FINAL

ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A NEW CIVIL ENGINEERING WORKSHOP AT BELLOWS AIR FORCE STATION, O'AHU, HAWAI'I

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14. ABSTRACT

The ability of the 718 CES to support engineering functions and requirements at Bellows AFS is currently diminished. The existing CE workshop (Building 544) was deemed inadequate in size to support mission requirements, is considered to be in substandard condition, and is dilapidated beyond repair for occupational use. However, Building 544 could be used for storage. In addition, Building 544 which was constructed in 1941, has frequent roof leaks and the window air conditioning units do not provide adequate cool air to all the necessary areas. The existing lighting is inadequate and the electrical system does not have enough capacity to accommodate all the CE functions. In addition, the building layout is not properly configured for a workshop and there are not adequate showers and locker space for all staff members. Under the Proposed Action, Bellows AFS proposes to construct an approximately 6,000-square-foot (ft2) CE workshop, install utilities to the new CE workshop, and construct one properly sized septic tank and leach field to support the new workshop. This new CE workshop for the Facilities Maintenance Team would be a pre-engineered metal building including air-conditioned office space, restrooms, locker room and break/kitchen area. The non-air-conditioned shop portion of the workshop would have a dust collection system and a plumbed eye wash station. This EA evaluates the Proposed Action and alternatives, including the No Action Alternative. Resource areas included in the impact analysis include cultural resources, geological resources, biological resources, water resources, air quality, safety, infrastructure and transportation, and hazardous materials and wastes. Inquiries regarding this document should be directed to Craig Gorsuch, Det 2, 18 FSS/CEE Environmental Program Manager, 515 Tinker Road, Waimanalo, Hawai?i 96795-1903. Requests can also be made by addressing email to craig.gorsuch.ctr@hickam.af.mil.

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)

1.0 NAME OF THE PROPOSED ACTION

Construction of a New Civil Engineering (CE) Workshop at Bellows Air Force Station (AFS), O'ahu, Hawai'i.

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to construct a new CE workshop to support CE functions and mission requirements, improve working conditions for CE personnel, provide adequate working space for staff members, and bring CE facilities and programs into compliance with Air Force Handbook (AFH) 32-1084, *Facility Requirements*, *Civil Engineer Squadron Design Guide* and Air Force Instruction (AFI) 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects*.

The Proposed Action is needed because the ability of 18th Force Support Squadron, Detachment 2 (18 FSS, Det 2) to support engineering functions and requirements at Bellows AFS is currently diminished. The existing CE workshop (Building 544) was deemed inadequate in size to support mission requirements, is considered to be in substandard condition, and is dilapidated beyond economic repair for occupational use. However, Building 544 could be used for storage. In addition, Building 544, which was constructed in 1941, has frequent roof leaks, window air-conditioning units do not provide adequate cool air to all necessary areas, existing lighting is inadequate, and the electrical system does not have enough capacity to accommodate all the CE functions. In addition, the building layout is not properly configured for a workshop and there are not adequate showers and locker space for all staff members. Without a new CE workshop, Bellows AFS would continue to experience difficulty meeting U.S. Air Force (USAF) CE mission requirements.

3.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action. Bellows AFS proposes to construct a new CE workshop, install utilities to the new CE workshop, and construct one properly sized septic tank and leach field to support the new workshop. The proposed CE workshop project site is located on the northern portion of Runway 18, one of two abandoned, deteriorated runways (18/36 and 3L/21RR) on Bellows AFS. The proposed CE workshop site has been previously disturbed and consists mostly of paved surfaces. The lands adjacent to the proposed CE workshop site consist of other CE facilities such as buildings and aboveground storage tanks. All construction specifications for building size and wastewater system capacity are currently approximate, since the proposed CE workshop has not been formally designed. The Proposed Action would consist of the following construction activities:

- Construct an approximately 6,000-square-foot (ft^2) CE workshop.
- Install utilities for the CE workshop.
- Construct one properly sized septic tank and leach field to support the new workshop. The septic tank and leach field (individual wastewater system [IWS]) would be constructed according to Hawai'i Administrative Rules (HAR) 11-62, *Wastewater Systems* requirements, which specify a 10,000 ft^2 usable area for one IWS with a total wastewater flow not to exceed 1,000 gallons per day.

This new CE workshop for the Facilities Maintenance Team is proposed as a pre-engineered, metal building including air-conditioned office space, restrooms, locker room, and break/kitchen area. The non-air-conditioned shop portion of the workshop would include a dust collection system and a plumbed eye wash station. One leach field would be required to remove contaminants and impurities from liquid that emerges from the septic tank. The leach field would be designed in accordance with contractor's

specifications and environmental regulations. All required utilities are located immediately adjacent to or within the proposed CE workshop location. The existing CE workshop (Building 544) would not be demolished and is planned for future storage. The Proposed Action would take approximately 12 months to complete and would occur in 2010.

Alternative 1. Under Alternative 1, Bellows AFS would conduct all of the actions described under the Proposed Action; however, the proposed site would be 50 feet north of Building 544. In addition, Building 548 (130 ft^2) would be demolished. The site proposed for Alternative 1 consists of an unpaved, graded area bordered by dense vegetation consisting of trees on the west and northeast.

No Action Alternative. Under the No Action Alternative, Bellows AFS would not construct a new CE workshop, install new utilities, or construct a septic tank and leach filed. Under the No Action Alternative, the 18 FSS, Det 2 engineering programs would continue to be held in facilities that are inadequate in size and are considered to be in substandard condition. Without a new CE workshop, Bellows AFS would continue to experience difficulty meeting USAF engineering mission requirements. In addition, existing CE workshop facilities would continue to deteriorate and eventually would be condemned because of occupational safety standards, leaving the 18 FSS, Det 2 with no engineering support facilities required to keep Bellows AFS functional.

4.0 SUMMARY OF ENVIRONMENTAL EFFECTS

The public and regulatory agency scoping process focused the analyses on the following environmental resources: cultural resources, geological resources, biological resources, water resources, air quality, safety, infrastructure and transportation, and hazardous materials and wastes. Details of the environmental consequences can be found in the Environmental Assessment (EA), which is hereby incorporated by reference.

5.0 CONCLUSION

Based on the description of the Proposed Action as set forth in the EA, all activities were found to comply with applicable standards of environmental quality and appropriate subject matter has been coordinated with Federal, state, and local agencies. The attached EA and a draft of this FONSI were made available to the public for a 30-day review period. Agencies were coordinated with throughout the EA process and their comments were incorporated into the analysis of potential environmental impacts performed as part of this EA.

6.0 FINDINGS

Based on the information and analysis presented in the EA conducted in accordance with the requirements of the National Environmental Policy Act; the Council on Environmental Quality Regulations; implementing USAF regulations set forth in 32 Code of Federal Regulations 989 (*Environmental Impact Analysis Process*), as amended; and a review of the public and agency comments submitted during the 30-day public comment period, I conclude that implementation of the Proposed Action would not result in significant impacts to the quality of the human or natural environment. For these reasons, a FONSI is approved and preparation of an Environmental Impact Statement is not warranted. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

Kenneth S Wilsbach

KENNETH S. WILSBACH
Brigadier General, USAF
Commander, 18th Wing

2 APR 2010
Date

ACRONYMS AND ABBREVIATIONS

718 CES	718th Civil Engineering Squadron
15 AW	15th Air Wing
µg/m^3	micrograms per cubic meter
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing materials
AFB	Air Force Base
AFH	Air Force Handbook
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AFS	Air Force Station
AOC	area of concern
APE	Area of Potential Effect
AQCR	air quality control region
AT/FP	Anti-Terrorism/Force Protection
BMP	best management practice
CAA	Clean Air Act
CALWLPA	Conservation of Aquatic Life, Wildlife, and Land Plants Act
CE	Civil Engineering
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CES	Civil Engineering Squadron
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
Det 2, 18 SVS	Detachment 2, 18 Services
dBA	A-weighted decibels
DLNR	Hawai‘i Department of Land and Natural Resources
DNL	day-night average A-weighted sound level
DOD	Department of Defense
DOH	Department of Health, State of Hawai‘i
DOPAA	Description of the Proposed Action and Alternatives
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
ft^2	square feet
GHG	greenhouse gas
HAP	hazardous air pollutant

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HAR	Hawai‘i Administrative Rules
HQ	headquarters
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IWS	Individual Wastewater System
LBP	lead-based paint
MBTA	Migratory Bird Treaty Act
MCTAB	Marine Corps Training Area Bellows
MFH	Military Family Housing
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NFA	no further action
NFRAP	No Further Remedial Action Planned
NHOs	Native Hawaiian Organizations
NIOSH	National Institute for Occupational Safety and Health
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OP	Office of Planning
ORMP	Ocean Resources Management Plan
OSHA	Occupational Safety and health Administration
O_3	Ozone
Pb	lead
PCB	polychlorinated biphenyl
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
SAAQS	State Ambient Air Quality Standards
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_X	sulfur oxides
tpy	tons per year
TSCA	Toxic Substance Control Act
UIC	Underground Injection Control
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USAF	U.S. Air Force
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USMC	U.S. Marine Corps
VOC	volatile organic compounds

COVER SHEET

FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A NEW CIVIL ENGINEERING WORKSHOP
AT BELLOWS AIR FORCE STATION, O'AHU, HAWAI'I

Responsible Agencies: United States Air Force (USAF), Air Force Center for Engineering and the Environment (AFCEE), Pacific Air Forces Command (PACAF) and 718th Civil Engineering Squadron (718 CES).

Affected Location: Bellows Air Force Station (AFS), Waimanalo, O'ahu, Hawai'i.

Proposed Action: Construct a new Civil Engineering (CE) workshop at Bellows AFS.

Report Designation: Final Environmental Assessment (EA).

Abstract: The ability of the 718 CES to support engineering functions and requirements at Bellows AFS is currently diminished. The existing CE workshop (Building 544) was deemed inadequate in size to support mission requirements, is considered to be in substandard condition, and is dilapidated beyond repair for occupational use. However, Building 544 could be used for storage**.** In addition, Building 544, which was constructed in 1941, has frequent roof leaks and the window air conditioning units do not provide adequate cool air to all the necessary areas. The existing lighting is inadequate and the electrical system does not have enough capacity to accommodate all the CE functions. In addition, the building layout is not properly configured for a workshop and there are not adequate showers and locker space for all staff members.

Under the Proposed Action, Bellows AFS proposes to construct an approximately 6,000-square-foot (ft^2) CE workshop, install utilities to the new CE workshop, and construct one properly sized septic tank and leach field to support the new workshop. This new CE workshop for the Facilities Maintenance Team would be a pre-engineered metal building including air-conditioned office space, restrooms, locker room, and break/kitchen area. The non-air-conditioned shop portion of the workshop would have a dust collection system and a plumbed eye wash station.

This EA evaluates the Proposed Action and alternatives, including the No Action Alternative. Resource areas included in the impact analysis include cultural resources, geological resources, biological resources, water resources, air quality, safety, infrastructure and transportation, and hazardous materials and wastes.

Inquiries regarding this document should be directed to Craig Gorsuch, Det 2, 18 FSS/CEE, Environmental Program Manager, 515 Tinker Road, Waimanalo, Hawai'i 96795-1903. Requests can also be made by addressing email to craig.gorsuch.ctr@hickam.af.mil.

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ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A NEW CIVIL ENGINEERING WORKSHOP AT BELLOWS AIR FORCE STATION, O'AHU, HAWAI'I

AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
AND
718TH CIVIL ENGINEER SQUADRON
KADENA AIR BASE, JAPAN

MARCH 2010

FINAL
ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A NEW CIVIL ENGINEERING WORKSHOP
AT BELLOWS AIR FORCE STATION, O'AHU, HAWAI'I

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1. Purpose of and Need for the Proposed Action

This Environmental Assessment (EA) describes a proposal from Bellows Air Force Station (AFS) to construct a new Civil Engineering (CE) workshop, install utilities to the new CE workshop, and construct one properly sized septic tank and leach field to support the new workshop. This section presents the purpose of and need for the Proposed Action, the location and mission of Bellows AFS, a summary of key environmental compliance requirements, and an introduction to the organization of this document and the EA.

1.1 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to construct a new CE workshop to support CE functions and mission requirements, improve working conditions for CE personnel, provide adequate working space for staff members, and bring CE facilities and programs into compliance with Air Force Handbook (AFH) 32-1084, *Facility Requirements* (USAF 1996), *Civil Engineer Squadron Design Guide* (USAF 1999), and Air Force Instruction (AFI) 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects* (USAF 1994).

The 718th Civil Engineering Squadron (718 CES) operates and maintains all real property on Bellows AFS. The 718 CES also ensures the potable water system is in compliance with state regulations by monitoring 27 fire hydrants, 10 cross contamination devices, and 80 septic systems. The 718 CES provides facility maintenance support to more than 100 facilities and maintains two service contracts for refuse collection and grounds maintenance. The 718 CES also plays a large role in disaster/storm recovery by providing first responders to damaged power lines, water line breaks, and downed trees.

The Proposed Action is needed because the 718 CES's ability to support engineering functions and requirements at Bellows AFS is currently diminished. The existing CE workshop (Building 544) was deemed inadequate in size to support mission requirements, is considered to be in substandard condition, and is dilapidated beyond repair for occupational use. However, Building 544 could be used for storage. In addition, Building 544, which was constructed in 1941, has frequent roof leaks, window air-conditioning units do not provide adequate cool air to all necessary areas, existing lighting is inadequate, and the electrical system does not have enough capacity to accommodate all the CE functions. Finally, the building layout is not properly configured for a workshop and there are not adequate showers and locker space for all staff members. Without a new CE workshop, Bellows AFS would continue to experience difficulty meeting U.S. Air Force (USAF) CE mission requirements.

1.2 Bellows AFS Location and Mission

Bellows AFS and the Marine Corps Training Area Bellows (MCTAB) consist of approximately 1,495 acres on the windward, southeastern side of the Island of O'ahu, Hawai'i (see **Figure 1-1**). The installation is approximately 6 miles southeast of Kaneohe Marine Corps Base, Hawai'i, and 6 miles west of Makapu Point. The southern portion of Kailua borders the installation on the northeast and Waimanalo adjoins the installation on the south. Bellows AFS is adjacent to the MCTAB (see **Figure 1-2**). MCTAB was originally USAF lands, which were transferred to the U.S. Marine Corps in 1999. Hickam Air Force Base (AFB) is approximately 40 minutes to the east, accessible via Interstates H1 and H3. Immediately off Kalanianaole Highway is the first of two entrance gates. The first gate is manned during the week with limited access to military personnel by Bellows AFS Security Forces. In 1999, a Memorandum of Agreement was signed with the U.S. Marines Corps (USMC) giving them the land between the first gate and the second gate for beach training. During the weekend, the first gate is unmanned

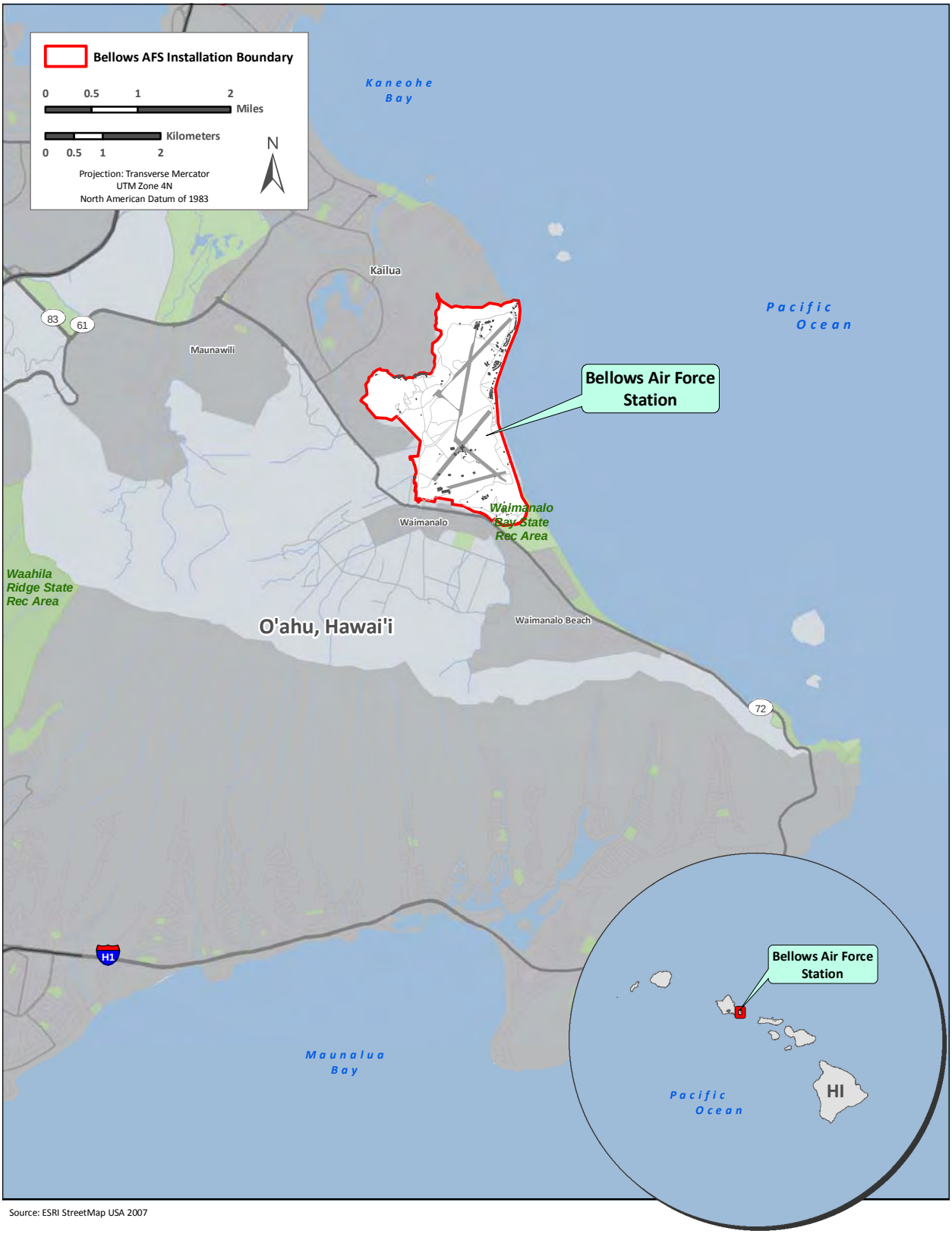
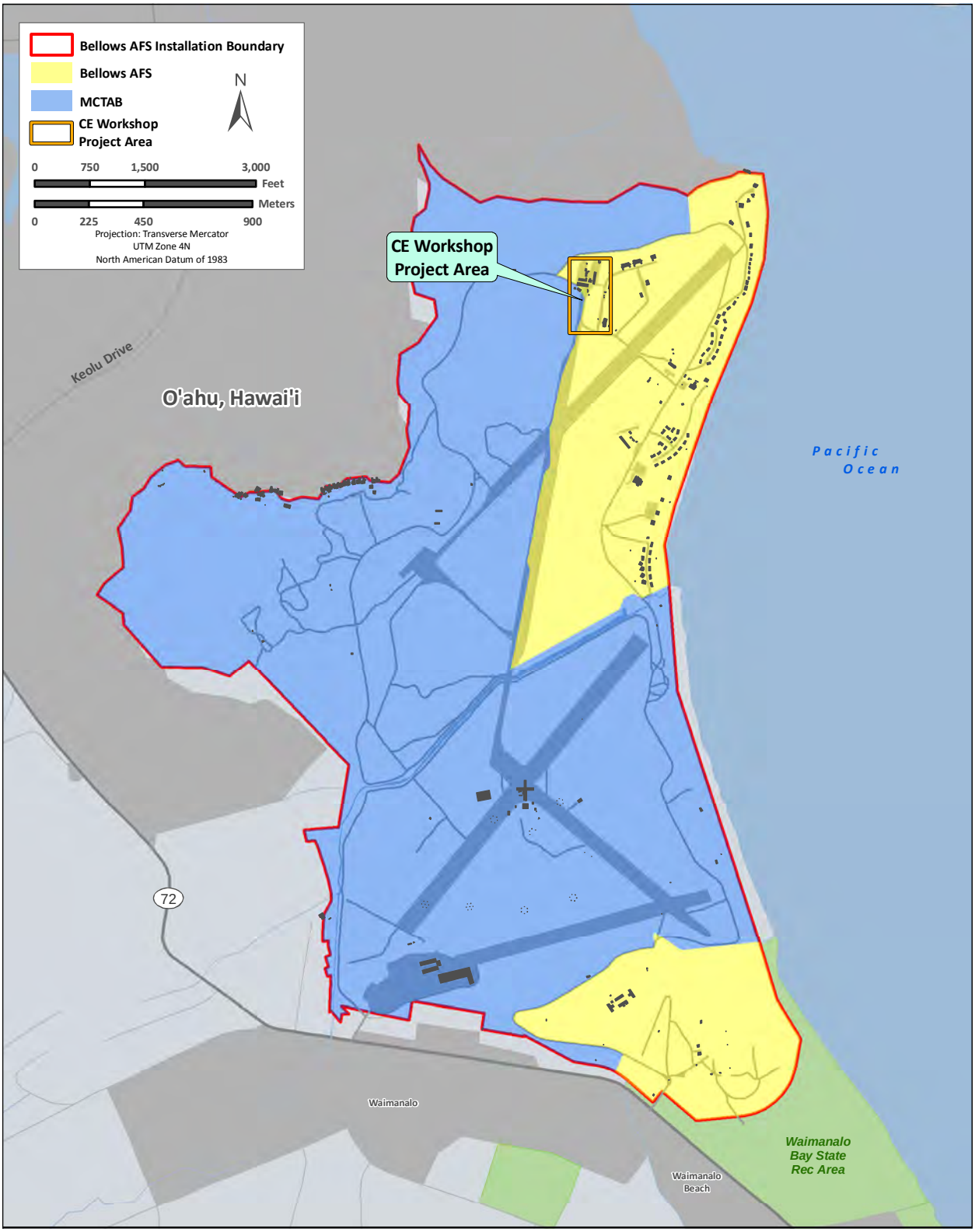


Figure 1-1. Bellows AFS and Surrounding Area



Sources: Background Data: ESRI StreetMap USA 2007; Base Data: Bellows AFS, 2009.

Figure 1-2. Overview of Bellows AFS and MCTAB

and the second gate, approximately 2 miles north on Tinker Road, is manned, so the southern half of the installation can be used by the State of Hawai‘i as a public beach and camping area on weekends and holidays (Bellows AFS 2009a).

Bellows AFS was originally established by a Presidential Executive Order (EO) as Waimanalo Military Reservation in 1917. In the 1930s, the facility was used as a bombing and gunnery range by aircraft based at nearby installations on O‘ahu. The reservation was renamed Bellows Field in 1933 in honor of Second Lieutenant Franklin B. Bellows. Bellows Field served as a sub-post to Wheeler Army Air Field until 1941, when it became a permanent military post. During World War II, Bellows Field served primarily as an auxiliary airfield, with less activity than the airfields at Wheeler Army Airfield and Hickam AFB. On 26 March 1948, Bellows Field was redesignated as Bellows AFB, and placed on caretaker status in December 1948. In 1958, it was redesignated as Bellows AFS when its runways were closed, ending its status as a potential flying field (15 AW 2007a).

The USMC used a portion of Bellows AFS for a coastal training site (as a tenant of the USAF) beginning in the early 1950s. In October 1999, 1,074 acres were transferred from the USAF to Marine Corps Base Hawai‘i for ownership, responsibility, and control as Marine Corps Training Area Bellows (15 AW 2007a).

Detachment 2, 18th Force Support Squadron (Det 2, 18 FSS) based at Kadena Air Base, Japan, assisted by the 15 Airlift Wing (15 AW) at Hickam AFB operates and maintains Bellows AFS as a recreational area for military personnel. The current mission at Bellows AFS is to provide training, recreation, and leisure programs to enhance combat effectiveness by delivering a realistic training environment. In addition, Bellows AFS provides affordable and customer-focused services that support the well-being and morale of Department of Defense (DOD) military and civilian personnel and their families while improving quality of life with exceptional regeneration efforts (Bellows AFS 2009b).

The primary mission is to provide recreational service, but Bellows AFS still supports ancillary mission of training of military forces. Bellows AFS Security Forces use the Nike site, as well the 800 buildings, for additional training besides training activities on the recreational area. Marine Corps Base Hawai‘i used the Nike site for land navigation training. Bellows AFS and the Honolulu Police Department conduct weekly Military Security Forces training with hostage entry, robbery, and all-terrain vehicles. The 15 CES conducts training as well. Bellows AFS recreational amenities are open to all branches of the military, both active-duty and retired, and other authorized DOD personnel. Bellows AFS provides a regional service primarily to the Pacific area of operation. The military community on the Island of O‘ahu consists of more than 100,000 military personnel. In addition, military personnel stationed worldwide have authorized use of these facilities.

1.3 Summary of Key Environmental Compliance Requirements

1.3.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] Section 4321-4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decisionmakers make well-informed decisions based on an understanding of the potential environmental consequences and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their

decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action.

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

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is its Environmental Impact Analysis Process (EIAP), 32 CFR Part 989, as amended.

1.3.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision maker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

This EA examines potential effects of the Proposed Action and alternatives on eight areas: cultural resources, geological resources, biological resources, water resources, air quality, safety, infrastructure and transportation, and hazardous materials and wastes. These were identified as being potentially affected by the Proposed Action and include applicable critical elements of the human environment that are mandated for review by EO, regulation, or policy. Some environmental resources and conditions that are often analyzed in an EA have been omitted from the analysis for this EA. The following listing provides the basis for such exclusions:

- ***Land Use.*** All activities associated with the Proposed Action would be consistent with present and foreseeable land use patterns at Bellows AFS. Implementation of the Proposed Action would not significantly alter the existing land use at Bellows AFS. Accordingly, the USAF has omitted detailed examination of land use.
- ***Noise.*** Implementation of the Proposed Action does not involve permanent alterations to Bellows AFS operations or missions. No new permanent ground-based heavy equipment operations are included in the Proposed Action. No activity included in the Proposed Action would result in a situation where military family housing residences or recreational users would be impacted by an increased noise levels. Furthermore, noise produced by construction activities associated with the Proposed Action would not significantly affect any other sensitive receptors. Accordingly, USAF has omitted detailed examination of noise.
- ***Socioeconomics.*** The Proposed Action does not involve any activities that would directly affect off-installation activities, or directly or indirectly contribute in socioeconomic resources outside the actual construction activity. There would be no change in the number of personnel assigned to Bellows AFS and no changes in area population or associated changes in demand for housing

and services. Accordingly, the USAF has omitted detailed examination of socioeconomics in this EA.

- ***Environmental Justice.*** The Proposed Action does not involve any activities that would effect low-income or minority populations because all work would be performed within an already developed area within the installation boundary. Accordingly, the USAF has omitted detailed examination of environmental justice in this EA.

Appendix A contains examples of relevant laws, EOs, regulations, and other requirements that are often considered as part of the analysis. Where useful to provide the reader with better understanding, key provisions of the statutes and EOs are discussed in more detail in the text of the EA.

1.3.3 Interagency Coordination and Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning* (IICEP), requires the USAF to implement the IICEP process, which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, Bellows AFS notified relevant Federal, state, and local agencies of the Proposed Action and provided them sufficient time to make known their environmental concerns specific to the action by distributing a Description of the Proposed Action and Alternatives (DOPAA) for review. Agency responses were incorporated into the Draft EA. Bellows AFS also coordinated with agencies such as the U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); Hawai‘i State Historic Preservation Office (SHPO); and other Federal, state, and local agencies. In addition, Bellows AFS coordinated the Proposed Action through Native Hawaiian Organizations (NHOs) and local community groups. All IICEP material and communications related to this EA are included in **Appendix B**.

A Notice of Availability for the Draft EA and FONSI was published in the *Honolulu Advertiser* and the Bellows AFS electronic newsletter and made available to the public for a 30-day review period. Copies of the Draft EA were also placed on reserve at local libraries such as the Kailua Library, Kaneohe Library, and Waimanalo Library for review. The Draft EA and FONSI were also published in the Office of Environmental Quality Control *Environmental Notice.* In addition, the Draft EA was made available at http://www.bellowsafs.com. The NOA was issued to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. No public comments were received during the 30-day review period. All agency comments on the Draft EA indicated that no comments were needed. **Appendix B** includes a copy of the Notice of Availability as it appeared in the *Honolulu Advertiser* and Bellows AFS electronic newsletter, a copy of the Office of Environmental Quality Control *Environmental Notice*, and responses received from the agencies during the 30-day review period.

1.4 Organization of this Document

This EA is organized into six sections, plus appendices. **Section 1** provides the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action, alternatives, and the No Action Alternative. **Section 3** contains a characterization of the affected environment, or baseline environmental conditions, and addresses potential environmental consequences associated with the

Proposed Action, alternatives, and the No Action Alternative. **Section 4** provides an analysis of the potential cumulative impacts. **Section 5** presents the preparers of the document. **Section 6** lists the references used in the preparation of the document. **Appendix A** contains applicable laws, regulations, policies, and planning criteria potentially relevant to NEPA analysis. **Appendix B** includes all IICEP materials developed to date. **Appendix C** includes the calculations to support air quality emissions estimates. **Appendix D** contains the Hawai‘i Coastal Zone Management Program Federal Consistency Assessment Form.

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2. Description of Proposed Action and Alternatives

This section presents information on the Proposed Action and alternatives. As discussed in **Section 1.3.1**, 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 the Proposed Action, as described in **Section 1.1**. In addition, CEQ regulations also specify the inclusion of the No Action Alternative against which potential impacts 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. Implementation of the Proposed Action, as described in **Section 2.1**, is Bellows AFS's Preferred Alternative.

2.1 Detailed Description of the Proposed Action

Under the Proposed Action, Bellows AFS proposes to construct a new CE workshop, install utilities to the new CE workshop, and construct one properly sized septic tank and leach field to support the new workshop. The proposed CE workshop project site is located on the northern portion of Runway 18, one of two abandoned, deteriorated runways (18/36 and 3L/21RR) on Bellows AFS (see **Figure 2-1**). The proposed CE workshop site has been previously disturbed and mostly consists of paved surfaces. The lands adjacent to the proposed CE workshop site consist of other CE facilities such as buildings and aboveground storage tanks. All construction project sizes stated below are approximate, since the proposed CE workshop has not been formally designed. The Proposed Action would consist of the following construction activities:

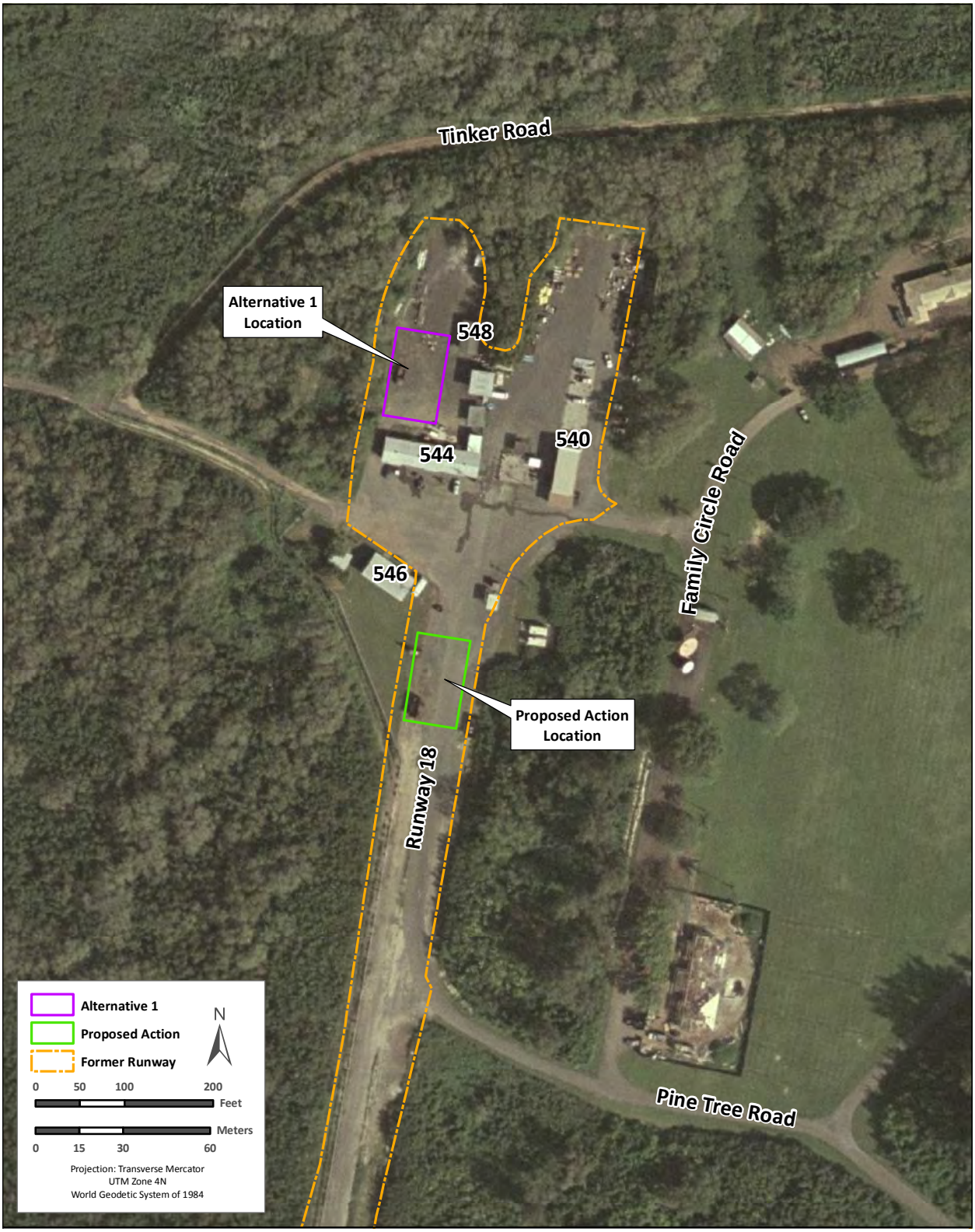
- Construct an approximately 6,000-square-foot (ft^2) CE workshop.
- Install utilities for the CE workshop.
- Construct one properly sized septic tank and leach field to support the new workshop. The septic tank and leach field (individual wastewater system [IWS]) would be constructed according to Hawai'i Administrative Rules (HAR) 11-62, *Wastewater Systems* requirements, which specify a 10,000-ft^2 usable area for one IWS with a total wastewater flow not to exceed 1,000 gallons per day.

This new CE workshop for the Facilities Maintenance Team is proposed as a pre-engineered, metal building including air-conditioned office space, restrooms, locker room, and break/kitchen area. The non-air-conditioned shop portion of the workshop would include a dust collection system and a plumbed eye wash station. One leach field will be required to remove contaminants and impurities from liquid that emerges from the septic tank. The leach field would be designed in accordance with contractor's specifications and environmental regulations. All required utilities are located immediately adjacent to or within the proposed CE workshop location. The existing CE workshop (Building 544) would not be demolished and is planned for future storage. The Proposed Action would take approximately 12 months to complete and would occur in 2010.

2.2 Alternatives

2.2.1 Alternative 1: Construct New CE Workshop North of Building 544

Under Alternative 1, Bellows AFS would construct the new CE workshop and related facilities as described under the Proposed Action, but at an alternate location. The Alternative 1 site is approximately 50 feet north of Building 544 (see **Figure 2-1**).



Sources: Aerial Photo: Bellows AFS 2006; Land Use: Bellows AFS, 2009.

Figure 2-1. Proposed Action and Alternative 1 Project Locations

The site proposed for Alternative 1 consists of an unpaved, graded area bordered by dense vegetation consisting of trees on the west and northeast. In addition, one CE maintenance/storage facility (Building 548) is located within the area planned for the new CE workshop and would require demolition.

All required utilities are located adjacent to or within the proposed Alternative 1 CE workshop location. The existing CE workshop (Building 544) would not be demolished and is planned for future storage. Alternative 1 would take approximately 12 months to complete and would occur in 2010.

2.2.2 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct a new CE workshop, install new utilities, or construct a septic tank and leach field. Under the No Action Alternative, the 718 CES engineering programs would continue to be held in facilities that are inadequate in size and are considered to be in substandard condition. Without a new CE workshop, Bellows AFS would continue to experience difficulty meeting USAF engineering mission requirements. In addition, existing CE workshop facilities would continue to deteriorate and eventually would be condemned because of occupational safety standards, leaving the 718 CES with no engineering support facilities that are required to keep Bellows AFS functional.

2.3 Alternatives Considered but Eliminated from Further Detailed Analysis

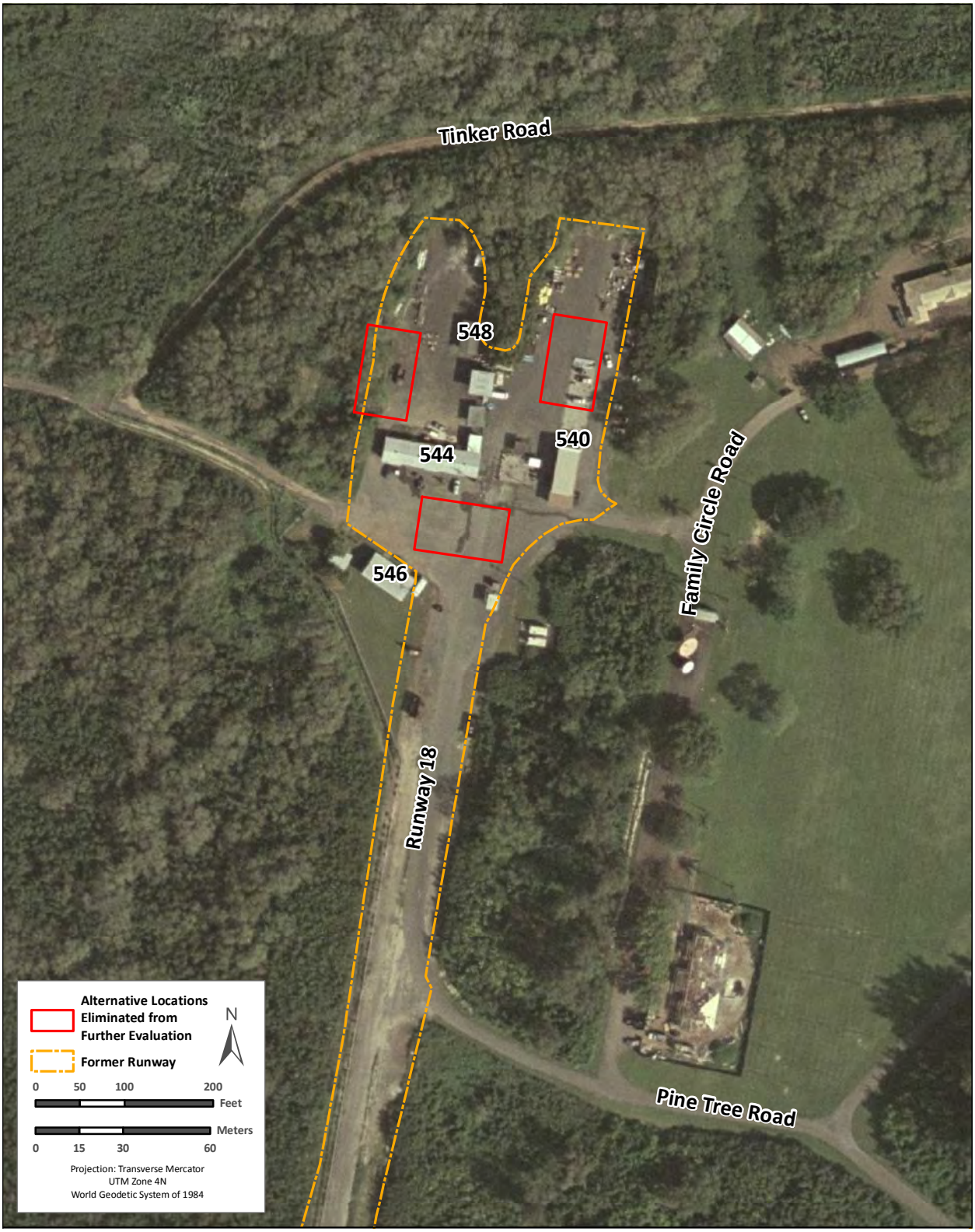
Criteria used to evaluate viable locations for the proposed CE workshop are presented in **Table 2-1**. The USAF evaluated three other alternative locations for the Proposed Action that were eliminated based on the criteria described in **Table 2-1**. **Table 2-2** describes the three potential locations that were dismissed and the rationale for their elimination. Alternative locations eliminated from further evaluation are also shown on **Figure 2-2**.

Table 2-1. Evaluation Criteria for Proposed CE Workshop

Evaluation Criteria	Requirement
Proximity to existing CE activities and utilities	Must be physically adjacent to other CE activities and utilities to minimize subsurface and aboveground construction and costs, while sustaining operational support functions.
Minimize impacts on other Bellows AFS functions	Must not impact other Bellows AFS mission-related functions and operations.
Land Use	Must be consistent with previous/current land use on Bellows AFS.
Environmental Resources	Must minimize potential environmental impacts on sensitive resource areas including but not limited to biological resources, cultural resources, and wetland areas. Priority was given to locating the CE workshop on land previously disturbed.
Anti-Terrorism/Force Protection (AT/FP) standards	Must comply with AT/FP standards.

Table 2-2. Rationale for Alternatives Eliminated from Further Detailed Analysis

Alternative Locations	Evaluation Criteria	Rationale for Elimination
Northeast Location	Minimize impacts on other Bellows AFS functions	This alternative would require the demolition of Building 540, which would cause unnecessary impacts on Bellows AFS functions.
Northwest Location	Environmental resources and land use	This alternative would overlap an area prone to flooding and would not be consistent with current land use. This alternative would also be located in an area that would require clearing of vegetation, which would cause impacts on biological resources.
Southern Location	Minimize impacts on other Bellows AFS functions and environmental resources	This alternative would be located in an area located near Building 546 and a fuel storage area. This location would create impacts on Bellows AFS mission functions due to its proximity to these sensitive areas.



Sources: Aerial Photo: Bellows AFS 2006; Land Use: Bellows AFS, 2009.

Figure 2-2. Alternative Locations Eliminated from Further Evaluation

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3. Affected Environment and Environmental Consequences

This section presents the characteristics of the affected environment and an analysis of the potential direct and indirect impacts each alternative would have on the affected environment. Cumulative and other effects are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. Some resource areas were eliminated from detailed examination because of their inapplicability to this proposal. General descriptions of the eliminated resources and the basis for elimination are described in **Section 1.3.2**.

3.1 Cultural Resources

Typically, cultural resources are subdivided into archaeological sites (prehistoric or historic locale containing physical evidence of human activity, but no structures remain standing); architectural sites (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and sites of traditional, religious, or cultural significance to Native American groups.

Archaeological resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., projectile points and bottles).

Architectural resources include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to warrant consideration for the National Register of Historic Places (NRHP). More recent structures, such as Cold War-era resources, might warrant protection if they are of exceptional importance or if they have the potential to gain significance in the future.

Traditional cultural properties or sacred sites can include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that American Indians, Native Alaskan, Native Hawaiian, or other groups consider essential for the preservation of traditional culture.

As part of the EA process, NEPA requires an assessment of potential impacts on cultural resources and aspects of the "human environment," which is defined as "the natural and physical (built) environment and the relationship of people with that environment" (40 CFR 1508.14). Under Section 106 of the NHPA, Federal agencies are required to conduct an assessment of the potential impact of an undertaking on historic properties that are within the proposed project's Area of Potential Effect (APE), which is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The proponent of an action is charged with providing the Advisory Council on Historic Preservation (ACHP) an opportunity to comment in accordance with its regulations, 36 CFR Part 800. Under Section 110 of the NHPA, Federal agencies are required to locate and inventory all resources under their purview that are recommended as eligible for inclusion in the NRHP on owned, leased, or managed property. In accordance with EO 12372, *Intergovernmental Review of Federal Programs*, determinations regarding the potential effects of an undertaking on historic properties are presented to the State Historic Preservation Office (SHPO). Cultural resources not evaluated for NRHP eligibility are considered eligible for compliance purposes until such evaluation has been completed and a formal determination of eligibility is made.

3.1.1 Description of Affected Environment

Bellows AFS and the MCTAB consist of approximately 1,495 acres on the windward coast of the Island of O'ahu, and is rich in cultural resources. It has both a military history and was the site of prehistoric Native Hawaiian settlement spanning an estimated 1,500 years. The area includes numerous buried Native Hawaiian cultural materials and human interments, World War II-era buildings and remnants, and Cold War-era structures (15 CES 2008).

3.1.2 Environmental Consequences

3.1.2.1 Evaluation Criteria

Analysis of the potential impacts and adverse effects on cultural resources associated with proposed actions on Federal property includes the assessment of both direct and indirect impacts on cultural resources. Adverse effects might include physically altering, damaging, or destroying a cultural resource. They can also include altering a characteristic that contributes to a resource's NRHP eligibility or introducing visual or audible elements out of character with or affecting the original setting of the resource. The intentional or benign neglect of a cultural resource that results in its full or partial destruction also can be an adverse effect. Adverse effects associated with indirect impacts might include the cumulative effects of the intensified use of an area in which a cultural resource is located resulting from construction or project-related improvement of the area, including improvements to transportation corridors in the vicinity that provide for or indirectly lead to increased access to the area.

3.1.2.2 Proposed Action

A pre-construction archaeological resource survey consisting of exploratory excavation of four backhoe trenches was conducted at the Proposed Action location for the new CE workshop. Two shallow traditional Hawaiian fire-pit features, one pit of unknown function, a small historic-era trash deposit, and a disturbed *paleosol* (cultural layer) present throughout the project area were identified during the exploratory excavations (Dye 2009). No human remains were encountered during the pre-construction exploratory trenching.

The Hawaiian fire-pit features identified within the Proposed Action footprint were assigned to NRHP eligible Site 50-80-11-4857 (Dye 2009). It is highly likely that the subsurface cultural resources associated with site 50-80-11-4857 extend into the location of the proposed new CE workshop (Dye 2009). However, the edges of this site have not been systematically defined. Although fire-pit features were discovered during the pre-construction trenching, it is not possible to infer confidently that fire-pit or other subsurface cultural features are present within the remaining footprint of the Proposed Action.

The stratigraphic soils profile exposed in the test trenches revealed a sterile fill layer, with an average thickness of 0.50 meters, situated just beneath a 10-centimeter surface layer composed of either asphalt or gravel and manicured grass, depending on the location of the trench. The proposed CE workshop is anticipated to be constructed atop a concrete slab foundation. The foundation is expected to have a shallow depth and be within the fill layer. Similarly, the potential impacts of the associated septic tank and leach field are expected to be minimal, but could have an adverse effect, depending on their placement.

In addition, the Proposed Action is on an asphalt-paved World War II runway (completed in 1943) that is considered eligible for the NRHP under Criterion A (15 CES 2008). The integrity of these northern runways is moderate, due to some physical deterioration. The runway represents one of two runways at Bellows AFS that are perhaps the only largely unaltered World War II runways that remain at a major air

base in the Hawaiian Islands (15 CES 2008). Proposed Action impacts on the runway are expected to be minimal.

Construction of the new CE workshop could potentially have an adverse effect on surface and subsurface cultural resources. Potential adverse effects will be addressed during the Section 106 consultation process. No decision regarding the Proposed Action would be made until after the conclusion of the Section 106 consultation process regarding mitigation of any potential adverse effects on cultural resources at a construction site identified at Bellows AFS.

It is recommended that construction activities associated with the Proposed Action be monitored by a qualified archaeologist according to a monitoring plan designed to collect information on the age and wood charcoal composition of any fire-pits exposed by construction excavations. Although no human remains were discovered during the pre-construction trenching, it is not possible to infer confidently that human remains are not present within the footprint of the Proposed Action. Therefore, the archaeological monitoring plan should contain, or make reference to, a process for treating inadvertently discovered human remains under Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (Dye 2009).

The Bellows AFS Integrated Cultural Resources Management Plan (ICRMP) contains Standard Operating Procedures for the inadvertent discovery of cultural resources, including archaeological artifacts or sites with human remains during construction. If a discovery occurs during construction, the unanticipated archaeological discoveries procedures, as defined in the Bellows AFS ICRMP (15 CES 2008) would be followed, in addition to any other mitigation efforts that might be agreed to through the Section 106 consultation process. Excavation and disturbance of the site would cease, the Detachment Commander (Det. 2, 18 FSS/CC) would be notified immediately, and the discovery would be protected. The Installation Commander would take actions to evaluate the discovery and provide guidance to the project engineer on any actions for appropriate management treatment of the resource (15 CES 2008). In addition to following the ICRMP Standard Operating Procedures for inadvertent discoveries, it is recommended that all construction and maintenance personnel should receive cultural resources awareness training by the installation cultural resources managers (15 CES or 718 CES) regarding what constitutes cultural resources and why they are important. Through such training, construction personnel working on site would know what to look for to minimize possible adverse effects. Bellows AFS has concluded the Section 106 consultation process with the SHPO with respect to the Proposed Action. The SHPO concurs with the recommendation that an archaeological monitor is needed during construction (see **Appendix B**), and has approved the pre-construction archeological survey report.

3.1.2.3 Alternative 1

No pre-construction archaeological survey was completed for the Alternative 1 location. Thus, it is assumed that the Alternative 1 location would have similar findings and potential impacts as described for the Proposed Action (see **Section 3.1.2.2**). In addition, construction activities conducted for Alternative 1 must conform to Standard Operating Procedures and environmental protection measures described in **Section 3.1.2.2**.

Alternative 1 would require demolition of Building 548 because its location would obstruct the construction process and would impede future mission operations at the proposed CE Workshop. This building was constructed in 1969. Section 106 consultation with the SHPO would be initiated by the installation cultural resources managers (15 CES or 718 CES) to determine if these buildings are potentially eligible for nomination to the NRHP in the event the Alternative 1 location is chosen for construction. Should these buildings be determined eligible for the NRHP, Bellows AFS would comply

with Section 106 of the NHPA, as appropriate. The required mitigation measures would be determined through the Section 106 consultation process prior to construction at the Alternative 1 location.

3.1.2.4 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct the proposed CE workshop, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. Therefore, no impacts would be expected on cultural resources from implementation of the No Action Alternative.

3.2 Geological Resources

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of geology and soils. Geology is the study of the earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock and other parent material. Soil depth, structure, elasticity, strength, shrink-swell potential, and erodibility determine a soil's ability to support man-made structures and facilities. Soils typically are described in terms of their series or association, slope, physical characteristics, and relative compatibility or constraints with respect to particular construction activities and types of land use.

3.2.1 Description of Affected Environment

Eight soil types are present on Bellows AFS, reflecting differences in geological substrate and topography, the influence of stream systems and the ocean, and modification by human. The five most abundant soil types are Jaucas sand (262 acres), Mokuleia loam (32 acres), Coral Outcrop (27 acres), and Kokokahi very stony clay and Ewa silty clay loam (both 15 acres each). The Jaucas sand and Coral Outcrop soil types reflect the installation's property and coastal location. Much of the remaining soils are colluvial material derived from basalt and basic igneous rock.

Soil types in the vicinity of the Proposed Action consist of Mokuleia loam (NRCS 2009). Mokuleia loam soil series are well-drained, consisting of loam and loamy sand and typically have 0 to 2 percent slopes. Soil types in the vicinity of Alternative 1 consist of Soil types in the vicinity of the Proposed Action consist of Kokokahi (NRCS 2009). Kokokahi soil series are moderately well-drained consisting of very stony clay and typically have 0 to 35 percent slopes.

3.2.2 Environmental Consequences

3.2.2.1 Evaluation Criteria

Analysis of potential impacts on geological resources typically includes identification and description of resources that could potentially be affected, examination of a proposed action and the potential effects this action could have on the resource, assessment of the significance of potential impacts, and, provision of mitigation measures in the event potentially significant impacts are identified. Impacts on geology and soils would be significant if they changed the soil composition, structure, or function within the environment.

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating environmental consequences of a

proposed action on geological resources. Generally, impacts would be avoided or minimized with proper construction techniques, erosion-control measures, and structural engineering design incorporated into project development.

3.2.2.2 Proposed Action

Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. Approximately 0.381 acres of land would be disturbed during construction of the proposed CE workshop, installation of required utilities, and construction of the associated septic tank and leach field. Implementation of best management practices (BMPs), including erosion-control measures during construction activities, would limit adverse impacts on geology and soils. Erosion-control measures can include the creation of control swales to channel runoff; establishment of sediment traps, sediment basins, or erosion-control berms; installation of silt fences; and temporary stabilization of areas graded and barren of vegetation. Dust-control measures such as watering and covering of soil stockpiles during transport or storage would be implemented to reduce the potential for windblown erosion. Upon project completion, permanent erosion-control measures such as stabilization with perennial vegetation or pavements would be applied to areas disturbed during construction activities. Therefore, no long-term, adverse direct or indirect impacts on soils, regional or local topography, or physiographic features at the installation are anticipated.

3.2.2.3 Alternative 1

Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. Approximately 0.384 acres of land would be disturbed during construction of the proposed CE workshop, installation of required utilities, construction of the associated septic tank and leach field, and demolition of Building 548. Implementation of BMPs and erosion-control measures as described in **Section 3.2.2.2** during and after construction and demolition activities would limit adverse impacts on geology and soils. Therefore, no long-term, adverse direct or indirect impacts on soils, regional or local topography, or physiographic features at the installation are anticipated.

3.2.2.4 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct the proposed CE workshop, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. Therefore, no short-term or long-term adverse impacts would be expected on geological resources from implementation of the No Action Alternative.

3.3 Biological Resources

Biological resources refer to the living components (flora and fauna) of the environment and the habitats in which they occur. This section of the EA describes the affected environment for biological resources within the Bellows AFS project area including vegetation, wildlife, threatened and endangered species, and wetland habitats. To understand the initial scope of the biological resources, demographic information such as distribution, abundance, productivity, and health of species, are often collected within the boundaries of the project area. During these surveys, any federally listed species (threatened, protected, proposed protected, or candidate species), any species of concern listed under Conservation Agreements or Management Plans, any state-listed species, and critical habitat (designated or proposed) are recorded.

Under the Endangered Species Act (ESA) (16 U.S.C. 1536), an "endangered species" is defined as any species in danger of extinction, with few in numbers, throughout all or a significant portion of its range. A "threatened species" is defined as any species that is vulnerable to becoming an endangered species in the foreseeable future. The USFWS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS advises government agencies, industry, and the public that these species are at risk and might warrant protection under the Act.

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

Wetlands play a critical role in the global water, nitrogen, and sulfur cycles and are integral to the development of organisms that form the base of the food web and feed many species. They are considered critical habitat in the Clean Water Act (CWA) (33 U.S.C. 1251 et seq. - Section 404) and the DOD Directive 4715.3, Environmental Conservation Program and are protected by EO 11990, Protection of Wetlands (amended by EO 12608). The CWA defines a wetland as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (40 CFR 230.3[t]). Wetlands are characterized by hydrophytic vegetation ("water-loving" plants), hydric soils, and the frequency of flooding.

Section 404 of the CWA established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. EO 11990 requires Federal agencies, including the USAF, to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.

3.3.1 Description of Affected Environment

Vegetation. The project area at Bellows AFS is located within a highly maintained land management unit consisting of an inactive runway and maintained turf. The majority of this vegetation is essentially nonnative terrestrial landscaping. The majority of Bellows AFS, including the project area, lies on the Waimanalo Plain and is relatively flat. A portion of the northern part of the installation lies in the Koolau Cliff and Valley physiographic province and has relatively steep terrain with elevations up to 600 feet. There are few naturally occurring native plant species on Bellows AFS, although some native species have been planted for landscaping projects. Existing nonnative vegetation communities include ironwood forests, koa-haole/Christmas berry shrublands, koa-haole shrublands, mangroves, and pickleweed flats. The project area is an existing runway with some adjacent vegetation (see **Figure 2-1**).

Wildlife. The diverse terrain in and around Bellows AFS attracts many species of wildlife into this area. Bellows AFS consists of four terrestrial habitat types: wetlands, second-growth forests, shrubland, and turf areas. Kaelepulu Pond and Enchanted Lake Park are about a mile northwest, and Kawainui Swamp Regional Park is about 2 miles northwest of the installation. Kailua Beach Park is about 1 mile north of Bellows AFS, with the Popoia Island State Bird Refuge just offshore. Feral animals (mongoose, cats, dogs, rodents, and pigs) have been sighted on Bellows AFS. Twenty-one species of birds have been observed on Bellows AFS, including 3 migratory shorebirds, 1 native waterbird, and 17 introduced land birds. Observations in marine fauna were found to be low in abundance and diversity, probably due to the bay's easterly orientation and high levels of sand, which limits the reef shelf's ability to flourish. Marine species included a total of 40 species of fish, 28 species of invertebrates, and 31 genera of algae in reef areas offshore of Bellows AFS. . The project area is an existing runway with some adjacent habitat for forest bird nesting (see **Figure 2-1**).

Threatened and Endangered Species. Federal listed species have been observed or could potentially utilize the habitat on Bellows AFS. **Table 3-1** gives details on these species. The listed waterbird species, including the black-necked stilt (*Himantopus mexicanusknudseni*), Hawaiian duck (*Anas wyvilliana*), Hawaiian coot (*Fulica americana alas*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*) have primarily been observed along the shore and wetland areas of Waimanalo Stream (approximately 0.5 miles from the proposed project area). The Newell's shearwater (*Puffinus newlli*) is known to utilize waters offshore of Bellows AFS, but is not common (15 AW 2007b). All of these bird species are also protected under the MBTA. Past surveys reported several green sea turtles on the surface and underwater in Waimanalo Bay offshore of Bellows AFS, distant from the project area. Green sea turtles are not known to nest on the beaches at Bellows AFS (15 AW 2007b). The project area is an existing runway and does not contain any habitat suitable for Federal listed species. Based on the habitat associations for each of the species presented in **Table 3-1**, no Federal listed species are expected to occur at the project area.

Table 3-1. Federal Protected Potentially Occurring in the Vicinity of Bellows AFS

Common Name (Hawaiian Name)	Scientific Name	Habitat/Occurrence	Federal Status	Critical Habitat
Hawaiian stilt (Aeʻo)*	*Himantopus mexicanus knudseni*	Wetlands/Observed in Waimanalo stream (approximately a half mile from the project site)	E	None
Hawaiian coot (ʻAlae keʻokeʻo)*	*Fulica americana alai*	Wetlands/Sporadic recorded sightings	E	None
Hawaiian duck (Koloa Maoli)	*Anas wyvilliana*	Wetlands/Sporadic recorded sightings	E	None
Newell's shearwater (Aʻo)*	*Puffinus newlli*	Marine/ Observed in Waimanalo Bay offshore of Bellows AFS, not common	E	None
Hawaiian moorhen (Alaeʻula)*	*Gallinula chloropus sandvicensis*	Wetlands/Sporadic recorded sightings	E	None
Hawaiian hoary bat (ʻŌpeʻapeʻa)	*Lasirius cinereus semotus*	Forest and Open Country/Possible use of habitat, but no recorded	E	None

Common Name (Hawaiian Name)	Scientific Name	Habitat/Occurrence	Federal Status	Critical Habitat
		sightings		
Green sea turtle	*Chelonias mydas*	Marine/Observed in Waimanalo Bay offshore of Bellows AFS	T	None

Source: 15 AW 2007b

Note: * Species protected under MBTA.

Key: E = Endangered, T = Threatened

Wetlands. There are no wetlands occurring at the proposed project site. The closest wetland is along the Waimanalo Stream, which is over 0.5 miles to the south. The wetland is dominated by red mangrove (*Rhizophora mangle*) and pickleweed (ʻakulikuli, *Batis maritima*) that covers the northern edge of the stream and is approximately 750 feet inland from the stream mouth of Waimanalo bay.

3.3.2 Environmental Consequences

3.3.2.1 Evaluation Criteria

Biological resources are evaluated in terms of compliance with CWA, Section 7 of the ESA and related laws, regulations, and authorities. Emphasis is placed on species with legal, commercial, recreational, ecological, or scientific importance. Biological resources can be affected by direct disturbance (i.e., foot traffic and vehicles) or indirectly through such changes as increased construction noise. A habitat perspective is used to provide a framework for analysis of general classes of impacts on biological resources (i.e., removal of critical habitat, noise, human disturbance). Impacts on biological resources were assessed by evaluating the following:

- Potential for loss or alteration of suitable habitat and the proximity of similar habitat
- The proportion of the resource that would be affected relative to its occurrence in the region
- The sensitivity of the resource to proposed activities
- The duration of ecological impacts.

Under the ESA, Federal agencies are required to provide documentation that ensures that no action will adversely affect the existence or health of any federally listed threatened or endangered species, this includes the species habitat.

3.3.2.2 Proposed Action

Vegetation. Construction activities occur on an existing runway with no impacts on naturally occurring vegetation. If any impacts on vegetation do occur, these impacts would be limited to the mowed turfgrass buffer zones along existing runway.

Wildlife. No permanent impacts on wildlife would occur. Auditory, visual, and physical disturbances during construction activities could temporarily affect some wildlife species. Noise would result from general construction activities including clearing, grading, jackhammering, drilling, and rock crushing; and noise associated with construction equipment moving to and from the proposed project area. Short-term, negligible to minor, adverse impacts on smaller, less-mobile species within the proposed project area could also occur as a result of direct mortality associated with collision with construction equipment.

Bellows AFS is used as a breeding and nesting ground for open country and forest migratory birds. The sensitive species listed in **Table 3-1** have not been observed at the proposed project site. The Proposed Action is located on an existing runway that is not utilized as a bird nesting area. However, the dense vegetation and trees surrounding Runway 18 could be used for nesting forest birds. It is anticipated that construction activities would have a temporary impact on open country birds through construction noise; however, since the project site is not a bird nesting area, it is unlikely to have negative effects on nesting activities.

Threatened and Endangered Species. It is anticipated that no impacts on threatened, endangered, or rare species would occur as a result of the Proposed Action. Because the project area is an existing runway and there is no Federal listed species habitat, the species listed in **Table 3-1** are not expected to occur in the project area. The Newell's shearwater flies at night and artificially lighted areas have the potential to attract this species, which could result in disorientation and injury due to exhaustion or collision with buildings or other objects. However, this species is not common off of Bellows AFS (15 AW 2007b) and new lighting under the Proposed Action would be minimal. Any lighting installed under the Proposed Action would be shielded so the bulb can only be seen from below and lowest wattage bulbs possible would be used. As such, impacts on Newell's shearwater are expected to be avoided and minimized. Through the IICEP process, USFWS was contacted for input into the Proposed Action. USFWS's response (see **Appendix B**) included direction that has been incorporated in the minimization/BMPs included in the Proposed Action. Potential impacts on Newell's shearwater and other migratory bird species would be avoided and minimized by shielding outside lights associated with the project to prevent attracting Newell's shearwater from other locations, avoiding night-time construction, and providing all project staff with information about seabird injury and mortality. Based on the lack of habitat and the use of construction and lighting BMPs to avoid and minimize impacts on Newell's shearwater and other migratory birds, including the Federal listed species, the proposed action will have no effect on the Federal listed species.

Wetlands. There are no wetlands located near the proposed site. Therefore, no impacts would be expected on wetlands on Bellows AFS.

3.3.2.3 Alternative 1

Alternative 1 would have similar impacts as the Proposed Action. Under Alternative 1, demolition of Building 548 might require the removal of an insignificant amount of nonnative vegetation. No long-term, adverse, direct or indirect impacts on biological resources are anticipated.

3.3.2.4 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct the proposed CE workshop, which would result in the continued use of the existing buildings. Therefore, no biological impacts would occur.

3.4 Water Resources

Hydrology consists of the redistribution of water through the processes of evapotranspiration, surface runoff, and subsurface flow. Hydrology is influenced primarily by temperature and total precipitation that determine evapotranspiration rates, topography that determines rate and direction of surface flow, and soil and geologic properties that determine rate of subsurface flow and recharge to the groundwater reservoir.

Groundwater consists of subsurface hydrologic resources. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater

typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Surface water resources in the State of Hawai‘i are regulated under the Clean Water Act (CWA) as amended (33 U.S.C. §§ 1251 et seq.); HRS 342D, *Water Pollution Control*; HAR 11-54, *Water Quality Standards*; and HAR 11-55, *Water Pollution Control*. Hawai‘i’s underground injection control (UIC) program developed to protect the quality of the state's underground sources of drinking water from pollution is established within HAR 11-23, *Underground Injection Control*.

Waters of the United States are defined within the CWA, as amended, and jurisdiction is addressed by the USEPA and the U.S. Army Corps of Engineers (USACE). These agencies assert jurisdiction over (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-around or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into waters of the United States, including wetlands. Encroachment into waters of the United States and wetlands requires a permit from the state and the Federal government.

The Coastal Management Act (CZMA) of 1972 calls for the effective management, beneficial use, protection, and development of the Nation’s coastal zone and promotes active state involvement in achieving those goals. To reach those goals, the CZMA requires participating states to develop management programs that demonstrate how these states will meet their obligations and responsibilities in managing their coastal areas. The agency responsible for implementing the CZMA in the State of Hawai‘i is the Department of Health (DOH)/Office of Planning (OP) Coastal Zone Management Program. The DOH/OP has developed the Hawai‘i Ocean Resources Management Plan (ORMP) to address the requirements of the CZMA.

3.4.1 Description of Affected Environment

Bellows AFS is situated at the coastal outfall of two watersheds, those of Waimanalo Stream and Inoa‘ole Stream. The headwaters for these perennial watercourses are located in the Koolau Mountains to the west of Bellows AFS. Most of the drainage area for Waimanalo Stream and Inoa‘ole Stream is upstream of the Bellows AFS boundary. Consequently, the surface watercourses on the installation are subject to the hydrologic and water quality effects associated with upstream land uses. Waimanalo Stream borders the southern boundary of the northern portion of Bellows AFS, and drains the central portion of the Bellows complex, including MCTAB. Several tributaries join it upstream including Kahawai Stream, which flows from the south along the western border of MCTAB, and a smaller unnamed tributary that flows from the ponds on the adjacent golf course. Inoa‘ole Stream drains the southern portion of MCTAB. Both Waimanalo and Inoa‘ole streams empty into Waimanalo Bay.

There are no defined watercourses in the limited drainage area of the northern part of Bellows AFS. Generally, all of the watercourses on the Bellows complex have been channelized. Due to their proximity to the coast and the generally low topographic elevation of the station, the streams are significantly influenced by tidal conditions and have relatively flat channel slopes. The channels are characteristically wide but have limited flood-carrying capacity due to their flat gradients.

Bellows AFS has one UIC permit issued by the DOH in 2006, which covers 5 subunits. Three of the injection wells on the UIC permit have been removed. There are no drinking water permits, storm water

permits, or National Pollutant Discharge Elimination System (NPDES) permits for Bellows AFS (15 AW 2007b).

3.4.2 Environmental Consequences

3.4.2.1 Evaluation Criteria

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

- Substantially reduce water availability or supply to existing users
- Overdraft of groundwater basins
- Exceed safe annual yield of water supply sources
- Substantially adversely affect water quality
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

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

3.4.2.2 Proposed Action

There are no surface waters, floodplains, or jurisdictional wetlands or streams within or adjacent to the Proposed Action project location. Therefore, there would be no impact on surface waters, jurisdictional wetlands or streams, or floodplains from implementation of the Proposed Action.

The Proposed Action would construct a septic tank and leach field to treat wastewater from the proposed CE workshop. The groundwater underneath the proposed project area is not considered a potential source of drinking water (DOH 1999). Therefore, no potential exists for proposed onsite wastewater disposal practices to adversely impact potable water supplies. Development of the septic tank and leach field for the proposed development would be coordinated with the DOH Wastewater Branch to conform to the requirements of HAR 11-62, *Wastewater Systems*, such that no adverse impacts would be anticipated. A copy of the Hawai‘i Coastal Zone Management Program Federal Consistency Assessment Form, as required by the Hawai‘i ORMP, is included in **Appendix D**.

3.4.2.3 Alternative 1

There are no surface waters, floodplains, or jurisdictional wetlands or streams within or adjacent to the Alternative 1 project location. Therefore, there would be no impact on surface waters, jurisdictional wetlands or streams, or floodplains from implementation of the Proposed Action.

Alternative 1 would construct a septic tank and leach field to treat wastewater from the proposed CE workshop. The groundwater underneath the proposed project area is not considered a potential source of drinking water (DOH 1999). Therefore, no potential exists for proposed onsite wastewater disposal practices to adversely impact potable water supplies. Development of the septic tank and leach field for the proposed development would be coordinated with the DOH Wastewater Branch to conform to the requirements of HAR 11-62, *Wastewater Systems*, such that no adverse impacts would be anticipated. A

copy of the Hawai‘i Coastal Zone Management Program Federal Consistency Assessment Form, as required by the Hawai‘i ORMP, is included in **Appendix D**.

3.4.2.4 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct the proposed CE workshop, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. Therefore, no short-term or long-term adverse impacts would be expected on water resources from implementation of the No Action Alternative.

3.5 Air Quality

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

Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O_3) – measured as either volatile organic compounds (VOCs) or total nitrogen oxides (NO_x), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur oxides (SO_x), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of Hawai‘i has adopted the NAAQS and promulgated additional State Ambient Air Quality Standards (SAAQS) for criteria pollutants. In some cases, the SAAQS are more stringent than the Federal primary standards. **Table 3-2** presents the USEPA NAAQS and SAAQS.

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

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

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be "significant" if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR 52.21[c]). According to 40 CFR Part 81, no Class I areas are located in the vicinity of Bellows AFS. Therefore, Federal PSD regulations would not apply to the Proposed Action (USEPA 2009b).

Table 3-2. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Standard Value		Federal Standard Type
		Federal	State	
CO	8-hour [a]	9 ppm (10 mg/m^3)	4.4 ppm (5 mg/m^3)	Primary
	1-hour [a]	35 ppm (40 mg/m^3)	9 ppm (10 mg/m^3)	Primary
NO_2	Annual Arithmetic Mean	0.053 ppm (100 µg/m^3)	0.04 ppm (70 µg/m^3)	Primary and Secondary
	1-hour	--	--	None
O_3	8-hour [b]	0.075 ppm (147 µg/m^3)	0.08 ppm (157 µg/m^3)	Primary and Secondary
	1-hour [c]	--	--	None
Pb	Quarterly average	1.5 µg/m^3	1.5 µg/m^3 (rolling 3 months)	Primary and Secondary
	30-Day	--	1.5 µg/m^3	None
PM_{10}	Annual Arithmetic Mean	--	50 µg/m^3	None
	24-hour	150 µg/m^3 [d]	150 µg/m^3	Primary and Secondary
$PM_{2.5}$	Annual Arithmetic Mean [e]	15 µg/m^3	--	Primary and Secondary
	24-hour [f]	35 µg/m^3	--	Primary and Secondary
SO_2	Annual Arithmetic Mean	0.030 ppm	0.03 ppm (80 µg/m^3)	Primary
	24-hour [a]	0.14 ppm	0.14 ppm (365 µg/m^3)	Primary
	3-hour [a]	0.5 ppm (1,300 µg/m^3)	0.5 ppm (1,300 µg/m^3)	Secondary
	1-hour	--	--	None
Hydrogen Sulfide	1-hour	--	0.025 ppm (35 µg/m^3)	None

Sources: USEPA 2009a, DOH 2001, and DOH 2009

Notes: Parenthetical values are approximate equivalent concentrations.

a. Not to be exceeded more than once per year.
b. 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. This standard is effective on May 27, 2008, and replaces the 1997 8-hour ozone standard of 0.08 ppm. However, the 1997 standard and its implementing rules remain in effect while USEPA undergoes rulemaking to transition to the 2008 standard.
c. As of June 15, 2005, USEPA revoked the Federal 1-hour ozone standard in all areas except the 14 8-hour ozone nonattainment Early Action Compact Areas.
d. Not to be exceeded more than once per year on average over 3 years.
e. To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
f. To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3. This standard is effective December 17, 2006.

Key: ppm = parts per million; mg/m^3 = milligrams per cubic meter; µg/m^3 = micrograms per cubic meter

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

3.5.1 Description of Affected Environment

Bellows AFS is located on the Island of O'ahu, Hawai'i, which is within the State of Hawai'i AQCR. The State of Hawai'i AQCR has been designated as unclassified/attainment for all criteria pollutants (USEPA 2002). The Proposed Action is subject to rules and regulations developed by the DOH. Bellows AFS is classified as "true minor source" since its potential emissions are below operational limitations. There are no air permits on Bellows AFS (15 AW 2007b).

3.5.2 Environmental Consequences

3.5.2.1 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
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory
- Exceed any Evaluation Criteria established by a SIP.

In addition to the *de minimis* emissions thresholds, Federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21[b][23][iii]).

3.5.2.2 Proposed Action

Construction and Demolition Emissions. Emissions from construction activities associated with the Proposed Action would have short-term, minor, adverse impacts on local air quality and would have negligible impacts on regional air quality. Implementation of the Proposed Action would not result in violations of any ambient air quality standards. The construction of the CE workshop as described in **Section 2.1** would generate air pollutant emissions because of grading, filling, compacting, trenching, and operation of construction equipment and generators. Construction activities would also generate total suspended particulate and PM_{10} emissions as fugitive dust from ground-disturbing activities (e.g., grading, trenching, soil piles) and from combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Construction activities would incorporate BMPs to minimize fugitive particulate matter emissions. Additionally, construction workers commuting daily to and from the construction site in their personal vehicles would result in criteria pollutant emissions. Because levels of criteria pollutants in Honolulu County are consistently well below Federal and state air quality standards, and because the prevailing winds rapidly dissipate pollutants, short-term increases in levels of criteria pollutants from the Proposed Action are not expected to be significant. **Appendix C** contains detailed calculations and the assumptions used to estimate the air quality emissions from construction activities.

Table 3-3 summarizes the annual estimated air quality emissions from construction activities. The estimated emissions from the Proposed Action would represent a minor percentage of the air emissions inventory locally and would represent a negligible percentage of the air emissions inventory regionally within the State of Hawai‘i AQCR. Since Bellows AFS is located in an unclassified/attainment area for criteria pollutants identified by the USEPA, no formal conformity analysis is required.

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

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy
2010 Construction Emissions	*4.828*	*0.506*	*2.506*	*0.377*	*0.782*	*0.358*
Percent of State of Hawai‘i AQCR Inventory (USEPA 2002)	0.008	0.001	0.001	0.001	0.003	0.005

The Energy Information Administration estimates that in 2005 gross CO_2 emissions in the State of Hawai‘i were 23.4 million metric tons (DOE/EIA 2005). Approximately 539 metric tons of CO_2 are estimated to be emitted by the Proposed Action in 2010, which is approximately 0.002 percent of the Hawai‘i statewide CO_2 emissions. Therefore, the proposed project would have negligible contribution towards the Hawai‘i statewide GHG inventory. CO_2 emission estimates are included in **Appendix C**.

3.5.2.3 Alternative 1

Alternative 1 would have similar impacts as the Proposed Action. **Table 3-4** summarizes the annual estimated air quality emissions from construction and demolition activities. The estimated emissions from the Proposed Action would represent a minor percentage of the air emissions inventory locally and would represent a negligible percentage of the air emissions inventory regionally within the State of Hawai‘i AQCR. Since Bellows AFS is located in an unclassified/attainment area for criteria pollutants identified by the USEPA, no formal conformity analysis is required.

Table 3-4. Annual Estimated Air Emissions Resulting from Alternative 1

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy
2010 Construction/Demolition Emissions	*4.831*	*0.506*	*2.507*	*0.377*	*0.786*	*0.358*
Percent of State of Hawai‘i AQCR Inventory (USEPA 2002)	0.008	0.001	0.001	0.001	0.003	0.005

The Energy Information Administration estimates that in 2005 gross CO_2 emissions in the State of Hawai‘i were 23.4 million metric tons (DOE/EIA 2005). Approximately 539 metric tons of CO_2 were estimated to be emitted by Alternative 1 in 2010, which is approximately 0.002 percent of the Hawai‘i statewide CO_2. Therefore, the proposed project would have negligible contribution towards the Hawai‘i statewide GHG inventory. CO_2 emission estimates are included in **Appendix C**.

3.5.2.4 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct the proposed CE workshop, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. Therefore, no direct or indirect adverse impacts would be expected on local or regional air quality from implementation of the No Action Alternative.

3.6 Safety

A safe environment is one in which the potential for death, serious bodily injury or illness, or property damage is eliminated or reduced as much as possible. Human health and safety addresses workers' and the public's health and safety during burning, demolition, construction activities, and subsequent operations of those facilities.

3.6.1 Description of Affected Environment

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

Occupational Safety and Health Administration (OSHA) regulations (29 CFR parts 1910 and 1926) set forth safety and health requirements that extend to all United States employers and employees. Activities that expose workers to health-threatening situations, such as asbestos, exposure to high noise levels, exposure to lead dust, and operating heavy equipment must comply with OSHA requirements. The assessment of safety and health considers activities, occurrences, or operations that have the potential to affect the safety and health of workers during construction or operation of the proposed CE workshop. Impacts on installation recreational users and Military Family Housing (MFH) residents who could be exposed to construction-related noise, traffic, and dust are also considered. There are no existing public safety or health concerns associated with current uses of the Proposed Action project area.

3.6.2 Environmental Consequences

3.6.2.1 Evaluation Criteria

A significant impact would occur if the Proposed Action were to substantially increase risks associated with the safety of Bellows AFS personnel, contractors, or the local community; or substantially hinder the ability to respond to an emergency. Impacts were assessed based on the potential impacts of construction and demolition activities.

3.6.2.2 Proposed Action

Short-term, minor, adverse impacts on safety would be anticipated due to the potential slight increase in the short-term risks associated with construction activities that would occur during the normal workday. During all phases of the Proposed Action, safety standards required by the OSHA and National Institute for Occupational Safety and Health (NIOSH) would be followed. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hat, gloves, and other appropriate safety gear. Construction areas would be fenced and appropriately marked with signs and placards. Construction

equipment and associated trucks transporting material to and from the construction and demolition sites would be directed to roads and streets that carry minimum vehicles. With the above measures in place, there would be no adverse impact on installation recreational users or MFH residents.

3.6.2.3 Alternative 1

Alternative 1 would have similar impacts as the Proposed Action. Therefore, no long-term, adverse, direct or indirect impacts on safety are anticipated.

3.6.2.4 No Action Alternative

Under the No Action Alternative, Bellows AFS would not construct the proposed CE workshop, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. Building 544 would not be demolished. This building is beyond repair for the purpose of occupational use, but could be used for storage. Therefore, no short-term or long-term adverse impacts would be expected on workers, recreational visitors, or MFH residents from implementation of the No Action Alternative.

3.7 Infrastructure and Transportation

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function and includes utility lines. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. Utilities and infrastructure include power supply, water supply, sewer and waste water systems, gas supply, liquid fuel supply, communications, transportation, and solid waste disposal.

The transportation resource is defined as the system of roadways and highways that are in the vicinity of the proposed project area and could reasonably be expected to be potentially impacted by the Proposed Action.

3.7.1 Description of Affected Environment

Electrical. Electrical service is available via overhead lines located on the project site.

Water. Water service is available via a water main bisecting the project site.

Sewer. There are no sewer mains present in the project area.

Transportation. Access to Bellows AFS is via the main entrance gate on Kalanianaole Highway. The proposed project area can be accessed via Pine Tree Road, Family Circle Road, or via the inactive runway that now supports limited vehicular access for Bellows AFS personnel and parking for patrons utilizing the existing CE compound facilities.

3.7.2 Environmental Consequences

3.7.2.1 Evaluation Criteria

Impacts on infrastructure and utilities are evaluated for their potential to disrupt or improve existing levels of service and create additional needs for energy (e.g., natural gas and electric), potable water, sanitary sewer and wastewater systems, storm water systems, and liquid fuels management. Impacts might arise

from energy needs created by either direct or indirect workforce and population changes related to installation activities. Impacts would be considered significant if implementation of the Proposed Action resulted in exceeded capacity of a utility, a long-term interruption of the utility, a violation of a permit condition, or a violation of an approved plan for a utility.

3.7.2.2 Proposed Action

Electrical. Electrical use would be similar to that used in existing CE facilities. Since overhead electric lines are located within and adjacent to the proposed project site, electrical distribution would be easily accessed for the Proposed Action. All electrical systems for the proposed CE Workshop would be designed to be energy efficient in compliance with E.O. 13514. Therefore, no adverse impacts are anticipated.

Water. Water usage would be equivalent to the usage produced from the existing CE workshop. In addition, water distribution lines bisect the site. All water systems for the proposed CE Workshop would incorporate efficient design in compliance with E.O. 13514. Therefore, no adverse impacts are anticipated.

Sewer. Sewer service for the proposed CE workshop would be provided through the use of septic systems with leach field. Development of IWS, such as septic tanks and leach fields, must conform to the requirements of HAR 11-62, *Wastewater Systems*. Key requirements that must be met include (1) the total wastewater flow from the development would not exceed 15,000 gallons per day, (2) the total wastewater flow into each IWS would not exceed 1,000 gallons per day, and (3) 10,000 square feet of usable land area would be available for each IWS. Wastewater plans are subject to the review and approval of the Director of the DOH. Upon commencement of design, the USAF would coordinate design of the IWS with the DOH Wastewater Branch to ensure compliance with HAR Chapter 11-62. The IWS would be designed to provide capacity to meet the projected increase in wastewater demand, such that no adverse impacts would be anticipated.

Transportation. Construction traffic would access Bellows AFS via the main entrance gate on Kalanianaole Highway. Short-term, minor, adverse impacts on Bellows AFS's traffic circulation due to road and lane closures from construction activities would be anticipated. The Proposed Action would require delivery of materials to the proposed construction site. Construction traffic would comprise a small percentage of the total existing traffic and many of the vehicles would be driven to and kept on site for the duration of construction activities, resulting in relatively few additional trips. Furthermore, potential increases in traffic volume associated with Proposed Action would be temporary. All road and lane closures would be temporary in nature and would be coordinated with Security Forces. In addition, appropriate signage would be in place; therefore, no long-term, adverse, direct or indirect impacts on transportation systems are anticipated.

No increase in traffic is anticipated after construction is completed, because there would be no change in CE personnel activities. The Proposed Action would impact part of the taxiway/ramp of Runway 18 from the south that is needed to access the proposed CE workshop. This could result in new traffic patterns in nearby industrial and MFH areas. However, no new access roads would be constructed as part of the Proposed Action. Because of the low level of CE-related traffic needing to access the CE compound area, any new traffic patterns that result from the Proposed Action would be minor.

3.7.2.3 Alternative 1

Alternative 1 would have similar impacts as the Proposed Action. Alternative 1 would result in the use of many of the infrastructure and utility resources discussed above in

Section 3.7.2.2. Impacts from Alternative 1 would be negligible to minor, compared to existing demand. Sustainable design measures would be used to reduce demand. Therefore, no long-term, adverse direct or indirect impacts on utilities and infrastructure are anticipated.

3.7.2.4 No Action Alternative

Under the No Action Alternative, the Bellows AFS would not construct a new CE workshop and would continue to use existing CE facilities on the installation; therefore, there would be no change in or impacts on utilities and infrastructure.

3.8 Hazardous Materials and Waste

Hazardous substances are defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that can cause an increase in mortality, a serious irreversible illness, or an incapacitating reversible illness; or pose a substantial threat to human health or the environment. CERCLA hazardous substances are found at Bellows AFS in subsurface soil and groundwater due to past leaks or spills. The Environmental Restoration Program (ERP) is designed to identify, confirm, and clean up problems arising from past releases of hazardous substances and petroleum products into the environment.

Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment. Hazardous wastes are collected at Bellows AFS at a central accumulation area, from which they are transported to a licensed off-site disposal area for disposal in accordance with RCRA.

The Toxic Substance Control Act (TSCA) addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos-containing materials (ACM), radon, and lead-based paint (LBP). Asbestos is found in building materials at older buildings at Bellows AFS. ACM in these buildings can include asphaltic roofing material and roofing felt, acoustic ceiling materials (e.g., acoustic tiles), textured paints and stucco, plaster color coats and skim coats, asbestos-cement wallboard, vinyl asbestos floor tile and adhesives, pipe insulation, and other building materials. LBP is defined by TSCA as paint or other surface coatings that contain lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight which could pose a hazard by exposure to lead if released from accessible painted surfaces due to deterioration, friction, or impact (15 U.S.C. 2601).

3.8.1 Description of Affected Environment

Hazardous Materials and Wastes. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards governing procurement, issuance, use or disposal of hazardous materials and tracking and recording keeping for public safety and for compliance with all laws and regulations. Bellows AFS monitors environmental permits, storage, spill prevention, and response. AFI 32-7042, *Solid and Hazardous Waste Compliance*, describes roles and responsibilities with waste stream management including planning, training, emergency response, and pollution prevention. Bellows AFS is a conditionally exempt small-quantity generator. In addition, there are no current ongoing problems associated with hazardous waste at the installation (15 AW 2007b).

Asbestos-Containing Materials. AFI 32-1052, *Facilities Asbestos Management*, provides the direction for asbestos management at USAF installations. This instruction incorporates by reference applicable requirements of 29 CFR Part 669 et seq., 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section

112 of the CAA, and other applicable AFIs and DOD Directives. AFI 32-1052 requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the status and condition of ACM in installation facilities and documenting asbestos management efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by USEPA with the authority promulgated under OSHA, 29 U.S.C. 669 et seq. Section 112 of the CAA regulates emissions of asbestos fibers to ambient air. Building materials in older buildings are assumed to contain asbestos. It exists in a variety of forms and can be found in floor tiles, floor tile mastic, roofing materials, joint compound used between two pieces of wallboard, some wallboard thermal system insulation, and boiler gaskets. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat. Asbestos at Bellows AFS is managed in accordance with the *Asbestos Management Plan* that is updated annually. This plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM-abatement projects. In addition, it is designed to protect personnel who live and work on Bellows AFS from exposure to airborne asbestos fibers, as well as to ensure the installation remains in compliance with Federal, state, and local regulations pertaining to asbestos.

Lead-Based Paint. USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of 29 CFR 1910.120, 29 CFR Part 1926, 40 CFR 50.12, 40 CFR Parts 240 through 280, the CAA, and other applicable Federal regulations. In addition, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on October 28, 1992, regulates the use and disposal of LBP on Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards. LBP at Bellows AFS is managed in accordance with the installation's *Lead Exposure and Lead-Based Paint Management Plan* and is updated annually. The plan is designed to establish management responsibilities and procedures for identifying and controlling hazards related to the presence of LBP. The plan addresses organizational roles and responsibilities, program development, management actions, data management, and training.

Environmental Restoration Program. The DOD's ERP requires each installation to identify, investigate, and clean up sites associated with hazardous waste disposal or releases. The ERP at Bellows AFS was initiated in 1984 with an installationwide Preliminary Assessment/Records Search that identified 22 ERP sites and 10 area of concern (AOCs) for further investigation. Currently, 20 ERP sites and all 10 AOCs are closed under No Further Action (NFA) or No Further Remedial Action Planned (NFRAP), one site is under remediation (Site LF23, Base Hardfill), and two sites (Site LF01, Base Landfill and Site DA101, World War II Dump) have been designated by DOH as Land Use Controls (15 AW 2009).

3.8.2 Environmental Consequences

3.8.2.1 Evaluation Criteria

Impacts on the ERP would be considered significant if the Federal action disturbed (or created) contaminated sites resulting in adverse effects on human health or the environment. Environmental consequences associated with hazardous materials and waste would be significant if the storage, use, transportation, or disposal of these substances were to substantially increase the risk to human health and the environment. Impacts from ACM and LBP would be considered significant if OSHA standards were exceeded.

3.8.2.2 Proposed Action

Hazardous Materials and Waste. Short- and long-term, negligible to minor, adverse impacts would be expected from encountering hazardous materials and wastes due to construction activities. Construction activities associated with the Proposed Action would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of products containing hazardous materials used during the construction of the CE workshop would be minimal and their use would be of short duration. The quantity of hazardous wastes generated from proposed construction activities would be minor and would not be expected to exceed the capacities of existing hazardous waste disposal facilities. Any hazardous materials encountered or hazardous waste generated during construction activities must be handled in accordance with all appropriate environmental laws and regulations.

ACM and LBP. No facilities containing ACM or LBP would be impacted by the Proposed Action.

ERP. No active ERP sites or AOCs are within or are known to impact the proposed project area. Sites LF23, LF01, and DA101 are outside the Proposed Action project area and would not directly or indirectly impact any construction activities or future operation of the proposed CE workshop.

3.8.2.3 Alternative 1

Hazardous Materials and Waste. Construction activities associated with Alternative 1 would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of products containing hazardous materials used during the construction of the CE workshop would be minimal and their use would be of short duration. The quantity of hazardous wastes generated from proposed construction activities would be minor and would not be expected to exceed the capacities of existing hazardous waste disposal facilities.

ACM and LBP. It is anticipated that the demolition of Building 548 could generate ACM and LBP wastes. Any ACM or LBP encountered during building demolition and cleanup would be handled in accordance with established USAF policy, the *Asbestos Management Plan*, and the *Lead-Based Paint Management Plan*. USAF regulations prohibit the use of ACM and LBP for new construction. Specifications for new facilities would be in accordance with USAF policies and regulations.

Demolition plans would be reviewed by civil engineering personnel to ensure appropriate measures were taken to reduce potential exposure to, and release of, asbestos and lead from LBP. The USAF would follow its current practices for removal of friable asbestos, other ACM, and LBP associated with this building. Friable ACM would be removed and disposed of at an asbestos-permitted landfill. Because Alternative 1 might affect ACM and LBP and existing handling procedures would ensure OSHA standards are not exceeded, impacts from the removal of ACM and LBP would be negligible.

ERP. No active ERP sites or AOCs are within or are known to impact the proposed project area. Sites LF23, LF01, and DA101 are outside the Alternative 1 project area and would not directly or indirectly impact any construction activities or future operation of the proposed CE workshop.

3.8.2.4 No Action Alternative

Under the No Action Alternative, there would be no soil disturbance at the proposed CE workshop site and no risk of encountering hazardous substances. Building 548 would not be demolished; LBP on painted surfaces and ACM in building materials would not be disturbed. In general, there would be no change in or impacts on environmental restoration, hazardous materials and wastes at Bellows AFS.

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4. Cumulative and Other Effects

4.1 Cumulative Effects

CEQ defines cumulative effects as the "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative effects resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects.

4.1.1 Identification of Projects with Potential for Cumulative Effects

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, as well as a description of what resources could potentially be cumulatively affected. For the purposes of this analysis, the temporal span of the Proposed Action is 5 years. For most resources, the spatial area for consideration of cumulative effects is Bellows AFS, particularly in the vicinity of the Proposed Action and Alternative 1. Given the relatively small scope of the Proposed Action, cumulative effects with other projects off the installation would not be expected and are not considered in detail in this EA. In accordance with CEQ guidance, the current effects of past actions are considered in aggregate as appropriate for each resource area without delving into the historical details of individual past actions.

Construction of New Recreational Lodging. The USAF, Det 2, 18th Wing would construct up to 16 new recreational lodging units at Bellows AFS in 2010. New lodging facilities would be constructed in multi-unit one- or two-story buildings with individual units ranging from 600 to 750 ft^2 each. Sewer service using a septic system with leach field would be provided to meet project wastewater demands. Water and electrical service would be provided via underground cables from existing service along Pacific Lane. A new access road from Tinker Road and parking areas (one to two spaces per unit) would also be constructed. Demolition of the northern end of the former runway would also be necessary. Units would be constructed within the northern end of the former runway 3L/21R and an adjacent grassy area west of Tinker Road. Following construction, disturbed areas would be landscaped.

An EA was prepared in September 2009 for the construction of new recreational lodging facilities (Bellows AFS 2009c). The EA identified short-term construction-related adverse effects on air quality, geology and soils, hazardous materials and waste, noise, safety and health, visual resources, and water resources and long-term beneficial effects on recreational resources. No effects on biological resources (assuming mitigation to reduce potential take of listed seabirds), land use, natural hazards, or socioeconomics were identified. To mitigate potentially adverse effects on cultural resources, a data

recovery program will be undertaken within certain portions of the project area prior to commencement of construction activities.

Other Installation Development Activities. Bellows AFS, as with all other USAF installations, has had continuous development of the installation. The 15 AW is in the early stages of preparing a Comprehensive Base Development EA, which would analyze the environmental consequences of implementing the Bellows AFS Wing-approved Strategic Master Plan (Bellows AFS 2009a). The projects to be analyzed in the Comprehensive Base Development EA are as follows:

- Replace Bath House 314
- Replace Main Gate
- Construct Community Activity Center
- Reconfigure Bath House, Buildings 250, 517, and 601
- Utility Pole Away Phases I, II, III, and IV
- Recreational Maze
- Beach Restoration.

Since the Base Development EA is in the early stages of its preparation, a full environmental analysis of these projects has not yet been prepared. Generally, construction and renovation projects would be expected to have short-term, minor, adverse effects on geological resources, biological resources, water resources, air quality, safety, transportation, and hazardous materials and wastes through the duration of construction activities. Potential long-term adverse effects on sensitive resources, including cultural resources, wetlands, floodplain, and threatened and endangered species, have not been determined. Long-term beneficial effects on infrastructure, recreation, and safety would be expected as improvements are undertaken.

4.1.2 Cumulative Effects Analysis

Potential cumulative effects of implementing the Proposed Action, constructing new recreational facilities, and implementing other installation development activities are summarized in **Table 4-1**. Potential cumulative effects of implementing Alternative 1 instead of the Proposed Action would be expected to be essentially the same. No significant adverse cumulative effects were identified in the cumulative effects analysis.

4.2 Unavoidable Adverse Effects

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Hazardous Materials and Waste. The generation of hazardous materials and wastes is an unavoidable condition associated with the Proposed Action. However, the potential for this would not significantly increase over baseline conditions and, therefore, is not considered significant.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action, Alternative 1, or No Action Alternative.

Table 4-1. Potential Cumulative Effects Summary under the Proposed Action

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Cultural Resources	Bellows AFS has many important cultural resources, including buried Native Hawaiian cultural materials and human interments; World War II-era buildings; and Cold War-era structures.	Cultural resources are managed in accordance with an approved Integrated Cultural Resources Management Plan.	Two shallow traditional Hawaiian fire-pit features, one pit of unknown function, a small historic-era trash deposit, and a disturbed paleosol present throughout the project area were identified during exploratory excavations (Dye 2009). Additionally, Runway 18 is considered eligible for the NRHP, though effects on the runway would be minimal. Section 106 has concluded in concurrence that construction monitors shall be present during construction (see **Appendix B** for letter from SHPO).	*Recreational Lodging:* Subsurface cultural resources could be affected by construction, including an NRHP-eligible site. A data recovery program will be implemented. Effects are not significant. *Base Development:* Effects on cultural resources have not yet been identified.	All construction and renovation activities would be undertaken in accordance with the Integrated Cultural Resources Management Plan. Bellows AFS seeks to avoid and minimize impacts on sensitive resources for individual projects and will consult and, if necessary, mitigate to ensure no significant effects. Avoidance of impacts is preferred to mitigation. With avoidance of impacts or as mitigation for individual projects, no significant adverse cumulative effects are expected.
Geological Resources	Past activities have modified soils.	None.	Short-term, minor, adverse effects would be expected from construction activities. Approximately 0.381 acres would be disturbed.	*Recreational Lodging:* Short-term, adverse effects are expected from construction activities. *Base Development:* Short-term, adverse effects are expected from construction activities.	Given the distance between projects, there is little potential for cumulative effects as a result of soil erosion. No significant adverse cumulative effects are expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Biological Resources	Several protected species are found on Oahʻu and can occur occasionally on Bellows AFS.	Biological resources are managed in accordance with an approved Integrated Natural Resources Management Plan.	No adverse impact would occur on naturally growing vegetation. No permanent or adverse impacts on wildlife or threatened and endangered species would occur. Noise from construction activities could temporarily impact migrating species. With use of special lighting to avoid and minimize the unintended take of listed seabirds, no effects on biological resources are expected. Short-term, negligible to minor, adverse impacts on smaller, less-mobile species within the proposed project area could also occur as a result of direct mortality associated with collision with construction equipment.	*Recreational Lodging:* With use of special lighting to avoid and minimize the unintended take of listed seabirds, no effects on biological resources are expected. *Base Development:* Short-term, adverse effects could occur during construction activities. Long-term effects on biological resources have not yet been identified.	All construction and renovation activities would be undertaken in accordance with the Integrated Natural Resources Management Plan. Bellows AFS seeks to avoid and minimize impacts on sensitive resources for individual projects and will consult and, if necessary, mitigate to ensure no significant effects. Avoidance of impacts is preferred to mitigation. With avoidance of impacts or as mitigation for individual projects, no significant adverse cumulative effects are expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Water Resources	Watercourses on Bellows AFS have been heavily channelized with limited flood capacity. Surface water quality has been impacted by land use.	Bellows AFS has one UIC permit.	There are no surface water bodies within or adjacent to the project area. No effects are anticipated.	*Recreational Lodging:* An NPDES permit will be required for construction activities. An IWS will be constructed. Short-term, adverse effects are expected from construction activities. *Base Development:* Short-term, adverse effects are expected from construction activities. Long-term effects on water resources have not yet been identified.	Given the distance between projects, there is little potential for cumulative effects as a result of storm water runoff. No significant adverse cumulative effects are expected.
Air Quality	Hawai‘i is in attainment/unclassified for all criteria air pollutants.	Hawai‘i is in attainment/unclassified for all criteria air pollutants. There are no air permits for Bellows AFS.	Short-term, minor, adverse effects would be expected from construction activities.	*Recreational Lodging:* Short-term, minor, adverse effects would be expected from construction activities. *Base Development:* Short-term, minor, adverse effects would be expected from construction activities.	Cumulative air emissions would not be expected to result in violations of NAAQS or noticeably degrade ambient air quality. No significant adverse cumulative effects are expected.
Safety	There are no existing public health or safety concerns from past installation actions.	USAF AFOSH Program and OSHA regulations are followed. There are no existing public health or safety concerns.	Short-term, minor, adverse effects would be expected during construction activities due to increased risk of injury.	*Recreational Lodging:* Short-term, minor, adverse effects are expected during construction activities due to increased risk of injury. *Base Development:* Short-term, minor, adverse effects would be expected during construction activities due to increased risk of injury.	If multiple construction projects are ongoing at the same time at Bellows AFS, short-term, minor, adverse cumulative effects due to increased risk of injury. No significant adverse, cumulative effects are expected.

Resource Area	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Infrastructure and Transportation	Bellows AFS infrastructure includes electrical, water, and sewer service and roadways.	Utilities and infrastructure systems are generally in good working condition.	An IWS would be constructed to provide septic service. Traffic patterns could change around MFH areas. Negligible adverse effects on infrastructure and transportation would be expected.	*Recreational Lodging:* An IWS would be constructed to provide septic service. Traffic patterns will change from construction of the new access road. Negligible, adverse effects on infrastructure and transportation would be expected. *Base Development:* Long-term, beneficial effects would be expected associated with the utility pole projects.	Long-term, beneficial cumulative effects would be expected from utility improvements. No significant adverse cumulative effects are expected.
Hazardous Materials and Waste	Hazardous wastes and materials, ACM, LBP, and ERP sites and AOCs occur at Bellows AFS as a result of historic use as a military installation.	Hazardous wastes and materials, ACM, LBP, and ERP sites and AOCs are managed in accordance with USAF and other applicable Federal regulations.	Short- and long-term, negligible to minor, adverse impacts would be expected from potentially encountering hazardous materials and wastes due to construction activities. No ACM*, LBP*, or ERP sites/AOCs are known to occur at the proposed site.	*Recreational Lodging:* Short- and long-term, negligible to minor, adverse impacts are expected from potentially encountering hazardous materials and wastes due to construction activities. *Base Development:* Short- and long-term, negligible to minor, adverse impacts would be expected from potentially encountering hazardous materials and wastes due to construction activities.	Cumulatively, short-term use of hazardous materials and generation of solid waste would increase during construction activities. Handling and disposal of hazardous materials and wastes would be in accordance with USAFand other applicable Federal regulations. No significant adverse cumulative effects are expected.

Note:
* Alternative 1 would require demolition of Building 548, which likely contains ACM and LBP. ACM and LBP would be handled in accordance with OSHA standards, so negligible effects are expected.

4.3 Unavoidable Adverse Effects

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Hazardous Materials and Waste. The generation of hazardous materials and wastes is an unavoidable condition associated with the Proposed Action. However, the potential for this would not significantly increase over baseline conditions and, therefore, is not considered significant.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action, Alternative 1, or No Action Alternative.

4.4 Compatibility of Proposed Action and Alternatives with Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

The Proposed Action would be consistent with all applicable land use plans and ordinances.

4.5 Relationship Between Short-Term Uses of Man's Environment and Maintenance and Enhancement of Long-Term Productivity

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

This EA identifies potential short-term adverse effects on the natural environment as a result of construction activities. These potential adverse effects include soil erosion, increased safety risks, and hazardous materials and wastes. Construction of a new CE facility would increase long-term productivity by replacing an old, outdated facility with a modern and efficient facility.

4.6 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources would have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, and human resources. The use of these resources is considered to be permanent but negligible.

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APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

Appendix A
Applicable Laws, Regulations, Policies, and Planning Criteria

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 as well as 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.

Airspace

Airspace management in the U.S. Air Force (USAF) is guided by Air Force Instruction (AFI) 13-201, *Air Force Airspace Management*. This AFI provides guidance and procedures for developing and processing special use airspace (SUA). It covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support USAF flight operations. It applies to activities that have operational or administrative responsibility for using airspace and establishes practices to decrease disturbances from flight operations that might cause adverse public reaction and provides flying unit commanders with general guidance for dealing with local problems.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near USAF installations.

Land Use

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, 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 U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) 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 (NAAQSs) 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 as well as 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 to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated

as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

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

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

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

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5, 2009) established an integrated strategy towards sustainability in Federal Government and to make reduction of greenhouse gas emissions a priority for the Federal agencies. Federal agencies are required to increase energy efficiency; measure, report, and reduce their greenhouse gas emissions; conserve and protect water resources through efficiency, reuse, and storm water management; and eliminate waste, recycle, and prevent pollution. This EO requires all Federal agencies to establish and report a percentage reduction target for agencywide reductions of scope 1 to 3 greenhouse gas emissions by fiscal year 2020, using fiscal year 2008 as the baseline year. Each agency shall consider reductions associated with reducing energy intensity in agency buildings; increasing agency use of renewable energy and implementing renewable energy generation projects on agency property; and reducing the use of fossil fuels by using low greenhouse gas emitting vehicles including alternative fuel vehicles; optimizing the number of vehicles in the agency fleet; and reducing, if the agency operates a fleet of at least 20 motor vehicles, the agency fleet's total consumption of petroleum products by a minimum of 2 percent annually through the end of fiscal year 2020, relative to a baseline of fiscal year 2005.

Safety

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program,* implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program.

The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

Geological Resources

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

Water Resources

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

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

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop

and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

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

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted flood proofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

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

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

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

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

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

The Federal Noxious Weed Act (Public Law 93-629) of 1975, as amended in 1990, established a Federal program to control the spread of noxious weeds. The Secretary of Agriculture was given the authority to designate plants as noxious weeds by regulation and the movement of such weeds in interstate or foreign commerce was prohibited except under permit. The Secretary was also given authority to inspect, seize, and destroy products and quarantine areas, if necessary, to prevent the spread of such weeds. The Secretary was also authorized to cooperate with Federal, state, and local agencies; farmer associations, and private individuals in measures to control, eradicate, prevent, or retard the spread of noxious weeds. This law also requires that any environmental assessments or impact statements that are required to implement plant control agreements must be completed within 1 year of the time the need for the document is established.

EO 13112, *Invasive Species* (February 3, 1999), provides direction to use relevant programs and authorities to prevent introduction of invasive species, detect and respond rapidly to control populations of invasive species, monitor invasive species populations, provide restoration of native species and habitat conditions in ecosystems that have been invaded, conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species, and promote public education on invasive species with means to address them. EO 13112 was created to minimize the economic, ecological, and human health impacts that invasive species cause.

Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of

Historic Places (NRHP). ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

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

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain "cultural items," defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

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

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

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

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

Socioeconomics and Environmental Justice

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

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorize USEPA to respond to spills and other releases of hazardous substances to the environment, and authorize the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

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

principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

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

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

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

APPENDIX B

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE AND NOTICE OF AVAILABILITY

Appendix B

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) Distribution

The Draft EA and FONSI were made available to the agencies listed below for a 30-day IICEP review period. A copy of the IICEP letter, comments received, and responses to comments received are included below.

FEDERAL PARTIES:

Commander, Pacific Division Naval Facilities
Engineering Command
Attn: Environmental Planning Division
258 Makalapa Drive Suite 100 Pearl Harbor,
Hawai‘i 96860-3134

Ron Yamada
Environmental Protection Specialist,
MCBH/LE
MCBH
Kanoehe Bay, Hawai‘i 96863-3062

Nova Blazej
Region 9 Coordinator
U.S. Environmental Protection Agency
75 Hawthorne St
San Francisco, California 94105

Mr. Dean Higuchi
Region 9, Pacific Islands Office
U.S. Environmental Protection Agency
P.O. Box 50003
Honolulu, Hawai‘i 96850

U.S. Department of Agriculture
State Conservationist
Resource Conservation Service
P.O. Box 50004
Honolulu, Hawai‘i 96850

Mr. Patrick Leonard
U.S. Fish and Wildlife Service
Pacific Islands Office
300 Ala Moana Blvd
Room 3-122, Box 50088
Honolulu, Hawai‘i 96850

STATE PARTIES:

Governor Linda Lingle
Office of the Governor
State Capitol
Honolulu, Hawai‘i 96813

State of Hawai‘i
Department of Defense
3949 Diamond Head Road
Honolulu, Hawai‘i 96816-4495

Ms. Katherine Puana Kealoha, Director
Hawai‘i State Department of Health
Office of Environmental Quality Control
235 S. Beretania St., Suite 702
Honolulu, Hawai‘i 96813

State of Hawai‘i
Department of Land and Natural Resources
Land Division
1151 Punchbowl St, Room 220
Honolulu, Hawai‘i 96813

State of Hawai‘i
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl St, Room 325
Honolulu, Hawai‘i 96813

Laura H. Theilen, Administrator
State Historic Preservation Division
Department of Land & Natural Resources
601 Kamokila Boulevard
Kapolei, Hawai‘i 96707

Hawai‘i Coastal Zone Management Program
State of Hawai‘i, Office of Planning
P.O. Box 2359
Honolulu, Hawai‘i 96804

Mr. Lance Foster
Office of Hawaiian Affairs (OHA)
711 Kapiʻolani Blvd., Suite 500
Honolulu, Hawaiʻi 96813

Mr. Keith Kawaoka
State of Hawaiʻi
Department of Health Hazard Evaluation and
Emergency Response Office (HEER)
919 Ala Moana Blvd, Room 206
Honolulu, Hawaiʻi 96814

LOCAL PARTIES:

Mayor Mufi Hannemann
530 S. King St
Honolulu, Hawaiʻi 96813

City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaiʻi 96813

Chief Engineer
Board of Water Supply
630 South Beretania Street
Honolulu, Hawaiʻi 96813

Hui Malama I Na Kupuna ʻO Hawaiʻi Nei
Mr. Edward Halealoha Ayau, Esq.
622 Wainaku Avenue
Hilo, Hawaiʻi 96720

Historic Hawaiʻi Foundation
Ms. Kiersten Falkner, Executive Director
P.O. Box 1658
Honolulu, Hawaiʻi 96806

Nation of Hawaiʻi
Mr. Dennis Kanahele
41-1300 Waikupanaha Street
Waimanalo, Hawaiʻi 96795

DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

MEMORANDUM FOR DISTRIBUTION

SEP 2 3 2009

FROM: 718 CES/CC
Unit 5261
APO AP 96368-5261

SUBJECT: Solicitation of Input into the Preparation of an Environmental Assessment for the Proposed Construction of New Civil Engineering Workshop at Bellows Air Force Station, O'ahu.

1. The 718th (718) Civil Engineer Squadron (CES) is preparing an Environmental Assessment to address the proposed construction of a new Civil Engineering (CE) workshop at Bellows Air Force Station (AFS), O'ahu, Hawaii. This workshop will be used by the Facilities Maintenance Team at Bellows AFS.

2. The purpose of the Proposed Action is to construct a 6,000 square feet (sf), 557 square meters (m^2), pre-engineered metal building with conditioned office space, restroom, locker room and break/kitchen area to provide working space for CE personnel. A detailed Description of the Proposed Action and Alternatives (DOPAA) is included as an attachment to this correspondence.

3. The environmental impact analysis process for the Proposed Action and appropriate Alternatives is being conducted by 718 CES in accordance with the Council on Environmental Quality guidelines pursuant to the requirement of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached DOPAA and solicit your comments concerning the proposal and any potential environmental issues of concern to you.

4. The Environmental Analysis for this proposed action will be available for review in the Draft Environmental Assessment available Nov 2009. Separate correspondence will be conducted to fulfill Sect. 106, and CZMA requirements.

5. Please provide comments directly to Mr. Craig Gorsuch, Det 2, 18 FSS/CEE, Civil Engineering Environmental, 515 Tinker Rd, Bldg. 515, Waimanalo, HI 96795-1903 at (808) 259-4215, craig.gorsuch.ctr@hickam.af.mil, 718 CES/CEAN, Unit 5261 APO, AP 96368-5261, george.komine.jp@kadena.af.mil within 30 days.

RICK T. PELZL, CAPT, USAF
Commander, Det 2, 18 FSS/CC

2 Attachments:
1. Description of the Proposed Action and Alternatives
2. Distribution List

LINDA LINGLE
GOVERNOR OF HAWAII

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

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESEERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

October 22, 2009

Captain Rick T. Pelzl, USAF
Commander, Det2 18 FSS/CC
C/o Craig Gorsuch craig.gorsuch@hickam.af.mil
Civil Engineering Environmental
515 Tinker Road Building 515
Waimanalo, Hawaii 96795-1903

LOG NO: 2009.4390
DOC NO: 0910NM29

Dear Mr. Gorsuch:

SUBJECT: **Section 106 (NHPA) Consultation – Draft EA for construction of a new Civil Engineering Workshop at Bellows Air Force Station, Wamanalo *Ahupua'a*, Ko'olaupoki District, Island of O'ahu**
TMK: (1) 4-1-15: 001

Thank you for your submittal of September 23, 2009. The proposed undertaking is the new construction of a Civil Engineering Workshop. The APE is the northern ramp runway 18. We agree an archaeological inventory survey and cultural assessment is needed for this project. The history of Bellows Air Force Station was interesting in this preliminary EA but you did not document the cultural landscape and the archaeological history which is so rich for the Bellows Air Force Station. We suggest your Final EA include this kind of documentation too as it part of the history of the Bellow.

Should you have any additional questions or concerns please do not hesitate to contact me, at 692-8015.

Sincerely,

Nancy A. McMahon

Nancy McMahon
Deputy State Historic Preservation Officer

Cc: George.komine@kadena.af.mil
Office of Hawaiian Affairs Honolulu, 711 Kapi'olani Boulevard, Suite 500, Honolulu, Hawai'i 96813

Submittal Sheet for Historic Preservation Review Filling Fees

State Historic Preservation Division
Department Land and Natural Resources

Agency/Firm (Requesting Review): U.S. AIR FORCE

Contact: JEFFREY PANTALEO

Phone: (808) 449-3179 Fax: (808) 448-7903 E-Mail: JEFFREY.PANTALEO.1@HICKAM.AF.MIL

Address: 75 H STREET Hickam AFB, HI 96853

Title of Report/Plan: PRE-CONSTRUCTION ARCHAEOLOGICAL RESOURCE SURVEY FOR THE NEW CIVIL ENGINEERING BUILDING, BELLOWS AIR FORCE STATION

Island:	Oahu	District:	Koolaupoko	Ahupua'a:	Waimanalo

TMK [(1) 1-1-001:001]: 4-1-001:015

Acreage inventoried (hectares):	1	Number of new sites inventoried:	∅
Please characterize survey level: Reconnaissance or Intensive	INVENTORY		

Submitted Plan/Report Fee & Type: (All reports or plans submitted to the SHPD for review shall be accompanied by the appropriate fee in accordance with HAR §13-275-4 and §284-4)

____ Check if Report is a Re-Submittal (no fee charged)

____	$50	Archaeological Assessment
____	$150	Archaeological Inventory Survey Plan
____	$450	Archaeological, Architectural or Ethnographic Survey Report
____	$150	Preservation Plan
____	$25	Monitoring Plan
____	$150	Archaeological Data Recovery Plan
____	$250	Burial Treatment Plan
____	$100	Archaeological Monitoring Report, if resources reported
____	$450	Archaeological Data Recovery Report
____	$450	Ethnographic Documentation Report
____	$25	Burial Disinterment Report
____	$50	Osteological Analysis Report

Fee Total: ∅ EXEMPT (Make check payable to "Hawaii Historic Preservation Special Fund")

For Office Use Only:

Date Received:	Payment Method: Cash $ Check: Check No.:
Log. No.:	Receipt Issued

RECEIVED
HISTORIC PRES. DIV.
DEPT. OF LAND &
NATURAL RESOURCES
2009 NOV 12 A 11:46

LINDA LINGLE
GOVERNOR OF HAWAII

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

RUSSELL Y. TSUJI
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DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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CONSERVATION AND RESOURCES ENFORCEMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 14, 2009

LOG NO: 2009.4558
DOC NO: 0912NM21

Mr. Jeff Pantaleo
Archaeologist , Environmental Planning Element
15th Civil Engineer Squadron
U. S. Air Force
75 H Street
Hickam AFB, Hawai'i 96853-5233

Dear Mr. Pantaleo:

SUBJECT: **National Historic Preservation Act (NHPA) Section 106 Review—**
Pre-Contruction Archaeological Resource Survey (Dye and Dye 2009) for Bellows Air Force Station,
Wāimanalo Ahupua'a, Ko'olaupoko District, O'ahu, Hawai'i
TMK: (1) 4-1-001: 015

Thank you for providing us the opportunity to review this Pre-construction Archaeological Resources Survey for a New Civil Engineering Building, Bellows Air Force Station, *[Day and Dye PhD, TS DYE and Colleagues, Inc. August 2009]* which we received on November 12, 2009. The project is for a new Civil Engineering Building at Bellows (AFS).

The survey area was 15 x 20 m of Family Circle Road. Four backhoe trenches (totaling 24 m of trenching) were excavated which yielded two traditional Hawaiian fire-pit features assigned SIHP number 50-80-11-4857. Two samples were collected from native wood species (*'ilima, alahe'e* and *'akoko* with bit of *'ulei*) for dating. The dates yielded age determinations from 25- 232 years [AD 1300-1425; AD1427-1625]. We concur with the recommendation that an archaeological monitor is needed for the actual construction of the Civil Engineering Building.

The report is acceptable and meets the minimum requirements for compliance with the Hawaii Administrative Rules (HAR) §13-13-276 *Rules Governing Standards for Archaeological Inventory Studies and Reports.* Please send one text-searchable PDF version on CD along with a **copy of this review letter** to the attention of the "**SHPD Library**" at the Kapolei SHPD office. Please contact me at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Nancy A. McMahon

Nancy A. McMahon (Deputy SHPO)
Archaeology and Historic Preservation Manager

Cc: Tom Dye, TSDye and Colleagues

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

October 8, 2009

Mr. Craig Gorsuch
Det 2, 18 FSS/CEE
Civil Engineering Environmental
515 Tinker Road, Building 515
Waimanalo, Hawaii 96795-1903

Dear Mr. Gorsuch:

Subject: Letter Dated September 23, 2009 Requesting Input into the Preparation of An Environmental Assessment for the Proposed Construction of New Civil Engineering Workshop at Bellows Air Force Station

Thank you for the opportunity to comment on the proposed new Civil Engineering Workshop.

The existing water system is presently adequate to accommodate the proposed development. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The proposed project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

KEITH S. SHIDA
Program Administrator
Customer Care Division

Water for Life . . . Ka Wai Ola

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR

DAVID K. TANOUE
DIRECTOR

ROBERT M. SUMITOMO
DEPUTY DIRECTOR

October 13, 2009

2009/ELOG-2345 (df)

Mr. Craig Gorsuch
Det 2, 18 FSS/CEE, Civil Engineering Environmental
515 Tinker Road, Building 515
Waimanalo, Hawaii 96795-1903

Dear Mr. Gorsuch:

Subject: September 2009 Draft Environmental Assessment (DEA) Preparation Notice for the Proposed Construction of New Civil Engineering Workshop At Bellows Air Force Station, Waimanalo, TMK: 4-1-015: 001

This is in response to your September 23, 2009 letter requesting our department's input to the subject project. Our preliminary comments are as follows:

1. Please be advised that in general, under City ordinance, all military uses and structures are allowed within military F-1 zoning districts. For clarification purposes, however, Federal ownership, Federal funding, and/or F-1 zoning does not automatically prohibit the City from exercising its jurisdiction over a project.

2. The DEA should include a list of all required permits and approvals.

3. According to our records, the project site may be listed as an historic site on the State and/or National Registry. Please contact the State Department of Land and Natural Resources, Historic Preservation Division for verification.

If there are any questions, please contact Mr. Don Fujii of the Site Development Division at 768-8107.

Very truly yours,

for David K. Tanoue, Director
Department of Planning and Permitting

DKT:ky
[727093]

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD09/4677

October 6, 2009

Craig Gorsuch
Det 2, 18FSS/CEE
Civil Engineering Environmental
515 Tinker Road, Bldg. 515
Waimānalo, HI 96795-1903

RE: Solicitation of Input into the Preparation of an Environmental Assessment for the Proposed Construction of New Civil Engineering Workshop at Bellows Air Force Station, Ahupua'a of Waimānalo, District of Ko'olaupoko, Island of O'ahu.

Aloha e Craig Gorsuch,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated September 23, 2009. The 718th Civil Engineer Squadron (CES) is preparing an Environmental Assessment for the proposed construction of a new Civil Engineering (CE) workshop at Bellows Air Force Station (BAFS). OHA has reviewed the project and offers the following comments.

The proposed undertaking consist of constructing a 6,000 square feet pre-engineered metal building with conditioned office space, restroom, locker room and break/kitchen area to provide working space for CE personnel. As part of the environmental review process the proposed action and appropriate alternatives for this project are being conducted pursuant to the National Environmental Policy Act of 1969 (NEPA). The proposed action and alternatives include the preferred alternative and only one alternative. The strength of the NEPA alternatives analysis process is to provide a wide range of alternatives and to evaluate them, especially in the Draft Environmental Assessment process.

According to the submission, a pre-construction archeological survey will be conducted for the proposed project area. Previous development of a playground has impacted iwi kūpuna in close proximity of the project site. OHA is concerned about further impacts to iwi kūpuna and any other cultural resources that may be present at a selected project site.

Thank you for the opportunity to comment. If you have further questions, please contact Jason Jeremiah by phone at (808) 594-1816 or e-mail him at jasonj@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Administrator

C: Rick T. Pelzl, CAPT, USAF
Commander, Det 2, 18 FSS/CC
Department of the Air Force
Pacific Air Forces

Laura Thielen
State Historic Preservation Officer
Department of Land and Natural Resources
601 Kamokila Boulevard, Room 555
Kapolei, Hawai'i 96707

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
2010-TA-0005

Mr. Craig Gorsuch
Det 2, 18 FSS/CEE
Civil Engineering Environmental
515 Tinker Road, Building 515
Waimanalo, Hawaii 96795-1903

OCT 2 9 2009

Subject: Preparation of an Environmental Assessment for the Construction of New Civil Engineering Workshop at Bellows Air Force Station, Oahu

Dear Mr. Gorsuch:

This letter acknowledges the U.S. Fish and Wildlife Service's (Service) receipt of your letter on September 23, 2009. You requested assistance regarding the preparation of a draft Environmental Assessment (DEA) for the proposed construction of a new Civil Engineering workshop at Bellows Air Force Station (AFS), Oahu. The proposed project will construct a 6,000-square foot, pre-engineered metal building with conditioned office space, restroom, locker room, and break/kitchen area. In addition, one properly sized septic tank will be constructed.

These comments are provided in accordance with the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat.852] (NEPA); and other authorities mandating Federal oversight of environmental resources the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], as amended (Act); and the Migratory Bird Treaty Act of 1918 [16 U.S.C. 703 *et seq.*; 40 Stat. 755] as amended (MBTA).

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program. The federally endangered Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian moorhen (*Gallinula chloropus sandvicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian hoary bat (*Lasiurus cinereus semotus*), and threatened green sea turtle (*Chelonia mydas*) have been observed near the proposed project area. The federally threatened Newell's shearwater (*Puffinus auricularis newelli*) and MBTA protected wedge-tailed shearwater (*P. pacificus*), are known to fly through the area. The DEA should address all potential impacts to these federally-protected species.

TAKE PRIDE IN AMERICA

More specifically, the DEA should address all potential impacts to listed seabirds and outline conservation measures to minimize these impacts. Newell's shearwater fly at night and are attracted to artificially-lighted areas which can result in disorientation and subsequent fallout due to exhaustion or collision with objects such as utility lines, guy wires, and towers that protrude above the vegetation layer. Any increase in the use of night-time lighting, particularly during each year's peak fallout period (September 15 through December 15), could result in seabird injury or mortality. Once grounded, they are vulnerable to predators or often struck by vehicles along roadways. Potential impacts to seabirds could be minimized by shielding outdoor lights associated with the project, minimizing night-time construction, and providing all project staff and residents with information about seabird fallout. All lights, including street lights, should be shielded so the bulb can only be seen from below and use the lowest wattage bulbs possible.

We hope this information assists you in your development of a DEA. If you have questions, please contact Aaron Nadig, Fish and Wildlife Biologist (phone: 808-792-9400; fax: 808-792-9581).

Sincerely,

for Loyal Mehrhoff
Field Supervisor

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME LEINAALA FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File: EHA/HEER Office
2010-056 RP

January 22, 2010

Kenneth S. Wilsbach
Brigadier General, USAF, Commander 18th Wing
DET2, 18 FSS/CC
515 Tinker Road
Bellows AFS
Waimanalo, HI 96795-1903

Facility/Site: Bellows Air Force Station, Oahu, Hawaii

Subject: Review of "Draft Environmental Assessment Addressing Construction of a New Civil Engineering Workshop at Bellows Air Force Station, Oahu, Hawaii"

Dear General Wilsbach:

The Hawaii Department of Health Hazard Evaluation and Emergency Response Office has reviewed the "Draft Environmental Assessment Addressing Construction of a New Civil Engineering Workshop at Bellows Air Force Station, Oahu, Hawaii".

The proposed construction of the new Civil Engineering (CE) Workshop will take place at the north end of the abandoned Runway 18. Excavations will be necessary to build a new foundation for the proposed structure. Please be aware that, should any hazardous materials be encountered during the construction of the CE Workshop, the HEER Office must be notified. Proper measures must then be taken to alleviate possible exposure pathways to construction workers, facility employees, and the environment. Disposition of any hazardous waste encountered should also be coordinated through the HEER Office.

Should there be any questions, please do not hesitate to contact me at 586-0957. Thank you for your time and consideration in this matter.

Sincerely

Richard Palmer Ph.D.

Richard Palmer, Ph.D.
Environmental Health Specialist
Hazard Evaluation and Emergency Response Office
State of Hawaii Department of Health

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

January 20, 2010

Mr. Craig Gorsuch
DET 2, 18 FSS/ CC
Civil Engineering Environmental
515 Tinker Road, Building 515
Waimanalo, Hawaii 96795-1903

Dear Mr. Gorsuch:

Subject: Your Letter Dated January 7, 2010 on the Environmental Assessment and Finding of No Significant Impact for the Proposed Construction of the New Civil Engineering Workshop at Bellows Air Force Station, TMK: 4-1-015:001

Thank you for the opportunity to comment on the proposed new Civil Engineering Workshop.

The existing water system is presently adequate to accommodate the proposed development. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The proposed development is subject to Board of Water Supply cross-connection control and backflow prevention requirements prior to issuance of the building permits.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

PAUL S. KIKUCHI
Chief Financial Officer
Customer Care Division

Water for Life . . Ka Wai Ola

7457.

LINDA LINGLE
GOVERNOR OF HAWAII

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

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

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

February 5, 2010

Mr. Craig Gorsuch
LEED AP
Environmental Program Manager
Bellows Air Force Station
Det 2, 18 FSS/CEE
515 Tinker Road
Waimanalo, Hawaii 96795-1903

Dear Mr. Gorsuch:

Subject: Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) Addressing Construction of A New Civil Engineering Workshop at Bellows Air Force Station, Oahu

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 your January 7, 2010 memorandum pertaining to the subject matter to DLNR Divisions for their review and comment. They are as follows:

Division of Boating & Ocean Recreation	No comments
Land Division-Oahu District	No comments
Commission on Water Resource Management	No objections

Should you have any questions, please feel free to call my Land Division staff at 587-0426. Thank you.

Sincerely,

Laura H. Thielen
Chairperson

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 20, 2010

MEMORANDUM

FROM:
~~TO:~~

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

TO:
~~FROM:~~ Morris M. Atta
SUBJECT: Draft Environmental Assessment for Construction of a New Civil Engineering Workshop at Bellows Air Force Station
LOCATION: Island of Oahu
APPLICANT: Department of the 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 January 25, 2010.

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

Signed:
Date: 1/26/2010

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 20, 2010

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LAND DIVISION
2010 FEB -3 A 3 11
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

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

FROM: for Morris M. Atta
SUBJECT: Draft Environmental Assessment for Construction of a New Civil Engineering Workshop at Bellows Air Force Station
LOCATION: Island of Oahu
APPLICANT: Department of the 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 January 25, 2010.

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

Signed:
Date: 2/1/10

JAN25'10PM12:43BOR EU

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 20, 2010

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2010 JAN 22 PM 2:26

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DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

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

FROM: for Morris M. Atta

SUBJECT: Draft Environmental Assessment for Construction of a New Civil Engineering Workshop at Bellows Air Force Station

LOCATION: Island of Oahu

APPLICANT: Department of the 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 January 25, 2010.

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: RKChang
Date: 1/27/10

FILE ID: RPD. 2583.3
DOC ID: 6056✓
6058✓

LINDA LINGLE
GOVERNOR OF HAWAII

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

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESEERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

January 22, 2010

Craig Gorsuch craig.gorsuch@hickam.af.mil
Civil Engineering Environmental
515 Tinker Road Building 515
Waimanalo, Hawaii 96795-1903

LOG NO: 2010.0286
DOC NO: 1001NM45

Dear Mr. Gorsuch:

SUBJECT: **Section 106 (NHPA) Consultation – Draft EA for construction of a new Civil Engineering Workshop at Bellows Air Force Station,**
Wamanalo *Ahupua'a*, Ko'olaupoki District, Island of O'ahu
TMK: (1) 4-1-15: 001

Thank you for your submittal of January 8, 2010. Our previous letter of October 22, 2009 (Log No. 2009.4390/Doc No.0910NM29) still stands. The proposed undertaking is the new construction of a Civil Engineering Workshop. The APE is the northern ramp runway 18. A Pre-construction Archaeological Resources Survey for a New Civil Engineering Building, Bellows Air Force Station, *[Day and Dye PhD, TS DYE and Colleagues, Inc. August 2009]* for a new Civil Engineering Building at Bellows (AFS).

The survey area was 15 x 20 m of Family Circle Road. Four backhoe trenches (totaling 24 m of trenching) were excavated which yielded two traditional Hawaiian fire-pit features assigned SIHP number 50-80-11-4857. Two samples were collected from native wood species (*'ilima, alahe'e* and *'akoko* with bit of *'ulei*) for dating. The dates yielded age determinations from 25- 232 years [AD 1300-1425; AD1427-1625]. We concur that this project could have the potential for an adverse effect on site 4857. We concur with the recommendation that an archaeological monitor is needed for the actual construction of the Civil Engineering Building. Given archaeological monitoring is needed to mitigate the adverse effect, an approved archaeological monitoring plan is also needed, prior to construction..

Should you have any additional questions or concerns please do not hesitate to contact me, at 692-8015.

Sincerely,

Nancy A. McMahon

Nancy McMahon
Deputy State Historic Preservation Officer

Chairperson

McCain, Sean

From: Kimo A. Marion [KMarion@hbws.org]
Sent: Wednesday, January 20, 2010 2:44 PM
To: Gorsuch, Craig H CTR USAF PACAF 15 CES/CEVQ
Subject: Comments on the DEA for the new civil engineering workshop at Bellows Airforce Base

Hello Craig,

Per our conversation today BWS understands that no significant changes have been made to the scope of this project from the previous request for input dated September 23, 2009. Please accept the BWS response dated October 8, 2009 as our continuing comments for this project.

Thank you,
-Kimo Marion

McCain, Sean

From: Colemon, Patricia A CIV NAVFAC HI, ARE1 [patricia.colemon@navy.mil]
Sent: Thursday, February 04, 2010 4:14 PM
To: Gorsuch, Craig H CTR USAF PACAF 15 CES/CEVQ
Cc: Muraoka, John T CIV NAVREGHAWAII N45
Subject: Navy Comments to BELLOWS AFB DEA due 05 Feb 10
Signed By: patricia.colemon@navy.mil

Importance: High

Hi Craig,
The Navy is replying with a "no comment" response to the Draft EA and FONSI Addressing Construction of a new Civil Engineering Workshop at Bellows AFS. Our admin assistant is having computer issues, but I wanted to make sure we gave you our reply by your deadline, which is tomorrow.

Rest assured that a written response will be mailed to you once repairs have been made. Please feel free to contact me should you have any questions.

V/r,
Patty A. Colemon
NEPA/Natural Resources PM
Assistant Regional Engineer's Office
Code ARE1, Bldg. 150 Basement
Ph: #808-473-4137 x224
Fax: #808-473-4155

LINDA LINGLE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 9, 2010

Mr. Craig Gorsuch
LEED AP
Environmental Program Manager
Bellows Air Force Station
Det 2, 18 FSS/CEE
515 Tinker Road
Waimanalo, Hawaii 96795-1903

Dear Mr. Gorsuch:

Subject: Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) Addressing Construction of A New Civil Engineering Workshop at Bellows Air Force Station, Oahu

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

The Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Morris M. Atta
Administrator

5379 (

LINDA LINGLE
GOVERNOR OF HAWAII

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

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LAND DIVISION

'10 JAN 22 A10:01

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

DEPT OF LAND & NATURAL RESOURCES

January 20, 2010

MEMORANDUM

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

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DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Morris M. Atta
SUBJECT: Draft Environmental Assessment for Construction of a New Civil Engineering Workshop at Bellows Air Force Station
LOCATION: Island of Oahu
APPLICANT: Department of the 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 January 25, 2010.

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

Attachments

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

Signed:
Date: 2/9/10

LINDA LINGLE
GOVERNOR OF HAWAII

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

AQUATIC RESOURCES: 2834

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STATE OF HAWAII

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DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 20, 2010

MEMORANDUM

RECEIVED
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AQUATIC RESOURCES

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

FROM: for Morris M. Atta
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(X) We have no comments.
( ) Comments are attached.

Signed:
Date: 3 Feb. 2010

DEPARTMENT OF THE NAVY
COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
PEARL HARBOR HI 96860-5101

5090
Ser N45/ 166
10 FEB 2010

Mr. Craig Gorsuch, LEED AP
Environmental Program Manager
Bellows Air Force Station, Det 2, 18 FSS/CEE
515 Tinker Road
Waimanalo, HI 96795-1903

Dear Mr. Gorsuch,

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT ADDRESSING CONSTRUCTION OF A NEW CIVIL ENGINEERING WORKSHOP AT BELLOWS AIR FORCE STATION, O`AHU, HAWAII

The Navy has reviewed the Draft Environmental Assessment (EA) and Finding of No Significant Impact addressing construction of a New Civil Engineering Workshop at Bellows Air Force Station, O`ahu, Hawaii and has no comment at this time.

Thank you for the opportunity to review this Draft EA. The Navy looks forward to working with you on other issues in the future.

Sincerely,

AARON Y. POENTIS
Program Manager
Region Environmental Department
By direction of the
Commander

The Draft EA and FONSI were made available to the public for a 30-day review period. The Notice of Availability was published in the *Honolulu Advertiser* and Bellows AFS electronic newsletter. Copies of the Draft EA were also placed on reserve at local libraries such as the Kailua Library, Kaneohe Library, and Waimanalo Library for review. The Draft EA and FONSI were also published in the Office of Environmental Quality Control *Environmental Notice*. In addition, the Draft EA was made available at http://www.bellowsafs.com. No public comments were received. All agencies comments received indicated no comments were needed. The Notice of Availability as it appeared in the *Honolulu Advertiser* and Bellows AFS electronic newsletter; copy of the Office of Environmental Quality Control *Environmental Notice;* and responses received from agencies during the 30-day review period are provided below.

PUBLIC NOTICE
United States Air Force

Notice of Availability
Draft Environmental Assessment (EA) Addressing Construction of a New Civil Engineering (CE) Workshop at Bellows Air Force Station (AFS), Oʻahu, Hawaiʻi

The U.S. Air Force (USAF) at Bellows AFS has completed a Draft EA that evaluates the potential effects of constructing an approximately 6,000-square-foot CE workshop, installing utilities to the new CE workshop, and constructing a properly sized septic tank and leach field to support the new workshop at Bellows AFS.

The analysis considered in detail potential environmental effects of the Proposed Action, Alternative 1, and the No Action Alternative. The results, as found in the EA, show that the Proposed Action and Alternative 1 would not have an adverse impact on the environment, indicating that a Finding of No Significant Impact (FONSI) would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Action.

Copies of the Draft EA showing the analysis are available for review at the following libraries:

Kailua Library
239 Kuulei Road
Kailua, HI 96734
(808) 266-9911

Kaneohe Library
45-829 Kamehameha Hwy
Kaneohe, HI 96744
(808) 233-5676

Waimanalo Library
41-1320 Kalanianaole Hwy
Waimanlo, HI 96795
(808) 259-2610

The Draft EA is also available at:

http://www.bellowsafs.com

Written comments on the Draft EA are invited and will be received for 30 days from the publication of this notice. Comments for consideration by the USAF on this document should be provided in writing to:

Notice of Availability as it appeared in *Honolulu Advertiser* and Bellows AFB Electronic Newsletter.

FEDERAL NOTICES

Environmental Assessment Addressing Construction of a New Civil Engineering Workshop at Bellows Air Force Station, Oahu

Island:	Oahu
District:	Koolaupoko
TMK:	(1) 4-1-01:15
Proposing Agency:	Bellows Air Force Station, Det 2, 18th FSS/CEE, 515 Tinker Road, Waimanalo, HI 96795-1903. Craig Gorsuch, 259-4227
Approving Agency:	718 CES/CEAN, Unit 5261, Building 3621, Kadena Air Base, Japan APO AP 96368-5261. George Komine/011-81-611-734-2132 (international)
Comments:	The EA comment period ends Feb. 6, 2010. Address comments to the Proposing Agency
Permits:	None

The purpose of the Proposed Action is to construct a Civil Engineering (CE) workshop to support CE functions and mission requirements, improve working conditions for CE personnel, provide adequate working space for staff members, and bring CE facilities and programs into compliance with Air Force regulations. The public and regulatory agency scoping process focused the analyses on the following environmental resources: cultural resources, geological resources, biological resources, water resources, air quality, safety, infrastructure and transportation, and hazardous materials and wastes. Based on the description of the Proposed Action as set forth in the EA, all activities were found to comply with applicable standards of environmental quality and appropriate subject matter has been coordinated with Federal, state, and local agencies. Based on the information and analysis presented in the EA conducted in accordance with the requirements of the National Environmental Policy Act; the Council on Environmental Quality Regulations; implementing USAF regulations set forth in 32 CFR 989 (*Environmental Impact Analysis Process*), as amended; and a review of the public and agency comments, implementation of the Proposed Action would not result in significant impacts to the quality of the human or natural environment.

Advertisement as it appeared in Office of Environmental Quality Control *Environmental Notice*.

APPENDIX C

AIR QUALITY EMISSION ESTIMATES

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

Air Quality Emissions from Construct Civil Engineering Workshop - Proposed Action

		NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
CY2010	Construction Combustion	4.784	0.462	2.109	0.377	0.344	0.334	541.810
	Construction Fugitive Dust	-	-	-	-	0.434	0.022	-
	Construction Commuter	0.044	0.044	0.397	0.001	0.004	0.003	52.593
	TOTAL CY2010	***4.828***	***0.506***	***2.506***	***0.377***	***0.782***	***0.358***	***594.403***

Note: Total CY2010 $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***539.123***	***metric tons***	
State of Hawaii's CO_2 emissions =	***23,400,000***	***metric tons***	*(DOE/EIA 2005)*
Percent of Hawaii's CO_2 emissions =	***0.002%***	***metric tons***	

Source: U.S. Department of Energy (DOE)/Energy Information Administration (EIA). 2005. State Carbon Dioxide Emissions Summary for the State of Hawaii. Available online: <http://www.eia.doe.gov/oiaf/1605/state/state_emissions.html>. Accessed 24 November 2009

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 Hawaii Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (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 24 November 2009.

Air Emissions from Construct CE Workshop
Determination Significance (Significance Threshold = 10% of regional)

CY2010	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	61,833	44,190	265,776	31,000	30,206	7,360
CY2010 Emissions	4.83	0.51	2.51	0.38	0.78	0.36
% of Regional	**0.008%**	**0.001%**	**0.001%**	**0.001%**	**0.003%**	**0.005%**

Combustion Emissions - Proposed Action

Combustion Emissions of VOC, NO_x, SO_2, CO, $PM_{2.5}$, $PM_{10,}$ and CO_2 due to Construction

General Construction Activities	Area Disturbed		
Construct CE Workshop Facility	6,000	ft^2	
Install Utilities	600	ft^2	Assume 200 feet of utilities by 3 feet wide construction corridor
Install Leach Field	10,000	ft^2	Assume 3,000 ft^2 of land disturbance

Total General Construction Area:	16,600	ft^2	
	0.381	acres	
Total Demolition Area:	0	ft^2	
	0.000	acres	
Total Pavement Area:	0.000	ft^2	
	0.000	acres	
Total Disturbed Area:	16,600	ft^2	
	0.381	acres	
Construction Duration:	12	months	
Annual Construction Activity:	240	days/yr	Assume 12 months, 4 weeks per month, 5 days per week.

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 e²M 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.

Grading

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Bulldozer	1	13.60	0.96	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
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (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
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Loader	1	13.45	0.99	5.58	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
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment[d]	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Stationary								
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
Mobile (non-road)								
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	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (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 SO2 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-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO_x	VOC	CO	SO_2**	PM_{10}	$PM_{2.5}$	CO_2
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**			8.150					

*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 NOx = (Total Grading NOx per 10 acre)*(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft^2)	Total Area (acres)	Total Days	
Grading:	16,600	0.38	1	(from "Grading" worksheet)
Paving:	0	0.00	0	
Demolition:	0	0.00	0	
Building Construction:	6,000	0.14	240	
Architectural Coating	10,000	0.23	20	(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_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Grading Equipment	41.64	2.58	15.71	0.83	2.55	2.47	4,942
Paving	-	-	-	-	-	-	0
Demolition	-	-	-	-	-	-	0
Building Construction	9,455.12	751.15	4,171.75	747.92	678.97	658.60	1,071,483
Architectural Coatings	71.48	170.46	31.31	5.02	6.19	6.00	7,195
Total Emissions (lbs):	**9,568.24**	**924.20**	**4,218.77**	**753.78**	**687.70**	**667.07**	**1,083,620**

Results: Total Project Annual Emission Rates

	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Total Project Emissions (lbs)	9,568.24	924.20	4,218.77	753.78	687.70	667.07	1,083,620
Total Project Emissions (tons)	4.78	0.46	2.11	0.38	0.34	0.33	541.81

Construction Fugitive Dust Emissions - Proposed Action

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19	ton PM_{10}/acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42	ton PM_{10}/acre-month	MRI 1996; EPA 2001; EPA 2006

$PM_{2.5}$ Emissions

$PM_{2.5}$ Multiplier	0.10	(10% of PM_{10} emissions assumed to be $PM_{2.5}$)	EPA 2001; EPA 2006
Control Efficiency	0.50	(assume 50% control efficiency for PM_{10} and $PM_{2.5}$ emissions)	EPA 2001; EPA 2006

Project Assumptions

New Roadway Construction (0.42 ton PM_{10}/acre-month)

Duration of Construction Project	-	months
Area	-	acres

General Construction Activities (0.19 ton PM_{10}/acre-month)

Duration of Construction Project	12	months
Area	0.4	acres

	Project Emissions (tons/year)			
	PM_{10} uncontrolled	PM_{10} controlled	$PM_{2.5}$ uncontrolled	$PM_{2.5}$ controlled
New Roadway Construction	0.00	0.00	0.00	0.00
General Construction Activities	0.87	0.43	0.04	0.02
Total	**0.87**	**0.43**	**0.04**	**0.02**

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM_{10}/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_{10}/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM_{10}/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_{10}/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM_{10}/acre-month) and 75% of the average emission factor (0.11 ton PM_{10}/acre-month). The 0.19 ton PM_{10}/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_{10}/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_{10} and $PM_{2.5}$ in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM_{10}/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_{10}/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 PM10/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

$PM_{2.5}$ Multiplier **0.10**

$PM_{2.5}$ emissions are estimated by applying a particle size multiplier of 0.10 to PM_{10} emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM_{10} and $PM_{2.5}$ **0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM_{10} and $PM_{2.5}$ 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 - Proposed Action

Estimate of time required to grade a specified area.

Input Parameters
Construction area: 0.381 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 clearing.
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 Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	0.38	0.05
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	0.38	0.19
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	0.19	0.19
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	0.19	0.08
2315 310 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	0.38	0.13
TOTAL								0.64

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 0.64
Qty Equipment: 3.00
Grading days/yr: 0.21

Construction Commuter Emissions - Proposed Action

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) =	10	people

Passenger Vehicle Emission Factors for Year 2010 (lbs/mile)

NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
0.00091814	0.00091399	0.00826276	0.00001077	0.00008698	0.00005478	1.09568235

updated April 24, 2008. Available online: <http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>. Accessed 27 May 2009.
Notes:
The SMAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC

Construction Commuter Emissions

	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
lbs	**88.142**	**87.743**	**793.225**	**1.034**	**8.350**	**5.259**	**105185.505**
tons	**0.044**	**0.044**	**0.397**	**0.0005**	**0.0042**	**0.0026**	**52.593**

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

State of Hawaii Air Quality Control Region

			Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	VOC
1	HI	Hawaii Co	286	1,620	702	285	4,745	156	45,375	7,520	6,001	1,182	1,200	6,606
2	HI	Honolulu Co	2,102	14,038	2,082	1,610	15,974	2,396	162,924	24,019	13,202	2,490	3,623	26,163
3	HI	Kalawao Co	0	0	0	0	0	0	47.2	8.08	765	154	3.78	5.46
4	HI	Kauai Co	293	2,099	55.1	52.7	286	149	17,531	2,208	2,661	462	225	3,131
5	HI	Maui Co	6,624	5,617	746	396	3,970	741	30,594	4,704	3,992	728	973	4,843
Grand Total			9,305	23,374	3,585	2,344	24,975	3,442	256,471	38,459	26,621	5,016	6,025	40,748

SOURCE:
http://www.epa.gov/air/data/geosel.html
USEPA - AirData NET Tier Report
*Net Air pollution sources (area and point) in tons per year (2002)
Site visited on 24 November 2009.

State of Hawaii Air Quality Control Region (40 CFR 81.76)

	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC
Honolulu Co	165,026	38,057	15,284	4,100	19,597	28,559

Summary	Summarizes total emissions by calendar year for Alternative 1.
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
AQCR Tier Report	Summarizes total emissions for the State of Hawaii Air Quality Control Region Tier report for 2002, to be used to compare the project to regional emissions.

Air Quality Emissions from Construct Civil Engineering Workshop - Alternative 1

		NO_x (ton)	VOC (ton)	CO (ton)	SO_2 (ton)	PM_{10} (ton)	$PM_{2.5}$ (ton)	CO_2 (ton)
CY2010	Construction Combustion	4.786	0.462	2.110	0.377	0.344	0.334	542.086
	Construction Fugitive Dust	-	-	-	-	0.438	0.022	-
	Construction Commuter	0.044	0.044	0.397	0.001	0.004	0.003	52.593
	TOTAL CY2010	***4.831***	***0.506***	***2.507***	***0.377***	***0.786***	***0.358***	***594.679***

Note: Total CY2010 $PM_{10}/_{2.5}$ fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO_2 emissions converted to metric tons =	***539.374***	***metric tons***	
State of Hawaii's CO_2 emissions =	***23,400,000***	***metric tons***	*(DOE/EIA 2005)*
Percent of Hawaii's CO_2 emissions =	***0.002%***	***metric tons***	

Source: U.S. Department of Energy (DOE)/Energy Information Administration (EIA). 2005. State Carbon Dioxide Emissions Summary for the State of Hawaii. Available online: <http://www.eia.doe.gov/oiaf/1605/state/state_emissions.html>. Accessed 24 November 2009

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 Hawaii Air Quality Control Region

	Point and Area Sources Combined					
Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (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 24 November 2009.

Air Emissions from Construct CE Workshop
Determination Significance (Significance Threshold = 10% of regional)

CY2010	Point and Area Sources Combined					
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Regional Emissions	61,833	44,190	265,776	31,000	30,206	7,360
CY2010 Emissions	4.83	0.51	2.51	0.38	0.79	0.36
% of Regional	**0.008%**	**0.001%**	**0.001%**	**0.001%**	**0.003%**	**0.005%**

Combustion Emissions - Alternative 1

Combustion Emissions of VOC, NO_x, SO_2, CO, $PM_{2.5}$, $PM_{10,}$ and CO_2 due to Construction

General Construction Activities	**Area Disturbed**		
Construct CE Workshop Facility	6,000	ft^2	
Install Utilities	600	ft^2	Assume 200 feet of utilities by 3 feet wide construction corridor
Install Leach Field	10,000	ft^2	Assume 3,000 ft^2 of land disturbance
Demolish Building 548	130	ft^2	

Total General Construction Area:	16,600	ft^2	
	0.381	acres	
Total Demolition Area:	130	ft^2	
	0.003	acres	
Total Pavement Area:	0.000	ft^2	
	0.000	acres	
Total Disturbed Area:	16,730	ft^2	
	0.384	acres	
Construction Duration:	12	months	
Annual Construction Activity:	240	days/yr	Assume 12 months, 4 weeks per month, 5 days per week.

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 e²M 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.

Grading

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Bulldozer	1	13.60	0.96	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
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (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
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Loader	1	13.45	0.99	5.58	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
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment[d]	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c] (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (lb/day)
Stationary								
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
Mobile (non-road)								
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	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment	No. Reqd.[a] per 10 acres	NO_x (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)	CO_2 (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 SO2 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-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO_x	VOC	CO	SO_2**	PM_{10}	$PM_{2.5}$	CO_2
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**			8.150					

*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 NOx = (Total Grading NOx per 10 acre)*(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft^2)	Total Area (acres)	Total Days	
Grading:	16,730	0.38	1	(from "Grading" worksheet)
Paving:	0	0.00	0	
Demolition:	130	0.00	0	
Building Construction:	6,000	0.14	240	
Architectural Coating	10,000	0.23	20	(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_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Grading Equipment	41.64	2.58	15.71	0.83	2.55	2.47	4,942
Paving	-	-	-	-	-	-	0
Demolition	4.75	0.28	1.88	0.09	0.29	0.28	553
Building Construction	9,455.12	751.15	4,171.75	747.92	678.97	658.60	1,071,483
Architectural Coatings	71.48	170.46	31.31	5.02	6.19	6.00	7,195
Total Emissions (lbs):	**9,572.99**	**924.48**	**4,220.65**	**753.87**	**687.99**	**667.35**	**1,084,172**

Results: Total Project Annual Emission Rates

	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Total Project Emissions (lbs)	9,572.99	924.48	4,220.65	753.87	687.99	667.35	1,084,172
Total Project Emissions (tons)	4.79	0.46	2.11	0.38	0.34	0.33	542.09

Construction Fugitive Dust Emissions - Alternative 1

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19	ton PM_{10}/acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42	ton PM_{10}/acre-month	MRI 1996; EPA 2001; EPA 2006
$PM_{2.5}$ Emissions			
$PM_{2.5}$ Multiplier	0.10	(10% of PM_{10} emissions assumed to be $PM_{2.5}$)	EPA 2001; EPA 2006
Control Efficiency	0.50	(assume 50% control efficiency for PM_{10} and $PM_{2.5}$ emissions)	EPA 2001; EPA 2006

Project Assumptions

New Roadway Construction (0.42 ton PM_{10}/acre-month)

Duration of Construction Project	-	months
Area	-	acres

General Construction Activities (0.19 ton PM_{10}/acre-month)

Duration of Construction Project	12	months
Area	0.4	acres

	Project Emissions (tons/year)			
	PM_{10} uncontrolled	**PM_{10} controlled**	**$PM_{2.5}$ uncontrolled**	**$PM_{2.5}$ controlled**
New Roadway Construction	0.00	0.00	0.00	0.00
General Construction Activities	0.88	0.44	0.04	0.02
Total	**0.88**	**0.44**	**0.04**	**0.02**

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM_{10}/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_{10}/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM_{10}/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_{10}/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM_{10}/acre-month) and 75% of the average emission factor (0.11 ton PM_{10}/acre-month). The 0.19 ton PM_{10}/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_{10}/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_{10} and $PM_{2.5}$ in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM_{10}/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_{10}/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 PM10/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

$PM_{2.5}$ Multiplier **0.10**

$PM_{2.5}$ emissions are estimated by applying a particle size multiplier of 0.10 to PM_{10} emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM_{10} and $PM_{2.5}$ **0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM_{10} and $PM_{2.5}$ 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 - Alternative 1

Estimate of time required to grade a specified area.

Input Parameters
Construction area: 0.384 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 clearing.
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 Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	0.38	0.05
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	0.38	0.19
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	0.19	0.19
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	0.19	0.08
2315 310 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	0.38	0.13
TOTAL								0.64

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 0.64
Qty Equipment: 3.00
Grading days/yr: 0.21

Construction Commuter Emissions - Alternative 1

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) =	10	people

Passenger Vehicle Emission Factors for Year 2010 (lbs/mile)

NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
0.00091814	0.00091399	0.00826276	0.00001077	0.00008698	0.00005478	1.09568235

updated April 24, 2008. Available online: <http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>. Accessed 27 May 2009.
Notes:
The SMAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC

Construction Commuter Emissions

	NO_x	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
lbs	**88.142**	**87.743**	**793.225**	**1.034**	**8.350**	**5.259**	**105185.505**
tons	**0.044**	**0.044**	**0.397**	**0.0005**	**0.0042**	**0.0026**	**52.593**

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

State of Hawaii Air Quality Control Region

			Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2	VOC
1	HI	Hawaii Co	286	1,620	702	285	4,745	156	45,375	7,520	6,001	1,182	1,200	6,606
2	HI	Honolulu Co	2,102	14,038	2,082	1,610	15,974	2,396	162,924	24,019	13,202	2,490	3,623	26,163
3	HI	Kalawao Co	0	0	0	0	0	0	47.2	8.08	765	154	3.78	5.46
4	HI	Kauai Co	293	2,099	55.1	52.7	286	149	17,531	2,208	2,661	462	225	3,131
5	HI	Maui Co	6,624	5,617	746	396	3,970	741	30,594	4,704	3,992	728	973	4,843
Grand Total			9,305	23,374	3,585	2,344	24,975	3,442	256,471	38,459	26,621	5,016	6,025	40,748

SOURCE:
http://www.epa.gov/air/data/geosel.html
USEPA - AirData NET Tier Report
*Net Air pollution sources (area and point) in tons per year (2002)
Site visited on 24 November 2009.

State of Hawaii Air Quality Control Region (40 CFR 81.76)

	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	VOC
Honolulu Co	165,026	38,057	15,284	4,100	19,597	28,559

APPENDIX D

HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY ASSESSMENT FORM

HAWAII CZM PROGRAM
FEDERAL CONSISTENCY ASSESSMENT FORM

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1) Improve coordination and funding of coastal recreation planning and management.

2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

   a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

   b) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

   c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

   d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

   e) Encouraging expanded public recreational use of county, State, and Federally owned or controlled shoreline lands and waters having recreational value;

   f) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;

   g) Developing new shoreline recreational opportunities, where appropriate, such as artificial reefs for surfing and fishing; and

   h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, County planning commissions; and crediting such dedication against the requirements of section 46-6.

RECREATIONAL RESOURCES (continued)

Check either "Yes" or "No" for each of the following questions:		Yes	No
1.	Will the proposed action involve or be near a dedicated public right-of-way?	☐	☒
2.	Does the project site abut the shoreline?	☐	☒
3.	Is the project site near a State or County park?	☐	☒
4.	Is the project site near a perennial stream?	☐	☒
5.	Will the proposed action occur in or affect a surf site?	☐	☒
6.	Will the proposed action occur in or affect a popular fishing area?	☐	☒
7.	Will the proposed action occur in or affect a recreational or boating area?	☐	☒
8.	Is the project site near a sandy beach?	☐	☒
9.	Are there swimming or other recreational uses in the area?	☒	☐

Discussion:

Although Bellows Air Force Station is a recreational and training installation and includes a stretch of beachfront property, the Proposed Action is located interior to the installation on paved and disturbed surfaces.

HISTORIC RESOURCES

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

Policies:

1) Identify and analyze significant archaeological resources;

2) Maximize information retention through preservation of remains and artifacts or salvage operations; and

3) Support State goals for protection, restoration, interpretation, and display of historic resources.

Check either "Yes" or "No" for each of the following questions:	Yes	No
1. Is the project site within a historic/cultural district?	☒	☐
2. Is the project site listed on or nominated to the Hawaii or National register of historic places?	☒	☐
3. Does the project site include undeveloped land which has not been surveyed by an archaeologist?	☐	☒
4. Has a site survey revealed any information on historic or archaeological resources?	☒	☐
5. Is the project site within or near a Hawaiian fishpond or historic settlement area?	☒	☐

Discussion:

A pre-construction archaeological resource survey consisting of exploratory excavation of four backhoe trenches was conducted at the Proposed Action location for the new CE workshop. Two shallow traditional Hawaiian fire-pit features, one pit of unknown function, a small historic-era trash deposit, and a disturbed paleosol (cultural layer) present throughout the project area were identified during the exploratory excavations. No human remains were encountered during the pre-construction exploratory trenching. In addition, the Proposed Action is on an asphalt-paved World War II runway (completed in 1943) that is considered eligible for the NRHP under Criterion A.

All construction activities will be monitored by a qualified archaeologist and SHPO has been coordinated with on potential impacts and environmental protection measures.

SCENIC AND OPEN SPACE RESOURCES

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

Policies:

1) Identify valued scenic resources in the coastal zone management area;

2) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

3) Preserve, maintain and where desirable, improve and restore shoreline open space and scenic resources; and

4) Encourage those developments that are not coastal dependent to locate in inland areas.

Check either "Yes" or "No" for each of the following questions:	Yes	No
1. Does the project site abut a scenic landmark?	☐	☒
2. Does the proposed action involve the construction of a multi-story structure or structures?	☐	☒
3. Is the project site adjacent to undeveloped parcels?	☐	☒
4. Does the proposed action involve the construction of structures visible between the nearest coastal roadway and the shoreline?	☐	☒
5. Will the proposed action involve construction in or on waters seaward of the shoreline? On or near a beach?	☐	☒

Discussion:

COASTAL ECOSYSTEMS

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

Policies:

1) Improve the technical basis for natural resources management;
2) Preserve valuable coastal ecosystems of significant biological or economic importance;
3) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land water uses, recognizing competing water needs; and
4) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses, which violate State, water quality standards.

Check either "Yes" or "No" for each of the following questions:	Yes	No
1. Does the proposed action involve dredge or fill activities?	☐	☒
2. Is the project site within the Shoreline Setback Area (20 to 40 feet inland of the shoreline)?	☐	☒
3. Will the proposed action require some form of effluent discharge into a body of water?	☐	☒
4. Will the proposed action require earthwork beyond clearing and grubbing?	☒	☐
5. Will the proposed action include the construction of special waste treatment facilities, such as injection wells, discharge pipes, or cesspools?	☒	☐
6. Is an intermittent or perennial stream located on or near the project site?	☐	☒
7. Does the project site provide habitat for endangered species of plants, birds, or mammals?	☐	☒
8. Is any such habitat located nearby?	☐	☒
9. Is there a wetland on the project site?	☐	☒
10. Is the project site situated in or abutting a Natural Area Reserve?	☐	☒
11. Is the project site situated in or abutting a Marine Life Conservation District?	☐	☒
12. Is the project site situated in or abutting an estuary?	☐	☒

Discussion:

The Proposed Action would include activities such as grading, excavation, trenching, recontouring of soils for utilities and foundation footings.

The Proposed Action would include constructing one properly sized septic tank and leach field to support the new workshop. The septic tank and leach field (individual wastewater system [IWS]) will be constructed according to Hawaii Administrative Rules (HAR) 11-62, Wastewater Systems requirements, which specify a 10,000 square foot usable area for one IWS with a total wastewater

ECONOMIC USES

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

Policies:

1) Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy;

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

3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

   a) Utilization of presently designated locations is not feasible;

   b) Adverse environmental effects are minimized; and

   c) Important to the State's economy.

Check either "Yes" or "No" for each of the following questions:	Yes	No
1. Does the project involve a harbor or port?	☐	☒
2. Is the project site within a designated tourist destination area?	☐	☒
3. Does the project site include agricultural lands or lands designated for such use?	☐	☒
4. Does the proposed activity relate to commercial fishing or seafood production?	☐	☒
5. Does the proposed activity related to energy production?	☐	☒
6. Does the proposed activity relate to seabed mining?	☐	☒

Discussion:

COASTAL HAZARDS

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

Policies:

1) Develop and communicate adequate information on storm wave, tsunami, flood erosion, and subsidence hazard;

2) Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;

3) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

4) Prevent coastal flooding from inland projects.

Check either "Yes" or "No" for each of the following questions:		**Yes**	**No**
1.	Is the project site on or abutting a sandy beach?	☐	☒
2.	Is the project site within a potential tsunami inundation area as depicted on the National Flood Insurance Program flood hazard map?	☐	☒
3.	Is the project site within a potential flood inundation area according to a flood hazard map?	☐	☒
4.	Is the project site within a potential subsidence hazard areas according to a subsidence hazard map?	☐	☒
5.	Has the project site or nearby shoreline areas experienced shoreline erosion?	☐	☒

Discussion:

MANAGING DEVELOPMENT

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

Policies:

1) Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;

2) Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements; and

3) Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

Check either "Yes" or "No" for each of the following questions:	Yes	No
1. Will the proposed activity require more than two (2) permits or approval? (Provide the status of each.)	☐	☒
2. Does the proposed activity conform with the State and County land use designations for the site?	☒	☐
3. Has or will the public be notified of the proposed activity?	☒	☐
4. Has a draft or final environmental impact statement or an environmental assessment been prepared?	☒	☐

Discussion:

The public and other Government agencies were provided with a copy of the Draft Environmental Assessment (EA) for 30 calendar days to solicit comments. The Draft EA was distributed for public and agency review on 8 January 2010 and ended on 11 February 2010.

Development of the IWS for the proposed development would be coordinated with the DOH Wastewater Branch to determine if a UIC permit is required and would conform to the requirements of HAR 11-62, Wastewater Systems, such that no adverse impacts would be anticipated.

PUBLIC PARTICIPATION

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

Policies:

1) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;

2) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and

3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion. Please provide information about the proposal relevant to the Objective and Policies No. 2 and No. 3 above:

Bellows AFS regularly works with local schools to provide educational programs regarding environmental and other coastal zone related issues at Bellows AFS. Bellows AFS also maintains regular dialogue with the U.S. Army Corps of Engineers regarding coastal studies and coastal management recommendations.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

1) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;

2) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

3) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion. Please provide information about the proposal relevant to the Objective and Policies above:

The Proposed Action will construct a CE Workshop, associated utilities, and IWS inland of the shoreline and will minimize all construction-related erosion by implementing best management practices such as the creation of control swales to channel runoff; establishment of sediment traps, sediment basins, or erosion-control berms; installation of silt fences; and temporary stabilization of areas graded and barren of vegetation. No beaches or other recreational use area will be impacted by the Proposed Action.

MARINE RESOURCES

Objective: Implement the State's ocean resources management plan.

Policies:

1) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

2) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

3) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;

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

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

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

Discussion. Please provide information about the proposal relevant to the Objective and Policies above:

No marine resources will be impacted by Proposed Action.

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