soil (less than 3 feet  
45 below ground surface) and subsurface (approximately 3 to 9 feet below ground surface), near Buildings



1 37 and 39. The soil contamination is mainly found in an isolated area and the surface soil contamination  
2 was found near the former AST location. There was no contamination found in perched groundwater or  
3 in soil gas. The results of a human health risk evaluation indicated that risks posed to occupational  
4 workers, excavation/construction workers, and hypothetical residents from chemicals in soil are within or  
5 below USEPA's acceptable levels. It was concluded that potential risks posed to human health are within  
6 acceptable levels at ERP Site ST001 and do not require further action (AFCEE 2010).

7 ERP Site ST001 is in the immediate vicinity of Buildings 32, 33, 37, and 39 proposed for demolition.

### 8 **3.10.3 Environmental Consequences**

#### 9 **3.10.3.1 Evaluation Criteria**

10 Impacts on hazardous materials or hazardous waste would be considered significant if a proposed action  
11 resulted in noncompliance with applicable Federal or state regulations, or increased the amounts  
12 generated or procured beyond current KPSTS waste management procedures and capacities. Impacts on  
13 the ERP would be considered significant if a proposed action disturbed or created contaminated sites  
14 resulting in negative effects on human health or the environment, or if a proposed action made it more  
15 difficult or costly to remediate existing contaminated sites.

#### 16 **3.10.3.2 Proposed Action**

17 **Hazardous Materials and Wastes.** Short-term, negligible to minor, adverse impacts would be expected  
18 from implementing the Proposed Action. Construction activities would require the use of certain  
19 hazardous materials (e.g., paints, welding gases, solvents, preservatives, sealants), and demolition  
20 activities would generate minor amounts of hazardous wastes. These activities would not be expected to  
21 exceed the capacities of existing hazardous waste disposal facilities. Hazardous wastes would be handled  
22 under the existing DOD RCRA-compliant waste management programs and, therefore, would not be  
23 expected to increase the risks of exposure to workers and installation personnel. The local contractor  
24 selected for transporting hazardous wastes off site to a permitted disposal area would be required to  
25 demonstrate that they have properly secured all hazardous wastes prior to transport. Prior to  
26 commencement of construction activities, the contractor would be required to obtain the necessary  
27 construction permits. No long-term, direct or indirect, adverse impacts would be expected.

28 **Asbestos-Containing Material.** Short-term, negligible to minor, adverse, and long-term, beneficial  
29 impacts would be expected. It is anticipated that the demolition of the nine buildings would generate  
30 ACM wastes because of their age. Any ACM encountered during building demolition activities would be  
31 handled in accordance with established USAF policy. USAF regulations prohibit the use of ACM for  
32 new construction. If friable ACM would need to be removed, an asbestos removal permit would be  
33 obtained prior to initiation of demolition activities. Friable ACM would be removed and disposed of at  
34 an asbestos-permitted landfill. The removal of ACM during demolition activities would result in  
35 long-term, beneficial impacts by reducing exposure to personnel.

36 **Lead-Based Paint.** Short-term, negligible to minor, adverse, and long-term, beneficial impacts would be  
37 expected. It is anticipated that the demolition of the nine buildings would generate LBP wastes because  
38 of their age. Any LBP encountered during building demolition activities would be handled in accordance  
39 with established USAF policy. LBP would be removed and disposed of at an LBP-permitted landfill.  
40 The removal of LBP during demolition activities would result in long-term, beneficial impacts by  
41 reducing exposure to personnel.

1 **Radon.** No impacts would be expected from implementing the Proposed Action, as KPSTS is in Federal  
2 USEPA Radon Zone 3, which is the lowest priority zone.

3 **Pesticides.** No impacts would be expected from implementing the Proposed Action. Restricted use  
4 pesticides are not generally used at KPSTS and there are no chemical pesticides stored at KPSTS. All  
5 pesticides and herbicides would be handled and applied according to Federal, state, and local regulations;  
6 KPSTS IPMP; and the Navy PWC Pearl Harbor Pest Management Plan.

7 **Aboveground and Underground Storage Tanks.** No impacts from or to existing USTs or ASTs would  
8 be expected. There are no known current open leaking UST cases at or within the vicinity of any of the  
9 nine buildings to be demolished. If any petroleum-contaminated soil, not associated with ERP Site  
10 ST001, was subsequently discovered during construction activities, the contractor would be required to  
11 immediately stop work, report the discovery to the installation, and implement the appropriate safety  
12 precautions. Commencement of field activities could not continue in this area until the issue was  
13 investigated. ASTs and USTs are not expected to impact or be impacted by the nine buildings to be  
14 demolished or the site for the construction of the proposed CE Storage Building. The tanks would  
15 continue to be used with appropriate BMPs in place (e.g., secondary containment, leak detection systems,  
16 alarm systems). The former UST associated with ERP Site ST001 is discussed in further detail in the  
17 subsequent paragraphs.

18 **Environmental Restoration Program.** Short-term, negligible to minor, adverse impacts could be  
19 expected from ERP sites. Demolition activities at Buildings 32, 33, 37, and 39 would be within the  
20 immediate vicinity of ERP Site ST001. There could be the potential for encountering contaminated soils  
21 from ERP Site ST001 during demolition activities; however, the Final RI report stated that potential risks  
22 posed to human health are within acceptable levels at site ST001 and do not require further action. Project  
23 planning would include soil and groundwater sampling, as appropriate, prior to commencement of  
24 demolition activities. If results of the sampling were to indicate the presence of additional contamination,  
25 remediation efforts would take place prior to commencement of demolition activities. Additionally, the  
26 handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance  
27 with applicable Federal, state, and local regulations; USAF regulations; and KPSTS management  
28 procedures. Therefore, negligible to minor impacts would be expected.

### 29 **3.10.3.3 No Action Alternative**

30 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
31 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.10.2**, would  
32 remain the same. No impacts related to hazardous materials and wastes or ERP sites would be expected  
33 from implementation of the No Action Alternative.

## 34 **3.11 Socioeconomics and Environmental Justice**

### 35 **3.11.1 Definition of the Resource**

36 **Socioeconomics.** Socioeconomics is the relationship between economies and social elements, such as  
37 population levels and economic activity. Factors that describe the socioeconomic environment represent  
38 a composite of several interrelated and nonrelated attributes. There are several factors that can be used as  
39 indicators of economic conditions for a geographic area, such as demographics, median household  
40 income, unemployment rates, percentage of families living below the poverty level, and employment and  
41 housing data. Data on employment identifies gross numbers of employees, employment by industry or  
42 trade, and unemployment trends. Data on personal income in a region is used to compare the before and  
43 after impacts of any jobs created or lost as a result of a proposed action. Data on industrial, commercial,

1 and other sectors of the economy provide baseline information about the economic health of a region.  
 2 Impacts on housing, recreational resources, emergency services, educational facilities, and social services  
 3 are not anticipated due to the small scope of the Proposed Action.

4 **Environmental Justice.** EO 12898, *Federal Actions to Address Environmental Justice in Minority*  
 5 *Populations and Low-Income Populations*, pertains to environmental justice issues and relates to various  
 6 socioeconomic groups and the disproportionate impacts that could be imposed on them. This EO requires  
 7 that Federal agencies’ actions substantially affecting human health or the environment do not exclude  
 8 persons, deny persons benefits, or subject persons to discrimination because of their race, color, or  
 9 national origin. The EO was enacted to ensure the fair treatment and meaningful involvement of all  
 10 people regardless of race, color, national origin, or income with respect to the development,  
 11 implementation, and enforcement of environmental laws, regulations, and policies. Consideration of  
 12 environmental justice concerns includes race, ethnicity, and the poverty status of populations in the  
 13 vicinity of a proposed action.

14 **3.11.2 Existing Conditions**

15 **Demographics.** The population of Honolulu County was 953,207 in 2010, which represents a 10 percent  
 16 increase above the 2000 Census. From 2000 to 2010, the population of Honolulu County grew from  
 17 876,156 to 953,207 (12 percent increase). The State of Hawai‘i grew at a faster rate than Honolulu  
 18 County. From 1990 to 2000, the population of the State of Hawai‘i increased from 1,108,229 to  
 19 1,211,537 (9 percent) and increased 12 percent from 2000 to 2010 bringing the total to 1,360,301. From  
 20 2000 to 2010, the rate of growth in the United States was less than the growth rate in Hawai‘i, but less  
 21 than the growth rate in Honolulu County (see **Table 3-15**).

22 **Table 3-15. Population Data from 1990, 2000, and 2010**

Location	1990	2000	2010	1990 to 2000 Percentage Change	2000 to 2010 Percentage Change
United States	248,709,873	281,421,906	308,745,538	13%	10%
State of Hawai‘i	1,108,229	1,211,537	1,360,301	9%	12%
Honolulu County	836,231	876,156	953,207	5%	9%
Census Tract 98.01	N/A <sup>a</sup>	2,386	2,834	N/A	19%
Census Tract 99.04 <sup>b</sup>	5,792	5,731	5,986	-1%	4%

Sources: Census Bureau 1990, Census Bureau 2000 , Census Bureau 2010a, Census Bureau 2010b

Notes:

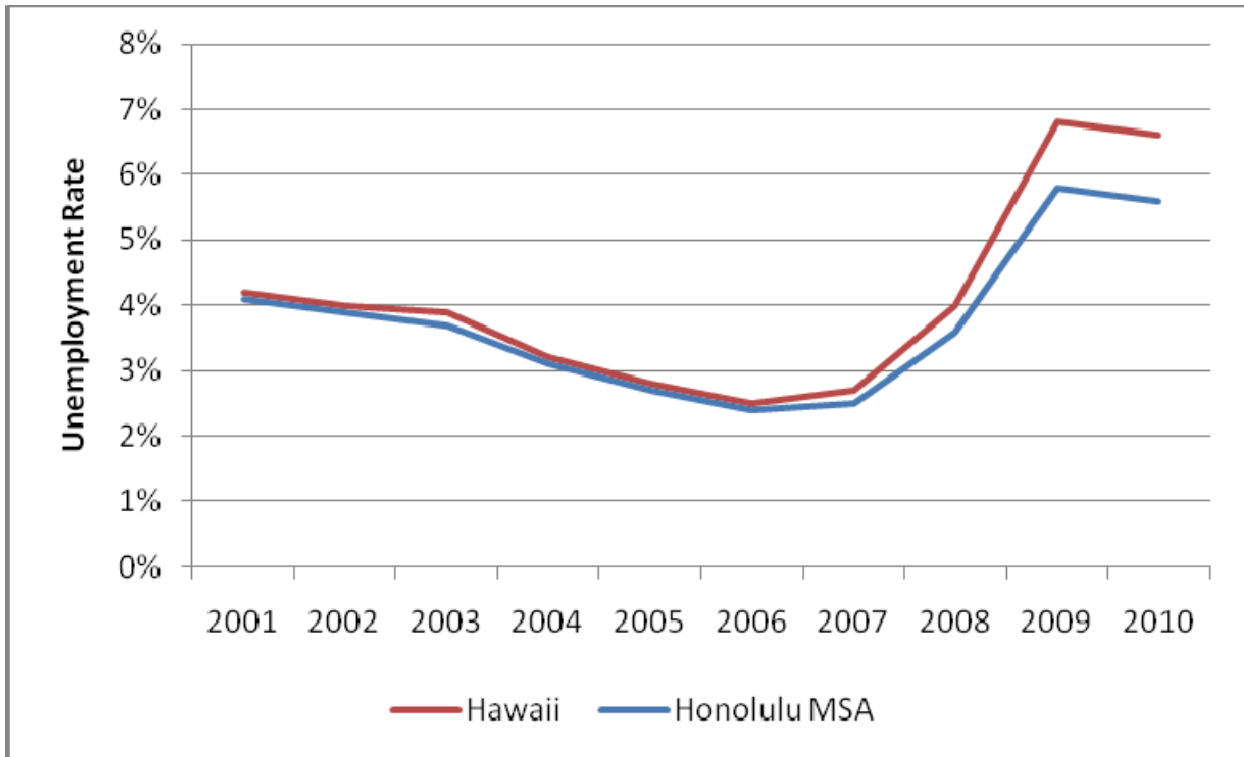
- a. Census Tract 98.01 boundaries were changed from the 1990 census to the 2000 census; therefore, directly corresponding 1990 data are unavailable.
- b. Census Tract 99.04 was called Census Tract 99.01 in the 1990 and 2000 censuses; however, the boundaries were the same in the 1990, 2000, and 2010 censuses.

23 Two census tracts in Honolulu County, tracts 98.01 and 99.04, are adjacent to or include KPSTS and  
 24 provide demographic data for the area immediately surrounding KPSTS. Census Tract 99.04 (called  
 25 Census Tract 99.01 in the 2000 census) increased in population by approximately 4 percent from 2000 to  
 26 2010, while the population in Census Tract 98.01 increased approximately 19 percent during the same  
 27 time period. **Table 3-15** provides available population data at the census tract level (Census Bureau 1990,  
 28 Census Bureau 2000, Census Bureau 2010a, Census Bureau 2010b).

1 According to U.S. Census Bureau data, the State of Hawai‘i contains one of the largest percentages of  
 2 minorities in the United States. The Asian population in Hawai‘i is the largest by percentage in the  
 3 United States at 38.6 percent, compared to California, the second largest, at 13.0 percent, and the United  
 4 States overall at 4.8 percent. The Native Hawaiian and Other Pacific Islander population in Hawai‘i is  
 5 also the largest by percentage in the United States at 10.0 percent. No other states or the nation report  
 6 levels greater than 1 percent. The White population in Hawai‘i is the smallest by percentage in the United  
 7 States at 24.7 percent (Census Bureau 2010a, Census Bureau 2010c, Census Bureau 2010d).

8 **Employment Characteristics.** The three largest industries and the corresponding percentage of the  
 9 workforce employed for Honolulu County are the educational, health, and social services industry  
 10 (21.2 percent); the arts, entertainment, recreation, accommodation and food services (13.4 percent); and  
 11 the retail trade industry (11.1 percent). The construction industry represents 7.2 percent of the workforce.  
 12 The average median household income for Honolulu County is \$67,066, which is more than \$15,000  
 13 higher than the United States average of \$51,425 (Census Bureau 2009a).

14 Unemployment from 2001 to 2010 in the Honolulu, Hawai‘i Metropolitan Statistical Area (MSA), which  
 15 consists of the City and County of Honolulu, ranged from 2.4 to 5.8 percent annually. As of March 2011,  
 16 the monthly unemployment rate in the Honolulu MSA was 5.1 percent. Unemployment data for the State  
 17 of Hawai‘i has followed a similar trend as that for the Honolulu MSA, but has been slightly higher.  
 18 Unemployment data are displayed in **Figure 3-2** (BLS 2011).



19 Source: BLS 2011

21 **Figure 3-2. Unemployment Rate for Honolulu MSA from 2001 to 2010**

22 **Environmental Justice.** To provide a baseline measure for environmental justice, an area around the  
 23 installation was established to examine the impacts on minority and low-income populations. For the  
 24 purpose of this analysis, Census 2010 data from the census tracts immediately surrounding KPSTS were  
 25 used. In Census Tract 98.01, 31.0 percent of the population reported Two or More Races and

1 23.4 percent were Native Hawaiian and Other Pacific Islanders as shown in **Table 3-16**. In Census Tract  
 2 99.04, 31.2 percent of the population was Asian and 23.4 percent of the population reported for the Two  
 3 or More Races category. The White population in Census Tract 98.01 (33.5 percent) and 99.04 (38.1  
 4 percent) were higher than the State of Hawai‘i (24.7 percent) and Honolulu County (20.8 percent)  
 5 (Census Bureau 2010b). The Hispanic or Latino population represents 15.3 percent of the total  
 6 population in Census Tract 98.01 compared to the 8.1 percent in Honolulu County and the 8.9 percent in  
 7 the State of Hawai‘i (Census Bureau 2010c).

8 **Table 3-16. Minority and Low-Income Characteristics, 2009 Estimates and 2010**

	<b>Census Tract 98.01</b>	<b>Census Tract 99.04</b>	<b>Honolulu County</b>	<b>Hawai‘i</b>	<b>United States</b>
Total Population	2,834	5,986	953,207	1,360,301	308,745,538
Percent Under 5 Years of Age <sup>a</sup>	9.9	6.4	6.9	6.7	6.9
Percent Over 65 Years of Age <sup>a</sup>	13.9	12.7	14.5	14.1	12.6
Percent White	33.5	38.1	20.8	24.7	72.4
Percent Black or African American	2.8	1.0	2.0	1.6	12.6
Percent American Indian and Alaska Native	0.4	0.4	0.3	0.3	0.9
Percent Asian	7.9	31.2	43.9	38.6	4.8
Percent Native Hawaiian and Other Pacific Islander	23.4	4.6	9.5	10.0	0.2
Percent Other Race	0.9	1.4	1.1	1.2	6.2
Percent Two or More Races	31.0	23.4	22.3	23.6	2.9
Percent Hispanic or Latino <sup>b</sup>	15.3	9.7	8.1	8.9	16.3
Median Household Income in the past 12 months (in 2009 inflation- adjusted dollars) <sup>a</sup>	\$36,829	\$71,321	\$67,066	\$64,661	\$51,425
Percent of Families Living Below Poverty in the past 12 months <sup>a</sup>	20.2	3.5	6.4	6.8	9.9

Sources: Census Bureau 2010a, Census Bureau 2010c, Census Bureau 2009a , Census Bureau 2009b

Notes:

a. 2010 census data for population by age, median household income, and families living below poverty data are not yet available; therefore, these data are from the U.S. Census Bureau’s 2005–2009 American Community Survey 5-Year Estimates data set.

b. Hispanic and Latino denote a place of origin.

9 The percentage of families living below the poverty level in Census Tract 98.01 is 20.2, which is greater  
 10 than Honolulu County where 6.4 percent of the families live below the poverty level and in the State of  
 11 Hawai‘i where 6.8 percent of the families live below the poverty level. The percentage of families living  
 12 below poverty in Census Tract 99.04 is 3.5 percent, which is less than Honolulu County, the State of  
 13 Hawai‘i, and the United States (9.9 percent) (Census Bureau 2009b).

1 **3.11.3 Environmental Consequences**

2 **3.11.3.1 Evaluation Criteria**

3 ***Socioeconomics.*** This section addresses the potential for direct and indirect impacts that the Proposed  
4 Action could have on local or regional socioeconomics. Impacts on local or regional socioeconomics are  
5 evaluated according to their potential to stimulate the economy through the purchase of goods or services  
6 and increases in employment. Similarly, impacts are evaluated to determine if overstimulation of the  
7 economy (e.g., the construction industry's ability to sufficiently meet the demands of a project) could  
8 occur as a result of the Proposed Action.

9 ***Environmental Justice.*** Ethnicity and poverty data are examined for Honolulu and compared to the State  
10 of Hawai'i and the United States to determine if a low-income or minority population could be  
11 disproportionately affected by the Proposed Action.

12 **3.11.3.2 Proposed Action**

13 ***Demographics.*** The majority of workers who would be hired for the proposed demolition and  
14 construction activities would most likely come from within Honolulu County. Temporary or permanent  
15 relocation of construction workers to meet the demand for the Proposed Action would not be expected.  
16 No new personnel are anticipated to be hired or transferred to KPSTS as a result of the Proposed Action.  
17 Demand for housing in the area surrounding KPSTS would not be impacted as a result of the Proposed  
18 Action. The number of new residents who would move to the area as result of the Proposed Action  
19 would be negligible; therefore, short- and long-term, negligible, beneficial impacts on demographics  
20 would be expected.

21 ***Employment Characteristics.*** The construction industry within Honolulu County should be able to  
22 adequately provide the workers that would be required to demolish nine existing buildings and construct a  
23 new CE Storage Building at KPSTS. The number of construction workers necessary for the Proposed  
24 Action is estimated to be less than 1 percent of all construction workers, which is not large enough to  
25 outstrip the supply of the industry. Indirect beneficial impacts would be expected from the increase in  
26 payroll, tax revenues, purchase of materials, and purchase of goods and services in the area, resulting in  
27 short-term, minor, beneficial impacts on employment in the Honolulu MSA.

28 The temporary increase of construction personnel would represent a small increase in the total number of  
29 persons working on site at KPSTS and no additional facilities (e.g., housing, transportation) would be  
30 necessary to accommodate the workforce. Changes to employment and expenditures resulting from the  
31 Proposed Action would be short-term, negligible, and beneficial.

32 ***Environmental Justice.*** The census tracts around KPSTS (98.01 and 99.04) contain elevated percentages  
33 of minority (non-White) populations in comparison to the United States, but lower minority populations  
34 when compared to Honolulu County. Census Tract 99.04 has a smaller percentage of low-income  
35 residents than Honolulu County; however, Census Tract 98.01 has a higher percentage of low-income  
36 residents. Demolition and construction activities would be located entirely within KPSTS. Because there  
37 are no residential properties within 1 mile of KPSTS, no minority population would be disproportionately  
38 impacted by implementing the Proposed Action. Adverse impacts on minority, low-income, and youth  
39 populations would not be expected.

40 **3.11.3.3 No Action Alternative**

41 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
42 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3.11.2**, would

1 remain the same. No impacts on socioeconomics or environmental justice would be expected, as no  
2 additional jobs would be created, expenditures for goods and services would not occur, and there would  
3 be no increase in tax revenue as a result of employee wages and sales receipts. In addition, no impacts on  
4 environmental justice would be expected, as operations at KPSTS would continue under current  
5 conditions.

## 6 **3.12 Cultural and Visual Resources**

### 7 **3.12.1 Definition of the Resource**

8 **Visual Resources.** Visual resources are defined as the natural and man-made features that give a  
9 particular setting or area its aesthetic qualities. These features define the landscape character of an area  
10 and form the overall impression that an observer receives of that area. Evaluating the aesthetic qualities  
11 of an area is a subjective process because the value that an observer places on a specific feature varies  
12 depending on his/her perspective. For example, an engineer might appreciate the span of a bridge or  
13 causeway, while a geologist might appreciate the exposure of a particular sequence of strata in a road cut.  
14 In general, a feature observed within a landscape can be considered as “characteristic”  
15 (or character-defining) if it is inherent to the composition and function of the landscape. This is  
16 particularly true if the landscape or area in question is part of a scenic byway, a state or national scenic  
17 river, a state or national park, a state or national recreation area, a state or national landmark, a national  
18 seashore, or a cultural landscape. Landscapes can change over time, so the assessment of the  
19 environmental impacts of a proposed action on a given landscape or area must be made relative to the  
20 “characteristic” features currently composing the landscape or area.

21 **Cultural Resources.** As part of the process for compliance with NEPA, agencies are required to assess  
22 potential impacts on the “human environment,” which is defined as “the natural and physical (built)  
23 environment and the relationship of people with that environment” (40 CFR Part 1508.14). This analysis  
24 is generally conducted in terms of cultural resources, which are a variety of heritage- or cultural-related  
25 resources that are defined by specific Federal laws, regulations, EOs, and other requirements. These  
26 include the NHPA, Native American Graves Protection and Repatriation Act (NAGPRA), Archaeological  
27 Resources Protection Act, American Indian Religious Freedom Act, and EO 13007 among other  
28 authorities. Typically, cultural resources are divided into archaeological resources, architectural resources  
29 (i.e., buildings, structures, or groups of buildings or structures of historic, technological, or aesthetic  
30 significance), and traditional cultural properties. Archaeological resources are prehistoric or historical  
31 sites where human activity has left physical evidence of activities but no standing structures remain.  
32 Architectural resources include standing buildings, structures such as bridges, and groups of buildings or  
33 structures constituting districts. Traditional cultural properties or sacred sites are a special category of  
34 cultural resources. These site types could encompass archaeological resources, structures, neighborhoods,  
35 prominent topographic features, habitat, plants, animals, and minerals that native people consider  
36 essential for the preservation of traditional culture. A traditional cultural property contains an intangible  
37 cultural element that is linked to a specific geographic location.

38 Section 110 of the NHPA requires Federal agencies to inventory and nominate cultural resources under  
39 their jurisdiction for inclusion in the NRHP. Buildings, structures, sites, objects, or districts could qualify  
40 for eligibility for inclusion in the NRHP if they are significant under one or more NRHP evaluation  
41 criteria (36 CFR 60.4), are 50 years of age or older, and retain historical integrity. More recent buildings,  
42 such as Cold War-era resources, could warrant protection if they have the potential to gain significance in  
43 the future or if they meet criteria regarding “exceptional significance.”

44 Under Section 106 of the NHPA, the Federal agency official is charged with providing the Advisory  
45 Council on Historic Preservation (ACHP) an opportunity to comment on the effect of Federal

1 undertakings on historic properties. Agencies do so in accordance with the ACHP's regulations, 36 CFR  
2 Part 800. Federal agencies identify and evaluate historic properties (resources listed in or eligible for  
3 inclusion in the NRHP) within the Area of Potential Effect (APE); determine effects of an undertaking on  
4 historic properties; and consult to avoid, minimize, or mitigate adverse effects on the historic properties in  
5 consultation with the State Historic Preservation Office (SHPO) and other parties including Native  
6 Hawaiian Organizations. Cultural resources not evaluated for NRHP eligibility are considered eligible for  
7 compliance purposes until such evaluation is completed and a formal determination of eligibility is made.  
8 In Hawai'i, the SHPO is the Hawai'i SHPD, State Department of Land and Natural Resources.

### 9 **3.12.2 Existing Conditions**

10 **Visual Resources.** The North Shore region is considered by many people, including both residents and  
11 visitors, as one of the most scenic regions on the Island of O'ahu. The North Shore region has an  
12 abundance of visual resources including vast open spaces, scenic shorelines, and backdrops of the  
13 Wai'anae and Ko'olau Mountain Ranges and the coastal pali. Major elements of the landscape include  
14 the ocean, the white sand beach, green valleys, and the rugged pu'u and ridges along the coast. The  
15 preservation of open space should be a high priority consideration for all public programs and projects  
16 that could affect the coastal lands, valleys, and mountains of the Wai'anae District.

17 **KPSTS History.** The original site for KPSTS consisted of 106 acres of land leased in 1958 from the  
18 Territory of Hawai'i and private landowners (USAF 2008). KPSTS now occupies approximately 153  
19 acres of land leased from the State of Hawai'i, including easements and rights-of-way. Of the 153 acres,  
20 approximately 83 include fenced facilities, roadways, and a 50-foot buffer zone. KPSTS consists of  
21 several building clusters supporting satellite tracking radio communications facilities connected by an  
22 access road extending approximately 2 miles along Kuaokalā Ridge. The Kuaokalā Ridge is a remnant of  
23 ancient sheet volcano that drops off approximately 1,000 feet to the Pacific Ocean along the western and  
24 southern sides of KPSTS. Toward the eastern portion of KPSTS, Kuaokalā Ridge merges with the  
25 western end of the Wai'anae Mountain Range. KPSTS has dramatic setting, sitting on the apex of the  
26 Kuaokalā Ridge and overlooking the coastal Ka'ena Point and Pacific Ocean.

27 Archaeologists believe Ka'ena Point was occupied permanently or semi-permanently by humans during  
28 both prehistoric and historic times. The area was arid; its land resources supplemented the nearby rich  
29 deepsea fishing grounds. The archaeological record of the area indicates recurrent occupation of Ka'ena  
30 Point to late Hawaiian times in approximately 1600 A.D. Historical records beginning in the 1830s  
31 describe a sparse native population through the 19th century. Records also indicate Kuaokalā Ridge to  
32 Ka'ena Point marks the boundary between traditional Hawaiian districts of Wai'alua and Wai'anae.  
33 Ka'ena Point is mentioned in several Hawaiian legends as the place where the demi-god Maui tried to  
34 join the islands of O'ahu and Kaua'i and where souls departed from the earth (HDR 2010). Beginning in  
35 the 1870s the area was leased for cattle ranching and beginning in 1921 pineapples were grown on the  
36 ridge slopes. The O'ahu Railway and Land Company constructed a rail line to Ka'ena Point. A  
37 switchback trail and cable line was constructed to transport pineapples down the steep slopes to  
38 processing plants and markets below. In 1923, the Ka'ena Point Military Reservation was established;  
39 the area was used by the U.S. military during World War II (USAF 2008, HDR 2010)

40 As discussed in **Section 1.3.1**, KPSTS was established in 1958 to support the nation's first satellite  
41 reconnaissance program (known as Discoverer, Weapon System 117L, and Corona). The secret  
42 Discoverer/Corona Program operated from 1959 to May 1972 and was declassified in February 1995.  
43 The Corona program is significant for having developed and operated the first satellites for aerial photo  
44 reconnaissance and is recognized for many "technological and scientific firsts." These include the first  
45 mid-air recovery of vehicles returning from space, mapping Earth from space, stereo-optical data from  
46 space, and multiple reentry vehicles from space. The satellites for the secret Corona Program were



1 launched into polar orbits by USAF Thor missile boosters from Vandenberg AFB. They flew at altitudes  
 2 of approximately 100 nautical miles to photograph selected target areas including the Soviet Union and  
 3 Cuba. The exposed film was ejected from the satellite in special capsules, which were parachuted to  
 4 earth, retrieved in midair by USAF aircraft of a special unit stationed at Hickam AFB, and sent to  
 5 processing facilities for analysis and interpretation (Perry 1973). Photoreconnaissance data produced by  
 6 the Corona Program contributed significantly to Cold War history (USAF 2011a, USAF 2008).

7 KPSTS was one of three tracking stations constructed for the Corona Program. The other two tracking  
 8 stations were New Boston Air Force Station (AFS), completed in 1959, and a station in Kodiak, Alaska,  
 9 added in 1963 and operated until 1975. Launch and other operation facilities were at Vandenberg AFB,  
 10 and early assembly, testing, and design work for the program occurred at Sunnyvale/Onizuka AFS.  
 11 KPSTS was used for other space programs including Missile Detection and Alarm System and Satellite  
 12 and Missile Observation System. In 1972, the installation of AN/FPQ-14 radar equipment in Building 41  
 13 brought KPSTS into North American Aerospace Defense Command. KPSTS is one of the initial  
 14 components of the AFSCN, which now consists of 15 antennas around the world and “supports more than  
 15 140 DOD, U.S. government, and allied satellites and space vehicles whose missions include manned  
 16 spaceflight, communications, reconnaissance, navigation, weather, and early warning” (USAF 2011a,  
 17 USAF 2008).

18 **Archaeological and Traditional Cultural Resources.** There are 13 archaeological sites and a possible  
 19 sacred site within or near the KPSTS boundaries (USAF 2008). Of these sites, five are within the  
 20 installation boundaries and eight are in the immediate area. Four sites are traditional Hawaiian, two are  
 21 possible traditional Hawaiian, four date to World War II, and two are ranching or historic. One site  
 22 (Site No. 50-80-03-3708) was found not to be cultural (USAF 2008, HDR 2010). **Table 3-17** presents a  
 23 summary of the archaeological sites within the boundaries of KPSTS.

24 **Table 3-17. Archaeological Sites within KPSTS**

Site Number	Description	Inferred Origin	Eligibility*
50-80-03-3708	Earth terraces with rock retaining walls	Natural geological terrace	None, no cultural materials
50-80-03-3714	Leveled area with rock retaining walls, concrete foundation, and barbeque area	WWII	A, D
50-80-03-3715	Wooden platform with wire cable	WWII	A, D
50-80-03-3718	Remnant alignments with adze on surface	Traditional Hawaiian	D
50-80-03-3719	Stone/brick pile and enclosure; disturbed	Recent	None; determined to be too recent

Note: NRHP criteria: A = Site is associated with events that have made an important contribution to the broad patterns of history.  
 D = Site has yielded, or might be likely to yield, information important for research on prehistory or history.

25 **Architectural Resources.** As stated in **Section 2.1**, a comprehensive evaluation of potentially historic,  
 26 Cold War-Era properties and one known World War II-Era property at KPSTS has not been completed.  
 27 On March 30, 2011, KPSTS consulted with the Hawai‘i SHPD regarding the determination of eligibility  
 28 for Buildings 20, 21, and 14111 at KPSTS. The USAF has determined that KPSTS is potentially eligible  
 29 for listing on the NRHP as a district, since it likely meets Cold War Criterion “b” and NRHP Criterion  
 30 “a.” Specifically, KPSTS is potentially eligible for listing on the NRHP as a district due to its role as one  
 31 of the many satellite tracking stations in the AFSCN during the Corona Program and its contribution to  
 32 overall intelligence gathering during the Cold War. On April 21, 2011, the Hawai‘i SHPD concurred  
 33 with the NRHP eligibility of KPSTS and Buildings 20, 21, and 14111 (SHPD 2011). Buildings 20 and

1 14111 were proposed for demolition in the *Final Environmental Assessment Addressing the Proposed*  
2 *Establishment of a Communications Antenna, Ka'ena Point Satellite Tracking Station, O'ahu, Hawai'i*  
3 (*"2010 Antenna EA"*) (KPSTS 2010a) and Building 21 is proposed for demolition under the Proposed  
4 Action in this EA. Historic American Buildings Survey (HABS) documentation of Buildings 20 and  
5 14111 were recommended by the Hawai'i SHPD as part of the consultation conducted for the 2010  
6 Antenna EA.

7 On May 13 2011, KPSTS coordinated with the Hawai'i SHPD, through the IICEP process (previously  
8 described in **Section 1.6**), regarding the demolition of nine existing buildings and construction of a new  
9 CE Storage Building. On July 1, 2011, KPSTS received concurrence from the Hawai'i SHPD that,  
10 although KPSTS is potentially eligible for inclusion on the National Register under the Cold War  
11 designation, the nine buildings proposed for demolition are infrastructure of a nondistinctive type and  
12 generally would not be interpreted as eligible for the National Register (see **Appendix B**).

13 The USAF is planning to complete a formal evaluation of KPSTS and will be finalizing its determination  
14 of eligibility. Upon completion of a formal evaluation, the USAF will provide the determination to the  
15 Hawai'i SHPD for review and concurrence.

16 **Table 3-18** lists buildings at KPSTS that were constructed during the Corona Program between 1958 and  
17 1972. **Table 3-18** includes buildings "likely to have contributed to the success of the program" (USAF  
18 2011a) such as test tracking buildings, communications/radar buildings, and buildings that currently have  
19 support roles such as storage.

### 20 **3.12.3 Environmental Consequences**

#### 21 **3.12.3.1 Evaluation Criteria**

22 The potential for adverse effects on visual resources is assessed based on whether the Proposed Action  
23 would result in the following:

- 24 • Adversely influence the visual integrity of an historic district or culturally significant resource
- 25 • Degrade or diminish a Federal, state, or local scenic resource
- 26 • Create adverse visual intrusions or visual contrasts affecting the quality of a landscape.

27 Analysis of the potential impacts and adverse impacts associated with the Proposed Action considers both  
28 direct and indirect impacts on cultural resources. Adverse impacts might include physically altering,  
29 damaging, or destroying a cultural resource. These could also include altering a characteristic that  
30 contributes to a resource's NRHP eligibility or introducing visual or audible elements out of character  
31 with or affecting the original setting of the resource. An adverse effect might also result from intentional  
32 or benign neglect that results in full or partial destruction of a cultural resource. Adverse impacts  
33 associated with indirect impacts could include the cumulative impacts of construction or project-related  
34 improvement of an area in which a cultural resource occurs. Such impacts include improvements to  
35 transportation corridors that facilitate increased access to the area.

36 Potential impacts were assessed by (1) identifying the nature and importance of cultural resources in  
37 potentially affected areas and (2) identifying activities that could directly or indirectly affect cultural  
38 resources classified as historic properties. Cultural resources not yet evaluated are afforded the same  
39 regulatory consideration as resources that have been determined eligible or nominated to the NRHP.

1 **Table 3-18. Buildings at KPSTS Constructed During Corona Program (1958–1972)**

<b>Building No.</b>	<b>Potentially Eligible or Contributing Elements</b>	<b>Date of Construction</b>
10	Group Headquarters and Communication Facility (Test Track Building)	1959
11	SP Entry CON Building	1959
13	Satellite Communication Ground Terminal (Test Track Building)	1960
14*	Hazardous Materials Storage Shed (current function; historical function to be determined)	1959
16*	Landscaping Shed (current function; historical function to be determined)	1965
17*	Supply and Equipment Storage Shed (current function; historical function to be determined) and Small Parking Area	1966
18*	Supply and Equipment Storage Shed (current function; historical function to be determined) and Small Parking Area	1968
20	Test Track Building	1959
21*	Traffic Check Station	1959
32*	Materials storage facility containing hazardous materials and paints (current function; historical function to be determined)	1959
33*	Civil Engineering shop and officers and asphalt parking area	1958
35	Test Track Building	1963
37*	Former maintenance facility; currently a storage facility	1972
39*	Former power plant; currently a storage facility with concrete pads on the eastern and western sides of the facility	1965
41	Test Track Building	1959
42	Hazardous Storage, BSE	1959
11601	Helicopter Pad	1959
14111	Radome Tower Building	1964
39000	Electric RSCH Radar	1959
39005	Satellite CON Station	1968
39007	ANT SUP Structure	1972

Sources: KPSTS 2010a, USAF 2011a, SHPD 2011, USAF 2008

Note: \* Buildings proposed for demolition under the Proposed Action.

2 **3.12.3.2 Proposed Action**

3 **Visual Resources.** Long-term, minor, beneficial impacts on visual resources would be expected from  
 4 implementation of the Proposed Action. The demolition of nine existing buildings at KPSTS would  
 5 reduce the number of man-made structures currently in the viewshed, and the visual quality of the  
 6 landscape would be enhanced. No impacts on visual resources would be expected from the newly  
 7 constructed CE Storage Building, as it would not be constructed in open space, and it would not be visible

1 from Keawa'ula Beach within Ka'ena Point State Park, an area that is frequented by Native Hawaiian  
2 fishermen seeking marine resources. In addition, the new CE Storage Building would be set back from  
3 the bluff edges and would not be visible from the coastline or the *Moka'ena Heiau*, an ancient Hawaiian  
4 temple. The Proposed Action would be compatible and comply with the policies and guidelines set forth  
5 in the North Shore and Wai'anae SCPs (see **Section 1.5.3**), as there would be no adverse impacts on open  
6 space or scenic beauty.

7 ***Archaeological and Traditional Cultural Resources.*** Two archaeological sites (Site Nos. 50-80-03-3718  
8 and 50-80-03-3719) are in the Control Area at KPSTS where the construction of the CE Storage Building  
9 and the demolition of Buildings 14, 16, 17, 18, and 21 would occur. Site No. 50-80-03-3718 is a  
10 traditional Hawaiian site that has been determined to be eligible for listing in the NRHP under Criterion  
11 D. The site is on a knoll between Buildings 10 and 20. Site No. 50-80-03-3719 includes stone/brick  
12 debris and could be associated with the construction of Building 20. In 2007, this site was recommended  
13 for removal from site records as it was no longer considered an archaeological site (KPSTS 2010a). No  
14 impacts on Site No. 50-80-03-3718 would be expected if the knoll area between Buildings 21, 16, 17, and  
15 18 is avoided, staging areas and temporary parking areas are located away from the site, and surface  
16 disturbance (i.e., removing trees and vegetation) in the vicinity of the site is avoided.

17 The potential exists for the unanticipated discovery of cultural resources and human remains during  
18 ground-disturbing activities related to the Proposed Action. Consequently, the USAF would develop an  
19 Inadvertent Discovery Plan that details responsibilities for reporting in the event of a discovery during  
20 these activities and compliance with 36 CFR 800.13. The plan would also include mitigation procedures  
21 to be implemented in the event of a significant unanticipated find. If human remains are discovered, the  
22 USAF would stop work and contact the county coroner and a professional archaeologist that meets the  
23 Secretary of the Interior's Professional Qualifications Standards in archaeology or history to determine  
24 the significance of the discovery. If appropriate, the USAF would also adhere to NAGPRA and its  
25 implementing regulations (43 CFR 19). Depending on the recommendations of the coroner or the  
26 archaeologist, the USAF would consult with Native Hawaiian Organizations to establish additional  
27 mitigation procedures. Potential mitigation procedures for unanticipated discoveries include avoidance,  
28 documentation, excavation, and curation. As a result, potential impacts on inadvertent cultural finds  
29 discovered during implementation of the Proposed Action would be negligible to minor.

30 ***Architectural Resources.*** Because KPSTS operated as an integrated tracking station for the Corona  
31 Program, impacts of the Proposed Action are evaluated relative to both the individual resources affected  
32 and the potential district as a whole. Long-term, minor to moderate, direct, adverse impacts would be  
33 expected on the potential historic district at KPSTS from demolition of the nine buildings and  
34 construction of a new CE Storage Building. All of the buildings proposed for demolition are associated  
35 with the Corona Program and the potential historic district. The introduction of a new CE Building at  
36 KPSTS could also impact the overall integrity of the potential historic district. Although KPSTS is  
37 potentially eligible for inclusion on the National Register as a historic district under the Cold War  
38 designation, the nine buildings proposed for demolition are infrastructure of a nondistinctive type and  
39 generally would not be interpreted as eligible for the National Register as individual resources; therefore,  
40 no adverse impacts would be expected on the individual resources.

41 Because the Proposed Action would result in adverse impacts on the potential historic district at KPSTS,  
42 proposed mitigation could include a comprehensive study of the built resources on KPSTS, history of  
43 KPSTS, and HABS documentation of the potential historic district at KPSTS. Additional mitigation  
44 could include oral history interviews of personnel associated with the Corona Program who were  
45 stationed at KPSTS or interpretation of the history of the Corona Program and KPSTS's contribution to  
46 the program through onsite signage at KPSTS and public areas in the vicinity of KPSTS. Mitigation  
47 measures developed in consultation with the Hawai'i SHPD, Native Hawaiian Organizations, and other

1 stakeholders would be outlined in a Section 106 Memorandum of Agreement (MOA). The MOA also  
2 would include the measures to avoid any actions that might cause surface disturbance to the knoll where  
3 Site No. 50-80-03-3718 is located and the Inadvertent Discovery Plan for unanticipated finds.

4 **3.12.3.3 No Action Alternative**

5 Under the No Action Alternative, the USAF would not demolish nine existing buildings or construct a  
6 new CE Storage Building at KPSTS. The existing conditions, as described in **Section 3-17**, would remain  
7 the same. No impacts on cultural resources would be expected from implementation of the No Action  
8 Alternative.

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## 4. Cumulative and Other Effects

### 4.1 Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis in an EA should consider the potential environmental effects resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR Part 1508.7). CEQ guidance in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with a proposed action. The scope must consider other projects that coincide with the location and timetable of a proposed action and other actions. Cumulative effects analyses must also evaluate the nature of interactions among these actions (CEQ 1997).

To identify cumulative effects, the analysis needs to address two fundamental questions:

1. Does a relationship exist such that affected resource areas of the Proposed Action or alternatives might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If such a relationship exists, then does an EA or EIS reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

The scope of the cumulative effects analysis involves both timeframe and geographic extent in which effects could be expected to occur, and a description of what resources could potentially be cumulatively affected. For the purposes of this analysis, the temporal span of the Proposed Action is 2 years, which would encompass the construction period and the transfer to and initial use of the new CE Storage Building. For most resources, the spatial areas for consideration of cumulative effects includes the areas surrounding Buildings 14, 16, 17, 18, 21, 32, 33, 37, and 39, though a larger area is considered for some resources (e.g., air quality, visual resources).

#### 4.1.1 Projects Identified for Potential Cumulative Effects

Several projects on KPSTS and another in an area surrounding KPSTS have been identified as having the potential for cumulative effects, when considered with the Proposed Action. Projects on KPSTS, which are described in detail in the following paragraphs, include (1) completing the Remote Block Change (RBC) upgrade of the Hawai'i Tracking Station (HTS) A-Side Antenna, (2) constructing a new communications antenna for the 50 SW, (3) upgrading the existing water system infrastructure for KPSTS, (4) constructing additional antennas for the Air Force Weather Agency (AFWA), and (5) installing the Improved Solar Observing Optical Network (ISOON) to upgrade the Solar Electro-Optical Network. Finally, constructing predator-proof fencing to prevent feral predators such as dogs, cats, mongoose, and rats from entering 59 acres of coastal habitat within Ka'ena Point NAR is also discussed. No other recently completed, currently underway, or reasonably foreseeable future projects on lands surrounding KPSTS, including Ka'ena Point NAR, Pahole NAR, Ka'ena Point State Park, Kuaokalā Game Management Area, and Mokulē'ia Forest Reserve, were identified.

**RBC Upgrade.** An EA supporting the construction of a new HTS A-side antenna RBC facility to replace the existing RBC facility will be completed in 2011 (USAF 2011b). The RBC facility will include installation of a tracking antenna, ringwall, and inflatable radome at an existing helipad west of Building 10; the helipad will be relocated northwest of the RBC facility. Other necessary infrastructure includes installation of electronics in Building 10 and placement of trenched fiber-optic and radio frequency cables between Building 10 and the RBC facility. One of two legacy antenna facilities, likely Antenna No. 39006, will also be demolished. The EA identified insignificant short-term effects on air quality,

1 noise, water resources, soil resources, and wildlife during construction and ground-disturbing activities.  
2 All applicable safety regulations pertaining to radio frequency transmissions will be followed, and radio  
3 frequency surveys will be conducted to ensure safe exposure limits are not exceeded. With  
4 implementation of mitigation measures, no effects on cultural resources are expected. The antenna will  
5 be visible along Kuaokalā Ridge, but visual changes will be minimal. A FONSI for the project was  
6 signed on February 17, 2011. The new RBC facility will be approximately 600 feet from the Proposed  
7 Action (i.e., Buildings 14, 16, 17, and 18 and the new CE storage facility). Antenna No. 39006 is in the  
8 immediate vicinity of Buildings 32 and 33 and approximately 300 feet from Buildings 37 and 39.

9 **Communications Antenna.** An EA supporting the construction of a new communications antenna and  
10 associated infrastructure for 50 SW was completed in 2010 (KPSTS 2010a). Outdoor components will  
11 include a 44.3-foot-tall antenna mounted on a full-motion tracking pedestal, which will be mounted on a  
12 284-inch-tall riser; these components will be enclosed within a radome that is 52 feet high and 64 feet in  
13 diameter. A small portable building on a concrete pad (190 ft<sup>2</sup>) will be installed to house electrical  
14 components. Transmissions will be sent and received within existing, approved frequency ranges at  
15 KPSTS. Other infrastructure, such as security systems and antiterrorism/force protection requirements,  
16 perimeter fencing, and fire hydrants and sprinklers will also be constructed to support this project. This  
17 new communications antenna will be in the vicinity of Building 20 and Antenna No. 14111, which will  
18 both be demolished prior to construction of the new communications antenna. Other than minor, short-  
19 term construction-related effects, the EA identified negligible to minor, long-term, adverse effects on air  
20 quality, geological resources, wildlife, utilities and infrastructure, and visual resources. Building 20 and  
21 Antenna No. 14111 are being surveyed in HABS II level documentation. The new communications  
22 antenna is anticipated to be constructed in 2011. Building 21, which would be demolished under the  
23 Proposed Action, is in the immediate vicinity of this project.

24 **Water Infrastructure System Upgrades.** An EA supporting upgrades to the existing water system  
25 infrastructure was completed in 2010 (KPSTS 2010c). Under this project, existing components of the  
26 water system will be replaced, repaired, upgraded, or augmented to provide a reliable system for  
27 supplying both potable water and fire suppression water at KPSTS. A new disinfection system will also  
28 be installed. This project includes the restoration of an existing well at KPSTS (i.e., State of Hawai'i  
29 Commission on Water Resource Management Well ID No. 3314-03). The well is not currently in use;  
30 however, upon completion of the project, it will serve as the primary water source to KPSTS. The well at  
31 Dillingham Airfield, which currently supplies potable water to KPSTS, will become a backup water  
32 supply source. The existing water storage tanks will be repaired, and domestic and fire protection water  
33 systems will be separated by breaking cross-connections or installing backflow prevention. The EA  
34 identified minor, short-term effects on air quality, geology and soils, noise, recreation, and transportation,  
35 and negligible, short-term effects on vegetation, wildlife, and aesthetics during construction and ground-  
36 disturbing activities. A FONSI for the project was signed on March 30, 2010.

37 **AFWA Antennas.** AFWA is planning to relocate from Palehua Solar Observatory to KPSTS. In order to  
38 accommodate this move, renovations to Building 41 at KPSTS (including removal of ACM and LBP),  
39 trenching for communication/power cables, and installation of several antennas (the tallest of which is  
40 54 feet high) in the area around Building 41 are needed. All construction activities will occur on  
41 previously disturbed areas. A review of this project determined that, due to obscuring terrain, the  
42 proposed AFWA antenna would not adversely affect the viewshed from Moka'ena Heiau, a cultural site  
43 approximately 1 mile east of Building 41. The AFWA antenna will be on a portion of the site that was  
44 previously developed only to one story in height, so it might be more visible from Keawa'ula Beach and  
45 other areas on the Wai'anae coastline. However, adverse effects are not expected because the tallest  
46 structure, the 54-foot-high antenna, is of similar height to an antenna that was recently removed from the  
47 vicinity of Building 41. Coordination with the Hawai'i SHPD and other potentially interested parties did  
48 not reveal concerns. A Categorical Exclusion was prepared for this project and signed on July 26, 2010



(AFWA 2010). The AFWA antenna project site is approximately 1,800 feet from Buildings 32, 33, 37, and 39, which are the closest areas affected by this Proposed Action; the areas are separated by the Kuaokalā Game Management Area.

**AFWA ISOON Upgrade.** The proposed AFWA ISOON project is one of three upgrades underway to the Solar Electro-Optical Network. ISOON is designed to replace four current system telescopes, which were designed in the 1970s, at different locations. The ISOON system would be installed at KPSTS during FY 2014. The installation would include the construction of seismic pads inside and outside of the selected location plus the installation of the telescope. The majority of the system equipment would be within the facility, with approximately two-thirds of the telescope extending beyond the building on a normal daily basis (Sonderman 2010). It is anticipated that ISOON would be installed on the north side of Building 41. This project is in the early planning stages; additional roadway or utility needs are not yet known. It is likely that the Proposed Action would be fully implemented prior to the proposed AFWA ISOON upgrades, but this project is included in this cumulative effects analysis because it is a reasonably foreseeable future project that could overlap temporally with the Proposed Action if either project schedule changes. The AFWA ISOON project site is approximately 1,800 feet from Buildings 32, 33, 37, and 39, which are the closest areas affected. The areas are separated by the Kuaokalā Game Management Area. Potential environmental effects as a result of this project are discussed generally for the purposes of this cumulative effects analysis.

**Predator-Proof Fencing at Ka'ena Point NAR.** A Final EA for the Ka'ena Point Ecosystem Restoration Project was prepared in May 2009 (Hawai'i DOFAW 2009). This project, which is approximately 2 miles west of the Proposed Action, included the construction of predator-proof fencing to prevent feral predators such as dogs, cats, mongoose, and rats from entering 59 acres of coastal habitat within Ka'ena Point NAR. The EA identified long-term, beneficial effects on the environmental resources within Ka'ena Point NAR; no significant adverse environmental effects were identified. Construction of the predator-proof fence was completed in April 2011 (KHON2 2011).

#### 4.1.2 Cumulative Effects Analysis

**Table 4-1** summarizes the potential environmental and socioeconomic effects of implementing the Proposed Action and the anticipated effects of implementing other projects identified in **Section 4.1.1**.

Potential cumulative effects from construction activities are not discussed in detail in this analysis. Some ground-disturbing activities would occur with each project. The level of impacts would be proportional to the size of the construction disturbance. All projects requiring heavy equipment to construct, modify, or demolish buildings or install new telescopes or antennas could result in short-term increased noise, increased air emissions, potential for erosion and transport of sediment, generation of small amounts of hazardous materials and wastes, and generation of construction and demolition waste. Additionally, all construction-related activities generally could result in minor, beneficial effects as a result of job creation and materials procurement. Furthermore, it should be assumed that demolition and renovation activities in older buildings have the potential to disturb ACM or LBP and the appropriate identification, handling, removal, and disposal of those materials would occur in accordance with Federal, state, and local regulations and guidance. Cumulative construction effects are not considered in this analysis in detail because these projects have fairly small footprints; therefore, they would have to be occurring at the same time and in close proximity to generate cumulative effects. The following projects are in reasonably close proximity; if the timelines for ground-disturbing activities coincided, then minor, short-term, cumulative effects could occur:

Table 4-1. Potential Cumulative Effects Summary

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Noise	Ambient sound environment is mainly affected by wind, HVAC systems and other industrial equipment, and automobile traffic.	Ambient sound environment is mainly affected by wind, HVAC systems and other industrial equipment, and automobile traffic.	Short-term, minor, adverse effects would be expected during construction and demolition activities. No long-term effects would be expected.	<i>RBC</i> : Long-term, negligible effects from generators. <i>Communications Antenna</i> : Long-term, negligible effects from generators. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No effects. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : No effects.	There would be no appreciable change from the existing conditions. No significant, adverse, cumulative effects expected.
Air Quality	State of Hawai'i AQCR was designated unclassified/attainment for all criteria pollutants.	KPSTS is in attainment with NAAQS. No violations of the KPSTS operating permit have occurred.	Short-term, negligible to minor, adverse effects would be expected from construction and demolition activities. No long-term effects would be expected.	<i>RBC</i> : Long-term, negligible effects from generators. <i>Communications Antenna</i> : Long-term, negligible effects from generators. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No effects. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : No effects.	There would be no appreciable change from the existing conditions. No significant, adverse, cumulative effects expected.
Land Use and Recreation	KPSTS consists of several building clusters and open space. Surrounding land uses are mostly unimproved forest and shrublands, including community and recreational areas.	KPSTS consists of various buildings and satellite tracking equipment and open space.	Short-term, negligible effects could occur on surrounding recreation areas during construction and demolition activities. Long-term, minor, beneficial effects on land use would be expected from the removal of facility and increase in open space.	<i>RBC</i> : No effects. <i>Comm. Antennas</i> : No effects. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No effects. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : Long-term, beneficial effects on recreation.	Proposed Action and other planned projects are compatible with existing and foreseeable future land uses. Long-term, beneficial, cumulative effects from overall decrease in facilities and increase in open space. No significant, adverse, cumulative effects expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Geological Resources	The Hawaiian Islands exhibit geological characteristics of volcanic formation, including saprolitic soils, areas of steep slopes, and rock outcrops.	None.	Short-term, minor, adverse effects could occur as a result of construction and demolition activities. Long-term, negligible, adverse effects would be expected from modified soils following all demolition and revegetation activities.	<p><i>RBC</i>: No effects.</p> <p><i>Comm. Antennas</i>: No long-term effects anticipated.</p> <p><i>Water Upgrades</i>: No effects.</p> <p><i>AFWA Antennas</i>: No effects.</p> <p><i>ISOON</i>: No significant effects anticipated.</p> <p><i>Predator Fence</i>: No effects.</p>	Development could result in localized minor changes to topography, soil conditions, and groundwater infiltration. No significant, adverse, cumulative effects expected.
Water Resources	Groundwater occurs generally in fractured basalt. Surface water bodies are nonperennial gulches.	KPSTS is within the Manini and Alau Gulch watersheds. No specific flood hazards have been delineated on KPSTS.	Short-term, negligible, adverse effects could occur as a result of construction and demolition activities. Long-term, minor, beneficial effects would occur from the overall decrease in impervious surfaces.	<p><i>RBC</i>: No long-term effects anticipated.</p> <p><i>Comm. Antennas</i>: No long-term effects anticipated.</p> <p><i>Water Upgrades</i>: Beneficial effects.</p> <p><i>AFWA Antennas</i>: No effects.</p> <p><i>ISOON</i>: No significant effects anticipated.</p> <p><i>Predator Fence</i>: No effects.</p>	Development could cumulatively result in localized minor changes to topography and storm water drainage into surface water bodies. Long-term, beneficial, cumulative effects from overall decrease in impervious surfaces. No significant, adverse, cumulative effects expected.
Coastal Zone Management	Nationwide, coastal areas have historically been impacted by development and land use activities. Hawai'i Office of Planning ensures Federal consistency under CZMA.	None.	No effects would be expected because activities would be below <i>de minimis</i> in accordance with the approved KPSTS <i>de minimis</i> activity list.	<p><i>RBC</i>: No effects.</p> <p><i>Comm. Antennas</i>: No effects.</p> <p><i>Water Upgrades</i>: No effects.</p> <p><i>AFWA Antennas</i>: No effects.</p> <p><i>ISOON</i>: No significant effects anticipated.</p> <p><i>Predator Fence</i>: No effects.</p>	Cumulative projects would be consistent with the Hawai'i CZM Program. No significant, adverse, cumulative effects expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Biological Resources	The Hawaiian Islands exhibit a diverse array of vegetation and wildlife species, though many native plant and animal species have been displaced by exotic ones. Many native species are classified as threatened or endangered.	KPSTS consists of predominantly nonnative vegetation. Wildlife at KPSTS consists primarily of introduced species, though some native species could also occur. There are no known threatened or endangered species at KPSTS, though they could occur.	Short-term, negligible, adverse effects on vegetation and wildlife could occur as a result of construction and demolition activities. Long-term, minor, beneficial effects on vegetation and wildlife would be expected from an overall increase in vegetative cover. No short- or long-term effects on threatened or endangered species would be expected. Lighting BMPs would be used to avoid potential adverse effects on seabirds.	<i>RBC</i> : No long-term effects anticipated. Lighting used will be similar to existing lighting and not near the coastline, minimizing adverse effects. <i>Comm. Antenna</i> : No long-term effects anticipated. Lighting BMPs will be used to minimize adverse effects. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No significant effects anticipated. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : Long-term, beneficial effects on native species.	Construction of predator-proof fencing could increase the presence of nonnative species on KPSTS since they would no longer occupy the 59 acres of the Ka'ena Point NAR; this would be a negligible, adverse effect on KPSTS since the installation is enclosed by a perimeter fence. No significant, adverse, cumulative effects expected.
Health and Human Safety	Most of KPSTS is secured from public access.	KPSTS adheres to Federal, state, and USAF protocols for construction, personnel, and public safety.	Short-term, negligible to minor, adverse effects on construction personnel and public safety could occur during construction and demolition activities. No long-term effects would be expected.	<i>RBC</i> : No effects. <i>Comm. Antenna</i> : No effects. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No effects. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : No effects.	All current and planned equipment and operations at KPSTS would comply with Federal, state, and USAF safety regulations. No significant, adverse, cumulative effects expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Utilities and Infrastructure	KPSTS is a fairly remote area, so utilities and infrastructure systems exist but are not extensively developed.	Water supply, storm drainage, septic and wastewater, electrical, and transportation systems are installed as needed to new facilities at KPSTS.	Short-term, negligible to minor, adverse effects on utility and infrastructure systems could occur during construction and demolition activities. Long-term, minor, beneficial effects would occur from decreased demand.	<i>RBC</i> : No long-term effects. <i>Comm. Antenna</i> : Negligible to minor, adverse effects. <i>Water Upgrades</i> : Beneficial effects. <i>AFWA Antennas</i> : No significant effects anticipated. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : Negligible effects.	Planned development activities incorporate necessary infrastructure improvements to ensure that demand does not exceed capacity. No significant, adverse, cumulative effects expected.
Hazardous Wastes and Materials	Hazardous wastes and materials, ACM, LBP, pesticides, ASTs and USTs, and compliance-related clean-up sites occur at KPSTS as a result of its historic use as a military installation.	All hazardous wastes and materials, ACM, LBP, pesticides, ASTs and USTs, and compliance-related clean-up sites are managed in accordance with all USAF policies and other applicable Federal and state regulations.	Short-term, minor, adverse effects on hazardous materials and wastes could occur during construction and demolition activities. Long-term, beneficial effects would be expected from the removal of ACM and LBP in all buildings proposed for demolition.	<i>RBC</i> : No effects. <i>Comm. Antenna</i> : Long-term, minor, beneficial effects from removal of ACM and LBP. No other long-term effects anticipated. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No effects. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : No effects.	There would be no appreciable change from the existing conditions. No significant, adverse, cumulative effects expected.
Socioeconomic Resources and Environmental Justice	Populations of Hawai'i and Honolulu County increased modestly over the past two decades.	The top employment industry for Honolulu County is educational, health, and social services. Hawai'i has large percentage of minority groups, namely Asian and Pacific Islander, when compared with the U.S. population.	Short- and long-term, negligible, beneficial effects would be expected from job creation and tax revenues. No adverse effects on minority, low-income, or youth populations would be expected.	<i>RBC</i> : No effects. <i>Comm. Antenna</i> : No long-term effects. <i>Water Upgrades</i> : No effects. <i>AFWA Antennas</i> : No effects. <i>ISOON</i> : No significant effects anticipated. <i>Predator Fence</i> : No effects.	The Proposed Action and other planned projects could result in small personnel changes at KPSTS but would not be expected to have appreciable effects on the population. No significant, adverse, cumulative effects expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Cultural and Visual Resources	There are 13 archaeological sites and a possible sacred site documented on or around KPSTS, including traditional Hawaiian remnants, a <i>heiau</i> , and historic ranching and World War II features. There is a potentially NRHP-eligible district at KPSTS related to the Corona Program.	All 9 buildings proposed for demolition were constructed for or during the Corona Program and might be part of an NRHP-eligible historic district. Building 21 is eligible for the NRHP. There is one archaeological site in the project vicinity (near Buildings 14, 16, 17, 18, and 21).	Long-term, adverse effects would be expected on the potentially NRHP-eligible district. Further evaluation of all Corona Program built resources needs to be conducted.  No effects on archaeological resources would be expected if proposed protection measures are implemented.	<p><i>RBC</i>: No effects anticipated. Antenna No. 39006, a legacy antenna, will be documented prior to demolition, but it is not part of the potentially NRHP-eligible district.</p> <p><i>Comm. Antenna</i>: Long-term, adverse effects from the demolition of two NRHP-eligible facilities (Buildings 20 and 1411). Hawai'i SHPD recommended a HABS II level documentation for these structures as mitigation.</p> <p><i>Water Upgrades</i>: No effects.</p> <p><i>AFWA Antennas</i>: Negligible, adverse effects anticipated. Height of tallest structure proposed might be visible but would be comparable to previous structures at the site.</p> <p><i>ISOON</i>: No significant effects anticipated.</p> <p><i>Predator Fence</i>: Possible long-term, minor, adverse effects on visual resources, but the beneficial effects on biological species would also enhance long-term visual resources.</p>	The Proposed Action would have a long-term contribution to potential cumulative effects on cultural resources. The removal of additional contributing elements to a potentially eligible district, and the construction of a new structure would adversely affect the location, setting, feeling, and association of the potentially NRHP-eligible district.  No significant, adverse, cumulative effects on archaeological resources would occur.

- It is possible that demolition of Building 21 (under the Proposed Action) and demolition of Building 20 and Antenna No. 14111 (to support the new communications antenna) could occur concurrently. These three facilities are clustered together.
- Demolition of Buildings 32 and 33 are in the immediate vicinity of Facility No. 39006, a legacy antenna that will likely be demolished following construction of the new RBC facility. Buildings 37 and 39 are approximately 300 feet east of Facility No. 39006.
- Demolition of Buildings 14, 16, 17, and 18 and construction of the CE storage facility would be approximately 600 feet east of the new RBC facility. Building 10 is in the middle of these two project areas.
- The water infrastructure system upgrades include numerous replacements, repairs, upgrades, and augmentations throughout KPSTS, so it is possible ground-disturbing activities of this project could coincide spatially and temporally with the Proposed Action or any other project on KPSTS.

## 4.2 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the Proposed Action. These effects are not anticipated to be significant.

**Geological Resources.** Under the Proposed Action, construction and demolition activities, such as grading, excavating, and trenching of the ground, would result in some minor soil disturbance. Implementation of BMPs during construction and demolition would limit environmental consequences resulting from ground-disturbing activities. Standard erosion-control means would also reduce environmental consequences related to these characteristics. Although unavoidable, effects on soils at the installation are not considered significant.

**Infrastructure.** Solid waste would be generated as a result of construction and demolition activities. This is an unavoidable but minor, adverse effect that can be mitigated, to a certain extent, by possible recycling opportunities and incorporation of LEED measures into the Proposed Action.

**Hazardous Wastes and Materials.** Products containing hazardous materials would be procured and used during the proposed construction and demolition projects. It is anticipated that the quantity of products containing hazardous materials used during the construction activities would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. Contractors must report use of hazardous materials. It is anticipated that the quantity of hazardous wastes generated from proposed construction activities would be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. The potential for construction accidents or spills during fuel handling are unavoidable risks associated with the Proposed Action.

**Cultural Resources.** The Proposed Action would result in the demolition of nine buildings that are part of a potentially NRHP-eligible historic district associated with the Corona Program. Building 21 is eligible for the NRHP. Further evaluation of all Corona Program resources needs to be conducted at KPSTS. It is anticipated that mitigation measures will be identified in an MOA during the NHPA Section 106 consultation process; mitigation could include HABS documentation. The physical loss of these resources is considered unavoidable. It is not anticipated that effects would be significant if buildings are formally documented prior to demolition.

**Energy Resources.** The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. The use of nonrenewable resources in construction activities, and subsequently with the

1 operations of facilities and additional aircraft and helicopters, would be unavoidable. Relatively small  
2 amounts of energy resources would be committed to the Proposed Action and are not considered  
3 significant.

#### 4 **4.3 Compatibility of Proposed Action and Alternatives with the Objectives of** 5 **Federal, Regional, State, and Local Land Use Plans, Policies, and Controls**

6 The Proposed Action would be consistent with existing and future foreseeable uses. Construction  
7 activities would not be in conflict with installation land use policies or objectives. The Proposed Action  
8 would not conflict with any off-installation land use ordinances.

#### 9 **4.4 Relationship Between Short-Term Uses of Man's Environment and** 10 **Maintenance and Enhancement of Long-Term Productivity**

11 Short-term uses of the biophysical components of the human environment include direct impacts, usually  
12 related to construction activities that occur over a period of less than 5 years. Long-term uses of the  
13 human environment include those impacts that occur over a period of more than 5 years, including  
14 permanent resource loss.

15 This EA identifies potential short-term, adverse effects on the natural environment as a result of  
16 construction and demolition activities. These potential adverse effects include noise emissions, air  
17 emissions, soil erosion, and storm water runoff into surface water. Demolition of old, outdated, and  
18 underused facilities and construction of the new CE Storage Building would help meet long-term,  
19 mission-related needs of the KPSTS.

#### 20 **4.5 Irreversible and Irrecoverable Commitment of Resources**

21 An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that  
22 cannot be reversed or recovered, even after an activity has ended and facilities have been  
23 decommissioned. A commitment of resources is related to use or destruction of nonrenewable resources,  
24 and effects that such a loss will have on future generations. For example, if prime farmland is developed  
25 there would be a permanent loss of agricultural productivity. The Proposed Action would involve the  
26 irreversible and irretrievable commitment of material resources and energy, land resources, and human  
27 resources. The impacts on these resources would be permanent.

28 **Cultural Resources.** The Proposed Action would result in the demolition of nine buildings that are part  
29 of a potentially NRHP-eligible historic district associated with the Corona Program. Building 21 is  
30 eligible for the NRHP. Further evaluation of all Corona Program resources needs to be conducted at  
31 KPSTS. It is anticipated that mitigation measures will be identified in an MOA during the NHPA Section  
32 106 consultation process; mitigation could include HABS documentation. The demolition of these  
33 resources would be considered irreversible. It is not anticipated that effects would be significant if  
34 buildings are formally documented prior to demolition.

35 **Material Resources.** Material resources irretrievably used for the Proposed Action would include steel,  
36 concrete, and other building materials. Such materials are not in short supply and would not be expected  
37 to limit other unrelated construction activities. The irretrievable use of material resources would not be  
38 considered significant.

39 **Energy Resources.** Energy resources used for the Proposed Action would be irretrievably lost. These  
40 would include petroleum-based products (e.g., gasoline and diesel) and electricity. During construction,  
41 gasoline and diesel fuel would be used for the operation of construction vehicles. Consumption of these



1 energy resources would not place a significant demand on their availability in the region. Therefore, no  
2 significant impacts would be expected.

3 ***Human Resources.*** The use of human resources for construction is considered an irretrievable loss only  
4 in that it would preclude such personnel from engaging in other work activities. However, the use of  
5 human resources for the Proposed Action would represent employment opportunities, and is considered  
6 beneficial.

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## 5. List of Preparers

1  
2 This Draft EA has been prepared by HDR Engineering, Inc. (HDR) under the direction of AFCEE and the  
3 50 SW. The individuals who contributed to the preparation of this document are listed below.

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| 31 Years of Experience: 30            | 67 <b>Jeffrey Weiler</b>                 |
|                                       | 68 M.S. Resource Economics/Environmental |
| 32 <b>Greg Lockard</b>                | 69 Management                            |
| 33 B.A. History and Political Science | 70 B.A. Political Science                |
| 34 M.A. and Ph.D. Anthropology        | 71 Years of Experience: 34               |
| 35 Years of Experience: 16            |  |
|                                       | 72 <b>Mary Young</b>                     |
| 36 <b>Cheryl Myers</b>                | 73 B.S. Environmental Science            |
| 37 A.A.S. Nursing                     | 74 Years of Experience: 7                |
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39

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## **APPENDIX A**

### **APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA**



# Appendix A

## Applicable Laws, Regulations, Policies, and Planning Criteria

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When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws and Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

*NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.*

### Noise

Federal, state, and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, requires compliance with state and local noise laws and ordinances.

The U.S. Department of Housing and Urban Development (HUD), in coordination with the Department of Defense (DOD) and the Federal Aviation Administration, has established criteria for acceptable noise levels for aircraft operations relative to various types of land use.

### Land Use

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activities occurring on a defined parcel of land. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories.

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVS, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the HUD and based on findings of the Federal Interagency Committee on Noise are used to recommend acceptable levels of noise exposure for land use.

### Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation’s air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance and leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the USEPA as being in attainment or nonattainment for pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at

1 designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated  
2 as unclassified. Section 309 of the CAA authorizes USEPA to review and comment on impact statements  
3 prepared by other agencies.

4 An agency should consider what effect an action might have on NAAQS due to short-term increases in air  
5 pollution during construction and long-term increases resulting from changes in traffic patterns. For  
6 actions in attainment areas, a Federal agency could also be subject to USEPA's Prevention of Significant  
7 Deterioration (PSD) regulations. These regulations apply to new major stationary sources and  
8 modifications to such sources. Although few agency facilities will actually emit pollutants, increases in  
9 pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal  
10 immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and  
11 state-approved requirements.

12 The General Conformity Rule requires that any Federal action meet the requirements of a State  
13 Implementation Plan or Federal Implementation Plan. More specifically, CAA conformity is ensured  
14 when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the  
15 frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim  
16 progress milestones, or other milestones toward achieving compliance with the NAAQS.

17 The General Conformity Rule applies only to actions in nonattainment or maintenance areas and  
18 considers both direct and indirect emissions. The rule applies only to Federal actions that are considered  
19 "regionally significant" or where the total emissions from the action meet or exceed the *de minimis*  
20 thresholds presented in 40 Code of Federal Regulations (CFR) 93.153. An action is regionally significant  
21 when the total nonattainment pollutant emissions exceed 10 percent of the AQCR's total emissions  
22 inventory for that nonattainment pollutant. If a Federal action does not meet or exceed the *de minimis*  
23 thresholds and is not considered regionally significant, then a full Conformity Determination is not  
24 required.

25 On May 13, 2010, the USEPA issued the Greenhouse Gas (GHG) Tailoring Rule that sets thresholds for  
26 GHG emissions from large stationary sources. The new GHG emissions thresholds for large stationary  
27 sources define when permits under the New Source Review Prevention of PSD and Title V Operating  
28 Permit programs are required for new and existing industrial facilities. Beginning January 2, 2011, large  
29 industrial facilities that have CAA permits for non-GHG emissions must also include GHGs in these  
30 permits. Beginning July 1, 2011, all new construction or renovations that increase GHG emissions by  
31 75,000 tons of carbon dioxide or equivalent per year or more will be required to obtain construction  
32 permits for GHG emissions. Operating permits will be needed by all sources that emit GHGs above  
33 75,000 tons of carbon dioxide or equivalent per year beginning in July 2011.

## 34 **Health and Safety**

35 Human health and safety relates to workers' health and safety during demolition or construction of  
36 facilities, or applies to work conditions during operations of a facility that could expose workers to  
37 conditions that pose a health or safety risk. The Federal Occupational Safety and Health Administration  
38 (OSHA) issues standards to protect persons from such risks, and the DOD and state and local jurisdictions  
39 issue guidance to comply with these OSHA standards. Safety also can refer to safe operations of aircraft  
40 or other equipment.

41 AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH)*  
42 *Program*, implements Air Force Policy Directive (AFPD) 91-3, *Occupational Safety and Health*, by  
43 outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF  
44 resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing



1 risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF  
2 workplaces meet Federal safety and health requirements.

3 AFI 91-202, *USAF Mishap Prevention Program*, implements AFD 91-2, *Safety Programs*. It  
4 establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard  
5 Program), assigns responsibilities for program elements, and contains program management information.

6 EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 23, 1997),  
7 directs Federal agencies to make it a high priority to identify and assess environmental health risks and  
8 safety risks that may disproportionately affect children. Federal agencies must also ensure that their  
9 policies, programs, activities, and standards address disproportionate risks to children that result from  
10 environmental health or safety risks.

## 11 **Geology and Soil Resources**

12 Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed  
13 the Farmland Protection Policy Act (FPPA) to minimize the extent to which Federal programs contribute  
14 to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland is  
15 described as soils that have a combination of soil and landscape properties that make them highly suitable  
16 for cropland, such as high inherent fertility, good water-holding capacity, and deep or thick effective  
17 rooting zones, and that are not subject to periodic flooding. Under the FPPA, agencies are encouraged to  
18 conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject  
19 to the FPPA include Federal permitting and licensing, projects on land already in urban development or  
20 used for water storage, construction for national defense purposes, or construction of new minor  
21 secondary structures such as a garage or storage shed.

## 22 **Water Resources**

23 The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of  
24 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into  
25 waters of the United States. The CWA requires USEPA to establish water quality standards for specified  
26 contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable  
27 waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are  
28 issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA  
29 establishes a Federal program to regulate the discharge of dredge and fill material into waters of the  
30 United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of  
31 the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for  
32 commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to  
33 restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency  
34 should consider the impact on water quality from actions such as the discharge of dredge or fill material  
35 into waters of the United States from construction, or the discharge of pollutants as a result of facility  
36 occupation.

37 Section 303(d) of the CWA requires states and the USEPA to identify waters not meeting state water  
38 quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum  
39 amount of a pollutant that a waterbody can receive and still be in compliance with state water quality  
40 standards. After determining TMDLs for impaired waters, states are required to identify all point and  
41 nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an  
42 implementation plan that will allocate reductions to each source to meet the state standards. The TMDL  
43 program is currently the Nation's most comprehensive attempt to restore and improve water quality. The  
44 TMDL program does not explicitly require the protection of riparian areas. However, implementation of

1 the TMDL plans typically calls for restoration of riparian areas as one of the required management  
2 measures for achieving reductions in nonpoint source pollutant loadings.

3 The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and  
4 develop, and, where possible, restore or enhance the resources of the Nation’s coastal zone. The coastal  
5 zone refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal  
6 areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states  
7 to exercise their full authority over the coastal zone through the development of land and water use  
8 programs in cooperation with Federal and local governments. States may apply for grants to help develop  
9 and implement management programs to achieve wise use of the land and water resources of the coastal  
10 zone. Under Section 307, Federal agency activities that affect any land or water use or natural resource of  
11 a coastal zone must be consistent to the maximum extent practicable with the enforceable policies of the  
12 state’s coastal management program.

13 The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the  
14 safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986,  
15 mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal  
16 enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA  
17 to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and  
18 Best Available Technology treatment techniques for organic, inorganic, radioactive, and microbial  
19 contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human  
20 health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs  
21 for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

22 EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5, 2009),  
23 directed the USEPA to issue guidance on Section 438 of the Energy Independence and Security Act  
24 (EISA). The EISA establishes into law new storm water design requirements for Federal construction  
25 projects that disturb a footprint of greater than 5,000 square feet of land. Under these requirements,  
26 predevelopment site hydrology must be maintained or restored to the maximum extent technically  
27 feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology  
28 would be calculated and site design would incorporate storm water retention and reuse technologies to the  
29 maximum extent technically feasible. Post-construction analyses will be conducted to evaluate the  
30 effectiveness of the as-built storm water reduction features. These regulations are applicable to DOD  
31 Unified Facilities Criteria. Additional guidance is provided in the USEPA’s *Technical Guidance on*  
32 *Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy*  
33 *Independence and Security Act*.

34 EO 13514 also requires Federal agencies to improve water efficiency and management by reducing  
35 potable water consumption intensity by 2 percent annually, or by 26 percent, by Fiscal Year (FY) 2020,  
36 relative to a FY 2007 baseline. Furthermore, Federal agencies must also reduce agency industrial,  
37 landscaping, and agricultural water consumption by 2 percent annually, or 20 percent, by FY 2020,  
38 relative to a FY 2010 baseline.

39 EO 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes* (July 19, 2010), establishes a  
40 national policy to ensure the protection, maintenance, and restoration of the health of ocean, coastal, and  
41 Great Lakes ecosystems and resources; enhance the sustainability of ocean and coastal economies;  
42 preserve our maritime heritage; support sustainable uses and access; provide for adaptive management to  
43 enhance our understanding of and capacity to respond to climate change and ocean acidification; and  
44 coordinate with our national security and foreign policy interests.

1 **Biological Resources**

2 The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and  
3 restore threatened and endangered plants and animals and their habitats. The ESA specifically charges  
4 Federal agencies with the responsibility of using their authority to conserve threatened and endangered  
5 species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to  
6 jeopardize the continued existence of an endangered or threatened species or result in the destruction of  
7 critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the  
8 Interior, using the best available scientific data, determines which species are officially endangered or  
9 threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal  
10 endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171).  
11 States might also have their own lists of threatened and endangered species which can be obtained by  
12 calling the appropriate State Fish and Wildlife office. Some species also have laws specifically for their  
13 protection (e.g., Bald Eagle Protection Act).

14 The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions  
15 between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of  
16 migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue,  
17 hunt, take, capture, or kill; attempt to take, capture, or kill; possess; offer to or sell, barter, purchase, or  
18 deliver; or cause to be shipped, exported, imported, transported, carried, or received any migratory bird,  
19 part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport, or  
20 carry from one state, territory, or district to another; or through a foreign country, any bird, part, nest, or  
21 egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it  
22 was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the  
23 province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or  
24 without a warrant, a person violating the MBTA.

25 The Sikes Act (16 United States Code [U.S.C.] §670a-670o, 74 Stat. 1052), as amended, Public Law  
26 (P.L.) 86-797, approved September 15, 1960, provides for cooperation by the Departments of the Interior  
27 and Defense with state agencies in planning, development, and maintenance of fish and wildlife resources  
28 on military reservations throughout the United States. In November 1997, the Sikes Act was amended via  
29 the Sikes Act Improvement Amendment (P.L. 105-85, Division B, Title XXIX) to require the Secretary of  
30 Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on  
31 military installations. To facilitate this program, the amendments require the Secretaries of the military  
32 departments to prepare and implement Integrated Natural Resources Management Plans (INRMPs) for  
33 each military installation in the United States unless the absence of significant natural resources on a  
34 particular installation makes preparation of a plan for the installation inappropriate. INRMPs must be  
35 reviewed by the USFWS and applicable states every 5 years. The National Defense Authorization Act of  
36 2004 modified Section 4(a) (3) of the ESA to preclude the designation of critical habitat on DOD lands  
37 that are subject to an INRMP, if the Secretary of the Interior determines in writing that such a plan  
38 provides a benefit to the species for which critical habitat is proposed for designation.

39 EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the  
40 President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort  
41 to provide leadership in protecting and enhancing the environment for the purpose of sustaining and  
42 enriching human life. Federal agencies are directed to meet national environmental goals through their  
43 policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to  
44 protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share  
45 information about existing or potential environmental problems with all interested parties, including the  
46 public, in order to obtain their views.

1 EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy  
2 for the conservation of migratory birds by the Federal government. EO 13186 provides a specific  
3 framework for the Federal government’s compliance with its treaty obligations to Canada, Mexico,  
4 Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the  
5 development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be  
6 coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote  
7 conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts  
8 already in progress; incorporation of bird conservation considerations into agency planning, including  
9 NEPA analyses; and reporting annually on the level of take of migratory birds.

## 10 **Cultural Resources**

11 The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom  
12 of religion for all people is an inherent right, and traditional American Indian religions are an  
13 indispensable and irreplaceable part of American Indian life. It also recognized the lack of Federal policy  
14 on this issue and made it the policy of the United States to protect and preserve the inherent right of  
15 religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the  
16 religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating  
17 their actions and policies to determine if changes should be made to protect and preserve the religious  
18 cultural rights and practices of Native Americans. These evaluations must be made in consultation with  
19 native traditional religious leaders.

20 The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public  
21 and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal,  
22 damage, alteration, or defacement of any archaeological resource, defined as material remains of past  
23 human life or activities which are at least 100 years old. Before archaeological resources are excavated or  
24 removed from public lands, the Federal land manager must issue a permit detailing the time, scope,  
25 location, and specific purpose of the proposed work. ARPA also fosters the exchange of information  
26 about archaeological resources between governmental agencies, the professional archaeological  
27 community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

28 The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve  
29 properties of state, local, and national significance. The NHPA establishes the Advisory Council on  
30 Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of  
31 Historic Places (NRHP). The ACHP advises the President, Congress, and Federal agencies on historic  
32 preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of  
33 their undertakings (actions and authorizations) on properties included in or eligible for the NRHP.  
34 Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned  
35 cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800.  
36 Agencies should coordinate studies and documents prepared under Section 106 with NEPA where  
37 appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not  
38 constitute compliance with the other. For example, actions which qualify for a categorical exclusion  
39 under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency  
40 official to identify properties in the area of potential effects, and whether they are included or eligible for  
41 inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and  
42 nominate historic property under agency control to the NRHP.

43 The Native American Graves Protection and Repatriation Act of 1990 establishes rights of American  
44 Indian tribes to claim ownership of certain “cultural items,” defined as Native American human remains,  
45 funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies.  
46 Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal

1 descendants, if these can be determined, and then the tribe owning the land where the items were  
2 discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on  
3 Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency  
4 with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must  
5 stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

6 EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971), directs the Federal  
7 government to provide leadership in the preservation, restoration, and maintenance of the historic and  
8 cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their  
9 jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to  
10 comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for  
11 listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also  
12 initiate procedures to maintain federally owned sites listed on the NRHP.

13 EO 13007, *Indian Sacred Sites* (May 24, 1996), provides that agencies managing Federal lands, to the  
14 extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate  
15 American Indian religious practitioners' access to and ceremonial use of American Indian sacred sites,  
16 shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality  
17 of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict  
18 future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

19 EO 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was  
20 issued to provide for regular and meaningful consultation and collaboration with Native American tribal  
21 officials in the development of Federal policies that have tribal implications, and to strengthen the United  
22 States government-to-government relationships with Native American tribes. EO 13175 recognizes the  
23 following fundamental principles: Native American tribes exercise inherent sovereignty over their lands  
24 and members, the United States government has a unique trust relationship with Native American tribes  
25 and deals with them on a government-to-government basis, and Native American tribes have the right to  
26 self-government and self-determination.

27 EO 13287, *Preserve America* (March 3, 2003), orders Federal agencies to take a leadership role in  
28 protection, enhancement, and contemporary use of historic properties owned by the Federal government,  
29 and promote intergovernmental cooperation and partnerships for preservation and use of historic  
30 properties. EO 13287 established new accountability for agencies with respect to inventories and  
31 stewardship.

## 32 **Socioeconomics and Environmental Justice**

33 EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income*  
34 *Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part  
35 of their mission. Agencies must identify and address the adverse human health or environmental effects  
36 that its activities have on minority and low-income populations, and develop agencywide environmental  
37 justice strategies. The strategy must list "programs, policies, planning and public participation processes,  
38 enforcement, and/or rulemakings related to human health or the environment that should be revised to  
39 promote enforcement of all health and environmental statutes in areas with minority populations and low-  
40 income populations, ensure greater public participation, improve research and data collection relating to  
41 the health of and environment of minority populations and low-income populations, and identify  
42 differential patterns of consumption of natural resources among minority populations and low-income  
43 populations." A copy of the strategy and progress reports must be provided to the Federal Working  
44 Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal  
45 agency.

1 **Hazardous Materials and Waste**

2 The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980  
3 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and  
4 authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also  
5 provides a Federal “Superfund” to respond to emergencies immediately. Although the “Superfund”  
6 provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is  
7 authorized to recover funds through damages collected from responsible parties. This funding process  
8 places the economic burden for cleanup on polluters. Section 120(h) of CERCLA requires Federal  
9 agencies to notify prospective buyers of contaminated Federal properties about the type, quantity, and  
10 location of hazardous substances that would be present.

11 The Pollution Prevention Act of 1990 encourages manufacturers to avoid the generation of pollution by  
12 modifying equipment and processes; redesigning products; substituting raw materials; and making  
13 improvements in management techniques, training, and inventory control. Consistent with pollution  
14 prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation*  
15 *Management* (January 24, 2007 [revoking EO 13148]), sets a goal for all Federal agencies to promote  
16 environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient,  
17 water-efficient, and recycled-content products; and use of paper of at least 30 percent post-consumer fiber  
18 content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the  
19 quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of; increase diversion  
20 of solid waste, as appropriate; and maintain cost-effective waste prevention and recycling programs at  
21 their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ  
22 provides guidance to Federal agencies on how to “incorporate pollution prevention principles, techniques,  
23 and mechanisms into their planning and decisionmaking processes and to evaluate and report those  
24 efforts, as appropriate, in documents pursuant to NEPA.”

25 The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste  
26 Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous  
27 waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA,  
28 hazardous waste is controlled from generation to disposal through tracking and permitting systems, and  
29 restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined  
30 as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the  
31 Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste  
32 disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The  
33 HSWA strengthens control of both hazardous and nonhazardous waste and emphasizes the prevention of  
34 pollution of groundwater.

35 The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up  
36 standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of  
37 SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires  
38 facility operators with “hazardous substances” or “extremely hazardous substances” to prepare  
39 comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a  
40 contaminated site, it can be held liable for cleanup as the property owner/operator. A Federal agency can  
41 also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if  
42 the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim  
43 the “innocent purchaser” defense under CERCLA. According to Title 42 U.S.C. 9601(35), the current  
44 owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of  
45 the property consistent with good commercial or customary practice” before buying the property to use  
46 this defense.

1 The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements  
2 and authorities to identify and control toxic chemical hazards to human health and the environment.  
3 TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals  
4 for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated  
5 biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when  
6 released into the environment and accumulate in the tissues of living organisms. They have been shown  
7 to cause adverse health effects on laboratory animals and could cause adverse health effects in humans.  
8 TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage,  
9 disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II  
10 provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to  
11 schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States  
12 should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on  
13 the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,”  
14 directs Federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable  
15 monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any  
16 Federal agency having jurisdiction over a property or facility must comply with all Federal, state,  
17 interstate, and local requirements concerning lead-based paint.

## 18 **Energy**

19 The Energy Policy Act (EPA) of 2005, P.L. 109-58, amended portions of the National Energy  
20 Conservation Policy Act and established energy management goals for Federal facilities and fleets.  
21 Section 109 of EPA directs that new Federal buildings (commercial or residential) be designed 30  
22 percent below American Society of Heating, Refrigerating, and Air-Conditioning Engineers standards or  
23 the International Energy Code. Section 109 also includes the application of sustainable design principles  
24 for new buildings and requires Federal agencies to identify new buildings in their budget requests that  
25 meet or exceed the standards. Section 203 of EPA requires that all Federal agencies’ renewable  
26 electricity consumption meet or exceed 3 percent from FY 2007 through FY 2009, with increases to at  
27 least 5 percent in FY 2010 through FY 2012 and 7.5 percent in FY 2013 and thereafter. Section 203 also  
28 establishes a double credit bonus for Federal agencies if renewable electricity is produced onsite at a  
29 Federal facility, on Federal lands, or on Native American lands. Section 204 of EPA establishes a  
30 photovoltaic energy commercialization program for Federal buildings.

31 EO 13514, *Federal Leadership In Environmental, Energy, And Economic Performance* (dated October 5,  
32 2009), directs Federal agencies to improve water use efficiency and management; implement high  
33 performance sustainable Federal building design, construction, operation and management; and advance  
34 regional and local integrated planning by identifying and analyzing impacts from energy usage and  
35 alternative energy sources. EO 13514 also directs Federal agencies to prepare and implement a Strategic  
36 Sustainability Performance Plan to manage its greenhouse gas emissions, water use, pollution prevention,  
37 regional development and transportation planning, sustainable building design and promote sustainability  
38 in its acquisition of goods and services. Section 2(g) requires new construction, major renovation, or  
39 repair and alteration of buildings to comply with the Guiding Principles for Federal Leadership in High  
40 Performance and Sustainable Buildings. The CEQ regulations at 40 CFR 1502.16(e) directs agencies to  
41 consider the energy requirements and conservation potential of various alternatives and mitigation  
42 measures.

43 Section 503(b) of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation*  
44 *Management*, instructs Federal agencies to conduct their environmental, transportation, and  
45 energy-related activities under the law in support of their respective missions in an environmentally,  
46 economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.  
47 EO 13423 sets goals in energy efficiency, acquisition, renewable energy, toxic chemical reduction,

1 recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Sustainable  
2 design measures such as the use of “green” technology (e.g., photovoltaic panels, solar collection, heat  
3 recovery systems, wind turbines, green roofs, and habitat-oriented storm water management) would be  
4 incorporated where practicable.



## **APPENDIX B**

**INTERAGENCY AND INTERGOVERNMENTAL COORDINATION  
FOR ENVIRONMENTAL PLANNING (IICEP) AND COASTAL ZONE MANAGEMENT  
MATERIALS**



## IICEP Distribution List

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- |  |  |
|--|--|
| 1 Department of Defense                            | 41 Mr. David K. Tanoue, Director                   |
| 2 3949 Diamond Head Road                           | 42 Department of Planning and Permitting           |
| 3 Honolulu, HI 96816-4495                          | 43 650 South King Street                           |
|  | 44 Honolulu, HI 96813                              |
| 4 Mr. Jared Blumenfeld, Administrator              |  |
| 5 U.S. Environmental Protection Agency, Region 9   | 45 Dr. Pua Aiu, PhD, SHPD Administrator            |
| 6 75 Hawthorne Street                              | 46 State Historic Preservation Division            |
| 7 San Francisco, CA 94105                          | 47 Department of Land and Natural Resources        |
|  | 48 601 Kamokila Blvd.                              |
| 8 Ms. Jayne Lefors, NEPA Project Manager           | 49 Kakuhihewa Building, Room 555                   |
| 9 Protected Resources Division                     | 50 Kapolei, HI 96707                               |
| 10 NOAA Fisheries, Pacific Islands Regional Office |  |
| 11 1601 Kapiolani Blvd., Suite 1110                | 51 Mr. Orlando Davidson, Executive Officer         |
| 12 Honolulu, HI 96814                              | 52 Department of Business, Economic Development    |
|  | 53 & Tourism                                       |
| 13 National Park Service Pacific West Region       | 54 Land Use Commission                             |
| 14 Attn: Regional Director                         | 55 235 South Beretania Street, Room 406            |
| 15 One Jackson Center                              | 56 Honolulu, HI 96804-2359                         |
| 16 1111 Jackson Street, Suite 700                  |  |
| 17 Oakland, CA 94607                               | 57 Mr. William Aila, Jr., Interim Chairperson      |
|  | 58 Department of Land and Natural Resources        |
| 18 Mr. Jeff Newman                                 | 59 1151 Punchbowl Street                           |
| 19 U.S. Department of the Interior                 | 60 Room 130  |
| 20 Fish and Wildlife Service                       | 61 Honolulu, HI 96813                              |
| 21 Pacific Islands Fish and Wildlife Office        |  |
| 22 300 Ala Moana Blvd.                             | 62 Mr. Neal A. Palafox, Interim Director of Health |
| 23 Room 3-122, Box 50088                           | 63 Hawai'i Department of Health                    |
| 24 Honolulu, HI 96850                              | 64 Office of Environmental Quality Control         |
|  | 65 235 South Beretania Street, Suite 702           |
| 25 Mr. John Nakagawa                               | 66 Honolulu, HI 96813                              |
| 26 Hawai'i Coastal Zone Management Program         |  |
| 27 Office of Planning                              | 67 Mr. Ernest Y. Martin                            |
| 28 P.O. Box 2359                                   | 68 Councilmember, District II                      |
| 29 Honolulu, HI 96804                              | 69 530 South King Street, Suite 202                |
|  | 70 Honolulu, HI 96813                              |
| 30 Mr. Ken C. Kawahara, Chair                      |  |
| 31 Division of Forestry and Wildlife               | 71 Dr. Charles Burrows                             |
| 32 State Department of Land and Natural Resources  | 72 Office of Hawaiian Affairs                      |
| 33 Natural Area Reserves Commission                | 73 Native Hawaiian Historic Preservation Council   |
| 34 1151 Punchbowl Street, Room 224                 | 74 711 Kapi'olani Blvd., Suite 500                 |
| 35 Honolulu, HI 96813                              | 75 Honolulu, HI 96813                              |
|  |  |
| 36 Mr. Lawrence Yamamoto, Director                 | 76 Ms. Patty Kahanamoku Teruya, Chair              |
| 37 Natural Resources Conservation Service          | 77 City and County of Honolulu                     |
| 38 Pacific Islands Area                            | 78 Nanakuli-Maili Neighborhood Board               |
| 39 P.O. Box 50004                                  | 79 P.O. Box 2308                                   |
| 40 Honolulu, HI 96850                              | 80 Wai'anae, HI 96792                              |

1 Mr. Michael Lyons, Chair  
2 City and County of Honolulu  
3 North Shore Neighborhood Board  
4 66-376 Haleiwa Road #A  
5 Haleiwa, HI 96712

6 Ms. Georgette Jordan, Chair  
7 City and County of Honolulu  
8 Wai‘anae Coast Neighborhood Board  
9 P.O. Box 1398  
10 Wai‘anae, HI 9679

11 Mr. Keola Lindsey  
12 Office of Hawaiian Affairs  
13 711 Kapiolani Boulevard, Suite 500  
14 Honolulu, HI 96813

15 Mr. Hanale Hopfe  
16 Koa Mana  
17 P.O. Box 343  
18 Wai‘anae, HI 96792

19

20 Mr. William J. Aila, Jr.  
21 Hui Malama I Na Kupuna ‘O Hawai‘i Nei  
22 86-630 Lualualei Homestead Road  
23 Wai‘anae, HI 96792

24 Mr. Shad Kane  
25 Royal Order of Kamehameha I  
26 92-1309 Uahanai Street  
27 Kapolei, HI 96707

28 Dr. Kaleo Patterson  
29 Pacific Justice & Reconciliation  
30 1127 Bethel Street, Suite 16  
31 Honolulu, HI 96813

# IICEP Distribution Letters

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13 May 2011

MEMORANDUM FOR: Mr. William J. Aila, Jr.  
Hui Malama I Na Kupuna 'O Hawai'i Nei  
86-630 Luualalei Homestead Road  
Wai'ananae, HI 96792

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'ananae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

The Air Force Center for Engineering and the Environment (AFCEE) and 50th Space Wing (50 SW) are preparing an *Environmental Assessment (EA) Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Ka'ena Point Satellite Tracking Station (KPSTS), O'ahu, Hawai'i*. The environmental impact analysis process for this proposal is being conducted by AFCEE and 50 SW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969. The DOPAA (included with this correspondence as Attachment 1) has been prepared to support the preparation of the EA and describes the U.S. Air Force's proposal to demolish nine buildings and construct a vehicle bay and Civil Engineering (CE) storage facility ("CE Storage Building") at KPSTS. The DOPAA also describes alternatives to the Proposed Action, including the No Action Alternative. The DOPAA will become Sections 1 and 2 of the EA.

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Please address questions and comments on the proposed demolition of nine buildings and construction of a CE Storage Building by mail to Mr. Lance Hayashi, Det 3, 21 SOPS/CE, P.O. Box 868, Wai'ananae, HI 96792-0868; by telephone at 808-697-4314; or by email at [lynn.cruz.ctr@kaenapt.af.mil](mailto:lynn.cruz.ctr@kaenapt.af.mil). Thank you for your participation.

Sincerely,

A handwritten signature in black ink, appearing to read 'Elizabeth Vashro', is written over a horizontal line.

Elizabeth Vashro, HDR

Attachments:

1. *Description of the Proposed Action and Alternatives for an Environmental Assessment Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Ka'ena Point Satellite Tracking Station, O'ahu, Hawai'i*
2. *IICEP Distribution List*



13 May 2011

MEMORANDUM FOR: Mr. William Aila, Jr., Interim Chairperson  
Department of Land and Natural Resources  
1151 Punchbowl Street  
Room 130  
Honolulu, HI 96813

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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Sincerely,

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Elizabeth Vashro, HDR

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13 May 2011

MEMORANDUM FOR: SEE DISTRIBUTION LIST

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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Sincerely,

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Elizabeth Vashro, HDR

**Attachments:**

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2. *IICEP Distribution List*



13 May 2011

MEMORANDUM FOR: Mr. Hanale Hopfe  
Koa Mana  
P.O. Box 343  
Waiʻanae, HI 96792

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Waiʻanae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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Sincerely,

Elizabeth Vashro, HDR

Attachments:

1. *Description of the Proposed Action and Alternatives for an Environmental Assessment Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Kaʻena Point Satellite Tracking Station, Oʻahu, Hawaiʻi*
2. *IICEP Distribution List*





13 May 2011

MEMORANDUM FOR: Mr. Shad Kane  
Royal Order of Kamehameha I  
92-1309 Uahanai Street  
Kapolei, HI 96707

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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Elizabeth Vashro, HDR

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2. *IICEP Distribution List*



13 May 2011

MEMORANDUM FOR: Mr. Keola Lindsey  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Suite 500  
Honolulu, HI 96813

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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13 May 2011

MEMORANDUM FOR: SEE DISTRIBUTION LIST

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792-0868

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Please address questions and comments on the proposed demolition of nine buildings and construction of a CE Storage Building by mail to Mr. Lance Hayashi, Det 3, 21 SOPS/CE, P.O. Box 868, Wai'anae, HI 96792-0868; by telephone at 808-697-4314; or by email at [lynn.cruz.ctr@kaenapt.af.mil](mailto:lynn.cruz.ctr@kaenapt.af.mil). Thank you for your participation.

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13 May 2011

MEMORANDUM FOR: Dr. Kaleo Patterson  
Pacific Justice & Reconciliation  
1127 Bethel Street, Suite 16  
Honolulu, HI 96813

FROM: HDR on behalf of  
Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Wai'anae, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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13 May 2011

MEMORANDUM FOR: Dr. Pua Aiu, PhD, SHPD Administrator  
State Historic Preservation Division  
Department of Land and Natural Resources  
601 Kamokila Boulevard  
Kakuhihewa Building, Room 555  
Kapolei, HI 96707

FROM: HDR on behalf of  
Major Marty W. Easter  
Ka'ena Point Satellite Tracking Station  
P.O. Box 868  
Wai'anāe, HI 96792-0868

SUBJECT: Description of the Proposed Action and Alternatives (DOPPA) for Review and Comment

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KPSTS was established in 1958 to support the Discover Satellite (Corona) Program, and photoreconnaissance data produced by the Corona Program contributed significantly to Cold War history. According to the KPSTS Integrated Cultural Resources Management Plan (ICRMP), there are archaeological sites and Native Hawaiian sites at KPSTS that are eligible for the National Register of Historic Places (NRHP). The ICRMP suggests that KPSTS contains significant Cold War-related buildings, features, and landscape. In particular, the ICRMP identifies significant architectural resources that were constructed between 1959 and 1968. All nine buildings proposed for demolition at KPSTS (i.e., Buildings 14, 16, 17, 18, 21, 32, 33, 37, and 39) have an original construction date between 1959 and 1968.

The USAF has preliminarily concluded that properties directly associated with the Cold War mission are potentially eligible for listing on the NRHP. On March 30, 2011, KPSTS consulted with the Hawai'i State Historic Preservation Division regarding the determination of eligibility for Buildings 20, 21, and 14111 at KPSTS. The USAF has determined that KPSTS is potentially eligible for listing on the NRHP as a district, since it likely meets Cold War Criteria "b" and NRHP Criteria "a." Specifically, KPSTS is potentially eligible for listing on the NRHP as a district due to its role as one of the many satellite tracking stations in the AFSCN during the Corona Program and its contribution to overall intelligence gathering during the Cold War.



In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation in the NEPA process by reviewing the attached DOPAA and solicit your comments concerning the proposal and any potential environmental consequences that might concern you. Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days from receipt of this letter. Also enclosed is a listing of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.

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Sincerely,

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Elizabeth Vashro, HDR

Attachments:

1. *Description of the Proposed Action and Alternatives for an Environmental Assessment Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Ka'ena Point Satellite Tracking Station, O'ahu, Hawai'i*
2. *IICEP Distribution List*

# IICEP Comment: State of Hawai'i Department of Defense

---

NEIL ABERCROMBIE  
GOVERNOR

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

EDWARD T. TEIXEIRA  
VICE DIRECTOR OF CIVIL DEFENSE



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



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

May 27, 2011

Mr. Lance Hayashi  
Chief of Civil Engineering  
Detachment 3, 21 Space Operations Squadron  
P. O. Box 868  
Waianae, Hawaii 96792-0868

Dear Mr. Hayashi:

Description of the Proposed Action and Alternatives (DOPPA)

Thank you for the opportunity to review and comment on the proposed demolition of nine buildings and construction of a CE Storage Building located at the Kaena Point Satellite Tracking Station (KPSTS), Honolulu, Hawaii.

We have no comments to provide and find the document addresses all issues very adequately.

If you have any questions, please contact me at (808) 733-4300.

Sincerely,

  
EDWARD T. TEIXEIRA  
Vice Director of Civil Defense

c: TAG  
HIENG

# IICEP Comment: Department of Planning and Permitting

---

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 768-8000 • FAX: (808) 768-6041  
DEPT. WEB SITE: [www.honoluluapp.org](http://www.honoluluapp.org) • CITY WEB SITE: [www.honolulu.gov](http://www.honolulu.gov)

PETER B. CARLSLE  
MAYOR



DAVID K. TANOUÉ  
DIRECTOR  
JIRO A. SUMADA  
DEPUTY DIRECTOR

2011/ELOG-1117 (ET)

June 7, 2011

Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P. O. Box 868  
Wai'anae, Hawai'i 96792-0868

Dear Mr. Hayashi:

Subject: Description of the Proposed Action and Alternatives  
Ka'ena Point Satellite Tracking Station, O'ahu, Hawai'i

We have reviewed the subject Description of the Proposed Action and Alternatives (DOPAA) and offer the following comments:

1. The Draft Environmental Assessment (DEA) should explain how the project will be compatible with and complies with the policies and guidelines of the City's Wai'anae Sustainable Communities Plan (SCP).
2. The proposal involves the demolition of nine buildings and the construction of one new storage building located where buildings 16, 17, and 18 are located. Buildings 14, 16, 17, 18, 21, 32, and 33 are located within the P-1 Restricted Preservation District and buildings 37 and 39 are located within the P-2 General Preservation District. Since the new storage building is located within the P-1 District, the State Department of Land and Natural Resources should be contacted to verify if a Conservation District Use Permit would be required.
3. The nine buildings proposed for demolition and one new storage building appears to be outside of the Special Management Area (SMA). The DEA should confirm that all of these buildings are located outside of the SMA.
4. The Wai'anae SCP places a high priority on the preservation of open space and scenic beauty for projects that may affect the coastal lands, valleys, and mountains in the Wai'anae district. We recommend that the proposed storage building be set back from the bluffs of the Wai'anae mountain range and landscaping be used to preserve the views from the coast line.

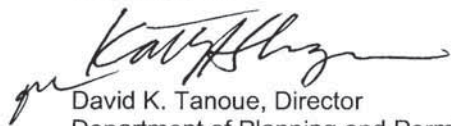


Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
June 7, 2011  
Page 2

Thank you for the opportunity to comment on this matter.

Should you have any questions, please contact Eugene Takahashi of our staff at 768-8035.

Very truly yours,

A handwritten signature in black ink, appearing to read "David K. Tanoue", with a stylized flourish extending to the left.

David K. Tanoue, Director  
Department of Planning and Permitting

DKT:bkg  
853746

# IICEP Comments: Department of Land and Natural Resources

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



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



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

May 27, 2011

MEMORANDUM

*TRE* TO:

**DLNR Agencies:**

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Oahu District
- Historic Preservation

*TRE* FROM:

Charlene Unoki, Assistant Administrator

SUBJECT: Environmental Assessment for Demolition of 9 Buildings & Construction of a Civil Engineering Storage Building

LOCATION: Island of Oahu

APPLICANT: U.S. Air Force

*Charlene*

2011 MAY 27 PM 12:41  
COMMUNICATIONS SECTION

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 10, 2011.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *C. Unoki*  
Date: 01 June 11



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

May 27, 2011

MEMORANDUM

TO: *KL*

**DLNR Agencies:**

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Oahu District
- Historic Preservation

FROM: *10'*

Charlene Unoki, Assistant Administrator

SUBJECT: Environmental Assessment for Demolition of 9 Buildings & Construction of a Civil Engineering Storage Building

LOCATION: Island of Oahu

APPLICANT: U.S. Air Force

*Charlene*

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 10, 2011.

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

Attachments

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

Signed: *[Signature]*

Date: June 1<sup>st</sup>, 2011 *KL*

NEIL ABACROMBIE  
GOVERNOR OF HAWAII



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



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

RECEIVED  
OFFICE OF CONSERVATION  
AND COASTAL LANDS

2011 MAY 27 A 10:28

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

May 27, 2011

MEMORANDUM

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

RECEIVED  
LAND DIVISION  
2011 MAY 27 P 3:13  
DEPT. OF LAND &  
NATURAL RESOURCES  
STATE OF HAWAII

*Charlene*

FROM: Charlene Unoki, Assistant Administrator  
SUBJECT: Environmental Assessment for Demolition of 9 Buildings & Construction of a Civil Engineering Storage Building  
LOCATION: Island of Oahu  
APPLICANT: U.S. Air Force

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 10, 2011.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*  
Date: 5-27-2011

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



54790

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



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

RECEIVED  
STATE PARKS DIV

'11 MAY 31 11:42

DEPT OF LAND &  
NATURAL RESOURCES

May 27, 2011

MEMORANDUM

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

FROM: Charlene Unoki, Assistant Administrator

SUBJECT: Environmental Assessment for Demolition of 9 Buildings & Construction of a Civil Engineering Storage Building

LOCATION: Island of Oahu

APPLICANT: U.S. Air Force

*Charlene*

2011 JUN -9 P 12:34  
RECEIVED  
STATE PARKS DIV

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by June 10, 2011.

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *[Signature]*  
Date: 6/8/11

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



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



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

June 9, 2011

Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Waianae, Hawaii 96792-0868

Dear Mr. Hayashi:

Subject: Environmental Assessment (EA) Addressing the Demolition of 9  
Buildings and Construction of a Civil Engineering Storage Building at  
Kaena Point Satellite Tracking Station (KPSTS)

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

Other than the comments from Division of State Parks, Commission on Water Resource Management, Land Division-Oahu District, Office of Conservation & Coastal Lands, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0414. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Russell Y. Tsuji".  
for Russell Y. Tsuji  
Administrator

# IICEP Comment: State Historic Preservation Division

---

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
HISTORIC PRESERVATION DIVISION  
KAHUUHEWA BUILDING  
601 KAMOKILA BLVD, KAPOLEI HI 96706

WILLIAM J. AHA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
GUY H. KAULUKUKU  
FIRST DEPUTY  
WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONSERVATION  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND ADMINISTRATION ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

DATE: July 01, 2011

LOG: 2011.1536  
DOC: 1107AW01

TO: Mr. Lance Hayashi  
Det 3, 21 SOPS/CE  
P.O. Box 868  
Waianae, HI 96792-0868

SUBJECT: **National Historic Preservation Act (NHPA) Section 106 Consultation**  
**Project:** Description of the Proposed Action and Alternatives (DOPAA) for an Environmental Assessment (EA) Addressing the Demolition of Nine (9) Buildings and Construction of a Civil Engineering Storage Building at Kaena Point Satellite Tracking Station  
**Building Owner:** United States Air Force  
**Location:** Kaena Point Satellite Tracking Station, Hawaii  
**Tax Map Key:** (1) 8-1-01:022

This letter is in response to a communication dated May 13, 2011, received by our office on May 25, 2011. The project location is various locations at the Kaena Point Satellite Tracking Station located at the westernmost tip of the Island of Oahu. The proposed action consists of the demolition of nine (9) facilities and the construction of a new 2,600 square foot storage building. There will be a net change of 5,392 less impervious surfaces post undertaking.

SHPD acknowledges the receipt of the DOPAA, including location maps, building photos and summary of building proposed for demolition. We also appreciate the opportunity to visit the properties and learn more about the operations and facilities at KPSTS.

Although KPSTS is potentially eligible for inclusion on the National Register under the Cold War designation, the nine buildings proposed for demolition are infrastructure of a non-distinctive type and generally would not be interpreted as eligible for the National Register. Therefore, **SHPD concurs that the project as outlined will have no adverse effect on historic property.**

Any questions should be addressed to Angie Westfall, SHPD Architecture Branch Chief, at (808) 692-8032, or [angie.r.westfall@hawaii.gov](mailto:angie.r.westfall@hawaii.gov).

Mahalo

A handwritten signature in black ink that reads "Angie Westfall".

Angie Westfall  
Architecture Branch Chief

cc: Charlene Unoki, Assistant Administrator, DLNR Land Division, P.O. Box 621, Honolulu, HI 96809

# Coastal Zone Management Materials

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## DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

### OFFICE OF PLANNING

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

Telephone: (808) 587-2848  
Fax: (808) 587-2824

LINDA LINGLE  
GOVERNOR  
THEODORE E. LIU  
DIRECTOR  
ABBIEY SETH MAYER  
DIRECTOR  
OFFICE OF PLANNING

Ref. No. P-13156

October 28, 2010

Major Marty W. Easter  
Kaena Point Satellite Tracking Station  
P.O. Box 868  
Waianae, Hawaii 96792-0868

Dear Major Easter:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency  
Concurrence for United States Air Force (USAF) Kaena Point Satellite Tracking  
Station (KPSTS) De Minimis Activities under the Coastal Zone Management Act  
(CZMA)

The request for concurrence with USAF KPSTS de minimis activities under the CZMA and corresponding list of de minimis activities and list of conditions and mitigation measures have been reviewed for consistency with the Hawaii CZM Program, pursuant to 15 CFR 930.33(3). The CZM program conducted a thorough review of the request and a public notice of the CZM review was published in the State of Hawaii Office of Environmental Quality Control's publication, *The Environmental Notice*, on October 8, 2010. The public was provided an opportunity to participate in the review through October 25, 2010. There were no public comments received.

It is our understanding that the KPSTS "De Minimis Activities List" is subject to and bound by full compliance with the corresponding "Conditions and Mitigations Measures." We concur that the listed de minimis activities are expected to have insignificant direct or indirect (cumulative and secondary) coastal effects, and should not be subject to further review by the Hawaii CZM Program, on the basis and condition that the listed de minimis activities are subject to and bound by full compliance with the corresponding conditions and mitigation measures.

The Hawaii CZM Program reserves the right to review, amend, suspend, and/or revoke the USAF KPSTS de minimis activities list whenever it finds that a listed activity or activities will have significant coastal effects. CZM consistency concurrence does not convey approval with any other regulations administered by any State or County agency.

If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

Abbey Seth Mayer  
Director



USAF KPSTS, CZMA *De Minimis* Actions and Conditions/Mitigation Measures

**Table 1 – *de Minimis* Activities List**

No.	Proposed Action	Description	Mitigation/Conditions (see Table 2)
1	New Construction	Construction of new facilities and structures wholly within USAF KPSTS controlled areas, that is similar to present use and, when completed, the use or operation of which complies with existing regulatory requirements.	1, 2, 3, 4, 6, 7, 8, 10
2	Utility Line Activities	Acquisition, installation, operation, construction, maintenance, or repair of utility or communication systems that use rights of way, easements, distribution systems, or facilities on USAF KPSTS controlled property. This includes excavation, backfill or bedding for utility lines, provided there is no change in preconstruction contours.	1, 4, 5, 7, 8, 10
3	Repair & Maintenance	Routine repair and maintenance of buildings, ancillary facilities, or equipment associated with existing operations	1, 5, 7, 8, 10
4	Oil Spill & Hazardous Waste Cleanup	Activities required for the containment, stabilization, removal and clean up of oil and hazardous or toxic waste materials on USAF KPSTS controlled property.	1, 2, 4, 5, 6, 7, 8, 10
5	Scientific Measuring Devices	The installation of devices which record scientific data on USAF KPSTS controlled property.	1, 7, 8, 9, 10
6	Studies and Data Collection and Survey Activities	Studies, data and information gathering, and surveys that involve no permanent physical change to the environment. Includes topographic surveys, surveys for evaluating environmental damage, engineering efforts to support environmental analyses, soil survey sampling, and historic resource surveys.	1,2, 3, 4, 5, 6, 7, 8, 9, 10
7	Demolition	Demolition and disposal involving buildings or structures when done in accordance with applicable regulations and within USAF KPSTS controlled property.	1, 2, 4, 5, 7, 8, 10
8	Mission Changes	Mission changes, base closures/relocations/consolidations, and deployments that would cause long term population increases or decreases in affected areas.	1, 8, 10

USAF KPSTS, CZMA *De Minimis* Actions and Conditions/Mitigation Measures

No.	Proposed Action	Description	Mitigation/Conditions (see Table 2)
9	Limitation of Access to Property	Permanent closure or limitation of access to any areas that were open previously to public use, such as roads or recreational purposes (provided the access is not required by established agreements with State of Hawaii, private industry, etc.	1, 8, 10
10	Environmental Management Activities	Environmental management activities within the USAF KPSTS controlled areas including but not limited to, activities such as vegetation removal, ditch clearing, erosion control, sediment removal, pest control, invasive species removal, construction related to protecting endangered species and wildlife, and actions prescribed by the Integrated Natural Resource Management Plan and supporting management plans (such as the pest management plan, invasive species management plan, wildland fire management plan, etc) .	1, 2, 6, 7, 8, 10
11	Signs, Towers & Emergency beacons	Installation, operation, and maintenance of signs, emergency beacons & towers (such as cell phone antennas, communication towers, wind-energy towers, etc) within USAF KPSTS controlled property.	1, 2, 3, 4, 5, 6, 7, 8, 10
12	Alternative Energy Research	Installation, operation, replacement and removal of alternative energy research structures/equipment taking place within USAF KPSTS controlled areas.	1, 2, 4, 5, 6, 7, 8, 10
13	Surface Maintenance	Upgrading and/or repairing existing surfaces, such as concrete slabs, resurfacing of roads and trails as long as there is no increase in foot print.	1, 2, 3, 4, 5, 7, 8, 10
14	Walkway/Trail Installation	Constructing walkways, sidewalks, running paths as long as there is no increase in footprint.	1, 2, 3, 4, 5, 7, 8, 10

**Table 2 – Conditions and Mitigation Measures**

No.	Project General Conditions & Mitigation Measures
1	United States Air Force (USAF) Kaena Point Satellite Tracking Station (KPSTS) controlled property refers to leased land areas, rights of way, easements, roads, safety zones, danger zones under active USAF control.
2	No contamination (trash or debris disposal, alien species introductions, etc.) of adjacent environments shall result from project-related activities
3	Fueling of project-related vehicles and equipment should take place away from waterways and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate cleanup of accidental petroleum releases.
4	Any soils exposed as part of the project shall be protected from erosion (e.g. with plastic sheeting, filter fabric, etc.) after exposure and stabilized as soon as practicable (e.g. with vegetation matting, hydroseeding, etc).
5	If applicable, Section 106, of the National Historic Preservation Act (NHPA), consultation requirements must be met. Also, follow guidelines in the area specific Integrated Cultural Resource Management Plan (ICRMP).
6	USAF / KPSTS shall evaluate the possible impact of the action on the species and habitats protected under the Endangered Species Act (ESA). If the AF determines that no such species or habitats will be affected by the action, then US Fish & Wildlife Service (USFWS) concurrence is not required. Should it be determined by the AF or USFWS that the action may affect any such species or habitat, informal or formal consultation will be initiated by the USAF as required by Section 7 (Interagency Cooperation) of the ESA.
7	If any listed species enters the area during conduct of construction activities, all activities should cease until the animal(s) voluntarily depart the area.
8	The National Environmental Policy Act (NEPA) review process will be completed.
9	The training, testing, and evaluation will be conducted in accordance with applicable standard operating procedures protective of the environment.
10	As a general rule, a CZM federal consistency review application should be submitted for any projects for which an Environmental Assessment (EA) is prepared. In the event that an EA may not require initiation of the CZM process, USAF at KPSTS shall consult State CZM for such projects. Consultation/notification can be sent via email to <a href="mailto:Jnakagaw@debedt.hawaii.gov">Jnakagaw@debedt.hawaii.gov</a> .



DEPARTMENT OF THE AIR FORCE  
50TH SPACE WING (AFSPC)

10 June 11

Major Marty W. Easter  
Kaena Point Satellite Tracking Station  
PO Box 868  
Waianae HI 96792-0868

Mr. John Nakagawa  
Department of Business, Economic Development and Tourism  
Office of Planning – CZM Program  
235 South Beretania St, 6<sup>th</sup> Floor  
Honolulu HI 96813

Subject: Notification of Coastal Zone Management (CZM) for *de minimis* Exemptions Applied to Environmental Assessment (EA) at Kaena Point Satellite Tracking Station (KPSTS)


Dear Mr. Nakagawa,

This is to provide notification and obtain your concurrence with the use of KPSTS' CZM *de minimis* exemptions and conditions/mitigations, approved by your office on October 28, 2010, for the draft *Proposed Action and Alternatives for the Environmental Assessment Addressing the Demolition of Nine Buildings and Construction of a Civil Engineering Storage Building at Kaena Point Satellite Tracking Station (KPSTS)*.

We have determined that CZM *de minimis* exemptions No. 1 and No. 7 respectively apply to the construction and demolition aspects of the Proposed Action. We will implement the Conditions/Mitigation measures that are required for those exemptions.

To fulfill Condition/Mitigation Measure No. 10, which requires consultation/notification with the State CZM for Proposed Actions that result in an EA, KPSTS requests your concurrence with the selected exemptions, and that a CZM Consistency Determination is not required for the EA.

Thank you for your assistance. Should you have any questions or require further information, my point of contact is Lance Hayashi, 697-4312.

  
Marty W. Easter, Major, USAF  
Commander



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

**OFFICE OF PLANNING**

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

NEIL ABERCROMBIE  
GOVERNOR  
RICHARD C. LIM  
DIRECTOR  
MARY ALICE EVANS  
DEPUTY DIRECTOR  
JESSE K. SOUKI  
DIRECTOR  
OFFICE OF PLANNING

Telephone: (808) 587-2846  
Fax: (808) 587-2824

Ref. No. P-13320

June 13, 2011

Major Marty W. Easter  
Kaena Point Satellite Tracking Station  
P.O. Box 868  
Waianae, Hawaii 96792-0868

Dear Major Easter:

Subject: United States Air Force (USAF) Kaena Point Satellite Tracking Station  
(KPSTS) Coastal Zone Management Act (CZMA) De Minimis Activities List

In response to your notification of the applicability of the approved USAF KPSTS CZMA de minimis activities list to the proposed demolition of nine buildings and construction of a civil engineering storage building at KPSTS, we concur with the use of the de minimis list.

Thank you for your CZMA federal consistency coordination. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,



Jesse K. Souki  
Director

c: ✓ Mr. Lance Hayashi, KPSTS  
Ms. Lynn Cruz, KPSTS

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## **APPENDIX C**

### **SITE PHOTOGRAPHS**





# Appendix C - Site Photographs

## Photographs of the Buildings Proposed for Demolition at KPSTS



**Building 21**



**Building 21**



**Building 17**



**Building 17**



**Building 18**



**Building 18**



**Building 16**



**Buildings 16 and 17**



**Building 14**



**Building 32**



**Building 33**



**Buildings 37 and 39**



**Building 37**



**Building 39**

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## **APPENDIX D**

### **AIR QUALITY EMISSIONS CALCULATIONS**



## Appendix D – Air Quality Emissions Calculations

---

EA Addressing the Demolition of Nine Buildings and Construction of a CE Storage Building at KPSTS

<b>Summary</b>	Summarizes total emissions by calendar year for the Proposed Action
<b>Combustion</b>	Estimates emissions from non-road equipment exhaust.
<b>Fugitive</b>	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
<b>Grading</b>	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
<b>Construction Commuter</b>	Estimates emissions for construction workers commuting to the site.
<b>AQCR Tier Report</b>	Summarizes total emissions for the State of Hawaii Air Quality Control Region Tier report for 2002, to be used to compare the Proposed Action to regional emissions.

*Summary  
Estimated Emissions for the Proposed Action*

EA Addressing the Demolition of Nine Buildings and Construction of a CE Storage Building at KPSTS

Air Quality Emissions from the Proposed Action

	NO <sub>x</sub> (ton)	VOC (ton)	CO (ton)	SO <sub>2</sub> (ton)	PM <sub>10</sub> (ton)	PM <sub>2.5</sub> (ton)	CO <sub>2</sub> (ton)
Combustion	4,930	0.431	2,167	0.380	0.353	0.342	558,795
Fugitive Dust	-	-	-	-	0.277	0.028	-
Commuter	0.053	0.053	0.476	0.001	0.005	0.003	63,111
<b>TOTAL</b>	<b>4,983</b>	<b>0.483</b>	<b>2,643</b>	<b>0.380</b>	<b>0.635</b>	<b>0.373</b>	<b>621,906</b>

Note: Total PM<sub>10/2.5</sub> fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO<sub>2</sub> emissions converted to metric tons = **564,069 metric tons**  
 State of Hawai'i CO<sub>2</sub> emissions = **19,700,000 metric tons (U.S. DOE/EIA 2008)**  
 Percent of Hawai'i CO<sub>2</sub> emissions = **0.00286% metric tons**  
 United States CO<sub>2</sub> emissions = **5,814,400,000 metric tons (U.S. DOE/EIA 2008)**  
 Percent of United States CO<sub>2</sub> emissions = **0.000010% metric tons**

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2010. Table 3. State Emissions by Year (Million Metric Tons of Carbon Dioxide). Available online <[http://www.eia.doe.gov/oi/air/1605/state/state\\_emissions.html](http://www.eia.doe.gov/oi/air/1605/state/state_emissions.html)>. Data released 26 October 2010. Data accessed 13 May 2011.

Since future year budgets were not readily available, actual 2002 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the Proposed Action is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

State of Hawai'i Intrastate Air Quality Control Region

Year	Point and Area Sources Combined					
	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
2002	61,833	44,190	265,776	31,000	30,206	7,360

Source: USEPA-AirData NET Tier Report (<http://www.epa.gov/air/data/geosel.html>). Site visited on 28 March 2011.

Air Emissions from the Proposed Action

Regional Emissions	Point and Area Sources Combined					
	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
4,983	44,190	265,776	31,000	30,206	7,360	
0.008%	0.001%	0.001%	0.001%	0.002%	0.005%	

Regional Emissions  
 Emissions  
 % of Regional



EA Addressing the Demolition of Nine Buildings and Construction of a CE Storage Building at KPSTS

Combustion Emissions

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, PM<sub>10</sub>, and CO<sub>2</sub> due to Construction and Demolition

General Construction and Demolition Activities

Area Disturbed

- 1.) Demolish Building 14 100 ft<sup>2</sup>
- 2.) Demolish Building 16 112 ft<sup>3</sup>
- 3.) Demolish Building 17 615 ft<sup>4</sup>
- 4.) Demolish Building 18 400 ft<sup>5</sup>
- 5.) Demolish Building 21 36 ft<sup>6</sup>
- 6.) Demolish Building 32 472 ft<sup>7</sup>
- 7.) Demolish Building 33 2,120 ft<sup>8</sup>
- 8.) Demolish Building 37 1,000 ft<sup>9</sup>
- 9.) Demolish Building 39 3,137 ft<sup>10</sup>
- 10.) Construct New Civil Engineering Storage Building 2,600 ft<sup>3</sup>

Total Construction Area:	2,600 ft <sup>2</sup>	10
Total Demolition Area:	7,992 ft <sup>2</sup>	1-9
Total Pavement Area:	0.2 acres	(none)
Total Disturbed Area:	10,592 ft <sup>2</sup>	
Construction Duration:	12 months	
Annual Construction Activity:	240 days	

Assume 12 months, 4 weeks per month, 5 days per week.

Project Combustion  
Estimated Emissions for the Proposed Action

**Emission Factors Used for Construction Equipment**

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0  
 Emission factors are taken from the NONROAD model and were provided to eM by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007. Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Equipment	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Buildozer	1	13.60	95.742%	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
<b>Total per 10 acres of activity</b>	<b>3</b>	<b>41.64</b>	<b>2.58</b>	<b>15.71</b>	<b>0.83</b>	<b>2.55</b>	<b>2.47</b>	<b>4941.53</b>

**Paving**

Equipment	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
<b>Total per 10 acres of activity</b>	<b>4</b>	<b>45.37</b>	<b>2.61</b>	<b>18.58</b>	<b>0.91</b>	<b>2.78</b>	<b>2.69</b>	<b>5623.96</b>

**Demolition**

Equipment	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Loader	1	13.45	0.99	5.53	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
<b>Total per 10 acres of activity</b>	<b>2</b>	<b>31.81</b>	<b>1.89</b>	<b>12.58</b>	<b>0.64</b>	<b>1.92</b>	<b>1.87</b>	<b>3703.07</b>

**Building Construction**

Equipment <sup>d</sup>	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
<b>Stationary</b>								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
<b>Mobile (non-road)</b>								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.97	0.66	2.39	0.65	0.50	0.49	931.93
<b>Total per 10 acres of activity</b>	<b>6</b>	<b>39.40</b>	<b>3.13</b>	<b>17.38</b>	<b>3.12</b>	<b>2.83</b>	<b>2.74</b>	<b>4464.51</b>

Note: Footnotes for tables are on following page

EA Addressing the Demolition of Nine Buildings and Construction of a CE Storage Building at KPSTS

Architectural Coatings

Equipment	No. Req'd <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup>	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity. (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO<sub>2</sub> emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

Project Combustion  
Estimated Emissions for the Proposed Action

**PROJECT-SPECIFIC EMISSION FACTOR SUMMARY**

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO <sub>x</sub>	VOC	CO	SO <sub>2</sub> **	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Grading Equipment	1	41,641	2,577	15,710	0.833	2,546	2,469	4941,526
Paving Equipment	1	45,367	2,606	18,578	0.907	2,776	2,693	5623,957
Demolition Equipment	1	31,808	1,886	12,584	0.636	1,923	1,865	3703,074
Building Construction	1	39,396	3,130	17,382	3.116	2,829	2,744	4464,512
Air Compressor for Architectural Coating	1	3,574	0.373	1,565	0.251	0.309	0.300	359,773
Architectural Coating**			4,156					

\*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

\*\*Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO<sub>x</sub> = (Total Grading NO<sub>x</sub> per 10 acre)/(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft <sup>2</sup> )	Total Area (acres)	Total Days
Grading:	10,592	0.2	1
Paving:	0	0.00	0
Demolition:	7,992	0.18	9
Building Construction:	2,600	0.06	240
Architectural Coating:	2,600	0.06	20

(from "Grading" worksheet)

(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The "Total Days" estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for "Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base", which provides an estimate of square feet paved per day. There is also an estimate for "Plain Cement Concrete Pavement, however the estimate for asphalt is used because it is more conservative.

The "Total Days" estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from "Building Demolition - Small Buildings, Concrete", assuming a height of 30 feet for a two-story building; from "Building Footings and Foundations Demolition - 6" Thick, Plain Concrete", and from "Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced". Paving is double-weighted since projects typically involve more paving demolition.

The "Total Days" estimate for building construction is assumed to be 230 days, unless project-specific data is known.

**Total Project Emissions by Activity (lbs)**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Grading Equipment	41,641	2,58	15,71	0.83	2,55	2,47	4,942
Paving	-	-	-	-	-	-	0
Demolition	291,79	17,30	115,44	5,84	17,64	17,11	33,970
Building Construction	9,455,12	751,15	4,171,75	747,92	678,97	658,60	1,077,483
Architectural Coatings	71,48	90,58	31,31	5,02	6,19	6,00	7,195
<b>Total Emissions (lbs):</b>	<b>9,860,03</b>	<b>861,61</b>	<b>4,334,21</b>	<b>759,62</b>	<b>705,34</b>	<b>684,18</b>	<b>1,117,590</b>

**Results: Total Project Annual Emission Rates**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Total Project Emissions (lbs)	9,860,03	861,61	4,334,21	759,62	705,34	684,18	1,117,590
Total Project Emissions (tons)	4.93	0.43	2.17	0.38	0.35	0.34	558.80

Project Combustion  
Estimated Emissions for the Proposed Action

EA Addressing the Demolition of Nine Buildings and Construction of a CE Storage Building at KPSTS

**Construction Fugitive Dust Emissions**

**Construction Fugitive Dust Emission Factors**

	Emission Factor	Units	Source
Construction and Demolition Activities	0.19 ton PM <sub>10</sub> /acre-month	MRI 1996; EPA 2001; EPA 2006	
New Road Construction	0.42 ton PM <sub>10</sub> /acre-month	MRI 1996; EPA 2001; EPA 2006	

**PM<sub>2.5</sub> Emissions**

PM <sub>2.5</sub> Multiplier	0.10	(10% of PM <sub>10</sub> emissions assumed to be PM <sub>2.5</sub> )	EPA 2001; EPA 2006
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**Control Efficiency**

	0.50	(assume 50% control efficiency for PM <sub>10</sub> and PM <sub>2.5</sub> emissions)	EPA 2001; EPA 2006
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**Project Assumptions**

**New Roadway Construction (0.42 ton PM<sub>10</sub>/acre-month)**  
 Duration of Construction Project - 0 months  
 Area - 0 acres

**General Construction and Demolition Activities (0.19 ton PM<sub>10</sub>/acre-month)**  
 Duration of Project - 12 months  
 Area - 0.2 acres

	Project Emissions (tons/year)		
	PM <sub>10</sub> uncontrolled	PM <sub>10</sub> controlled	PM <sub>2.5</sub> uncontrolled
New Roadway Construction	0.00	0.00	0.00
General Construction Activities	0.55	0.28	0.06
<b>Total</b>	<b>0.55</b>	<b>0.28</b>	<b>0.06</b>

	Project Emissions (tons/year)		
	PM <sub>10</sub> uncontrolled	PM <sub>10</sub> controlled	PM <sub>2.5</sub> uncontrolled
New Roadway Construction	0.00	0.00	0.00
General Construction Activities	0.55	0.28	0.06
<b>Total</b>	<b>0.55</b>	<b>0.28</b>	<b>0.06</b>

Project Fugitive  
 Estimated Emissions for the Proposed Action

**Construction Fugitive Dust Emission Factors**

**General Construction Activities Emission Factor**

**0.19 ton PM<sub>10</sub>/acre-month Source:** MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM<sub>10</sub>/acre-month for sites without large-scale cutfill operations. A worst-case emission factor of 0.42 ton PM<sub>10</sub>/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM<sub>10</sub>/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM<sub>10</sub>/acre-month) and 75% of the average emission factor (0.11 ton PM<sub>10</sub>/acre-month). The 0.19 ton PM<sub>10</sub>/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM<sub>10</sub>/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM<sub>10</sub> and PM<sub>2.5</sub> in PM nonattainment areas.

**New Road Construction Emission Factor**

**0.42 ton PM<sub>10</sub>/acre-month Source:** MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM<sub>10</sub>/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM<sub>10</sub>/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

**PM<sub>2.5</sub> Multiplier**

PM<sub>2.5</sub> emissions are estimated by applying a particle size multiplier of 0.10 to PM<sub>10</sub> emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

**0.50**

**Control Efficiency for PM<sub>10</sub> and PM<sub>2.5</sub>**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM<sub>10</sub> and PM<sub>2.5</sub> in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

**References:**

- EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency, March 2001.
- EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency, July 2006.
- MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

**Grading Schedule**

Estimate of time required to grade a specified area.

Input Parameters  
 Construction area: 0.2 acres/yr (from Combustion Worksheet)  
 Qty Equipment: 3.0 (calculated based on 3 pieces of equipment for every 10 acres)

**Assumptions:**

Terrain is mostly flat.  
 An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.  
 200 hp bulldozers are used for site cleaning.  
 300 hp bulldozers are used for stripping, excavation, and backfill.  
 Vibratory drum rollers are used for compacting.  
 Stripping, Excavation, Backfill and Compaction require an average of two passes each.  
 Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Cleaning	Dozer & rake, medium brush	8	acre/day	8	0.13	0.24	0.03
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	0.24	0.12
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	0.12	0.12
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	0.12	0.05
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	0.24	0.09
<b>TOTAL</b>								<b>0.41</b>

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 0.41  
 Qty Equipment: 3.00  
 Grading days/yr: 0.14

**Construction Commuter Emissions**

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors from the South Coast Air Quality Management District (SCAQMD) EMFAC 2007 (v 2.3), Model (on-road) were used. These emission factors are available online at <http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>.

Assumptions:  
 Passenger vehicle emission factors for scenario year 2010 are used.  
 The average roundtrip commute for a construction worker = 40 miles  
 Number of construction days = 240 days  
 Number of construction workers (daily) = 12 people

*Passenger Vehicle Emission Factors for Year 2010 (lbs/mile)*

NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
0.00091814	0.00091389	0.00826276	0.00001077	0.00008698	0.00005478	1.09568235

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Last updated April 24, 2008. Available online: <http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>. Accessed 27 May 2009.

Notes:

The SCAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC.

**Construction Commuter Emissions**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
lbs	105.770	105.291	951.870	1.241	10.020	6.311	128222.607
tons	0.053	0.053	0.476	0.0006	0.0050	0.0032	63.111

Example Calculation: NO<sub>x</sub> emissions (lbs) = 60 miles/day \* NO<sub>x</sub> emission factor (lb/mile) \* number of construction days \* number of workers



EA Addressing the Demolition of Nine Buildings and Construction of a CE Storage Building

State of Hawai'i Air Quality Control Region

Row #	State	County	Point Source Emissions					Area Source Emissions (Non-Point and Mobile Sources)				
			CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>
1	HI	Hawai'i	286	1,620	702	285	4,745	156	6,001	1,182	1,200	6,606
2	HI	Honolulu	2,102	14,038	2,082	1,610	15,974	2,396	13,202	2,490	3,623	26,163
3	HI	Kalawao	0	0	0	0	0	0	8,08	154	3,78	5,46
4	HI	Kauai	293	2,099	55.1	52.7	286	149	2,661	462	225	3,131
5	HI	Mauai	6,624	5,617	746	396	3,970	741	3,992	728	973	4,843
Grand Total			9,305	23,374	3,585	2,344	24,975	3,442	26,621	5,016	6,025	40,748

SOURCE:

<http://www.epa.gov/air/data/geose.html>

USEPA - AirData NET Tier Report

\*Net Air pollution sources (area and point) in tons per year (2002)

Site visited on 13 May 2011.

State of Hawai'i Air Quality Control Region (40 CFR 81.76)

	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC
Honolulu County	165,026	38,057	15,284	4,100	19,597	28,559
State of Hawai'i AQCR	285,776	61,833	30,206	7,360	31,000	44,190

AQCR Tier Report  
Estimated Emissions for the Proposed Action

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