Final

Environmental Assessment

for the CV-22 Interim Beddown

Kirtland Air Force Base and Cannon Air Force Base, New Mexico, and Hurlburt Field, Florida

April

2016

Finding of No Significant Impact (FONSI)

Name of the Proposed Action

Environmental Assessment (EA) for the CV-22 Interim Beddown at Kirtland Air Force Base (AFB) and Cannon AFB, New Mexico, and Hurlburt Field, Florida.

Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide temporary locations for 10 U.S. Air Force (USAF) CV-22 Osprey (CV-22) aircraft that have been procured by Air Force Special Operations Command (AFSOC) in accordance with current CV-22 authorizations. The Proposed Action is needed because the 10 aircraft will be delivered to AFSOC before supporting infrastructure is in place at the final intended beddown location, Yokota Air Base (AB).

Description of the Proposed Action and Alternatives

Proposed Action. AFSOC proposes to beddown 10 CV-22 aircraft on an interim (i.e., temporary) basis at Continental United States (CONUS) installations that currently host CV-22 aircraft. These 10 CV-22 aircraft are planned for permanent beddown within PACOM at Yokota AB, Japan. All 10 CV-22 aircraft would be relocated to Yokota AB when supporting requirements are in place and the aircraft are ready to be received. The interim aircraft beddown at each installation would include an increase in support personnel and a change in aircraft operations from current conditions. However, the interim beddown would not require military construction, or would require construction that has already been documented through the Environmental Impact Analysis Process (EIAP).

AFSOC proposes the interim beddown of the following aircraft numbers and locations based on their capacity to host additional CV-22s:

- Kirtland AFB – Four additional CV-22s; totaling 11 CV-22s
- Cannon AFB – Three additional CV-22s; totaling 14 CV-22s
- Hurlburt Field – Three additional CV-22s; totaling 15 CV-22s.

Aircraft beddowns at each installation would occur as the aircraft are procured through Fiscal Year 2021. Each installation that hosts, or is scheduled to host, CV-22s within USAF has existing EIAP documentation. Existing EIAP documents analyze the beddown, maintenance, and operation of CV-22s at the host installation and include analysis of CV-22 support personnel and requirements.

Kirtland AFB, New Mexico. USAF would beddown four additional CV-22 aircraft on an interim basis at Kirtland AFB. Three aircraft would beddown by the end of FY16, and the fourth aircraft would beddown by the end of FY17. The four additional CV-22s would be located at Kirtland AFB until at least the end of FY20, when they would transition to Yokota AB, Japan.

The beddown of up to 7 CV-22s at Kirtland AFB was previously analyzed in the *Final Supplemental Environmental Assessment (EA) of Proposed Actions by the 58th Special Operations Wing, June 2008*. Therefore, the additional aircraft would not be within the number of CV-22s previously analyzed in EIAP documentation for Kirtland AFB.

The four additional CV-22s at Kirtland AFB would mainly be used as back-up training aircraft. The back-up aircraft would be rotated into the existing training mission when maintenance or other issues occur with the permanently assigned aircraft. There are no changes to flight patterns or locations proposed at Kirtland AFB.

CV-22 flight operations at Kirtland AFB during the interim beddown would include up to 2,530 flight hours and 633 sorties per year. The 2008 Supplemental EA analyzed a total of 2,361 flight hours and 591 sorties per year. This change represents a 7 percent increase in CV-22 flight hours and sorties.

The majority of additional flight hours are associated with an increase in CV-22 student pilot training as dictated by the training syllabus, which is unrelated to the interim beddown. However, some of the additional flight hours anticipated in FY15 through FY21 would be related to operation of the interim beddown aircraft.

A total of 78 personnel would accompany the four interim beddown aircraft. The 2008 Supplemental EA includes analysis of up to 277 CV-22 support personnel, and there are currently 265 CV-22 related authorizations at Kirtland AFB. However, the total number of personnel currently at Kirtland AFB is 20,826 personnel and the *2013 Final Programmatic Environmental Assessment for Base-wide Military Construction Planning at Kirtland Air Force Base, New Mexico* analyzed over 23,000 total personnel. Therefore, although the additional CV-22 interim authorizations would not be within CV-22 personnel numbers previously analyzed in EIAP documents for Kirtland AFB, they would be within the total number of Kirtland AFB personnel previously analyzed.

Cannon AFB, New Mexico. At Cannon AFB, the USAF would beddown three additional CV-22 aircraft on an interim basis. All three of the aircraft would be onsite in FY16 and would increase the total number of CV-22s to 14. It is expected that the three additional CV-22s would be located at Cannon AFB until at least the end of FY17, when they would transition to Yokota AB, Japan.

The beddown of up to 22 CV-22s at Cannon AFB was previously analyzed in the *Environmental Impact Statement (EIS) for AFSOC Assets Beddown at Cannon Air Force Base, New Mexico, July 2007.* Therefore, the additional aircraft would be within the number of CV-22s previously analyzed for Cannon AFB.

CV-22 flight operations at Cannon AFB during the interim beddown would include up to 3,627 flight hours and 907 sorties per year, in comparison to the 2007 EIS baseline of 10,000 flight hours and 2,500 sorties. Therefore, the proposed CV-22 flight hours and sorties are within those previously analyzed for Cannon AFB. When flown, the interim beddown aircraft would operate within Cannon AFB existing airspace and training areas designated for CV-22 operations.

A total of 117 personnel would accompany the three interim beddown aircraft at Cannon AFB. The 2007 EIS includes analysis of up to 5,680 installation personnel at Cannon AFB, and there

are currently 5,250 personnel at Cannon AFB. Therefore, the additional support personnel would be within personnel numbers previously analyzed for Cannon AFB.

Hurlburt Field, Florida. At Hurlburt Field, the USAF would beddown three additional CV-22 aircraft on an interim basis. All three of the aircraft would be onsite in FY16 and would increase total CV-22 aircraft at Hurlburt Field to 15. It is expected that the three additional CV-22s would be located at Hurlburt Field until at least the end of FY17, when they would transition to Yokota AB, Japan.

The beddown of up to 27 CV-22s at Hurlburt Field was previously analyzed in the *5-Year Update Environmental Assessment for CV-22 Beddown, Hurlburt Field, Florida, 2007*. Therefore, the proposed increase to a total of 15 CV-22 aircraft at Hurlburt Field would be within the number of CV-22s previously analyzed.

CV-22 flight operations at Hurlburt Field during the interim beddown would include up to 3,822 flight hours and 956 sorties per year. Two USAF EIAP documents describe Hurlburt Field's flight operations. The *Final Environmental Assessment for Planned Growth at Hurlburt Field, Florida, 2009* analyzed a total of 3,744 flight hours per year and the *Final Environmental Assessment for CV-22 Beddown, Hurlburt Field, Florida, September 2001* analyzed a total of 936 sorties per year. This change represents a 2 percent increase in CV-22 flight hours and sorties. When flown, the interim beddown aircraft would operate within Hurlburt AFB or Eglin AFB existing airspace and training areas designated for CV-22 operations.

A total of 117 authorizations would accompany the three interim beddown aircraft. The 2009 EA includes analysis of up to 11,506 installation personnel at Hurlburt Field, and there are currently 9,246 authorizations at Hurlburt Field. Therefore, the additional support manpower would be within personnel numbers previously analyzed for Hurlburt Field.

Alternative 1 – 10 CV-22 Interim Beddown at Cannon AFB. At Cannon AFB, USAF would beddown all 10 CV-22 aircraft on an interim basis. All 10 aircraft would be onsite in FY16 and would increase the total number of CV-22s at Cannon AFB to 21. It is expected that the 10 additional CV-22s would be located at Cannon AFB until at least the end of FY17, when they would transition to Yokota AB, Japan.

The beddown of up to 22 CV-22s at Cannon AFB was previously analyzed in 2007 EIS and the proposed aircraft numbers, operations, and personnel are within numbers previously analyzed. Therefore, if the Proposed Action were to only consider actions at Cannon AFB, these actions would qualify for a categorical exclusion under the EIAP and 32 CFR § 989, Appendix B.

Alternative 2 – 10 CV-22 Interim Beddown at Hurlburt Field. At Hurlburt Field, the USAF would beddown all 10 CV-22 aircraft on an interim basis. All 10 aircraft would be onsite in FY16 and would increase total CV-22 aircraft at Hurlburt Field to 22. It is expected that the 10 additional CV-22s would be located at Hurlburt Field until at least the end of FY17, when they would transition to Yokota AB, Japan.

The beddown of up to 27 CV-22s at Hurlburt Field was previously analyzed in the *Final Environmental Assessment for Planned Growth at Hurlburt Field, Florida, 2009*. Therefore, the proposed increase to a total of 22 CV-22 aircraft at Hurlburt Field would be within the number of CV-22s previously analyzed.

CV-22 flight operations at Hurlburt Field during the interim beddown would include up to 9,648 flight hours and 2,412 sorties per year. Two USAF EIAP documents describe Hurlburt Field's flight operations. The *Final Environmental Assessment for Planned Growth at Hurlburt Field, Florida, 2009 analyzed a* total of 3,744 flight hours per year and the *Final Environmental Assessment for CV-22 Beddown, Hurlburt Field, Florida, September 2001* analyzed a total of 936 sorties per year. This change represents a 60 percent increase in CV-22 flight hours and sorties. When flown, the interim beddown aircraft would operate within Hurlburt AFB or Eglin AFB existing airspace and training areas designated for CV-22 operations.

A total of 312 authorizations would accompany the 10 interim beddown aircraft. The 2009 EA includes analysis of up to 11,506 installation personnel at Hurlburt Field, and there are currently 9,246 authorizations at Hurlburt Field. Therefore, the additional support manpower would be within personnel numbers previously analyzed for Hurlburt Field.

No Action Alternative. USAF NEPA regulations require consideration of the No Action Alternative. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and other potential action alternatives can be evaluated. Under the No Action Alternative, USAF would not conduct an interim beddown of 10 CV-22s at CONUS installations as they are procured. Therefore, the No Action Alternative would not meet the purpose of and need for the action.

Summary of Environmental Effects

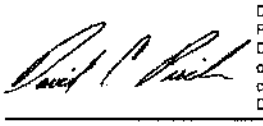
The Analysis of environmental effects focused on the following environmental resources: noise, air quality, airspace, and hazardous materials and wastes. A cumulative effects assessment was also conducted. Details of the environmental consequences can be found in the *Environmental Assessment (EA) for the CV-22 Interim Beddown at Kirtland Air Force Base and Cannon Air Force Base, New Mexico, and Hurlburt Field, Florida,* which is hereby incorporated by reference. The Analysis in the EA for each of the environmental resource areas listed above identified negligible to minor adverse impacts under the Proposed Action and alternatives. The Proposed Action and alternatives would not result in significant impacts.

Conclusion

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

Finding of No Significant Impact

Based on the information and analysis presented in the EA, which was prepared in accordance with the requirements of the National Environmental Policy Act, the Council on Environmental Quality regulations, implementing regulations set forth in 32 Code of Federal Regulations 989 (*Environmental Impact Analysis Process*), as amended, and based on review of the public and agency comments submitted during the 30-day public comment period, I conclude that the environmental effects of implementing the CV-22 interim beddown at Kirtland AFB, Cannon AFB and Hurlburt Field is not significant, that preparation of an Environmental Impact Statement is unnecessary, and that a FONSI is appropriate.



28-Apr-2016

DAVID C. PIECH, Colonel, USAF
Director, Installations and Mission Support

Date

Attachment: *Environmental Assessment (EA) for the CV-22 Interim Beddown at Kirtland Air Force Base and Cannon Air Force Base, New Mexico, and Hurlburt Field, Florida*

ABBREVIATIONS AND ACRONYMS

ºF	Fahrenheit
AB	Air Base
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instruction
AFSOC	Air Force Special Operations Command
AQCR	Air-Quality Control Region
ATC	Air Traffic Control
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CONUS	Continental United States
dB	decibel
dBA	A-weighted sound level measured in decibels
DNL	day-night sound level
DOD	Department of Defense
DZ	drop zone
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EOD	Explosive Ordnance Division
ER	Environmental Review
EUCOM	European Command
FAA	Federal Aviation Administration
FDEP	Florida Department of Environmental Protection
FONSI	Finding of No Significant Impact
ft	feet
FY	Fiscal Year
GHG	Greenhouse Gas
GRABS	Giant Reusable Air Blast Simulator
GRASI	Gulf Regional Airspace Strategic Initiative
HDR	HDR, Inc.
HWMP	Hazardous Waste Management Plan
IDP	Installation Development Plan
IR	Instrument Route
JO	Joint order
Leq	equivalent sound level
MOA	Military operations area
MSL	Mean sea level
MTR	Military training route
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMED	New Mexico Environment Department
NO_2	Nitrogen dioxide
NO_X	nitrogen oxide
O_3	Ozone
PACOM	Pacific Command
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
RA	Restricted Area
RAF	Royal Air Force
RCRA	Resource Conservation and Recovery Act
SIP	State Implementation Plan
SR	Slow route
SO_2	Sulfur dioxide
SOW	Special Operations Wing
SPCC	Spill Prevention, Control, Countermeasure
SUA	Special Use Airspace
tpy	tons per year
$\mu g/m^3$	micrograms per cubic meter
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
VR	Victory Route

Cover Sheet

Final Environmental Assessment for the CV-22 Interim Beddown Kirtland Air Force Base and Cannon Air Force Base, New Mexico, and Hurlburt Field, Florida

Responsible Agencies: U.S. Air Force (USAF), Air Force Special Operations Command, Air Force Civil Engineer Center.

Affected Location: Kirtland Air Force Base and Cannon Air Force Base, New Mexico, and Hurlburt Field, Florida.

Report Designation: Final Environmental Assessment (EA).

Abstract: This Environmental Assessment was developed in compliance with USAF's *Environmental Impact Analysis Process* for the proposed interim beddown of 10 USAF CV-22 Osprey (CV-22) aircraft. This EA studies the potential impacts associated with the USAF proposal to beddown 10 CV-22 aircraft on an interim (i.e., temporary) basis at continental U.S. installations that currently host CV-22 aircraft. These 10 CV-22 aircraft are planned for an eventual permanent beddown within Pacific Command at Yokota AB, Japan. All 10 CV-22 aircraft would be relocated to Yokota AB when supporting requirements are in place and the aircraft are ready to be received. The interim aircraft beddown at each installation would include an increase in support personnel and a change in aircraft operations from current conditions. However, the interim beddown would not require military construction, or would require construction that has already been documented through the Environmental Impact Analysis Process.

Written comments and inquiries regarding this document should be directed by mail to Mr. Bill Bushman, AFCEC CZN, 2261 Hughes Avenue Suite. 155, JBSA Lackland, TX 78236-9853, or by telephone at (210) 925-2730.

FINAL

ENVIRONMENTAL ASSESSMENT

FOR THE

CV-22 INTERIM BEDDOWN

KIRTLAND AIR FORCE BASE AND CANNON AIR FORCE BASE, NEW MEXICO, AND HURLBURT FIELD, FLORIDA

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APRIL 2016

Table of Contents

Appendices

Figures

Tables

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1. Purpose of and Need for the Proposed Action

1.1 Introduction

This Environmental Assessment (EA) was prepared in compliance with the U.S. Air Force's (USAF's) *Environmental Impact Analysis Process* (EIAP) for the proposed interim beddown of 10 USAF CV-22 Osprey (CV-22) aircraft. This EA would analyze the potential for significant environmental impacts associated with the Proposed Action and alternatives, including the No Action Alternative. The environmental documentation process associated with preparing the EA is carried out in compliance with the National Environmental Policy Act (NEPA); the regulations implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508); Department of Defense (DOD) Directive 6050.1, Environmental Considerations in DOD Actions; and the USAF implementing regulation for NEPA, the EIAP, Air Force Instruction 32-7061, which adopts Title 32 CFR § 989, as amended, as the controlling document for the EIAP.

The purpose of this EA is to meet the standards of the USAF EIAP and consolidate and summarize EIAP documentation for all current USAF CV-22 authorizations. This document provides a general background and programmatic view of the Air Force Special Operations Command (AFSOC) CV-22 program, including the 50 CV-22 authorizations and the current distribution of aircraft within USAF.

1.2 Organization of this Document

This EA is organized into five sections, plus appendices. **Section 1** of the EA provides history and background information, the project location, and the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action and alternatives, including the No Action Alternative. **Section 3** provides existing conditions and analyses of potential impacts from the Proposed Action and Alternatives. **Section 4** provides analysis of potential cumulative impacts. **Section 4** lists the references used in the preparation of this document. **Appendix A** includes the public and stakeholder distribution list.

1.3 AFSOC CV-22 Program Background

The CV-22 is a tiltrotor aircraft that can perform vertical takeoff; has the hover and vertical landing qualities of a helicopter; and provides the long-range, fuel efficiency and speed characteristics of a turboprop aircraft. The CV-22 allows USAF to perform missions that would normally require both fixed-wing and rotary-wing aircraft. Because the CV-22 has an increased speed and range over other rotary-wing aircraft, it enables AFSOC aircrews to execute long-range special operations missions (USAF 2015a).

AFSOC currently has authorizations for 50 CV-22s across the command. Through gradual procurement, AFSOC has distributed 10 CV-22s to European Command (EUCOM) and 30 CV-22s to continental United States (CONUS) installations for a total of 40 CV-22s. AFSOC planned to distribute the remaining 10 CV-22s to a Pacific Command (PACOM) installation from Fiscal Year (FY) 2016 through FY17. However, supporting construction and infrastructure will not be complete at the PACOM installation before the aircraft are procured. Procurement

cannot be delayed and is based on the development and distribution schedule for the remaining 10 aircraft. **Table 1-1** shows the current CV-22 distributions within USAF.

Table 1-1. Baseline USAF CV-22 Distributions

	EUCOM	PACOM	CONUS		
Installation	Royal Air Force (RAF) Mildenhall	Yokota Air Base (AB)	Kirtland Air Force Base (AFB)	Cannon AFB	Hurlburt Field
Current Number of CV-22 Aircraft	10	0	7	11	12

1.4 Existing CV-22 EIAP Documentation

Each installation that hosts, or is scheduled to host, CV-22s within USAF has existing EIAP documentation. Existing EIAP documents analyze the beddown, maintenance, and operation of CV-22s at the host installation and include analysis of CV-22 support personnel and requirements. **Sections 1.4.1** through **1.4.5** provide a summary of existing EIAP documentation for host installations.

1.4.1 RAF Mildenhall, United Kingdom

EIAP documentation was conducted in 2011 and 2013 for the beddown of 10 CV-22s at Royal Air Force (RAF) Mildenhall. An Environmental Review (ER) in 2011 analyzed the beddown of six primary and one back-up CV-22 aircraft to provide expanded capabilities to AFSOC in the European theater. An additional ER was completed in November 2013 for the proposed increase of three additional CV-22s at RAF Mildenhall. Therefore, EIAP has been completed for the beddown and operation of all 10 CV-22s currently assigned to RAF Mildenhall (AFSOC 2013).

1.4.2 Yokota AB, Japan

An ER in compliance with 32 CFR § 187 analyzed the eventual beddown of 10 CV-22s proposed for PACOM at Yokota Air Base (AB), Japan (AFSOC 2015). Therefore, the EIAP has been completed for the eventual beddown and operation of all 10 CV-22s proposed for Yokota AB.

1.4.3 Kirtland AFB, New Mexico

An EA, the *Final Supplemental Environmental Assessment of 58 SOW Proposed Actions, Kirtland AFB, June 2008,* analyzed the beddown of seven CV-22s at Kirtland AFB. The 2008 Supplemental EA includes analysis of 2,361 CV-22 flight hours and up to 277 CV-22 support personnel (AETC 2008). The Finding of No Significant Impact (FONSI) for this action was signed in July 2008. Therefore, the EIAP has been completed for the beddown and operation of all seven CV-22s currently assigned to Kirtland AFB.

1.4.4 Cannon AFB, New Mexico

An Environmental Impact Statement (EIS), the *EIS for AFSOC Assets Beddown at Cannon Air Force Base, New Mexico, July 2007* (AFSOC 2007), analyzed the beddown of numerous

aircraft at Cannon AFB, including up to 22 CV-22 aircraft. The 2007 EIS included an analysis of up to 5,000 CV-22 approaches and departures, up to 5,000 CV-22 closed patterns per year, and up to 5,680 installation personnel, to include CV-22 support personnel. A Record of Decision was signed for the EIS in August 2007. Therefore, the EIAP has been completed for the beddown and operation of all 11 CV-22s currently assigned to Cannon AFB.

1.4.5 Hurlburt Field, Florida

Multiple EIAP documents were completed for CV-22 beddown and operation at Hurlburt Field. These documents include the *Final Environmental Assessment for CV-22 Beddown, Hurlburt Field, Florida, September 2001 (*AFSOC 2001), the *5-Year Update Environmental Assessment for CV-22 Beddown, Hurlburt Field, Florida, 2007* (USAF and U.S. Navy 2007*)*, and the *Final Environmental Assessment for Planned Growth at Hurlburt Field, Florida, 2009* (USAF 2009). **Table 1-2** provides a summary of existing EIAP documentation for CV-22 beddowns, installation personnel, and aircraft sorties per day at Hurlburt Field. Therefore, the EIAP has been completed for the beddown and operation of all 12 CV-22s currently assigned to Hurlburt Field.

A "sortie" is considered a round trip flight that consists of one take-off and one landing.

Table 1-2. Summary of Existing Hurlburt EIAP Documentation

	2001 EA	2007 EA	2009 EA
Total CV-22s	28	27	7
Total Installation Personnel	5,226	7,017	11,506
Sorties/Year	936[1]	520[2]	N/A[3]

[1] The 2001 EA proposed 468 sorties in route LATN, and 486 sorties in route slow route (SR) -119 for a total of 936 sorties (AFSOC 2001).

[2] The 2007 EA indicates that the CV-22 would operate at 117 percent of the MH-53 rate in 1999. The 2001 EA indicates that the MH-53 conducted 444 sorties in 1999. Therefore, 117 percent of 444 is 520 sorties (USAF and U.S. Navy 2007*)*.

[3] The 2009 EA only analyzes a change in the exiting numbers of CV-22s and installation personnel (USAF 2009).

1.5 Project Location Description

Three separate CONUS installations are proposed to support the interim beddown of 10 CV-22s, as detailed in **Section 2**. **Sections 1.5.1** through **1.5.3** briefly describe each location, and **Figure 1-1** presents a regional overview of the three proposed locations.

1.5.1 Kirtland AFB, New Mexico

Kirtland AFB is located southeast of Albuquerque, New Mexico, in Bernalillo County at the foot of the Manzanita Mountains (**Figure 1-2**). Kirtland AFB encompasses 51,585 acres with elevations ranging from 5,200 to almost 8,000 feet above MSL. The host unit, the 377 Air Base Wing, supports more than 100 associate organizations on the installation including the 58 Special Operations Wing (SOW) (Kirtland AFB 2010).

Data Source: ESRI Streetmap 2010

Figure 1-1. Regional Overview of Proposed Locations for Interim Beddown

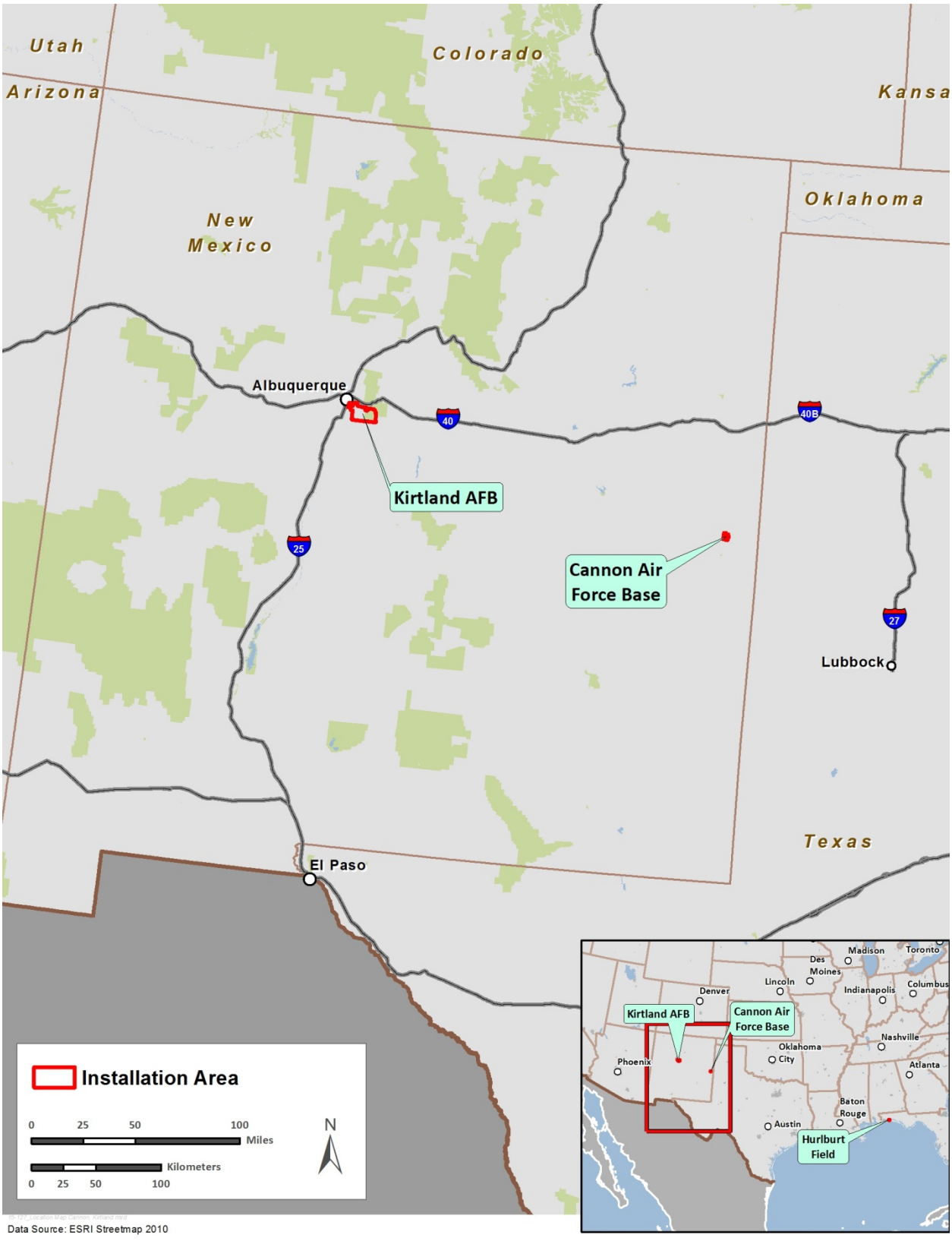

Figure 1-2. Kirtland and Cannon AFB, New Mexico Locations

The mission of the 58 SOW is "Train Warriors, Professionalize Airmen, Employ Airpower." Once trained, students serve with AFSOC, Air Combat Command, Pacific Air Forces, USAF in Europe, Air Force Global Strike Command, Air Force Reserve and Air National Guard components. The 58 SOW serves as the premier training unit for USAF special operations and combat search and rescue aircrews. The wing provides undergraduate, graduate, and refresher aircrew training for special operations, rescue, missile site support and distinguished visitor airlift helicopter, fixed wing, and tiltrotor operations. The 58 SOW employs more than 1,800 personnel and trains over 2,000 students per year. The wing operates seven different weapon systems at Kirtland AFB (i.e., UH-1N, HH-60G, HC-130J, MC-130J, CV-22, and HC-130P/N and MC-130H [until FY16Q4]) totaling more than 60 assigned aircraft.

The wing teaches more than 100 courses in 18 different crew positions including pilot, navigator, combat system operator, special mission aviators, and load masters. Additionally, the wing responds to worldwide contingencies and provides search and rescue support to the local community (AETC 2015).

1.5.2 Cannon AFB, New Mexico

Cannon AFB lies in the high plains of eastern New Mexico, near the Texas Panhandle. The installation is 8 miles west of Clovis, New Mexico, and is 4,295 feet above sea level. The installation itself sits on 3,789 acres of land (**Figure 1-2**) (Cannon AFB Undated a).

Cannon AFB is home to the 27 SOW, whose mission is "to provide and enable precise, reliable, flexible and responsive specialized airpower for our joint teammates, while sustaining and growing a premier Air Force installation" (Cannon AFB Undated a). The 27 Special Operations Group is one of four groups assigned to the 27 SOW. The group accomplishes global special operations tasking as a USAF component member of the United States Special Operations Command. It conducts infiltration/exfiltration, combat support, tiltrotor operations, helicopter aerial refueling, close air support, unmanned aerial vehicle operations, non-standard aviation, and other special missions. It directs the deployment, employment, training, and planning for squadrons that operate the AC-130W, MC-130J, CV-22B, C-146A, U-28A, and MQ-9, and provides operational support to flying operations (Cannon AFB Undated b).

1.5.3 Hurlburt Field, Florida

Hurlburt Field is located in the Florida Panhandle between Pensacola and Fort Walton Beach. The installation covers 6,643 acres in southern Okaloosa County (**Figure 1-3**). Hurlburt Field is home to AFSOC, and AFSOC's mission is to organize, train, equip, and educate USAF special operations forces for worldwide deployment and assignment to regional unified command.

The 1 SOW at Hurlburt Field is one of three USAF active duty special operations wings and is a part of AFSOC. The 1 SOW is a pivotal component of AFSOC's ability to provide airpower to conduct special operations missions worldwide. The primary mission of the 1 SOW is to rapidly plan and execute specialized and contingency operations in support of national priorities. The wing's core missions include close air support, precision aerospace firepower, specialized aerospace mobility, intelligence, surveillance and reconnaissance operations, and agile combat support. Within the 1 SOW, the 8 SOS is the primary flyer of the CV-22. However, the 413 Flight Test Squadron and the 18 Flight Test Squadron also fly the CV-22 out to Hurlburt Field (Hurlburt Field 2015a).

Figure 1-3. Hurlburt Field, Florida Location

1.6 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide temporary locations for 10 CV-22 aircraft that have been procured by AFSOC in accordance with current CV-22 authorizations. The Proposed Action is needed because the 10 aircraft will be delivered to AFSOC before supporting infrastructure is in place at the final intended beddown location, Yokota AB.

1.7 NEPA Compliance Requirements

NEPA is a federal statute requiring the identification and analysis of potential environmental impacts associated with proposed federal actions before those actions are taken. NEPA helps decision-makers make well-informed decisions based on an understanding of the potential environmental consequences. NEPA established the Council on Environmental Quality (CEQ), which is charged with the development of implementing regulations and ensuring federal agency compliance with NEPA. The process for implementing NEPA is outlined in 40 CFR §§ 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*.

CEQ regulations specify that an EA be prepared to provide evidence and analysis for determining whether to prepare a FONSI or an EIS. The EA aids in an agency's compliance with NEPA when an EIS is unnecessary and facilitates preparation of an EIS when one is required.

Air Force Policy Directive 32-70, *Environmental Quality*, states that USAF will comply with applicable federal, state and local environmental laws and regulations, including NEPA. USAF's implementing regulation for NEPA is the EIAP, Air Force Instruction 32-7061, which adopts Title 32 CFR § 989, as amended, as the controlling document for the EIAP. USAF will determine whether or not the Proposed Action would result in significant impacts in a Final EA. If such impacts are predicted, then USAF would decide whether to provide mitigation to reduce impacts below the level of significance, undertake the preparation of an EIS, or abandon the Proposed Action. The EA also guides USAF in implementing the Proposed Action in a manner consistent with USAF standards for environmental stewardship should the Proposed Action be approved for implementation.

1.8 Intergovernmental and Stakeholder Coordination

NEPA requirements help ensure that environmental information is made available to the public during the decision-making process and prior to actions being taken. CEQ NEPA regulations state, "There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a Proposed Action. This process shall be termed scoping." The Intergovernmental Coordination Act and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, require federal agencies to cooperate with and consider state and local views when implementing a federal proposal.

In compliance with NEPA, USAF notifies relevant agencies, stakeholders, and federally recognized tribes about the Proposed Action and alternatives (see **Appendix A** for stakeholder and public involvement distribution lists). The notification process provides these relevant

agencies and groups the opportunity to cooperate with USAF and provide comments on the Proposed Action. A Notice of Availability was published for the Draft EA in local newspapers near Kirtland AFB and Cannon AFB, New Mexico, and Hurlburt Field, Florida. The notices announced a 30-day public availability period. Copies of the Draft EA were also sent to local libraries. Public and agency correspondence on the Draft EA was received from the following parties:

- Ysleta Del Sur Pueblo
- U.S. Department of Agriculture, Forest Service, Southwestern Region
- New Mexico Department of Game and Fish
- Bureau of Land Management, Albuquerque District
- Federal Aviation Administration (FAA), Southern Region
- Comanche Nation.

However, these correspondences did not contain comments requesting or requiring revisions to the EA.

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2. Description of the Proposed Action and Alternatives

This section describes the Proposed Action and alternatives considered, including the No Action Alternative. As discussed in **Section 1.7**, the NEPA process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a Proposed Action, as defined in **Section 1.6**. USAF NEPA regulations also specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in accordance with CEQ guidance and USAF NEPA regulations.

2.1 Proposed Action

2.1.1 Interim Beddown of 10 CV-22 Aircraft

AFSOC proposes to beddown 10 CV-22 aircraft on an interim (i.e., temporary) basis at CONUS installations that currently host CV-22 aircraft. These 10 CV-22 aircraft are planned for permanent beddown within PACOM at Yokota AB, Japan. All 10 CV-22 aircraft would be relocated to Yokota AB when supporting requirements are in place and the aircraft are ready to be received. The potential impacts of the permanent PACOM beddown are not addressed in this EA; however, they are addressed in the ER for CV-22 beddown at Yokota AB.

AFSOC proposes the interim beddown of the following aircraft numbers and locations based on their capacity to host additional CV-22s:

- Kirtland AFB – Four additional CV-22s; totaling 11 CV-22s
- Cannon AFB – Three additional CV-22s; totaling 14 CV-22s
- Hurlburt Field – Three additional CV-22s; totaling 15 CV-22s.

Aircraft beddowns at each installation would occur as the aircraft are procured in accordance with the schedule presented in **Table 2-1**.

Table 2-1. Interim Beddown Schedule

Installation	Baseline	FY16*	FY17*	FY18*	FY19*	FY20*	FY21*
Kirtland	7	10	11	11	11	11	7
Cannon	11	14	13	11	11	11	11
Hurlburt	12	15	13	11	11	11	12
Total	**30**	**39**	**37**	**33**	**33**	**33**	**30**

* Anticipated conditions at end of the fiscal year

The aircraft beddown at each installation would not require military construction, or would require construction that has already been documented through the EIAP.

2.1.2 Aircraft Operations

The CV-22 interim beddown would include an associated change in CV-22 operations and flight hours from the existing baseline operations. However, in some cases, the proposed changes in flight hours are within the boundaries analyzed in previous NEPA documents. **Table 2-2** presents, by installation, the NEPA baseline, the FY15 executed flight hours which are considered the existing baseline, and proposed number of CV-22 flight hours and corresponding interim beddown year.

Table 2-2. Total CV-22 Flying Hours by Installation During Interim Beddown Years

Installation	NEPA Baseline	FY15 Executed	FY16	FY17	FY18	FY19	FY20	FY21
Kirtland	2,361[1]	1,429[4]	2,098	2,386	2,530	2,516	2,516	1,946
Cannon	10,000[2]	3,507[4]	3,627	3,487	3,071	N/A	N/A	N/A
Hurlburt	3,744[3]	3,025[4]	3,822	3,775	3,306	N/A	N/A	N/A

[1] As analyzed in the 2008 Supplemental EA (AETC 2008).
[2] Extrapolated from the 2007 EIS which analyzes 5,000 CV-22 operations (AFSOC 2007); 5,000 operations are equivalent to 2,500 sorties.
[3] As shown in **Table 1-2**, the 2001 Beddown EA analyzed 936 sorties, which is the maximum number of CV-22 flight hours previously analyzed for Hurlburt Field (AFSOC 2001).
[4] Source: Michna 2016.
[5] N/A means not analyzed in this EA because the interim beddown CV-22 aircraft would already be transitioned to Yokota AB, Japan.

In some cases, data within existing NEPA documents and baseline data do not provide flight hours, but rather provide numbers of sorties or operations. The 2007 Beddown EIS states that CV-22 sorties from Cannon AFB would normally be 4 to 5 hours long (AFSOC 2007). The 58 SOW indicates that the standard sortie at Kirtland AFB is approximately 3.5 hours long. Therefore, this EA assumes an average of 4 flight hours per sortie for each of the three installations. Given this assumption, **Table 2-3** also presents, by installation, the NEPA baseline, existing baseline, and proposed number of CV-22 sorties and corresponding interim beddown year.

Table 2-3. Total CV-22 Sorties by Installation During Interim Beddown Years

Installation	NEPA Baseline	FY15 Executed	FY16*	FY17*	FY18*	FY19	FY20	FY21
Kirtland	591[1*]	357*	525	597	633	629	629	487
Cannon	2,500[2]	877*	907	872	768	N/A	N/A	N/A
Hurlburt	936[3]	756*	956	944	827	N/A	N/A	N/A

* Extrapolated from the assumption of an average of 4 flight hours per sortie
[1] Source: 2008 Supplemental EA (AETC 2008), which analyzes 2,361 flight hours.
[2] Source: 2007 EIS which analyzes 5,000 CV-22 operations (AFSOC 2007).
[3] As shown in **Table 1-2**, the 2001 Beddown EA analyzed 936 sorties, which is the maximum number of CV-22 sorties previously analyzed for Hurlburt Field (AFSOC 2001).
[5] N/A means not analyzed in this EA because the interim beddown CV-22 aircraft would already be transitioned to Yokota AB, Japan.

Flight hours and sorties are not provided in **Tables 2-2 and 2-3** for Cannon AFB and Hurlburt AFB from FY19 through FY21 because the interim CV-22s at these locations would transition to Yokota AB, Japan prior to FY19.

A "sortie" is considered a round trip flight that consists of one take-off and one landing. An "operation" is either a take-off or a landing. Therefore, a sortie consists of two operations.

2.1.3 Support Personnel

Support personnel accompanying the CV-22 interim beddowns would include operators and maintenance personnel. Specific manpower requirements are detailed in **Sections 2.1.1 through 2.1.3** by installation.

2.1.4 4 CV-22 Aircraft at Kirtland AFB, New Mexico

2.1.4.1 AIRCRAFT BEDDOWN

USAF would beddown four additional CV-22 aircraft on an interim basis at Kirtland AFB. Three aircraft would beddown by the end of FY16, and the fourth aircraft would beddown by the end of FY17. The four additional CV-22s would be located at Kirtland AFB until at least the end of FY20, when they would transition to Yokota AB, Japan.

As stated in **Section 1.4.3**, the beddown of up to 7 CV-22s at Kirtland AFB was previously analyzed in USAF EIAP documentation (AETC 2008). Therefore, the additional aircraft would not be within the number of CV-22s previously analyzed for Kirtland AFB.

Additional overhead hoists, two hot wash racks, mooring points, fall protection infrastructure, and a storage mezzanine would be required to support the additional aircraft. However, these items were previously analyzed and qualified for a categorical exclusion under the EIAP and 32 CFR § 989, Appendix B A2.3.8, A2.3.10, A2.3.12, and A2.3.13. Therefore, these items will not be discussed and analyzed further in this document.

2.1.4.2 OPERATIONS

The four additional CV-22s at Kirtland AFB would mainly be used as back-up training aircraft. The back-up aircraft would be rotated into the existing training mission when maintenance or other issues occur with the permanently assigned aircraft. There are no changes to flight patterns or locations proposed at Kirtland AFB.

As shown in **Table 2-2**, CV-22 flying time at Kirtland AFB during the interim beddown would include up to 2,530 hours per year. The 2008 Supplemental EA analyzed a total of 2,361 hours (AETC 2008). Assuming that each sortie is approximately 4 hours, this translates to 633 sorties proposed during the interim beddown, in comparison to the 591 previously analyzed. This represents a 7 percent increase in CV-22 flight hours and sorties.

The majority of additional flight hours are associated with an increase in CV-22 student pilot training as dictated by the training syllabus, which is unrelated to the interim beddown. However, some of the additional flight hours anticipated in FY15 through FY21 would be related to operation of the interim beddown aircraft. Therefore, this EA analyzes the total proposed increase in flight hours, even though all are not directly linked to the interim beddown of four additional aircraft.

2.1.4.3 PERSONNEL

A total of 78 personnel would accompany the four interim beddown aircraft. The 2008 Supplemental EA includes analysis of up to 277 CV-22 support personnel, and there are currently 265 CV-22 related authorizations at Kirtland AFB. However, the total number of personnel currently at Kirtland AFB is 20,826 personnel (Kirtland AFB 2014), and the *2013 Final Programmatic Environmental Assessment for Base-wide Military Construction Planning at Kirtland Air Force Base, New Mexico* analyzed over 23,000 total personnel. In the past, the total personnel population was greater than 28,000 (Kirtland AFB 2013a). Therefore; although the additional CV-22 interim authorizations would not be within CV-22 personnel numbers previously analyzed in EIAP documents for Kirtland AFB, they would be within the total number of Kirtland AFB personnel previously analyzed.

2.1.5 3 CV-22 Aircraft at Cannon AFB, New Mexico

Based on the description of the Proposed Action at Cannon AFB provided in **Sections 2.1.5.1** through **2.1.5.3**, proposed aircraft numbers, operations, and personnel are within numbers previously analyzed in EIAP documentation for Cannon AFB.

2.1.5.1 AIRCRAFT BEDDOWN

At Cannon AFB, USAF would beddown three additional CV-22 aircraft on an interim basis. All three of the aircraft would be onsite in FY16 and would increase the total number of CV-22s at Cannon AFB to 14. It is expected that the three additional CV-22s would be located at Cannon AFB until at least the end of FY17, when they would transition to Yokota AB, Japan.

As stated in **Section 1.4.4**, the beddown of up to 22 CV-22s at Cannon AFB was previously analyzed in USAF EIAP documentation (AFSOC 2007). Therefore, the additional aircraft would be within the number of CV-22s previously analyzed for Cannon AFB.

2.1.5.2 OPERATIONS

As shown in **Table 2-2**, CV-22 flying time at Cannon AFB during the interim beddown would include up to 3,627 hours per year, in comparison to the NEPA baseline of 10,000 flight hours. Assuming that each sortie from Cannon AFB is approximately 4 hours, this translates to 907 sorties during the interim beddown timeframe, in comparison to the 2,500 previously analyzed (AFSOC 2007). Therefore, the proposed CV-22 flight hours and sorties are within those previously analyzed for Cannon AFB. When flown, the interim beddown aircraft would operate within Cannon AFB existing airspace and training areas designated for CV-22 operations.

2.1.5.3 PERSONNEL

A total of 117 personnel would accompany the three interim beddown aircraft at Cannon AFB. The 2007 Beddown EIS (AFSOC 2007) includes analysis of up to 5,680 installation personnel at Cannon AFB, and there are currently 5,250 personnel at Cannon AFB. Therefore, the additional support personnel would be within personnel numbers previously analyzed for Cannon AFB.

2.1.6 3 CV-22 Aircraft at Hurlburt Field, Florida

2.1.6.1 AIRCRAFT BEDDOWN

At Hurlburt Field, USAF would beddown three additional CV-22 aircraft on an interim basis. All three of the aircraft would be onsite in FY16 and would increase total CV-22 aircraft at Hurlburt Field to 15. It is expected that the three additional CV-22s would be located at Hurlburt Field until at least the end of FY17, when they would transition to Yokota AB, Japan.

As stated in **Section 1.4.5** and shown in **Table 1-2**, the beddown of up to 27 CV-22s at Hurlburt Field was previously analyzed in USAF EIAP documentation (USAF and U.S. Navy 2007). Therefore, the proposed increase to a total of 15 CV-22 aircraft at Hurlburt Field would be within the number of CV-22s previously analyzed for Hurlburt Field.

2.1.6.2 OPERATIONS

As shown in **Table 2-2**, CV-22 flying time at Hurlburt Field during the interim beddown would include up to 3,822 hours per year, in comparison to the NEPA baseline of 3,744 flight hours per year. Assuming that each sortie is approximately 4 hours, this translates to 956 sorties during the interim beddown in comparison to the 936 previously analyzed in the 2001 Beddown EA (AFSOC 2001). This represents a 2 percent increase in CV-22 flight hours and sorties. When flown, the interim beddown aircraft would operate within Hurlburt AFB or Eglin AFB existing airspace and training areas designated for CV-22 operations.

2.1.6.3 PERSONNEL

A total of 117 authorizations would accompany the three interim beddown aircraft. The 2009 EA (USAF 2009) includes analysis of up to 11,506 installation personnel at Hurlburt Field, and there are currently 9,246 authorizations at Hurlburt Field. Therefore, the additional support manpower would be within personnel numbers previously analyzed for Hurlburt Field.

2.2 Selection of Alternatives

Considering alternatives helps to avoid unnecessary impacts and allows for an analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be suitable for decision-making, capable of implementation, and sufficiently satisfactory with respect to meeting the purpose of and need for the action. CEQ NEPA regulations define reasonable alternatives as those that are economically and technically feasible, and that show evidence of common sense.

Certain facility, operational, and mission requirements must be present or reasonably attainable to meet the purpose of and need for the Proposed Action. The following selection standards for the interim beddown location(s) were developed based on operations and training requirements:

- AFSOC/USAF locations that currently support CV-22s. Locations that already support the aircraft type proposed for beddown would facilitate a smooth transition to the final beddown location. These locations already have trained crew and supporting facilities, including maintenance facilities. Their airspace and training range locations are already designed and analyzed to accommodate the aircraft type and mission functions.

Therefore, locations that currently support the CV-22 would require minimal effort to temporarily accommodate additional aircraft.

- Existing capability to accept additional aircraft without impacting existing missions.
- Ability to accept aircraft while avoiding construction to accommodate them. Military construction to support the interim beddown should be avoided because the aircraft would only be onsite for a short period of time.

2.3 Alternatives Carried Forward for Analysis

Possible alternatives identified by AFSOC were evaluated by applying the alternative selection standards described in **Section 2.2**. Alternatives 1 and 2 described below meet the operational and technical selection standards as described in **Section 2.2** and will be carried forward for analysis in the EA.

2.3.1 Alternative 1 – 10 CV-22 Interim Beddown at Cannon AFB

Based on the description of the Proposed Action at Cannon AFB provided in below **Sections 2.3.1.1** through **2.3.1.3**, proposed aircraft numbers, operations, and personnel are within numbers previously analyzed in EIAP documentation for Cannon AFB.

2.3.1.1 AIRCRAFT BEDDOWN

At Cannon AFB, USAF would beddown all 10 CV-22 aircraft on an interim basis. All 10 aircraft would be onsite in FY16 and would increase the total number of CV-22s at Cannon AFB to 21. It is expected that the 10 additional CV-22s would be located at Cannon AFB until at least the end of FY17, when they would transition to Yokota AB, Japan.

As stated in **Section 1.4.4**, the beddown of up to 22 CV-22s at Cannon AFB was previously analyzed in USAF EIAP documentation (AFSOC 2007).

2.3.1.2 OPERATIONS

CV-22 flying time at Cannon AFB during the interim beddown would occur as shown in **Table 2-4**. **Table 2-4** presents the NEPA baseline, the FY15 executed flight hours which is considered the existing baseline, and proposed number of CV-22 flight hours and corresponding interim beddown year under Alternative 1 at Cannon AFB. **Table 2-5** also presents the NEPA baseline, existing baseline, and proposed number of CV-22 sorties and corresponding interim beddown year under Alternative 1 at Cannon AFB.

Under Alternative 1 at Cannon AFB, flight hours would be up to 9,648 hours per year, in comparison to the NEPA baseline of 10,000 flight hours. Assuming that each sortie at Cannon AFB is approximately 4 hours, this translates 2,412 sorties during the interim beddown, in comparison to the 2,500 previously analyzed (AFSOC 2007). Therefore, the proposed CV-22 flight hours and sorties under Alternative 1 are within those previously analyzed for Cannon AFB. When flown, the interim beddown aircraft would operate within Cannon AFB existing airspace and training areas designated for CV-22 operations.

Table 2-4. Total CV-22 Flying Hours at Cannon AFB during Interim Beddown Years under Alternative 1

Installation	NEPA Baseline	FY15 Executed	FY16	FY17	FY18
Cannon	10,000[1]	3,507[2]	9,547	9,648	8,907

[1] Extrapolated from the 2007 EIS which analyzed 5,000 CV-22 operations (AFSOC 2007). 5,000 operations are equivalent to 2,500 sorties.
[2] Source: Michna 2016.

Table 2-5. Total CV-22 Sorties at Cannon AFB during Interim Beddown Years under Alternative 1

Installation	NEPA Baseline	FY15 Executed	FY16*	FY17*	FY18*
Cannon	2,500[1]	877[2]*	2,387	2,412	2,227

* Extrapolated from the assumption of an average of 4 flight hours per sortie.
[1] Source: 2007 EIS which analyzes 5,000 CV-22 operations (AFSOC 2007); 5,000 operations are equivalent to 2,500 sorties.
[2] Source: Michna 2016.

2.3.1.3 PERSONNEL

A total of 312 personnel would accompany the 10 interim beddown aircraft at Cannon AFB. The 2007 Beddown EIS includes analysis of up to 5,680 installation personnel at Cannon AFB, and there are currently 5,250 personnel at Cannon AFB (AFSOC 2007). Therefore, the additional support personnel would be within personnel numbers previously analyzed for Cannon AFB.

2.3.2 Alternative 2 – 10 CV-22 Interim Beddown at Hurlburt Field

2.3.2.1 AIRCRAFT BEDDOWN

At Hurlburt Field, the USAF would beddown all 10 CV-22 aircraft on an interim basis. All 10 aircraft would be onsite in FY16 and would increase total CV-22 aircraft at Hurlburt Field to 22. It is expected that the 10 additional CV-22s would be located at Hurlburt Field until at least the end of FY17, when they would transition to Yokota AB, Japan.

As stated in **Section 1.4.5**, the beddown of up to 27 CV-22s at Hurlburt Field was previously analyzed in USAF EIAP documentation (USAF and U.S. Navy 2007).

2.3.2.2 OPERATIONS

CV-22 flying time at Hurlburt Field during the interim beddown would occur as shown in **Table 2-6**. **Table 2-6** presents the NEPA baseline, the FY15 executed flight hours which is considered the existing baseline, and proposed number of CV-22 flight hours and corresponding interim beddown year under Alternative 2 at Hurlburt Field. **Table 2-7** also presents the NEPA baseline, existing baseline, and proposed number of CV-22 sorties and corresponding interim beddown year under Alternative 2 at Hurlburt Field.

Under Alternative 2 at Hurlburt Field, CV-22 flying time during the interim beddown would include up to 9,684 hours per year, in comparison to NEPA baseline of 3,744 flight hours per year. Assuming that each sortie is approximately 4 hours, this translates to up to 2,412 sorties per year during the interim beddown, in comparison to the 936 sorties previously analyzed in the 2001 Beddown EA (AFSOC 2001). This represents a 60 percent increase in CV-22 flight hours

Table 2-6. Total CV-22 Flying Hours at Hurlburt Field during Interim Beddown Years under Alternative 2

Installation	NEPA Baseline	FY15 Executed	FY16	FY17	FY18
Hurlburt	3,744[1]	3,025[2]	9,547	9,648	8,907

[1] As shown in **Table 1-2**, the 2001 Beddown EA analyzed 936 sorties, which is the maximum number of CV-22 sorties previously analyzed for Hurlburt Field (AFSOC 2001). Flight hours extrapolated from this number, assuming 4 hours per sortie.
[2] Source: Michna 2016.

Table 2-7. Total CV-22 Sorties at Hurlburt Field during Interim Beddown Years under Alternative 2

Installation	NEPA Baseline	FY15 Executed	FY16*	FY17*	FY18*
Hurlburt	936[1]	756[2*]	2,387	2,412	2,227

* Extrapolated from the assumption of an average of 4 flight hours per sortie
[1] As shown in **Table 1-2**, the 2001 Beddown EA analyzed 936 sorties, which is the maximum number of CV-22 sorties previously analyzed for Hurlburt Field (AFSOC 2001).
[2] Source: Michna 2016.

and sorties. When flown, the interim beddown aircraft would operate within Hurlburt Field or Eglin AFB existing airspace and training areas designated for CV-22 operations.

2.3.2.3 PERSONNEL

A total of 312 personnel would accompany the 10 interim beddown aircraft. The 2009 EA includes analysis of up to 11,506 installation personnel at Hurlburt Field, and there are currently 9,246 authorized positions at Hurlburt Field (USAF 2009). Therefore, the additional authorizations would be within personnel numbers previously analyzed for Hurlburt Field.

2.4 No Action Alternative

USAF NEPA regulations require consideration of the No Action Alternative. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and other potential action alternatives can be evaluated. Under the No Action Alternative, USAF would not conduct an interim beddown of 10 CV-22s at CONUS installations as they are procured.

The No Action Alternative would not meet the purpose of and need for the action, as described in **Section 1.6**.

2.5 Alternatives Considered but Eliminated from Detailed Analysis

Under NEPA, action proponents must consider and analyze reasonable alternatives to the Proposed Action. The following alternatives were considered, but eliminated from detailed analysis because they do not meet the purpose of and need for the Proposed Action described in **Section 1.6**, or do not meet the selection standards described in **Section 2.2**.

2.5.1 Interim Beddown at RAF Mildenhall

RAF Mildenhall is not a CONUS location and does not therefore meet this selection standard. Beddown at RAF Mildenhall would require discussions and agreements with the host nation that

could delay the ability to temporarily beddown the aircraft. In addition, RAF Mildenhall does not have sufficient capacity to accept additional CV-22 aircraft. Therefore, RAF Mildenhall is not considered a viable interim beddown location alternative and is not carried forward for analysis in this EA.

2.5.2 Interim Beddown at Kirtland AFB Only

Interim beddown of all 10 CV-22 aircraft at Kirtland AFB is not carried forward as a viable alternative because the installation does not have the existing capacity for all of the aircraft. Additional ramp space and maintenance facilities would need to be constructed. In addition, the CV-22 mission at Kirtland AFB is to train mission-ready pilots according to a set syllabus with a set schedule. Therefore, 10 additional CV-22 aircraft would not integrate into the existing mission because there is no capacity. The aircraft would sit idle while requiring routine maintenance and could become a burden to the existing mission.

2.6 Identification of the Preferred Alternative

The Preferred Alternative is to implement the Proposed Action, as described in **Section 2.1** of this EA.

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3. Affected Environment and Environmental Consequences

In compliance with NEPA, CEQ, and EIAP (32 CFR § 989) guidelines, **Section 3** of this document focuses only on those resource areas potentially subject to impacts from the Proposed Action and Alternatives, or No Action Alternative. **Sections 3.1 through 3.4** present the potential environmental impacts with respect to noise, air quality, airspace, and hazardous materials and wastes from the Proposed Action and Alternatives, including the No Action Alternative.

Combined impacts from the Proposed Action at Hurlburt Field, Cannon AFB, and Kirtland AFB are not expected because of the geographic separation between these installations, and are therefore not presented in this document for any resource area.

Resource Topics Eliminated from Detailed Analysis. All potentially relevant resource areas were initially considered for analysis in this EA. Some resource areas would not be affected by the Proposed Action and Alternatives, or No Action Alternative. Resource areas that have been eliminated from further detailed study in this document and the rationale for eliminating them are presented below:

- **Water Resources.** The Proposed Action and Alternatives do not include any construction or ground disturbing activities, nor do they include the use of water resources. Additionally, the aircraft would be positioned in locations on the installations that currently support the same type of aircraft. Therefore, impacts on water resources are not expected.
- **Geological Resources and Soils.** The Proposed Action and Alternatives do not include ground-disturbing activities. The aircraft beddown at each installation would not require military construction or would require construction that has already been documented through the EIAP. Additionally, the aircraft would be positioned in locations on the installations that currently support the same type of aircraft. Therefore, impacts on geological resources and soils are not expected.
- **Land Use.** The Proposed Action and Alternatives would occur on existing USAF installations and would not require any change to land use. The aircraft would be positioned in locations on the installations that currently support the same type of aircraft and would not require military construction. Therefore, impacts on land use are not expected.
- **Biological Resources.** The Proposed Action and Alternatives would occur on existing USAF installations and within existing airspace where CV-22s currently operate. Additionally, the Proposed Action and Alternatives do not include any construction or ground disturbing activities, and the aircraft would be positioned in locations on the installations that currently support the same type of aircraft. The noise analysis for the Proposed Action and Alternatives provided in **Section 3.1.3** indicates that the addition of the proposed CV-22 aircraft and associated air operations would have only a minute

incremental effect on the noise surrounding each airfield. Operational changes would have an imperceptible increase in noise when compared to existing conditions, and noise levels would be indistinguishable from those under existing conditions. Therefore, impacts on biological resources are not expected.

- **Cultural Resources.** The Proposed Action and Alternatives would occur on existing installations and within existing airspace where CV-22s currently operate. Additionally, the Proposed Action and Alternatives do not include any construction or ground disturbing activities, and the aircraft would be positioned in locations on the installations that currently support the same type of aircraft. Therefore, impacts on cultural resources are not expected.
- **Health and Safety.** The Proposed Action and Alternatives would occur on existing installations and within existing airspace where CV-22s currently operate. Additionally, the Proposed Action and Alternatives do not include any construction or ground disturbing activities. The aircraft would be operated and maintained under the same safety protocols currently used for the existing CV-22s at each installation. Therefore, impacts on health and safety are not expected.
- **Utilities and Infrastructure.** The Proposed Action and Alternatives would occur at existing installations that host CV-22s. All existing installations provide existing utilities and infrastructure systems that have the capacity to support the interim beddown and would not be upgraded. Therefore, impacts on utilities and infrastructure are not expected.
- **Transportation.** The Proposed Action and Alternatives do not include any construction. Therefore, construction-related traffic would not occur. Additionally, the interim beddown would occur at existing installations with transportation networks in place. Additional CV-22 personnel associated with the interim beddown would be within the total number of personnel previously analyzed in EIAP documentation for all installations under the Proposed Action and Alternatives. Therefore, no impacts on transportation would be expected.
- **Socioeconomics and Environmental Justice.** The Proposed Action and Alternatives do not include any construction. Therefore, impacts on the local economy from the increases in construction-related payroll taxes, sales receipts, and the indirect purchase of goods and services would not occur. Additional CV-22 personnel associated with the interim beddown would be within the total number of personnel previously analyzed in EIAP documentation for all installations under the Proposed Action and Alternatives. Impacts on population demographics and employment from additional CV-22 personnel would fall within the previously completed EIAP documentation. Lastly, the Proposed Action and Alternatives would occur on existing USAF installations and within existing airspace where CV-22s currently operate. Therefore, there will be no measureable impact on socioeconomics and there would be no impact, disproportionate or otherwise, on low income or minority communities.

Proposed Action Components Eliminated from Detailed Analysis. Based on the description of the Proposed Action at Cannon AFB provided in **Sections 2.1.5.1** through **2.1.5.3**, proposed aircraft numbers, operations, and personnel are within numbers previously

analyzed in EIAP documentation for Cannon AFB. Therefore, if the Proposed Action were to only consider actions at Cannon AFB, these actions would qualify for a categorical exclusion under the EIAP and 32 CFR § 989, Appendix B A2.3.11. These actions would not, individually or cumulatively, have the potential for additional significant effects on human health and the environment. Therefore, all elements of the Proposed Action at Cannon AFB have been eliminated from additional environmental analysis in this EA.

Alternatives Eliminated from Detailed Analysis. Based on the description of Alternative 1 at Cannon AFB provided in **Sections 2.3.1.1** through **2.3.1.3**, proposed aircraft numbers, operations, and personnel are within numbers previously analyzed in EIAP documentation for Cannon AFB. Therefore, all actions under Alternative 1 would qualify for a categorical exclusion under the EIAP and 32 CFR § 989, Appendix B A2.3.11. These actions would not, individually or cumulatively, have the potential for additional significant effects on human health and the environment due to the nature of the action. Therefore, Alternative 1 at Cannon AFB has been eliminated from additional environmental analysis in this EA.

3.1 Noise

3.1.1 Definition of the Resource

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities essential to a community's daily life, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz are used to quantify sound frequency. The human ear responds differently to different frequencies. "A-weighing," measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. Representative sounds encountered in daily life and their dBA levels are provided in **Table 3.1-1**.

Table 3.1-1. Common Sounds and Their Levels

Outdoor	Sound Level (dBA)	Indoor
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

The dBA noise metric describes steady noise levels, although very few noises are, in fact, constant. Therefore, A-weighted Day-night Sound Level has been developed. Day-night sound level (DNL) is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10:00 p.m. to 7:00 a.m.). DNL is a useful descriptor for noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. In addition, equivalent sound level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB.

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, and local noise control regulations. Aircraft and military training activities are specifically exempt from the act. In 1974, the U.S. Environmental Protection Agency (USEPA) provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. Okaloosa County, Florida, and Bernalillo County, New Mexico, maintain noise ordinances that set not-to-exceed sound levels; however, they do not apply to any activities outlined under the Proposed Action or alternatives.

3.1.2 Existing Conditions

3.1.2.1 HURLBURT FIELD

Existing sources of noise at Hurlburt Field include military aircraft overflights, limited ground munitions training, commercial and private aircraft overflights, road traffic, and other noises such as lawn maintenance equipment, construction noise, and bird and animal vocalizations. Existing noise levels (L_{eq} and DNL) without aircraft operations were estimated for the surrounding areas using the techniques specified in the American National Standard *Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present.* **Table 3.1-2** outlines the land use category and the estimated background noise levels for nearby areas (ANSI 2013).

Table 3.1-2. Estimated Background Noise Levels

Example Land Use Category	Average Residential Intensity (people per acre)	DNL	L_{eq} (dBA)	
			Daytime	Nighttime
Rural or remote areas	<2	<49	<48	<42
Quiet suburban residential	2	49	48	42
	4	52	53	47
	4.5	52	53	47
Quiet urban residential	9	55	56	50
Quiet commercial, industrial, and normal urban residential	16	58	58	52
	20	59	60	54

Source: ANSI 2013

USAF's land use compatibility guidelines for noise exposure are essentially the same as those published by the Federal Interagency Committee on Urban Noise in the June 1980 publication, *Guidelines for Considering Noise in Land-Use Planning and Control*. These guidelines stem

from the USEPA 1974 "Levels Document" which suggested continuous and long-term noise in excess of DNL 65 dBA are normally incompatible with noise-sensitive land uses such as residences, schools, churches, and hospitals. USAF recently updated Air Force Instruction (AFI) 32-7063, *Air Installations Compatible Use Zone*s Program, which provides prescriptive guidance on the recommended land use compatibility for noise zones. **Table 3.1-3** provides general categories of noise ranges from aircraft operations to achieve compatible land use planning.

Table 3.1-3. Recommended Noise Ranges for Compatible Land Use Planning

General Level of Noise	Aircraft Noise (DNL)	Recommended Uses
Low	< 65 dBA	Noise-sensitive land uses compatible
Moderate	65–75 dBA	Noise-sensitive land uses normally not compatible
High	> 75 dBA	Noise-sensitive land uses not compatible

Source: USAF 2015b

NOISEMAP is a suite of computer programs adopted by USAF which predict noise exposure in the vicinity of an airfield due to aircraft, maintenance, and ground run-up operations. NOISEMAP Version 7.3 was used to calculate the existing DNL noise contours at Hurlburt Field based on the average daily aircraft operations. **Figure 3.1-1** shows the existing DNL noise contours at Hurlburt Field plotted in 5-dB increments, ranging from 65 to 85 dBA DNL. As mentioned above, DNL 65 dB is the noise level below which all land uses are compatible with noise generated from airfield operations. All areas exposed to noise levels greater than 65 dBA DNL, other than a small off-installation area to the north of the airfield, are completely within the property boundary or over the water.

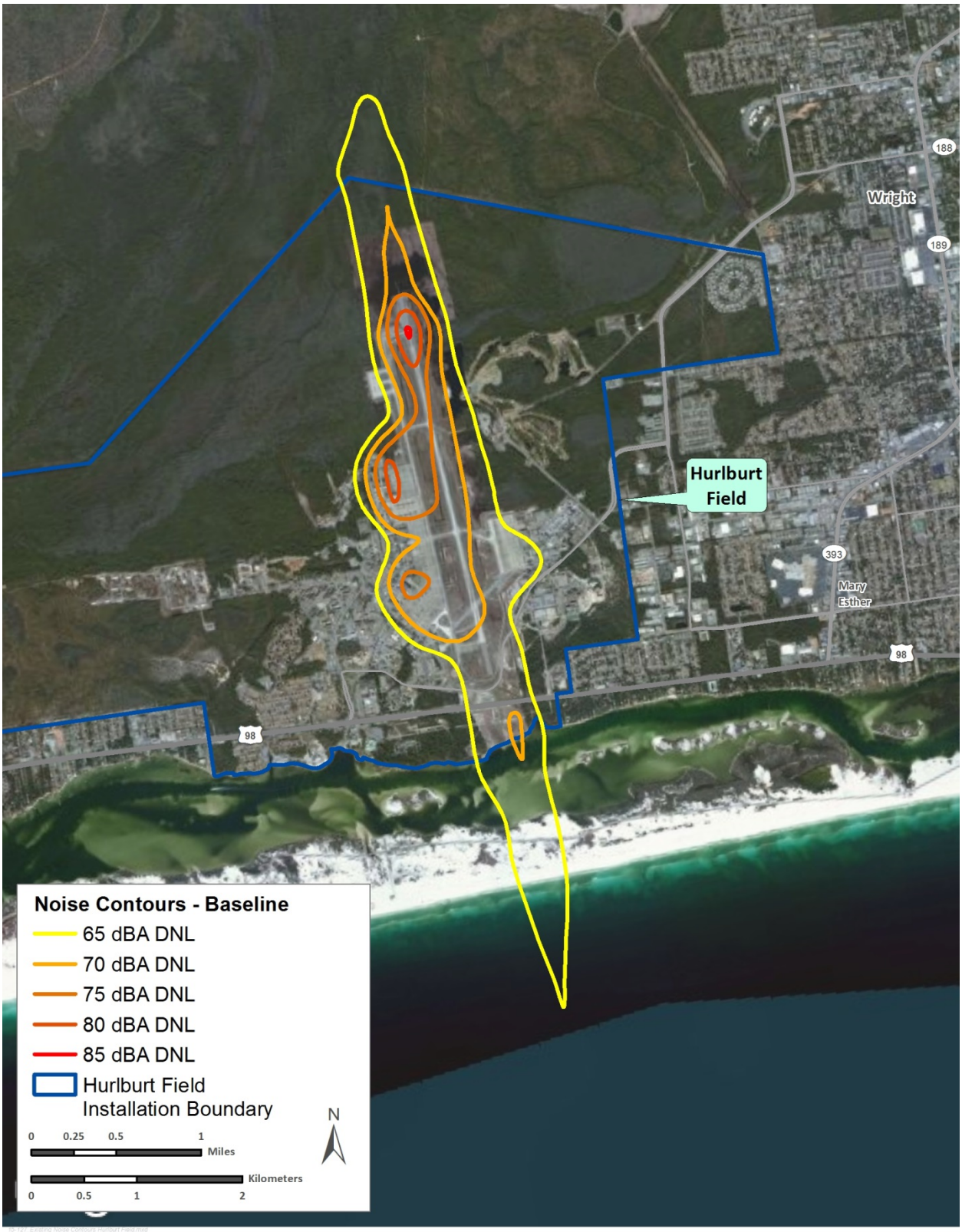
3.1.2.2 KIRTLAND AFB

As with Hurlburt Field described in **Section 3.1.2.1**, existing sources of noise at Albuquerque International Sunport ("Sunport")/Kirtland AFB include military aircraft overflights, limited ground munitions training, commercial and private aircraft overflights, road traffic, and other noises such as lawn maintenance equipment, construction noise, and bird and animal vocalizations. **Table 3.1-2** outlines the land use category and the estimated background noise levels without aircraft operations for nearby areas (ANSI 2013).

Sunport recently analyzed the noise conditions on and around the airport using the FAA's Integrated Noise Model. **Figure 3.1-2** shows the existing DNL noise contours at Kirtland AFB plotted in 5-dB increments, ranging from 65 to 85 dBA DNL. Approximately 1 acre of residential housing, the USS Bullhead Memorial Park, a portion of Morris Field, and the University of New Mexico are within the 65 dBA DNL noise contour for Sunport. No sensitive land uses are within areas exposed to greater than 70 dBA DNL.

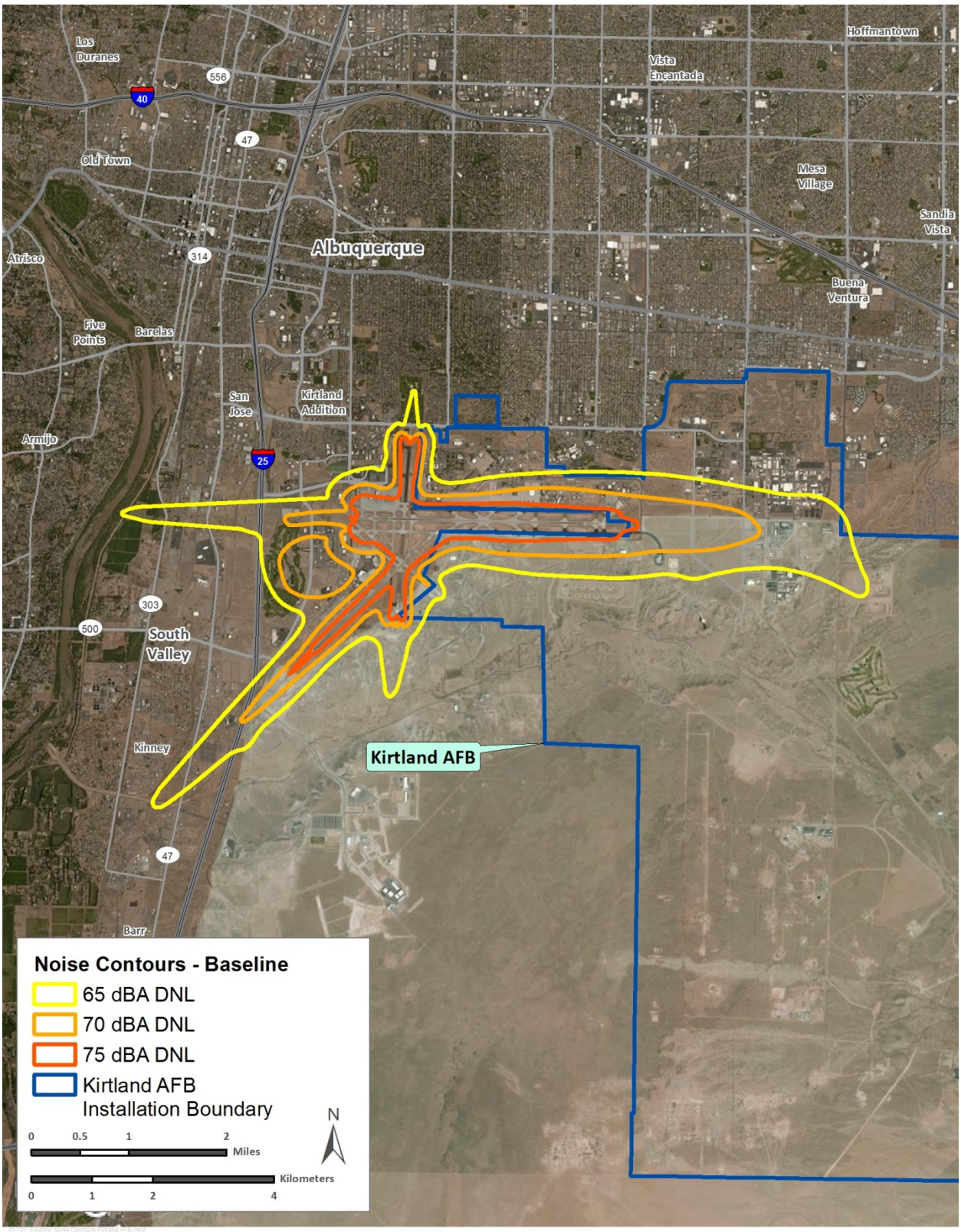
3.1.3 Environmental Consequences

Effects would be considered significant if the Proposed Action or alternatives were to result in the violation of applicable federal, state, or local noise regulations, or create appreciable areas of incompatible land use.



Data Source: Baseline Noise Contours: Hurlburt Field; Bing Imagery: (c) 2010 Microsoft Corporation and its data suppliers; Roads: ESRI Streetmap 2010

Figure 3.1-1. Noise Contours – Hurlburt Field (2013 Baseline)



Data Source: Baseline Noise Contours: Kirtland AFB; Bing Imagery: (c) 2010 Microsoft Corporation and its data suppliers; Roads: ESRI Streetmap 2010

Figure 3.1-2. Noise Contours – Sunport/Kirtland AFB (Baseline)

3.1.3.1 PROPOSED ACTION

The Proposed Action would have short-term, negligible, direct, adverse effects on the existing noise environment. Short-term effects would be primarily due to temporary incremental increases in CV-22 operations at Hurlburt Field and Kirtland AFB. These effects would not result in the violation of applicable federal, state, or local noise regulations, or create appreciable areas of incompatible land.

Hurlburt Field

Short- term, negligible, direct, adverse effects would occur due to temporary incremental increases in CV-22 operations at Hurlburt Field. The noise environment in the immediate area surrounding Hurlburt Field would continue to be dominated by aircraft takeoff and landing operations. **Table 3.1-4** shows the existing air operations at Hurlburt Field and those that would occur with the Proposed Action. Approximately 40 additional aircraft operations per year would occur to or from Hurlburt Field during 2016 (i.e., the most active year of the interim beddown) when compared to 2013 baseline conditions. This would equate to an average of less than one additional operation per week, an increase of approximately 0.1 percent.

Table 3.1-4. Air Operations at Hurlburt Field – Proposed Action

	Aircraft Operations	
	Total Annual	**Average Daily**
NEPA Baseline (2001 Beddown EA)	36,456	99.9
Noise Baseline (2013 Draft AICUZ *in prep*)	46,254	126.7
Proposed Action (Maximum Year)	46,294	126.8
Change in Total Operations	40	0.1
Percent Change From Baseline	0.1%	0.1%

Sources: AFSOC 2001, AFCEC 2013

In general, it would take a doubling (100 percent increase) in air operations to have a barely perceptible change to the noise environment (e.g., greater than 3 dBA). Therefore, this 0.1 percent increase in air operations would be negligible when compared to existing conditions and would have no perceptible effect on the overall noise in surrounding areas. The additional aircraft operations would amount to an overall increase in noise of less than 0.1 dBA DNL at Hurlburt Field, and noise levels with the Proposed Action would be indistinguishable from those shown in **Figure 3.1-1**. These effects would be negligible.

Kirtland AFB

Short-term, negligible, direct adverse effects would occur due to temporary incremental increases in CV-22 operations at Sunport/Kirtland AFB. The noise environment in the immediate area surrounding Kirtland AFB would continue to be dominated by aircraft takeoff and landing operations. **Table 3.1-5** shows the existing air operations at Sunport/Kirtland AFB and those that would occur with the Proposed Action. Approximately 84 additional aircraft operations per year would occur to or from Kirtland AFB during 2018 (i.e., the most active year of the interim beddown) when compared to 2015 baseline conditions (AirNav 2015b). This would equate to an average of less than two additional operations per week, an increase of approximately 0.1 percent.

Table 3.1-5. Air Operations at Sunport/Kirtland AFB – Proposed Action

	Aircraft Operations	
	Total Annual	**Average Daily**
Baseline (Airport-wide)	144,540	396.0
Baseline (Military Only)	14,600	40.0
Proposed Action	144,624	396.2
Change in Total Operations	84	0.2
Percent Change From Baseline	0.1%	0.1%

Sources: AETC 2008, AirNav 2015b

In general, it would take a doubling (100 percent increase) in air operations to have a barely perceptible change to the noise environment (e.g., greater than 3 dBA). Therefore, this 0.1 percent increase in air operations would be negligible when compared to existing conditions and would have no perceptible effect on the overall noise in surrounding areas. The additional aircraft operations would amount to an overall increase in noise of less than 0.1 dBA DNL at Sunport/Kirtland AFB, and noise levels with the Proposed Action would be indistinguishable from those shown in **Figure 3.1-2**. These effects would be negligible.

3.1.3.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

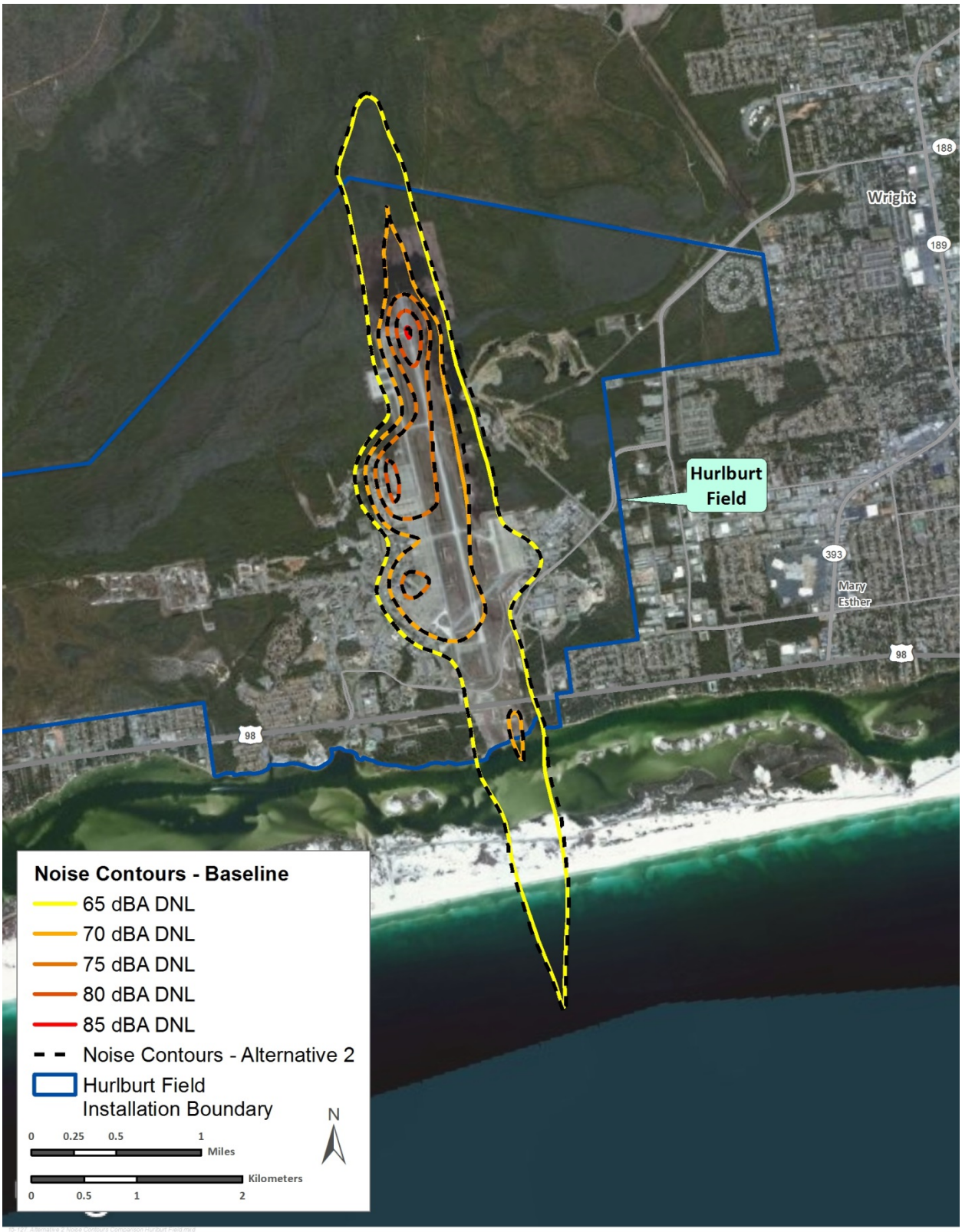
Alternative 2 would have short-term, minor, direct, adverse effects on the noise environment. Short-term effects would be due to additional aircraft operations during the temporary transfer of the 10 CV-22s. As with the Proposed Action, the noise environment in the immediate area surrounding Hurlburt Field would continue to be dominated by aircraft takeoff and landing operations. **Table 3.1-6** shows the existing air operations at Hurlburt Field and those that would occur with Alternative 2. Approximately 2,952 additional aircraft operations per year would occur to or from Hurlburt Field under Alternative 2 during 2017 (i.e., the most active year of the interim beddown) when compared to 2013 baseline conditions. This would equate to an average of 57 additional operations per week (i.e., eight operations per day), an increase of approximately 6.4 percent.

Table 3.1-6. Air Operations at Hurlburt Field – Alternative 2

	Aircraft Operations	
	Total Annual	**Average Daily**
NEPA Baseline (2001 Beddown EA)	36,456	99.9
Noise Baseline (2013 Draft AICUZ *in prep*)	46,254	126.7
Alternative 2 (Maximum Year)	49,206	134.8
Change in Total Operations	2,952	8.1
Percent Change From Baseline	6.4%	6.4%

Sources: AFSOC 2001, AFCEC 2013

NOISEMAP Version 7.3 was used to calculate the DNL noise contours with and without the aircraft operations outlined under Alternative 2. **Figure 3.1-3** shows the noise contours with and without the proposed CV-22 operations at Hurlburt Field under Alternative 2. As expected from the small change in overall air operations at the airfield, the addition of the proposed CV-22



Data Source: Baseline & Alternative 2 Noise Contours: Hurlburt Field; Bing Imagery: (c) 2010 Microsoft Corporation and its data suppliers; Roads: ESRI Streetmap 2010

Figure 3.1-3. Noise Contours –Hurlburt Field (Alternative 2)

aircraft and associated air operations would have only a minute incremental effect on the noise surrounding Hurlburt Field. Operational changes would have an imperceptible increase in noise when compared to existing conditions, and noise levels would be indistinguishable from those shown in **Figure 3.1-1**. These effects would be minor.

3.1.3.3 NO ACTION ALTERNATIVE

Impacts on noise would not be expected under the No Action Alternative. There would be no interim increases in noise, and the noise environment would remain unchanged when compared to existing conditions.

3.2 Air Quality

3.2.1 Definition of the Resource

USEPA Region 4 and Florida Department of Environmental Protection (FDEP) regulate air quality in Florida, and Region 6, New Mexico Environment Department (NMED) regulate air quality in New Mexico. The NMED Air Quality Bureau has delegated the authority and responsibility to prevent or abate air pollution in Bernalillo County over air quality in Bernalillo County to the Albuquerque Environmental Health Department-Air Quality Division (AEHD-AQD). The Clean Air Act (CAA) (42 United States Code § 7401-7671q), as amended, assigns USEPA responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR § 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the Federal program. The State of Florida has accepted the federal standards, while the State of New Mexico has stricter standards for nitrogen oxide (NO_x) and CO (NMAC § 2.3.109).

Permitting. FDEP and AEGD-AQD oversee programs for permitting the operation of new or modified stationary source air emissions in Florida and Bernalillo County, New Mexico. Air permitting is required for many industries and facilities that emit regulated pollutants. Based on the size of the emissions units and type of pollutants emitted, these states set permit rules and standards for emissions sources. The New Source Performance Standards process requires USEPA to list categories of stationary sources that cause or contribute to air pollution that might reasonably be anticipated to endanger public health or welfare. The New Source Performance Standards program sets uniform emissions limitations for many industrial sources. The CAA Amendments of 1990, under revisions to Section 112, required USEPA to list and promulgate National Emission Standards for Hazardous Air Pollutants to reduce the emissions of hazardous air pollutants, such as formaldehyde, benzene, xylene, and toluene from categories of major and area sources (40 CFR § 63).

3.2.2 Existing Conditions

3.2.2.1 HURLBURT FIELD

Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as nonattainment areas. Federal regulations designate AQCRs with levels below the NAAQS as attainment areas. Okaloosa County is within the Mobile (Alabama)-Pensacola-Panama City (Florida)-Southern Mississippi Interstate AQCR (40 CFR § 81.68). USEPA has designated Okaloosa County as in attainment for all criteria pollutants (USEPA 2015a). USEPA monitors levels of criteria pollutants at representative sites in each region throughout Florida. For reference purposes, **Table 3.2-1** shows the monitored concentrations of criteria pollutants at the monitoring location closest to Hurlburt Field.

Table 3.2-1. Air Quality Standards and Monitored Data

Pollutant	Air Quality Standard		Monitored Concentrations		
	Level	Averaging Period	2012	2013	2014
CO					
1-hour (ppm)	35	Not to be exceeded more than once per year	1.5	1.7	1.3
8-hour (ppm)	9		1.3	0.8	1
NO_2					
1-hour (ppb)	100	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	*35*	36	32
O_3					
8-hour (ppm)	0.070	3-year average of the fourth highest daily maximum	0.057	0.059	0.063
SO_2					
1-hour (ppm)	75	98th percentile, averaged over 3 years	*No Data*	*No Data*	*No Data*
3-hour (ppb)	0.5	Not to be exceeded more than once per year	*No Data*	*No Data*	*No Data*
$PM_{2.5}$					
24-hour ($\mu g/m^3$)	35	98th percentile, averaged over 3 years	*14*	*16*	12
Annual mean ($\mu g/m^3$)	12	Averaged over 3 years	*6*	*6.7*	6.5
PM_{10}					
24-hour ($\mu g/m^3$)	150	Not to be exceeded more than once per year over 3 years	80	75	66

Source: 40 CFR § 50.1-50.12, USEPA 2015b.
ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter

Hurlburt Field holds a synthetic minor operating permit (#0910064-011-AF) which expires October 26, 2017 (FDEP 2015a). AFI 32-7040, Air Quality Compliance, establishes a framework for USAF facilities to follow in order to comply with applicable CAA requirements. Within this framework are the requirements to obtain and maintain operating permits and to prepare and periodically update a comprehensive base emissions inventory. The permit requirements include annual periodic inventory of all significant stationary sources of air emissions for each of the criteria pollutants of concern; and monitoring and recordkeeping

requirements. Primary stationary sources of air emissions include paint booths, fuel storage areas, aircraft engine test stand, and electric generators. **Table 3.2-2** lists Hurlburt Field's 2012 facility-wide air emissions from all significant stationary sources.

Table 3.2-2. Annual Emissions for Significant Stationary Sources at Hurlburt Field

Pollutant	Emissions (tons/year)
CO	7.1
NO_x	78.7
Volatile organic compounds (VOCs)	29.2
$PM_{10}/PM_{2.5}$	4.6
SO_2	4.0

Source: FDEP 2015b.

Climate and Greenhouse Gases (GHGs). GHGs are components of the atmosphere that trap heat relatively near the surface of the earth, and therefore, contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO_2), methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the

atmosphere. Whether or not rainfall will increase or decrease remains difficult to project for specific regions (USEPA 2015c and IPCC 2014).

Historically, Oskaloosa's average high temperature is 91.3 degrees Fahrenheit (°F) in the hottest month of July, and the average low temperature is 36.7°F in the coldest month of January. Okaloosa has average annual precipitation of 69.2 inches per year. The wettest month of the year is July with an average rainfall of 9.4 inches (Idcide 2015).

EO 13693, *Planning for Federal Sustainability in the Next Decade*, outlines policies intended to ensure that federal agencies evaluate climate-change risks and vulnerabilities, and to manage the short- and long-term effects of climate change on their operations and mission. The EO specifically requires agencies within DOD to measure, report, and reduce their GHG emissions from both their direct and indirect activities. DOD has committed to reduce GHG emissions from non-combat activities 34 percent by 2020 (DOD 2014). In addition, CEQ recently revised draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA analyses. The draft guidance includes a presumptive effects threshold of 27,563 tons per year (25,000 metric tons per year) of CO_2 equivalent emissions from a federal action (CEQ 2014).

3.2.2.2 KIRTLAND AFB

Bernalillo County is within the Albuquerque-Mid Rio Grande Interstate AQCR (40 CFR § 81.83). USEPA has designated Bernalillo County as a maintenance area for CO, and an attainment area for all other criteria pollutants (USEPA 2015a). USEPA monitors levels of criteria pollutants at representative sites in each region throughout New Mexico. For reference purposes, **Table 3.2-3** shows the monitored concentrations of criteria pollutants at the monitoring location closest to Kirtland AFB (USEPA 2015b). Notably, although the PM_{10}

Table 3.2-3. Air Quality Standards and Monitored Data

Pollutant	NMAAQS	NAAQS		Monitored Concentrations		
	Level	Level	Averaging Period	2012	2013	2014
CO						
1-hour (ppm)	13.1	35	Not to be exceeded more than once per year	3.2	2.4	1.3
8-hour (ppm)	8.7	9		2.2	1.1	0.8
NO_2						
1-hour (ppb)	100	100	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	49	45	67
O_3						
8-hour (ppm)	-	0.070	3-year average of the fourth highest daily maximum	0.077	0.072	0.072
SO_2						
1-hour (ppm)	-	75	98th percentile, averaged over 3 years	6	4	53
3-hour (ppb)	-	0.5	Not to be exceeded more than once per year	No Data	No Data	No Data
$PM_{2.5}$						
24-hour ($\mu g/m^3$)	5.0	35	98th percentile, averaged over 3 years	24	20	21
Annual mean ($\mu g/m^3$)	-	12	Averaged over 3 years	11.8	8.7	10
PM_{10}						
24-hour ($\mu g/m^3$)	5.0	150	Not to be exceeded more than once per year over 3 years	227	155	93

Source: 40 CFR § 50.1-50.12, USEPA 2015c, NMAC § 20.2.72.500.
NMAAQS = New Mexico Air Quality Standards; ppm = parts per million; ppb = parts per billion;
$\mu g/m^3$ = micrograms per cubic meter.

monitored data exceed the standard, it is the highest reading over the average year and has not exceeded the standard more than once per year over a 3-year period; hence the attainment status.

Kirtland AFB is considered a major operating facility for the purposes of air permitting, and has a Title V operating permit (#527) issued on December 16, 2011 (NMED 2015). The permit requirements include annual periodic inventory of all significant stationary sources of air emissions for each of the criteria pollutants of concern; monitoring and recordkeeping requirements also are included in the permit. As with Hurlburt Field, primary stationary sources of air emissions include boilers, fuel storage areas, aircraft engine facilities, and electric generators. **Table 3.2-4** lists Kirtland AFB's 2013 facility-wide air emissions from significant stationary sources.

Climate and GHGs. The average high temperate at Kirtland AFB is 92.3°F in the hottest month of July, and the average low temperature is 22.8°F in the coldest month of January. Kirtland AFB has average annual precipitation of 9.5 inches per year. The wettest month of the year is August with an average rainfall of 1.7 inch (Idcide 2015). Guidance and EOs associated with GHG emissions are similar to those outlined for Hurlburt Field.

Table 3.2-4. Annual Emissions for Significant Stationary Sources at Kirtland AFB

Pollutant	Emissions (tons/year)
CO	9.6
NO_x	76.4
VOCs	5.7
$PM_{2.5}/PM_{10}$	0.8
SO_2	0.6

Source: USAF 2014c.

3.2.3 Environmental Consequences

3.2.3.1 PROPOSED ACTION

The Proposed Action would have short-term, minor, direct, adverse effects on air quality. Short-term increases in emissions would be due to the interim increase in mobile source emissions such as commuter vehicles and aircraft. Increases in emissions at Hurlburt Field and Kirtland AFB would be below the general conformity rule *de minimis* thresholds, would not exceed the GHG reference point in the draft CEQ guidance, and would not contribute to a violation of any federal, state, or local air regulations.

Table 3.2-5 lists total direct and indirect emissions resulting from the Proposed Action at Kirtland AFB and Hurlburt Field. Emissions would be below the *de minimis* threshold of 100 tons per year (tpy) for CO within the Bernalillo County maintenance area; therefore, the general conformity rule would not apply. Emissions would be below the *de minimis* threshold of 100 tpy of each pollutant in all areas; therefore, the level of effects would be minor. Moderate changes in aircraft operations or personnel would not substantially change these emissions estimates, and would not change the level of effects under NEPA.

Table 3.2-5 Annual Air Emissions Compared to *De Minimis* Thresholds - Proposed Action

Operations	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	*De minimis Threshold [tpy]*	*Exceeds De Minimis Thresholds? [Yes/No]*
Kirtland AFB	2.9	1.6	0.3	0.2	0.2	0.2	100	No
Hurlburt Field	4.3	1.4	0.4	0.1	0.1	0.1	100	No
Total	**7.2**	**2.9**	**0.7**	**0.3**	**0.3**	**0.3**	**100**	**No**

Source: USAF 2015c.

Climate Change and GHGs. **Table 3.2-6** lists the approximate CO_2 emissions for Kirtland AFB and Hurlburt Field in comparison to the CEQ presumptive effects threshold. Operational activities associated with the Proposed Action would not have GHG emissions above the CEQ threshold. These effects would be minor. Notably, GHG emissions would not change regardless of the ultimate location of the aircraft and associated training, and these emissions would be the same with or without the Proposed Action.

Table 3.2-6. GHG Emissions for the Proposed Action

	CO_2 Emissions [metric tpy]	*CEQ* Threshold [metric tpy]	Exceeds Thresholds? [Yes/No]
Kirtland AFB	309	25,000	No
Hurlburt Field	226	25,000	No
Total	**535**	**25,000**	**No**

3.2.3.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

Short-term, direct, minor, adverse effects would be expected. Activities outlined under Alternative 2 would be similar to but greater than Alternative 1. Effects would be primarily from the interim increase in source emissions such as commuter vehicles and aircraft at Hurlburt Field. Effects would be minor as increases in emissions would be below the general conformity rule *de minimis* thresholds, would not exceed the GHG reference point in the draft CEQ guidance, and would not contribute to a violation of any federal, state, or local air regulations.

Table 3.2-7 lists total emissions resulting from Alternative 2. Emissions would be below the *de minimis* threshold of 100 tpy of each pollutant; therefore, the level of effects would be minor. Moderate changes in aircraft operations or personnel would not substantially change these emissions estimates, and would not change the level of effects under NEPA.

Table 3.2-7. Annual Air Emissions Compared to *De Minimis* Thresholds – Alternative 2

Location	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	*De minimis Threshold* [tpy]	*Exceeds De Minimis Thresholds?* [Yes/No]
Hurlburt Field	13.0	5.9	1.1	0.6	0.8	0.8	100	No

Source: USAF 2015c.

Climate Change and GHGs. All operational activities combined under Alternative 2 would generate approximately 1,687 tons (1,533 metric tons) of CO_2, which would be below the CEQ threshold. These effects would be minor. Notably, GHG emissions would not change regardless of the ultimate location of the aircraft and associated training, and these emissions would be the same with or without the proposed action.

3.2.3.3 NO ACTION ALTERNATIVE

Impacts on air quality would not be expected under the No Action Alternative. There would be no interim changes to emissions and ambient air quality would remain unchanged when compared to existing conditions.

3.3 Airspace

3.3.1 Definition of the Resource

Airspace Management. Airspace management is defined by USAF as the coordination, integration, and regulation of the use of airspace. The objective of airspace management is to meet military training requirements through the safe and efficient use of available navigable airspace in a peacetime environment while minimizing the impact on other aviation users and

the public (AFI 13-201, Air Force Airspace Management). Airspace management procedures assist in preventing potential conflicts or aircraft accidents associated with aircraft using designated airspace in the United States, including restricted military airspace.

The management of airspace is governed by federal legislation and military regulations and procedures. FAA has overall responsibility for managing airspace through a system of flight rules and regulations, airspace management actions, and air traffic control (ATC) procedures. FAA accomplishes this through close coordination with state aviation and airport planners, military airspace managers, and other entities to determine how airspace can be used most effectively to serve all interests. The FAA *Aeronautical Information Manual: Official Guide to Basic Flight Information and ATC Procedures* defines and provides the operational requirements for each of the various types or classes of airspace (FAA 2015). The airspace environment is described in terms of its principal attributes, namely controlled and uncontrolled airspace and special use airspace (SUA).

Controlled Airspace. Controlled airspace is a generic term that encompasses the different classifications (Class A, B, C, D, and E) of airspace and defines dimensions within which ATC service is provided to flights under instrument meteorological conditions, and to flights under visual meteorological conditions. All military and civilian aircraft are subject to Federal Aviation Regulations.

- Class A airspace is generally airspace from 18,000 feet (ft) above mean sea level (MSL) up to and including 60,000 ft above MSL.
- Class B airspace typically comprises contiguous cylinders of airspace, stacked one upon another and extending from the surface up to 10,000 ft above MSL. Class B airspace is typically associated with major airport complexes such as Philadelphia International Airport, Pennsylvania; Newark Liberty International Airport, New Jersey; and JFK International Airport, New York.
- Class C airspace can generally be described as airspace that extends from the surface up to 4,000 ft above the airport elevation (charted in MSL). Class C airspace is designed to provide additional ATC into and out of primary airports where aircraft operations are periodically at high-density levels such as Atlantic City International Airport, New Jersey.
- Class D airspace is generally airspace from the surface to 2,500 ft above the airport elevation (charted in MSL) surrounding an operating ATC-controlled airport.
- Class E airspace can be described as general controlled airspace. Class E airspace can range from ground level at non-towered airfields up to 18,000 ft above MSL. The majority of Class E airspace is where more stringent airspace control has not been established.

Uncontrolled Airspace. Uncontrolled airspace (Class G) is the portion of airspace that has not been designated as Class A, B, C, D, or E airspace and is, therefore, not subject to restrictions that apply to controlled airspace. Class G airspace extends from the surface to the base of the overlying Class E airspace. ATC does not have authority to exercise control over aircraft

operations within uncontrolled airspace. Primary users of uncontrolled airspace are general aviation aircraft operating under visual meteorological conditions.

Special Use Airspace. SUA consists of airspace within which specific activities must be confined, or wherein limitations are imposed on aircraft not participating in those activities. SUAs were established, in a coordinated effort with FAA, to maintain safety by separating military and civilian flights. SUA usually consists of prohibited areas, restricted areas (RAs) (noted with R designator), warning areas (noted with W designator), military operations areas (MOAs), military training routes (MTRs) alert areas, and controlled firing areas. With the exception of controlled firing areas, SUA is depicted on aeronautical charts. Chart depictions include hours of operation, altitudes, and the agency controlling the airspace. All SUA descriptions are contained in FAA Joint Order (JO) 7400.8, *Special Use Airspace*. FAA JO 7400.2, *Procedures for Handling Airspace Matters*, is also a basic document that defines procedures for handling airspace matters including SUA. Military missions may also use other types of airspace (designated as airspace for special use) that is not categorized as SUA but where limitations may still be imposed on nonparticipating aircraft. This type of airspace is slightly less restrictive than SUA, but its purpose is also to minimize negative interactions between a military mission and nonparticipating aircraft. Examples of airspace for special use include MTRs, slow routes (SRs), and drop zones (DZs). Other flight routes commonly used by air traffic include flight corridors and FAA-designated Victor routes (noted on aeronautical charts by the letter V).

- **Restricted Area Airspace.** Restricted Area airspace is a block of airspace reserved for military operations that cannot be entered by private or commercial aircraft without permission from the controlling agency when that airspace is active.
- **MOAs.** An MOA is a block of airspace established outside of Class A airspace where there will be a high density of military aircraft conducting nonhazardous operations. Private and commercial aircraft may also use this airspace. The purpose of the MOA is to separate military activities from instrument flight rules traffic and to identify for visual flight rules traffic where these activities are conducted.
- **MTRs.** MTRs are military air traffic corridors designated by FAA for low-altitude military operations at airspeeds in excess of 250 knots indicated airspeed (i.e., 287 miles per hour). MTRs provide airspace to practice navigational skills over a variety of terrain and provide the military with access to DZs, ranges, and other destinations. The centerlines of MTRs are depicted on aeronautical charts.
- **SRs.** SRs are similar to MTRs in structure, but are used by aircraft that normally operate at low-level airspeeds of less than 250 knots indicated airspeed. SRs are designated through military approval channels and do not require FAA coordination. The maximum altitude that can be flown in SRs is 1,500 feet above ground level.
- **DZs.** DZs are used, as part of military aircrew training, as locations where personnel and pallets of cargo are dropped to simulate wartime and humanitarian relief missions.
- **Victor Routes.** Victor routes (VRs) cover altitudes ranging from approximately 1,200 ft above ground level up to, but not including 17,999 ft above MSL.

USAF uses FAA JO 7110.65, *Air Traffic Control*, and FAA JO 7610.4, *Memorandum of Agreement between Department of the Air Force and Federal Aviation Administration on Safety for Space Transportation and Range Activities*, established procedures for flying, airfield, and flight-line vehicle operations at USAF airfields.

Aircraft Safety. Aircraft safety is based on the physical risks associated with aircraft flight and current military operation procedures concerning aircraft safety. Military aircraft fly in accordance with Federal Aviation Regulations Part 91, *General Operating and Flight Rules*, which governs such things as operating near other aircraft, right-of-way rules, aircraft speed, and minimum safe altitudes. This regulation has precise requirements for the use of airports, heliports, and other landing areas; local flying rules; and SUA.

Obstructions to flights, which include towers and power transmission lines, represent safety concerns for aircrews, especially those engaged in low-altitude flight training. Hazardous weather conditions can pose safety hazards and influence a pilot to alter flight. Pilots consult the National Weather Service or weather services at local airports to obtain preflight weather information. Adverse weather conditions of concern include tornadoes, thunderstorms, hail, severe turbulence, dust storms, and wind shear. The evaluation of potential hazards of weather conditions rests in a pilot's sound discretion based on knowledge of available information, experience, and the operational limits of the aircraft.

AFI 91-202, *The US Air Force Mishap Prevention Program,* implements Air Force Policy Directive 91-2, Safety Programs. It establishes mishap prevention program requirements (including Bird/Wildlife Aircraft Strike Hazard), assigns responsibilities for program elements, and contains program management information including for USAF-supported installations. Bird and wildlife strikes are a safety concern due to the potential damage that a strike might have on the aircraft or injury to aircrews. USAF devotes considerable attention to avoiding the possibility of bird/wildlife-aircraft strikes. It has conducted a worldwide program for decades to study bird migrations, bird flight patterns, and past strikes to develop predictions of where and when bird/wildlife-aircraft strikes might occur.

3.3.2 Existing Conditions

3.3.2.1 HURLBURT FIELD

Hurlburt Field. Hurlburt Field (FAA identifier HRT) is located on the Gulf of Mexico in the Florida Panhandle, 35 miles east of Pensacola and is part of the greater Eglin Air Force Base reservation (USAF and US Navy 2007) (see **Figure 3.3-1**). The installation's one runway, Runway 18/36, is 9,600 ft long and runs north to south with a parallel taxiway. It is located in the eastern portion of the installation. Airfield operations and maintenance facilities are located on either side of the runway, along with other industrial facilities. Hurlburt Field's pavement system includes the runway, paved overruns, parking and maintenance aprons, aircraft taxiways, and arm and disarm pads (USAF 2009). Secondary taxiways linking the parallel taxiway to the runway are identified alphabetically from the north to the south. Taxiway Alpha is at the approach end of Runway 18 and Taxiway Foxtrot is at the approach end of Runway 36. The west apron and the hot cargo apron (i.e., safe stand-off apron for loading/unloading potentially hazardous cargo) are adjacent to the parallel taxiway. The east apron is connected by Taxiways Charlie and Delta.

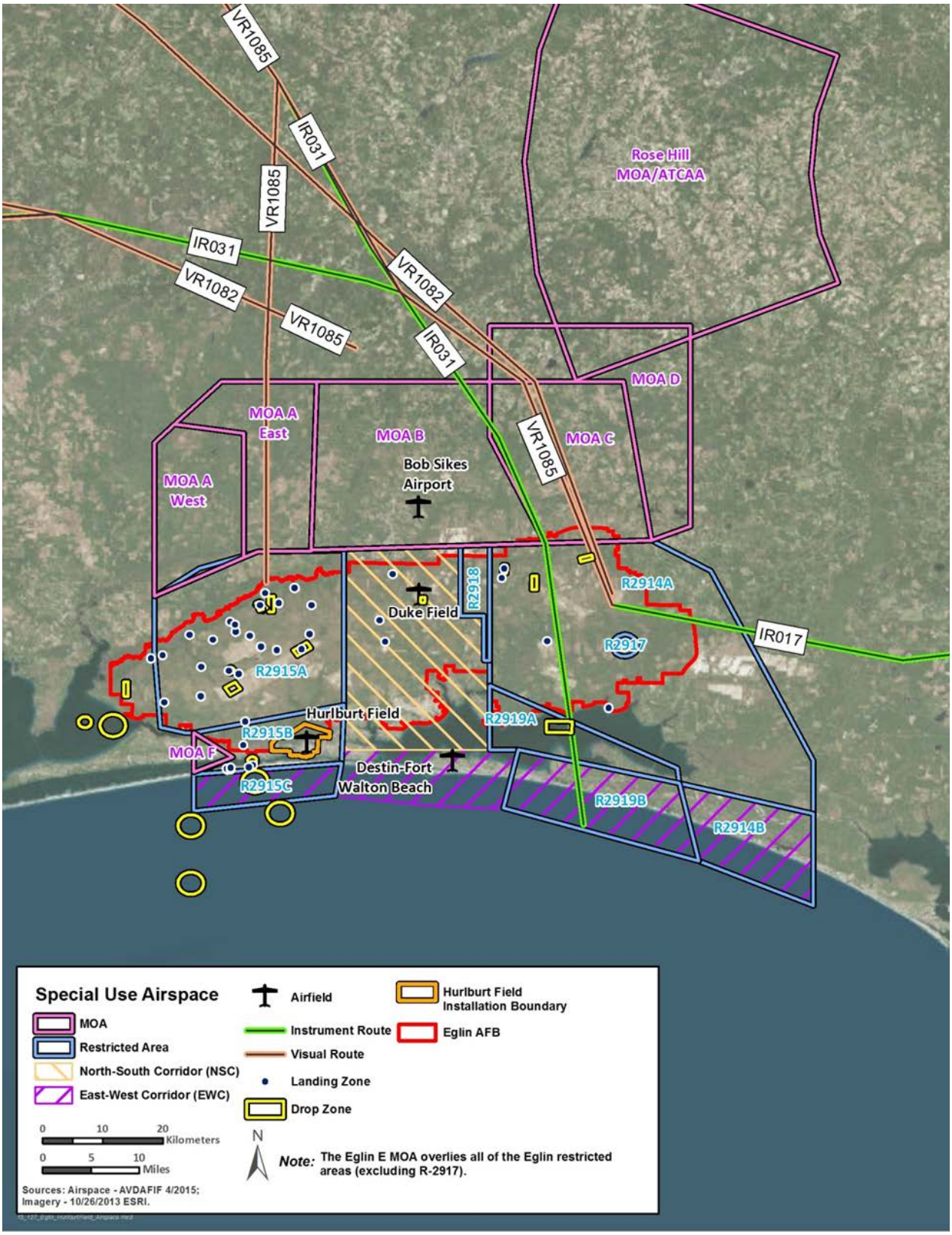


Figure 3.3-1. Key Airfields and Airspaces Proximal to Hurlburt Field.

The primary fixed and rotary wing forward arming and refueling point site is located at the intersection of the D taxiway and Landing Lane 36H. Rotary wing operations are limited to Landing Lanes 18H/36H (Flash Card Machine, LLC, 2016). The helipad, located along Runway 18 at the Delta taxiway is a 1,608 × 90-ft concrete slab dedicated to rotary wing aircraft departures (AirNav 2015a; Flash Card Machine, LLC, 2016).

Hurlburt Field Airspace. Hurlburt Field airspace extends upward from the surface to and including an altitude of 2,500 ft above MSL within a 5.3-nautical mile radius of the Airfield Reference Point (center point of the installation). Conventional flight patterns in Hurlburt Field airspace are flown at altitudes ranging between 1,200 and 1,700 ft above MSL with a 3-mile visibility. Jet operations typically fly at altitudes ranging between 1,700 and approximately 2,200 ft above MSL. Helicopter and rectangular traffic patterns are normally flown east of the runway at altitudes ranging between 700 and 1,200 ft above MSL. Overhead helicopter patterns are typically flown up to an altitude of 1,700 ft above MSL west of the runway for noise abatement.

USAF flight operations out of Hurlburt Field may be conducted within Hurlburt airspace or the nearby SUAs identified in **Figure 3.3**-1. SUAs proximal to Hurlburt Field include Eglin AFB Restricted Area Airspaces, MOAs, designated flight corridors, and MTRs.

The restricted areas are located mostly over the land portion of the Eglin Reservation, and are used primarily for air-to-surface and surface-to-air testing and training operations (USAF 2014a). Eglin AFB's Restricted Area Airspaces include: R-2914A and B; R-2915A, B, and C; R-2917 (within R-2914A); R-2918; and R-2919A and B.

The restricted areas such as R-2914, R-2915, and R-2919 are primarily used by various military tenants for extensive multi-use air-to-surface, surface-to-air, ground detonations, and test and evaluation activities. Hurlburt airspace lies east of the easternmost boundaries of R-2915 A, B, and C (Flash Card Machine, LLC, 2016). The vertical limits (i.e., altitudinal boundaries) of Restricted Area Airspaces R-2914A, R-2915A, R-2915B, and R-2119A extend from the surface into an unlimited ceiling. Altitudes for Restricted Area Airspaces R-2914B, R-2914C, R-2915C, and R-2919B extend from 8,500 ft above MSL to an unlimited ceiling (Eglin AFB 2014a). Eglin AFB is the controlling agency for its Restricted Area Airspaces.

MOAs proximal to Hurlburt Field include Eglin AFB MOAs A East and West, MOA B, and MOA C, at altitudes above 11,000 ft above MSL, which are controlled by the Jacksonville Air Traffic Control Center (AirNav 2015a; USAF 2014a). Eglin AFB controls MOAs A East and West, MOAs B and C, up to an altitude of 10,000 ft above MSL, and MOAs D, E, and F. Rose Hill MOA/Air Traffic Control Assigned Airspace is controlled by the Jacksonville Air Traffic Control Center; Eglin AFB schedules this airspace. The vertical limits of MOAs A East and West, B, C, D, E, and F range between 1,000 ft above ground level and 18,000 ft above MSL. The vertical limits of Rose Hill MOA extend from 8,000 to 18,000 ft above MSL.

MTRs proximal to Hurlburt field include IR031, IR017, VR1082, and VR1085.

Hurlburt Field Existing Operations. Hurlburt Field is fully dedicated to military operations, and has the runway capacity to support an average of 181 aircraft operations per day, or 66,065 flight operations per year (AirNav 2015a). According to the 2014 AFSOC baseline analysis of

Special Operations Forces Force Structure Realignments at Hurlburt Field, five aircraft types and associated operating programs are currently based out of the installation including the MC-130, AC-130, CV-22, PC-12, and U-28 (USAF 2014b). The total number of aircraft based at the installation is 63. Annually, Hurlburt Field supports operational averages for Hurlburt Field estimated at 73.5 sorties (i.e., round-trip flights) or 147 operations (individual takeoffs and landings) per day, and a baseline total of 3,744 flight hours flown per year.

CV-22 flight activities conducted beyond the boundaries of Hurlburt Field airspace are addressed in NEPA documentation prepared specifically for low altitude training navigation, military training routes, and the Eglin Range Complex.

3.3.2.2 KIRTLAND AFB

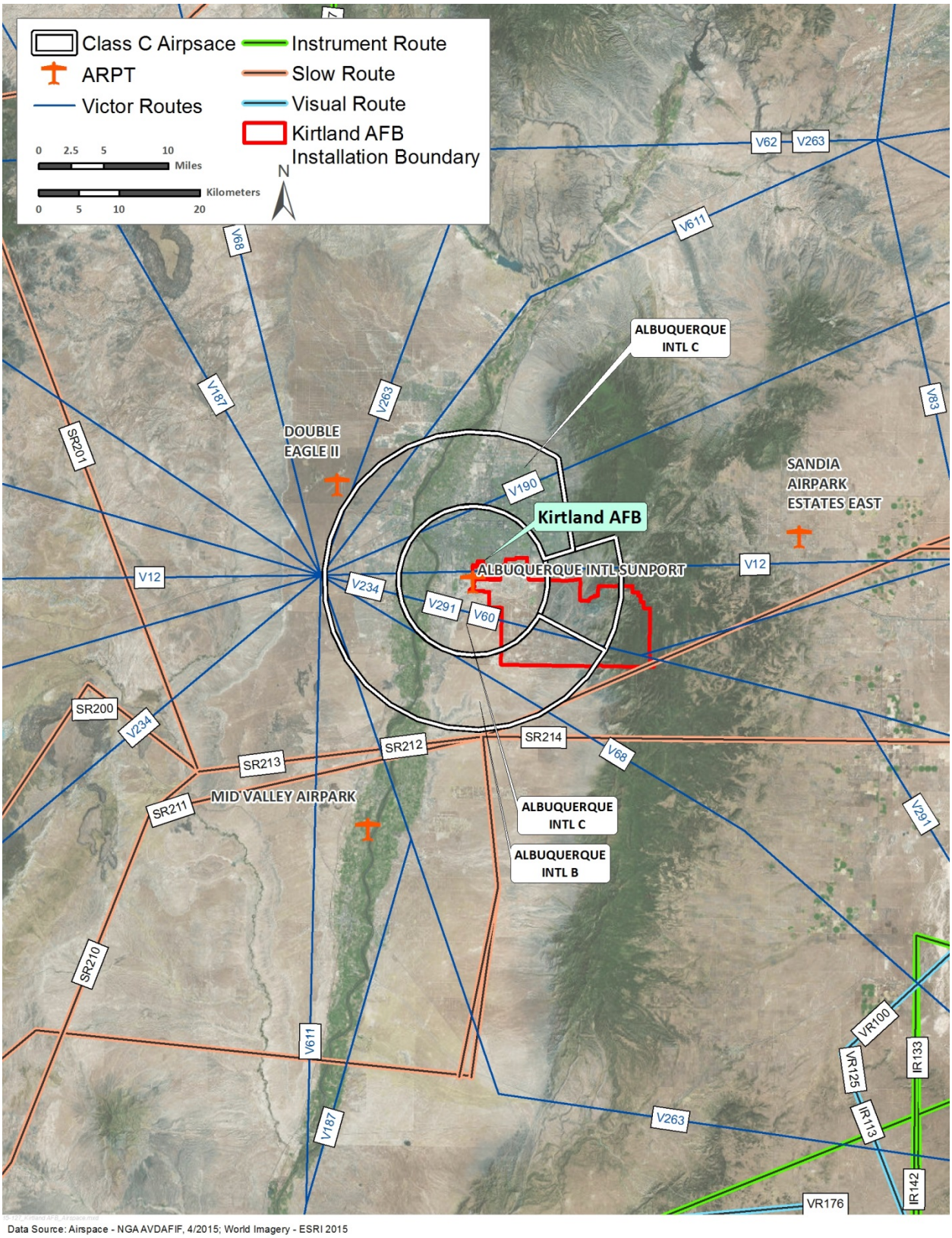
Airfield. Kirtland AFB and Sunport (FAA designator ABQ), located immediately northwest of the installation, operate a joint-use (public and military) airport (FAA 2015; AirNav 2015b). Kirtland AFB uses the four runways located on the Albuquerque airfield. Runway 8/26 is 13,739 ft in length, Runways 3/21 and 17/35 are 10,000 ft, and Runway 12/30 is 6,000 ft. The installation uses the ATC tower at the airport. The FAA is responsible for maintenance and operations of the airfield and operates the air traffic control tower for all flights in and out of the airport. USAF provides crash and rescue services.

Reported statistics for year 2014 annual operations occurred out of Sunport indicated that 198 aircraft were based on the airfield (FAA 2015; AirNav 2015b). This included 60 single-engine fixed-wing; 49 multi-engine fixed-wing aircraft, 30 jet aircraft, 19 rotary wing aircraft, and 40 designated military aircraft. Flight operations out of the airport were comprised of commercial (40 percent), transient general aviation (22 percent), air taxi (21 percent), military operations (15 percent), and local general aviation (2 percent).

When necessary, fixed- and rotary-wing flight training operations (e.g., emergency procedure maneuvers, airdrops, crash and rescue ground training, and operations to maintain flight hour currencies) are conducted at an auxiliary airfield located 5 miles south of the airport and in the surrounding airspaces. This allows military aircrews to conduct required training with minimal impact on air traffic at the airport (Kirtland AFB 2013b).

Airspace. Kirtland AFB uses Sunport and surrounding airspaces to conduct flight operations (**Figure 3.3-2**). Albuquerque Tower airspace is classified as Class C airspace with an altitude that extends from the surface up to and including 20,000 ft above MSL. All airspace within 56 km (35 miles) of the airport is considered Albuquerque Tower airspace and controlled by the Albuquerque Tower Control 24 hours/day, seven days/week. This area comprises Albuquerque International Airspaces A, B, and C (USAF 2003; USAF 2011; NGA 2015). The airspace beyond 56 km (35 miles) is controlled by FAA out of the Albuquerque Air Traffic Enroute Center.

Other airspaces proximal to Kirtland AFB include 3 Instrument Routes (IRs) (i.e., IR142, IR133, and IR113) located approximately 50 miles southeast of Kirtland AFB, 12 FAA-designated VRs (i.e., V263, V611, V190, V60, V234, V291, V68, V187, V12, V60, V62, and V83), 2 RAs (RA5107C and RA5107H) located approximately 50 miles southwest of Kirtland AFB, 2 MOAs (i.e., MOA US 01194 and MOA US 02095) located approximately 60 miles southwest of Kirtland AFB, and 7 SRs (i.e., SR200, SR201, SR210, SR211, SR212, SR213, and SR214)



Data Source: Airspace - NGA AVDAFIF, 4/2015; World Imagery - ESRI 2015

Figure 3.3-2. Key Airspaces and Airways Proximal to Kirtland AFB.

(USAF 2003; USAF 2011; NGA 2015). **Figure 3.3-2** shows the airspaces and airways within an approximate 40-mile radius of the installation.

Kirtland AFB Existing Operations. The USAF Air Education Training Command reported that 42 aircraft representing seven types of aircraft (including fixed- and rotary-wing aircraft) are based at Kirtland AFB (Reese 2016). These include seven CV-22s, 3 HC-130Js, 5 HC-130 P/Ns, 12 HH-60Gs, 3 MC-130Hs, 4 MC-130Js, and 7 UH-1s.

The most recently reported statistics for Sunport indicate that during 2014 the airport supported a total of 130,002 flight operations (FAA 2015). Based on operational assumptions made for analysis in this EA (i.e., two flight operations equal one sortie and one sortie represents four hours of flight time on average), this total represents approximately 65,000 sorties and over 260,000 flight hours. Until 2007, the airfield supported more than 190,000 flight operations, annually (FAA 2015; Albuquerque International Sunport 2011). Therefore, the operational tempo of existing flight operations is well below the historical operational capacity of the airfield and its associated airspaces.

For the purposes of this EA, the NEPA baseline for CV-22 operations out of the installation (i.e., 591 sorties per year or 1,182 flight operations per year) is conservatively assumed as the current level of operational activity for the aircraft program. Based on the 2014-reported flight operations data for Sunport, and assuming CV-22s operate according to the NEPA baseline, CV-22 operations currently comprise less than 1 percent of total flight operations out of the airport.

3.3.3 Environmental Consequences

The significance of potential impacts to airspace management depends on the degree to which the aircraft proposed for beddown and operation would affect the airspace environment. Significant impacts could result if implementation of the Proposed Action would: 1) impose major restrictions on air commerce opportunities; 2) significantly limit airspace access to a large number of users; or 3) require major modifications to air traffic control systems.

3.3.3.1 PROPOSED ACTION

Hurlburt Field

Under the Proposed Action, USAF would beddown three additional CV-22 aircraft on an interim basis at Hurlburt Field. Based on the resulting total flight operations projected for the CV-22 mission at Hurlburt Field, short-term, minor, adverse impacts on overall airfield operations would be expected from the integration of these additional aircraft into the installation's operational profile over the 3-year interim beddown. The current number of CV-22 aircraft based at Hurlburt would increase from 12 to 15 aircraft, representing an increase of approximately 25 percent. However, this increase in the number of CV-22 aircraft represents only an approximated increase of 5 percent of the total number of aircraft currently based on the installation. As stated in **Section 1.4.5**, the beddown of up to 27 CV-22s at Hurlburt Field was analyzed and covered by NEPA analysis conducted for the 2007 USAF and US Navy. Documentation and impacts from that number of CV-22s operating out of the installation were determined to be less than significant. Because the proposed addition of 3 CV-22 aircraft on the installation would bring the total number of CV-22s to 15, and the additional aircraft and associated operations on

the installation would be temporary, impacts from the current Proposed Action would also be less than significant.

The proposed interim beddown and operations of the three additional CV-22s at Hurlburt Field would result in a slight increase in total domestic annual operating hours. As discussed in **Section 2.1.6.2**, CV-22 flying time at Hurlburt Field during the interim beddown would include up to 3,822 flight hours per year representing a projected total of 956 sorties (1,912 flight operations) per year at the installation during the interim beddown. This would represent a 2 percent increase in CV-22 flight hours and sorties on the installation. Further, compared with Hurlburt Field's operational capacity (i.e., 66,165 flight operations per year), the additional CV-22 flight hours and sorties represent a 3 percent increase in overall flight operations. When flown, the interim beddown aircraft would operate within Hurlburt Field, Eglin AFB, MTRs, or other existing airspace and training areas designated for CV-22 operations.

No change to the configuration (i.e., size, shape, or location) of airspace is proposed or would be required to support implementation of the Proposed Action. Additionally, no airspace areas or ATC facilities currently used by aircraft operating out of Hurlburt Field would be adversely affected by implementation of the Proposed Action. Further, the additional CV-22s would be accommodated fully by existing facilities, and their existence on the installation would not require the alteration of the 18/36 runway or impede access to the airfield.

Annual operations of the three additional CV-22 aircraft occurring outside of Hurlburt Field would likely be distributed over a large area and similarly would not exceed the established capacities of respective airspaces. Relative to regional aircraft activity, net increases in flight activity under the Proposed Action would be negligible. As a result, any impacts on airspace management at Hurlburt Field or within the southeast region would be less than significant.

Kirtland AFB

Under the Proposed Action, USAF would beddown four additional CV-22 aircraft on an interim basis at Kirtland AFB. Based on the projected total flight operations for the CV-22 mission at Kirtland AFB, short-term, minor, adverse impacts on overall airfield operations would be expected from the integration of these additional aircraft into the installation's operational profile over the 3-year interim beddown. The current number of CV-22 aircraft based at Kirtland AFB would increase from 7 to 11 aircraft, representing an increase of approximately 57 percent of CV-22s on the installation, and an overall increase of approximately 9.5 percent of all aircraft based at Kirtland AFB. The additional aircraft would be accommodated by using existing infrastructure, requiring addition of minor structural and maintenance reconfiguration. These changes would likely have negligible impacts on airfield and airspace management. Because the proposed additional aircraft would be maintained and operated as backup aircraft, and their existence and associated operations on the installation would be temporary, lasting only the duration of the interim beddown, impacts from the Proposed Action would also be less than significant. The back-up aircraft would be rotated into the existing training mission when maintenance or other issues occur with the permanently assigned aircraft. No changes to flight patterns or locations are proposed at Kirtland AFB.

As discussed in **Section 2.1.2**, CV-22 flying time at Kirtland AFB was already planned to increase during the timeframe of the proposed interim beddown to support the planned increase

in CV-22 student pilot training in accordance with the installation's training syllabus. Only a fraction of the additional hours would be dedicated to flight and operation of the proposed four additional (backup) aircraft during this period. However, this EA assesses all of the additional flight hours proposed for the interim beddown as a conservative estimate for the potential impacts incurred from the increased flight time over that duration. Increased flight time would include up to 2,530 flight hours per year for projected completion of 633 sorties at the airfield, annually. Compared with the 2014 baseline data described in **Section 3.3.1.2**, the proposed changes represent an approximated seven percent increase in CV-22 flight hours and sorties conducted out of the airfield. Overall, the total projected CV-22 flight operations would represent less than a 1 percent increase of all aircraft operating out of Sunport. When flown, the interim beddown aircraft would operate within the Kirtland AFB, Sunport, MTRs, Victor Airways, or other existing airspace and training areas designated for CV-22 operations. Therefore, impacts from the additional aircraft operations would be negligible.

No change to the configuration (i.e., size, shape, or location) of airspace is proposed or would be required to support implementation of the Proposed Action. Additionally, no airspace areas or ATC facilities currently used by aircraft operating out of Kirtland AFB would be adversely affected by implementation of the Proposed Action.

The increase in annual flight operations over the duration of the interim beddown would likely require use of nearby auxiliary airfields and airspaces proximal to the airfield. Because these operations would likely be distributed over a large area, the capacities of these airspaces would not likely be exceeded. Relative to regional aircraft activity, net increases in flight activity under the Proposed Action would be negligible. As a result, any impacts on airspace management at Kirtland AFB or Sunport would be less than significant.

3.3.3.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

Under Alternative 2, all 10 CV-22 aircraft would beddown at Hurlburt Field from FY16 through at least the end of FY17, when they would be transitioned to Yokota AB, Japan. During the beddown, the number of CV-22 aircraft at Hurlburt Field would be increased to 22, representing an 83 percent increase in CV-22 aircraft on the installation and a 16 percent increase in the total number of aircraft based on the installation. It is assumed that the additional aircraft would be fully accommodated by existing facilities and infrastructure on the installation, thus, storage and maintenance of the 10 CV-22s would likely result in negligible to minor impacts on airfield management. No change to the configuration (i.e., size, shape, or location) of airspace is proposed or would be required to support implementation of the Proposed Action.

Additionally, CV-22 flying time during the interim beddown would include up to 9,684 hours per year, in comparison to the NEPA baseline of 3,744 flight hours per year for completion of up to 2,412 sorties per year. As explained in **Section 2.3.2.2**, this would result in a 60 percent increase in CV-22 flight hours and sorties out of Hurlburt Field, representing a 4 percent increase in overall flight operations out of the installation. When flown, the interim beddown aircraft would operate within Hurlburt Field or Eglin AFB existing airspace and training areas designated for CV-22 operations. Although the additional flight operations out of the airfield would require increased ATC coverage compared with that required for current operational levels, impacts would be expected to be minor.

Because the numbers of personnel, aircraft, and associated aircraft operations are greater under Alternative 2 than the numbers described for the Proposed Action, impacts from implementing Alternative 2 would likely be greater than those described for the Proposed Action. However, based on the projected operational impacts for Alternative 2, these results would be less than significant.

3.3.3.3 NO ACTION ALTERNATIVE

Impacts on airspace would not be expected under the No Action Alternative. There would be no interim increases in aircraft within existing airspace and the airspace use would remain unchanged when compared to existing conditions.

3.4 Hazardous Materials and Wastes

3.4.1 Definition of the Resource

Hazardous materials and hazardous wastes refer to any substance that has the potential to cause harm to humans, animals, or the environment when released into the environment. Under the Resource Conservation and Recovery Act (RCRA) 40 CFR § 261, hazardous wastes are defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity, or by specific listing under Part 261.

Evaluation of hazardous materials and wastes focuses on the storage, handling, use, transport, and disposal of these substances.

3.4.2 Existing Conditions

Hazardous materials and wastes on USAF installations are managed in accordance with AFI 32-7086, *Hazardous Material Management,* which establishes procedures and standards to ensure compliance with applicable federal, state, and local regulations. Kirtland AFB and Hurlburt Field have established hazardous waste management plans, in accordance with AFI 32-7086, that provide guidance for minimizing hazardous materials usage, managing hazardous waste and implementing pollution prevention initiatives.

3.4.2.1 HURLBURT FIELD

The hazardous materials and wastes associated with CV-22 beddown, operation and maintenance activities at Hurlburt Field consist of a variety of solvents, adhesives, sealants, paints, lubricants and jet fuel. USAF personnel and contractors follow the 2015 Hurlburt Field Hazardous Waste Management Plan (HWMP) for storage, transport, use and disposal of all hazardous wastes.

Hurlburt Field is a large-quantity generator of hazardous waste, generating more than 2,200 pounds of hazardous waste per month from a variety of installation functions, including aircraft operation and maintenance. The installation is permitted under RCRA Part B number FL7570024375 to allow temporary storage of hazardous wastes at designated accumulation sites.

Hazardous wastes generated at Hurlburt Field are containerized, labeled, and transported to a central accumulation point in accordance with the 2015 HWMP. The 1st Special Operations Civil Engineer Squadron is responsible for implementing hazardous waste management on Hurlburt Field and arranges for off-site disposal of the wastes per policy procedures and state and federal regulations. Defense Logistics Agency Disposition Services at Eglin AFB serves as the contracting agent for hazardous waste transportation and disposal for Hurlburt Field (Hurlburt Field 2015b).

3.4.2.2 KIRTLAND AFB

The hazardous materials and wastes associated with CV-22 beddown, operation, and maintenance activities at Kirtland AFB consist of a variety of solvents, adhesives, sealants, paints, lubricants and jet fuel. USAF personnel and contractors follow the 2015 Kirtland AFB HWMP for storage, transport, use and disposal of all hazardous wastes. The 2015 HWMP incorporates federal, state, local, and USAF requirements regarding hazardous waste management.

Kirtland AFB is a large-quantity generator of hazardous waste, generated from a variety of installation functions, including aircraft operation and maintenance. Hazardous wastes generated at Kirtland AFB are containerized, labeled, and transported to a central accumulation point in accordance with the 2015 HWMP. The Defense Reutilization and Marketing Office operates the storage and disposal facilities on the installation and arranges for off-site disposal of the wastes per policy procedures and state and federal regulations.

3.4.3 Environmental Consequences

Impacts associated with hazardous materials and wastes were assessed to determine if the Proposed Action would result in the following:

- Noncompliance with applicable federal or state regulations
- Increases in the amounts generated or procured beyond current waste management procedures and capacities
- The disturbance or creation of contaminated sites that cause negative impacts on human health or the environment
- Impacts that include actions that make it more difficult or costly to remediate hazardous substance clean-up sites.

3.4.3.1 PROPOSED ACTION

Short term, minor, adverse impacts would result from the implementation of the Proposed Action. Under the Proposed Action, a temporary increase in hazardous materials and hazardous wastes would be expected from the interim beddown, operation and maintenance of three CV-22 aircraft at Hurlburt Field, Florida, and four CV-22 aircraft at Kirtland AFB, New Mexico. Hazardous materials used for maintaining and operating aircraft include a variety of solvents, jet fuel, adhesives, sealants, paints, and lubricants typical for maintaining and operating aircraft. All hazardous materials and wastes must be handled, stored, transported, and disposed of in accordance with applicable installation policies, USAF regulations, and local,

state, and federal laws. No significant impacts are expected to result from the use, storage, or disposal of hazardous materials or wastes associated with the Proposed Action.

Hurlburt Field

The three additional CV-22s would be maintained in the same manner and use the same materials as the existing 12 CV-22s at Hurlburt Field. In addition, hazardous materials and wastes were analyzed for the beddown of 28 CV-22s at Hurlburt Field in the *Final Environmental Assessment for CV-22 Beddown Hurlburt Field, Florida, September 2001* (AFSOC 2001).

USAF personnel follow the 2015 Hurlburt Field HWMP for the storage, transport, use and disposal of all hazardous materials and wastes. Safety procedures described in the 2007 Hurlburt Spill Prevention, Control, Countermeasure (SPCC) Plan would be adhered to by USAF personnel and contractors, and if an accidental release or spill of hazardous substances should occur, procedures within the SPCC Plan would be followed to minimize impacts. All USAF personnel and contractors would comply with all federal, state, and local laws to ensure compliance with use, storage, transport and disposal of hazardous materials and wastes.

Implementation of the Proposed Action is not expected to alter the use, storage, transport or disposal of hazardous materials or wastes as previously analyzed in the 2001 Hurlburt Field EA. Therefore, no significant impacts are expected to result from the use, storage or disposal of hazardous materials and wastes associated with the Proposed Action.

Kirtland AFB

The proposed action would result in the interim beddown of four additional CV-22 aircraft at Kirtland AFB, which would result in a minimal increase in the quantity of hazardous materials and hazardous wastes for a short period of time. The CV-22s would be maintained in the same manner and use the same materials as the existing seven CV-22s at Kirtland AFB. USAF personnel follow the 2015 HWMP in the storage, transport, use and disposal of all hazardous wastes. Safety procedures described in the 2012 Kirtland SPCC Plan would be adhered to and if an accidental release or spill of hazardous substances should occur, procedures within the SPCC Plan would be followed to minimize impacts. All USAF personnel and contractors would comply with all federal, state, and local laws to ensure compliance with the use, storage, transport, and/or disposal of hazardous materials and wastes. Therefore, no significant impact on hazardous materials and wastes is anticipated from implementation of the Proposed Action.

3.4.3.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

Alternative 2 would have short-term minor adverse impacts on the use, storage, transport and disposal of hazardous materials and hazardous waste at Hurlburt Field. The temporary transfer of the 10 CV-22s would increase the quantities of hazardous materials and hazardous wastes, although there would be no change in types of materials or wastes from the existing 12 CV-22s stationed at Hurlburt. Implementation of Alternative 2 is not expected to alter the use or disposal of hazardous materials or waste and is covered under the 2001 *Hurlburt Field EA*. Therefore, no significant impacts are expected to result from the use, storage, transport and/or disposal of hazardous materials and wastes associated with the Alternative 2 Action.

3.4.3.3 NO ACTION ALTERNATIVE

Impacts on hazardous materials and wastes would not be expected under the No Action Alternative. There would be no interim increases in aircraft, and hazardous materials and waste management would remain unchanged when compared to existing conditions.

4. Cumulative Effects

4.1 Cumulative Effects

CEQ regulations for implementing NEPA require that the cumulative impacts of a proposed action be assessed (40 CFR §§ 1500–1508). A cumulative effect is defined as the following (40 CFR § 1508.7):

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

Cumulative effects are most likely to arise when a relationship exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to a proposed action would be expected to have more potential for a relationship than those more geographically separated.

CEQ's guidance for considering cumulative effects states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant." The first step in assessing cumulative effects involves identifying and defining the scope of other actions and their interrelationship with a proposed action or alternatives. The scope must consider other projects that coincide with the location and timeline of a proposed action and other actions.

This cumulative effects analysis focuses on past, present, and reasonably foreseeable future projects related to the beddown, operation, and maintenance of aircraft taking place at Kirtland AFB and Hurlburt AFB and the associated airspace. Proposed construction projects for each installation are also considered. As described in **Section 3**, all elements of the Proposed Action and Alternative 1 at Cannon AFB have been eliminated from additional environmental analysis in this EA. For the purposes of this analysis, the temporal span of consideration is the time period of the interim beddown, which is through FY18 for Hurlburt Field and through FY20 for Kirtland AFB.

4.1.1 Projects Considered for Potential Cumulative Effects

For the resource areas, the present effects of past actions are now part of the existing environment described in **Section 3**. Identification of projects occurring at Kirtland AFB and Hurlburt Field during the same time as the Proposed Action ensures that all present and reasonably foreseeable future activities that have the potential to result in cumulative effects are taken into account. USAF actions that have a potential to partially coincide, either in time or geographic extent, with the Proposed Action are analyzed to determine if environmental resources would be incrementally affected. **Tables 4-1** and **4-2** provide a summary of the past, present and reasonably foreseeable projects considered for potential cumulative effects.

Table 4-1. Cumulative Projects at Hurlburt Field

Project Title	Project Description
Installation Development Plan	The Hurlburt Field Installation Development Plan (IDP) contains 40 construction and demolition projects within the installation boundary that are considered short range, medium range, and long range. Two short-term construction projects are proposed immediately adjacent to the airfield: an aircraft parking area and hangar. (Adkins 2016).
Gulf Regional Airspace Strategic Initiative (GRASI) Landscape Initiative	This initiative is USAF's request to use up to 11 previously specified locations as mobile and/or temporary emitter sites that are currently managed by the Florida Forest Service and Florida Fish and Wildlife Conservation Commission.
CV-22 Landing Zones	The proposed project includes CV-22 Osprey tiltrotor aircraft training operations at remote landing zones located on non-military properties.

Table 4-2. Cumulative Projects at Kirtland AFB

Project Title	Project Description
Hercules Tanker Recapitalization	The 58 SOW proposed to recapitalize existing Special Operations Force tanker aircraft and flight simulators and increase the number of their training fleet. The SOF training force would increase by eight tanker planes and one flight simulator. By FY 2023, SOF personnel would increase by 171 and the average daily student population would increase by 37. As part of this project, six military construction projects are planned for the installation totaling 146,440 square feet.
Replacement of Fire Station 3	Kirtland AFB plans to construct a new fire station to replace the Base Fire Station 3. The new Fire Station 3 would be approximately 7,320 square feet. Daily operations consist of housing and classroom proficiency training of up to 10 firefighters at any one time. The action also includes the demolition of the existing Fire Station 3 (Building 30116), which is approximately 4,312 square feet. Following demolition, site restoration includes backfill and final grading of the disturbed area to blend with surrounding areas, and seeding as applicable.
Construction and Demolition of Military Support Facilities	Kirtland AFB proposes to demolish and construct several military personnel support facilities in the improved area in the northwestern portion of the installation. This project would include the demolition of facilities totaling approximately 498,000 square feet and construction of facilities totaling approximately 389,000 square feet, resulting in a decrease of approximately 109,000 square feet of building space on the installation.
Ongoing and Enhanced Use of the Giant Reusable Air Blast Simulator (GRABS) Site	USAF proposes enhanced testing and associated training use of the GRABS Site. The mission of the GRABS Site is to test the blast resistance of various components by simulating a nuclear blast. In addition to the continuation of ongoing activities, proposed new mission testing requirements include the use of a biological simulant (i.e., Bacillus thuringiensis), improved "housekeeping," and periodic ground disturbance for construction of test structures.
Building Demolition at Kirtland AFB	The 377 ABW proposes to demolish 23 buildings (approximately 105,000 square feet) on Kirtland AFB to make space available for future construction and to fulfill its mission as installation host through better site utilization. None of the buildings proposed for demolition are currently occupied or used by installation personnel.

Project Title	Project Description
Security Forces Complex	The 377 ABW proposes to construct, operate, and maintain a 42,500-square-foot security forces complex at Kirtland AFB to provide adequate space and modern facilities to house all 377 Security Forces Squadron administrative and support functions in a consolidated location. One existing building (879 square feet) within the footprint of the security forces complex would be demolished. This project would result in an increase of 41,621 square feet of building space on the installation.
21st Explosive Ordnance Division (EOD) Expansion	The 21st EOD proposes facility expansion and site improvements for the 21st EOD Weapons of Mass Destruction Company Complex at Kirtland AFB. The 21st EOD proposes to expand this site to a total of 280 acres, add three permanent structures totaling 40,000 square feet, demolish five of the six substandard structures (75,000 square feet), add two temporary storage containers, tie in to nearby utilities, construct water tanks for fire suppression, and construct several concrete pads for training tasks. This project would result in a decrease of 35,000 square feet of building space on the installation.
Cibola National Forest Management Plan	The Cibola National Forest is planning to revise the management plan for lands in the forest. Dependent upon the plan outcome, there is a potential for training areas currently used by 58 SOW, Pararescue/Combat Rescue Officers, and the Marines to be re-designated as wilderness areas. This would result in a loss of training areas currently used by these groups. Once the management plan is complete, an EIS will be prepared by the U.S. Forest Service.
Bulk Fuels Facility Spill Cleanup	USAF is addressing requirements identified by NMED regarding characterization of soil, the vadose zone, and groundwater contamination, and to identify and implement interim measures to remediate contamination in groundwater, source areas, and fuel floating on the water table. As part of the groundwater portion of remedial investigations, USAF has installed groundwater monitoring wells both on the installation and in the neighborhoods bordering Kirtland AFB to collect more information about the extent of contamination in the underground environment. Information gained during all remedial investigations will be used to identify and recommend a remedial approach that best addresses the contaminants based on environmental conditions.

Hurlburt Field

Past projects at Hurlburt Field include those described in the 2001 *Final Environmental Assessment CV-22 Beddown at Hurlburt Field, Florida,* which was prepared to address the potential effects that could be generated from the beddown and operation of 28 CV-22s and associated construction projects (AFSOC 2001). In the 2007 *Final 5-Year Update Environmental Assessment for CV-22 Beddown,* potential environmental effects were addressed resulting from the Initial Operational Test and Evaluation and beddown of the CV-22s at Hurlburt Field (USAF and U.S. Navy 2007). Current aircraft operations were considered for this EA, as presented in **Section 2**.

Kirtland AFB

Past projects at Kirtland AFB were described in the 2000 *Environmental Assessment of Proposed Actions by the 58th Special Operations Wing at Kirtland Air Force Base,* which was

prepared to address potential environmental and human resources impacts related to replacing 11 aging H-53 helicopter with seven new CV-22 tiltrotor aircraft and increasing aircraft and training operations of existing UH-1N and H-60G helicopters and HC-130P fixed wing aircraft (AETC 2000). In addition, a Supplemental Environmental Assessment in 2008 analyzed a decrease in aircraft and construction of landing zones and personnel parking spaces (AETC 2008). Current aircraft operations were considered for this EA, as presented in **Section 2**.

4.2 Cumulative Effects Analysis

The Proposed Action, when combined with past, present and reasonably foreseeable future projects, would not result in cumulatively significant effects on any resource area. Non-significant potential cumulative effects for each resource area analyzed in **Section 3** are presented in the following subsections.

4.2.1 Noise

4.2.1.1 PROPOSED ACTION

Hurlburt Field

Short-term, negligible, adverse, cumulative effects could occur due to temporary incremental increases in CV-22 operations at Hurlburt Field and noise generated from construction adjacent to the airfield. These changes would have negligible cumulative effects, and the noise environment in the immediate area surrounding Kirtland AFB would continue to be dominated by aircraft takeoff and landing operations.

Cumulative effects on noise would not be expected from the Proposed Action, Gulf Regional Airspace Strategic Initiative (GRASI), and CV-22 landing zones proposal because the Proposed Action accounts for all CV-22 operations at Hurlburt Field through FY18 and because the GRASI and CV-22 landing zone proposals include CV-22 training operations off-installation. Additionally, the best available air noise data were used as a comparative baseline to determine the level of effects. This approach naturally accounts for all past, present, and reasonably foreseeable aircraft noise at the installation.

Kirtland AFB

Short- term, minor, adverse, cumulative effects would occur due to temporary incremental increases in CV-22 operations at Sunport/Kirtland AFB, noise generated from construction adjacent to the airfield, and the proposed Hercules tanker recapitalization. The Hercules tanker recapitalization would increase the training fleet by eight aircraft and could result in an increase in noise from additional operations at the airfield. However, the noise environment in the immediate area surrounding Kirtland AFB would continue to be dominated by aircraft takeoff and landing operations. Additionally, the best available air operational and noise data were used as a comparative baseline to determine the level of effects. This approach naturally accounts for all past, present, and reasonably foreseeable aircraft noise at the installation.

4.2.1.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

Short-term, minor, adverse, cumulative effects on the noise environmental would be expected under Alternative 2. Cumulative effects could be expected from the additional aircraft operations during the temporary transfer of the 10 CV-22s and noise generated from

construction adjacent to the airfield. Under Alternative 2, even with the temporary beddown of 10 CV-22 aircraft, there would still be an almost imperceptible increase in the noise environment compared to baseline conditions. As with the Proposed Action, the noise environment in the immediate area surrounding Hurlburt Field would continue to be dominated by aircraft takeoff and landing operations. Therefore, only minor cumulative impacts on the noise environment would be expected from Alternative 2.

4.2.2 Air Quality

4.2.2.1 PROPOSED ACTION

Hurlburt Field and Kirtland AFB

The Proposed Action at Hurlburt Field and Kirtland AFB would have short-term, minor, adverse cumulative effects. Short-term, minor, cumulative effects would be expected from the increase in mobile source emissions such as commuter vehicles and aircraft under the Proposed Action, and multiple construction and demolition projects at each installation. At Kirtland AFB, cumulative effects could also be expected from air emissions from the additional eight aircraft proposed in the Hercules tanker recapitalization. At Hurlburt Field, cumulative effects on air quality would not be expected from the Proposed Action, GRASI, and CV-22 landing zones because the Proposed Action accounts for all CV-22 operations a Hurlburt Field through FY18.

By directly inventorying all emissions in nonattainment regions and monitoring concentrations of criteria pollutants in attainment regions, Florida and New Mexico take into account the effects of all past and present emissions in their states. This is done by putting a regulatory structure in place designed to prevent air quality deterioration for attainment areas. This structure of rules and regulations are contained in the State Implementation Plan (SIP). SIPs are the regulations and other materials for meeting clean air standards and associated CAA requirements. SIPs include the following:

- State regulations that USEPA has approved
- State-issued, USEPA-approved orders requiring pollution control at individual companies
- Planning documents such as area-specific compilations of emissions estimates and computer simulations (modeling analyses) demonstrating that regulatory limits ensure that the air will meet air quality standards.

The SIP process applies either specifically or indirectly to all activities in the region. Although construction and demolition is proposed at each installation, no proposals have been identified that, when combined with the Proposed Action, would threaten the region's attainment status; would have substantial GHG emissions; or would lead to a violation of any federal, state, or local air regulation. Therefore, cumulative effects at each installation would be minor.

4.2.2.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

Short-term, minor, adverse, cumulative effects would be expected under Alternative 2. Proposed aircraft operations under Alternative 2 are similar to but greater than those under the Proposed Action. Cumulative effects would be expected from increased source emissions such as commuter vehicles and aircraft at Hurlburt Field during the interim beddown period and multiple construction and demolition projects proposed at the installation. Cumulative effects on

air quality would not be expected from Alternative 2, GRASI, and CV-22 landing zones because Alternative 2 accounts for all CV-22 operations at Hurlburt Field through FY18. Although construction and demolition is proposed at Hurlburt Field, no proposals have been identified that, when combined with Alternative 2, would threaten the region's attainment status; would have substantial GHG emissions; or would lead to a violation of any federal, state, or local air regulation. Therefore, cumulative effects would be minor.

4.2.3 Airspace

4.2.3.1 PROPOSED ACTION

Hurlburt Field

Cumulative effects on Hurlburt Field's immediate airspace and airfield operations would not be expected because no proposals have been identified through FY18 that would alter aircraft operations at the airfield.

Cumulative effects on Hurlburt Field's regional airspace also would not be expected. Annual operations of the three additional CV-22 aircraft occurring outside of Hurlburt Field are addressed by existing NEPA documentation and would be accounted for in the GRASI, and CV-22 landing zones proposals.

Kirtland AFB

Short-term, minor, adverse, cumulative effects on Kirtland AFB immediate airspace and airfield operations would be expected due to temporary incremental increases in CV-22 operations at Sunport/Kirtland AFB and the proposed Hercules tanker recapitalization. The Hercules tanker recapitalization would increase the training fleet by eight aircraft and could result in additional operations at the airfield.

Short-term, minor, adverse cumulative effects on Kirtland AFB regional airspace could also be expected from temporary incremental increases in CV-22 operations in regional airspace, the increase in tanker aircraft from the proposed Hercules tanker recapitalization, and potential revisions to the Cibola National Forest Management Plan. The Hercules tanker recapitalization combined with the Proposed Action would result in additional military aircraft in regional airspace. Revisions to the Cibola National Forest Management Plan could cause a loss of off-installation training areas for the 58 SOW and Pararescue/Combat Rescue Officers. The loss of these training areas may require the increased use of other training areas and would therefore increase military air traffic in the airspace to and from these training areas. Therefore, these proposed increases in military air traffic could result in minor, adverse cumulative effects on Kirtland AFB regional airspace.

4.2.3.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

Cumulative effects on Hurlburt Field immediate airspace and airfield operations under Alterative 2 would not be expected because no proposals have been identified through FY18 that would alter aircraft operations at the airfield.

Cumulative effects on Hurlburt Field regional airspace under Alternative 2 also would not be expected. Annual operations of the 10 additional CV-22 aircraft occurring outside of Hurlburt

Field are addressed by existing NEPA documentation and would be accounted for in the GRASI, and CV-22 landing zones proposals.

4.2.4 Hazardous Materials and Wastes

4.2.4.1 PROPOSED ACTION

Hurlburt Field

Short-term, minor, direct, adverse cumulative effects from hazardous materials and wastes would be expected due to the temporary increase in hazardous materials and hazardous wastes generated by the Proposed Action from the operation and maintenance of the additional CV-22 aircraft and from multiple construction and demolition projects proposed in the IDP. Construction would require the use and onsite storage of hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. Demolition could generate additional hazardous wastes and materials such as asbestos-containing materials and lead-based paints, depending on the age of the buildings demolished. The Proposed Action and proposed construction and demolitions projects would incorporate measures to limit or control hazardous materials and waste and would comply with all federal, state, and local laws to ensure compliance with the use, storage, transport and disposal of hazardous materials and wastes. Therefore, significant cumulative impacts on hazardous materials and waste would not be expected.

Kirtland AFB

Short-term, minor, direct, adverse cumulative effects from hazardous materials and wastes would be expected. Cumulative effects would be due to the temporary increase in hazardous materials and wastes generated by the operation and maintenance of the additional CV-22s under the Proposed Action and additional tankers under the Hercules tanker recapitalization. Increases in hazardous materials and wastes would also be expected from the multiple construction and demolition projects proposed at Kirtland AFB. Construction would require the use and onsite storage of hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. Demolition could generate additional hazardous wastes and materials such as asbestos-containing materials and lead-based paints, depending on the age of the buildings demolished. The Proposed Action and proposed construction and demolitions projects would incorporate measures to limit or control hazardous materials and waste and would comply with all federal, state, and local laws to ensure compliance with the use, storage, transport and disposal of hazardous materials and wastes. Therefore, significant cumulative effects on hazardous materials and waste management would not be expected.

4.2.4.2 ALTERNATIVE 2 – 10 CV-22 INTERIM BEDDOWN AT HURLBURT FIELD

As described under the Proposed Action, short-term, minor, direct, adverse cumulative effects from hazardous materials and wastes would be expected under Alternative 2 due to the temporary increase in hazardous materials and hazardous wastes generated by the Proposed Action from the operation and maintenance of the additional CV-22s aircraft and from multiple construction and demolition projects proposed in the IDP. Alternative 2 and proposed construction and demolitions projects would incorporate measures to limit or control hazardous materials and waste and would comply with all federal, state, and local laws to ensure compliance with the use, storage, transport and disposal of hazardous materials and wastes.

Therefore, significant cumulative impacts on hazardous materials and waste would not be expected.

4.3 Climate Change

Global climate change refers to long-term fluctuations in temperature, precipitation, wind, and other elements of Earth's climate system. Recently there has been global discussion of the ways in which the earth's climate system may also be influenced by changes in the concentration of various gases in the atmosphere. Of particular interest are those gases that affect the Earth's absorption of solar radiation. These gases serve a natural function of trapping heat in the atmosphere, thereby regulating Earth's climate. The most common of these gases include water vapor, carbon dioxide, methane, and nitrous oxide; the latter three are referred to collectively as GHGs. Natural processes, such as respiration by plants or animals and seasonal cycles of plant growth and decay, continuously cycle GHGs between the atmospheric, oceanic, and terrestrial systems. Human activities can increase the amount of these gases to be emitted or sequestered, thereby changing their atmospheric concentrations and influencing changes in the global climate.

In addition to producing GHGs as described in **Section 3.2**, the Proposed Action is analyzed in the context of an activity that could be affected by climate change. However, the interim nature of the Proposed Action would preclude climate change from having any measurable effects on the action, which would only occur through FY20.

4.4 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the Proposed Action and Alternative 2. Energy supplies, although relatively small, would be committed to the Proposed Action and Alternative 2 which would require the continued use of fossil fuels, a nonrenewable natural resource, during aircraft operations. The use of nonrenewable resources under the Proposed Action and Alternative 2 is an unavoidable occurrence, although not considered significant.

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

The Proposed Action and Alternative 2 would occur on government-owned lands and airspace within which USAF currently operates. The nature of activities for the Proposed Action and Alternative 2 would not differ from current CV-22 use of these areas. USAF would continue to follow all requirements related to CV-22 operation and maintenance and would therefore be consistent with current federal, regional, state, and local land use policies and controls.

4.6 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, project-related disturbances and direct impacts associated with an increase of population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those impacts occurring over a period of more than 5 years, including permanent resource loss.

Implementation of the Proposed Action or Alternative 2 would not require short-term resource uses that would result in long-term compromises of productivity. Under the Proposed Action, short-term uses of the environment would result in noise and air emissions from aircraft operations. Noise and air emissions generated by training would not be expected to result in long-term, adverse impacts on noise-sensitive receptors or wildlife. Long-term impacts are not expected due to the interim nature of the Proposed Action and Alternative 2. The nature of activities for the Proposed Action and Alternative 2 would not differ from current uses of these areas.

Therefore, implementation of the Proposed Action or Alternative 2 would not result in significant impacts on sensitive resources. As a result, it is not anticipated that the Proposed Action or Alternative 2 would result in any environmental impacts that would permanently narrow the range of beneficial uses of the environment or pose long-term risks to health, safety, or the general welfare of the public.

4.7 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the impacts that the use of these resources would have on future generations. Irreversible impacts primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). Irreversible and irretrievable commitments of resources usually result from implementation of actions that involve the consumption of material resources used for construction, energy resources, and human labor resources. The use of these resources is considered to be permanent.

Under the Proposed Action and Alternative 2, the use of fuel for aircraft operations would be irreversible. These impacts would be temporary due to the interim nature of the Proposed Action and Alternative 2. No other irreversible or irretrievable commitment of resources would be expected.

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A

Public and Stakeholder Coordination

Appendix A:
Public and Stakeholder Coordination Lists

FLORIDA

Federal Elected Officials

Florida Senators

Federal Agency Contacts

US Department of Interior, Office of Environmental Policy and Compliance

Federal Aviation Administration (FAA), Deputy Assistant Administrator for Regions and Center Operations

FAA, Director, Aviation Logistics Organization

FAA Southern Region Regional Administrator

Federal Emergency Management Agency, Region IV. Regional Administrator,

U.S. Environmental Protection Agency (EPA) Region IV, Regional Administrator,

U.S. Fish and Wildlife Service Southeast Region, Regional Director

State Elected Officials

Florida State House of Representatives, District 1

Florida State House of Representatives, District 4

Florida State House of Representatives, District 5

Local Agency Contacts

Escambia Florida County Administrator, Escambia County

Escambia Florida County Commissioner, Escambia County

Military Representative, Representative Jeff Miller

Northwest Florida Water Management District, Headquarters

Okaloosa County Administrator, Okaloosa County

Okaloosa County Commissioner, Okaloosa County

Santa Rosa County Commissioner, Santa Rosa County

Santa Rosa County Planning and Zoning

Mayor of Mary Esther

Mayor of Fort Walton Beach

Tribal Contacts

Poarch Band of Creek Indians

Seminole Tribe of Florida

Muscogee (Creek) Nation

Miccosukee Tribe of Indians of Florida

Thlopthlocco Tribal Town

NEW MEXICO

Federal Elected Officials

United States Senate, New Mexico Senators

United States House of Representatives, New Mexico Representatives

Federal Agency Contacts

Bureau of Indian Affairs, Southwest Region

Department of Energy- National Nuclear Security Administration

Natural Resources Conservation Service, District Conservationist,

Federal Aviation Administration, Regional Administrator and New Mexico Airports Development Office

U.S. Army Corps of Engineers

Bureau of Land Management New Mexico State Office

U.S. Environmental Protection Agency, Region 6

US Fish & Wildlife Service, Southwest Region

U.S. Forest Service Southwestern Region NEPA Coordinator

State Elected Officials

Governor, State of New Mexico

State Representative, New Mexico House of Representatives, District 64

State Senator, New Mexico Senate, District 27

State Agency Contacts

New Mexico State Historic Preservation Office

New Mexico State Land Office

Mid-Region Council of Governments Board of Directors

New Mexico Environment Department

New Mexico Indian Affairs Department

New Mexico Office of Military Base Planning and Support

New Mexico Department of Agriculture

New Mexico State Historic Preservation Officer, New Mexico State Historic Preservation Office

New Mexico Game and Fish, Santa Fe District

Local Agency Contacts

Albuquerque City Councilmembers

Bernalillo County Board of Commissioners

Bernalillo County Manager, Bernalillo County Manager's Office

City Manager, City of Clovis

City of Albuquerque Planning Department

Commissioner, Curry County

Commissioner, De Baca County

Commissioner, Roosevelt County

Development Management/Department Director, Bernalillo County Planning Section

Director of Communications, City of Albuquerque Office of the Mayor

Mayor, City of Albuquerque

Mayor, City of Clovis

Mayor, City of Portales

Mayor, Fort Sumner Village

Tribal Contacts

Apache Tribe of Oklahoma

Comanche Nation of Oklahoma

Jicarilla Apache Nation

Kiowa Tribe of Oklahoma

Mescalero Apache Tribe

Pueblo of Acoma

Pueblo of Cochiti

The Hopi Tribe

Pueblo of Isleta

Pueblo of Jemez

Pueblo of Laguna

Pueblo of Nambe

Navajo Nation

Ohkay Owingeh Pueblo

Pueblo of Picuris

Pueblo of Pojoaque

Pueblo of San Felipe

Pueblo of San Ildefonso

Pueblo of Sandia

Pueblo of Santa Ana

Pueblo of Santa Clara

Pueblo of Santo Domingo

Pueblo of Taos

Pueblo of Tesuque

White Mountain Apache Tribe

Ysleta del Sur Pueblo

Pueblo of Zia

Pueblo of Zuni

All Pueblo Council of Governors

Five Sandoval Indian Pueblos, Inc.

Eight Northern Indian Pueblos Council

23rd Navajo Nation Council, Office of the Speaker

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