

Draft

Creech Air Force Base Capital Improvements Program Environmental Assessment



*Prepared for
Nellis AFB, NV*

September 2013

LIST OF ACRONYMS AND ABBREVIATIONS

99 ABW	99 th Air Base Wing	kV	Kilovolt
ACC	Air Combat Command	LBP	Lead-Based Paint
ACES	Automated Civil Engineer System	LEED	Leadership in Energy and Environmental Design
ACM	Asbestos-Containing Material	LF	linear feet
ADP	Area Development Plan	MILCON	Military Construction
AFB	Air Force Base	MSAT	Mobile Source Air Toxics
AGE	Aerospace Ground Equipment	MSL	Mean Sea Level
AICUZ	Air Installation Compatible Use Zone	NAAQS	National Ambient Air Quality Standards
Air Force/USAF	United States Air Force	NDEP	Nevada Division of Environmental Protection
APZ	Accident Potential Zone	NEPA	National Environmental Policy Act
ATG	Adversary Tactics Group	NHPA	National Historic Preservation Act
BTU	British thermal unit	nm	nautical miles
CAA	Clean Air Act	NO ₂	Nitrogen Dioxide
CCDAQEM	Clark County Department of Air Quality and Environmental Management	NO _x	Nitrogen Oxide
CCW	Command and Control Wing	NDPES	National Pollutant Discharge Elimination System
CEP	Central Energy Plant	NRHP	National Register of Historic Places
CEQ	Council on Environmental Quality	NTTR	Nevada Test and Training Range
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	O ₃	Ozone
CFR	Code of Federal Regulations	O&M	Operations and Maintenance
CIP	Capital Improvements Program	PM ₁₀	Particulate Matter Less than 10 Microns
CO	Carbon Monoxide	PM _{2.5}	Particulate Matter Less than 2.5 Microns
CWA	Clean Water Act	QD	Quantity Distance
CZ	Clear Zone	RCRA	Resource Conservation and Recovery Act
dB	Decibel	RED HORSE	Rapid Engineers Deployable Heavy Operational Repair Squadron Engineer
dba	A-Weighted Decibel	SHPO	State Historic Preservation Office
DNL	Day-Night Average Sound Level	SIP	State Implementation Plan
DoD	Department of Defense	SO ₂	Sulfur Dioxide
EA	Environmental Assessment	SO _x	Sulfur Oxide
ECIP	Energy Conservation Improvement Program	THPO	Tribal Historic Preservation Office
EIAP	Environmental Impact Analysis Process	UFC	Unified Facilities Criteria
EIS	Environmental Impact Statement	UNLV	University of Nevada Las Vegas
EPA	United States Environmental Protection Agency	U.S.	United States
ERP	Environmental Restoration Program	US-93	United States Highway 93
ESA	Endangered Species Act	USACE	United States Army Corps of Engineers
FEMA	Federal Emergency Management Agency	USAFWC	United States Air Force Warfare Center
FDE	Force Development Evaluation	USC	United States Code
FY	Fiscal Year	USCB	United States Census Bureau
GHG	greenhouse gas	USFWS	United States Fish and Wildlife Service
gpd	Gallons Per Day	VOC	Volatile Organic Compound
HAP	hazardous air pollutant	WINDO	Wing Infrastructure and Development Outlook
HAZMART	hazardous material pharmacy	WS	Weapons School
HAZMAT	Hazardous Materials	WSA	Weapons Storage Area
HQ	Headquarters		
IAP	Initial Accumulation Point		
JSF	Joint Strike Fighter		

FINDING OF NO SIGNIFICANT IMPACT

1 1.0 NAME OF THE PROPOSED ACTION

2 Creech Air Force Base Capital Improvements Program (CIP) Environmental Assessment (EA)

3 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

4 Creech AFB proposes to formally update their CIP which continually evolves, but the last formal
5 proposal which resulted in National Environmental Policy Act (NEPA) documentation was during the
6 2008 update of the Creech Air Force Base (AFB) General Plan. The mission changes at Creech AFB are
7 substantive enough to require update of the CIP projects list. Restoration/Modernization and Sustainment
8 projects would provide the base with up-to-date facilities by repairing, remodeling, or replacing older
9 facilities to modern standards. Also, these outdated facilities demand considerable energy, replacing them
10 with new energy efficient, updated facilities would yield considerable savings for the base and conform to
11 Department of Defense (DoD) guidelines for Leadership in Energy & Environmental Design (LEED)
12 facilities.

13 The projects described in the CIP are derived from Base Comprehensive Asset management Plan
14 (BCAMP). The BCAMP lists all of the proposed projects which have been identified as a bona fide need
15 by the individual proponents of each action. These projects are reviewed by the Civil Engineering
16 Facility Review Board and approved by the 99 ABW Commander based upon criteria including mission
17 requirements, quality of life, degradation of existing facilities, and other factors. While the CIP includes
18 hundreds of projects, funding for all of the projects to be completed in the next 5 years is not feasible
19 because of the limited amount of funds available. These funding limitations are due to worldwide
20 deployments and contingency operations; competing funding requests from every other military
21 installation; new missions such as the F-35A beddown; and general budget reductions for civil
22 engineering projects. As a result, only a small percentage of the projects can be funded within one fiscal
23 year.

24 Since the overall funding amount available to execute CIP projects is unknown, two construction
25 scenarios have been developed to place reasonable limits on the analyses. Scenario 1 involves light
26 construction and describes demolition of an unspecified 2,000 square foot existing building, and
27 construction of representative 30,000 square foot facility including parking up to 3 acres. The vast
28 majority of the CIP projects combined together would be an aggregate size less than that described for
29 Scenario 1. Scenario 2 triples the size of the demolition and construction up to 10 acres and only the
30 largest or combination of several smaller new construction projects would reach this limit. Other large
31 projects could be implemented if aspects of Scenario 2 would not be implemented, such as roadway
32 projects where there would be no demolition or facility construction, but would be looked at on a case-by-
33 case basis.

34 The Air Force also analyzed the no-action alternative. Baseline conditions as reflected by the no-action
35 alternative provide a comparison to the environmental impacts of the proposed action.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The EA provides an analysis of the potential environmental consequences resulting from implementing the proposed action. Nine resource categories were thoroughly analyzed to identify potential impacts. According to the analysis in this EA, implementation of the proposed action would not result in significant impacts to any resource category or significantly affect existing conditions at Creech AFB. The following summarizes and highlights the results of the analysis by the resource categories anticipated to be affected of land use, socioeconomics, biological resources and air quality. Cultural resources, water and soil resources, hazardous materials and waste, safety, and noise were also analyzed but were determined to have little to no impacts.

Land Use. All Creech AFB projects, including the CIP projects, would be reviewed by the base community planner to assume compatibility with current land uses. To the extent possible, facilities would be clustered together assuring compatible facilities would be sited closer to each other. New facilities would be sited to ensure compatibility with land uses in accordance with the General Plan.

Socioeconomics. Under the proposed action, no increase in permanently-based personnel would occur at Creech AFB in Clark County. The proposed action would not adversely affect housing, schools, or utilities in the Indian Springs or Las Vegas area. Construction activities could create jobs for people in the Indian Springs and Las Vegas area, although the split of how many jobs for each location in indeterminable. Operation of the new facilities would draw from existing manpower positions and not create new jobs for any of the communities; therefore, no significant impacts are anticipated if the proposed action were implemented.

Biological Resources. Overall, there would be no adverse impact to vegetation, wildlife, wetlands, or special-status species from implementation of the proposed action. None of the CIP projects intersect known desert tortoise habitat, and therefore, this species would not be affected. However, should a project arise with the potential to affect desert tortoise, consultation with the United States (U.S.) Fish and Wildlife Service would be initiated. Consultation with the U.S. Army Corps of Engineers would be conducted and a Section 404 permit obtained if required for any capital improvement project with the potential to impact jurisdictional waters of the United States.

Air Quality. Air quality would be affected during facility construction period; however, the emissions would not pose an adverse impact. Two demolition/construction scenarios were developed to calculate *de minimis* thresholds for pollutant emissions. Scenario 1 modeled demolition of a two-story, 2,000 square-foot concrete building located on 1 acre of land, and 3 acres of construction for a 30,000 square-foot concrete maintenance shop with a 100,000 square-foot parking lot. Scenario 2 increased demolition to 3 acres and tripled the sizes of the building and parking lot to be demolished. Construction under Scenario 2 tripled the sizes of the building and parking lot and the overall project disturbance area increased to 10 acres. These scenarios assumed that all best management practices, such as watering loose soil and avoiding unnecessary periods of engine-idle, would be in place.

1 **4.0 CONCLUSION**

2 On the basis of the findings of the EA, no significant impact to human health or the natural environment
3 would be expected from implementation of the proposed action or no-action alternative. Therefore,
4 issuance of a Finding of No Significant Impact (FONSI) is warranted, and preparation of an
5 Environmental Impact Statement, pursuant to the National Environmental Policy Act of 1969 (Public
6 Law 91-190) is not required for this action.

7

8 _____
9 BARRY CORNISH
10 Colonel, USAF
Commander

_____ Date

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**CREECH AIR FORCE BASE CAPITAL IMPROVEMENTS PROGRAM
ENVIRONMENTAL ASSESSMENT**

1 **Responsible Agency:** United States Air Force (Air Force), Creech Air Force Base
2

3 **Proposed Action:** Creech AFB proposes to update the Capital Improvements Program (CIP). The CIP update
4 proposes a plan to construct new facilities, and/or repair, remodel, maintain or demolish outdated facilities at
5 Creech AFB, Nevada.
6

7 Written comments and inquiries regarding this document should be directed to:
8

9 99 ABW/PA
10 4430 Grissom Ave, Suite 107
11 Nellis AFB NV 89191
12 ATTN: 99 ABW/PA Director
13

14 In addition, the document can be viewed on and downloaded from the World Wide Web at
15 www.nellis.af.mil/library/environment.asp
16

17 **Designation:** Draft Environmental Assessment (EA)

18 **Abstract:** Creech AFB proposes to initiate updates to the CIP that would include construction, demolition,
19 renovation, and maintenance activities at the base. By taking a comprehensive approach to planning and
20 implementing facilities and infrastructure improvements over a multi-year period, Creech AFB would ensure that
21 limited funds, energy conservation, and operational goals are maximized. The CIP contains hundreds of projects;
22 however, funding for all of the projects to be completed in the next five years is not feasible because of the
23 limited amount of funds available. These funding limitations are due to worldwide deployments and contingency
24 operations, competing funding requests from other military installations, and general budget reductions for civil
25 engineering projects. As a result, only a small percentage of the projects can be funded within one fiscal year

26 Since the overall funding amount available to execute CIP projects is unknown, two construction scenarios have
27 been developed to place reasonable limits on the analyses. Scenario 1 involves light construction and describes
28 demolition of an unspecified 2,000 square foot existing building, and construction of representative 30,000 square
29 foot facility including parking up to 3 acres. The vast majority of the CIP projects combined together would be an
30 aggregate size less than that described for Scenario 1. Scenario 2 triples the size of the demolition and
31 construction up to 10 acres and only the largest or combination of several smaller new construction projects
32 would reach this limit. Other large projects could be implemented if aspects of Scenario 2 would not be
33 implemented, such as roadway projects where there would be no demolition or facility construction, but would be
34 looked at on a case-by-case basis.

35 This Draft EA analyzes the potential environmental consequences of the proposed CIP update and includes
36 analysis of the no-action alternative.

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Draft

Creech Air Force Base
Capital Improvements Program
Environmental Assessment

**United States Air Force
Air Combat Command**

September 2013

EXECUTIVE SUMMARY

1 **EXECUTIVE SUMMARY**

2 This Environmental Assessment (EA) analyzes the potential environmental consequences resulting from a
3 proposal to update the Creech Air Force Base (AFB) Capital Improvement Program (CIP). The CIP for
4 Creech AFB describes discrete projects, such as major utility upgrades or construction of individual
5 facilities, also reflects planned changes to enhance mission capability, correct space and/or infrastructure
6 deficiencies, and to support future development through modernization, restoration, and sustainment
7 projects. The CIP is first identified in the Creech AFB General Plan issued in 2006 and the last CIP was
8 formalized in 2008. However, internally the CIP evolves regularly as completed projects get deleted from
9 the list and as new requirements are identified and planned. Formal updates to the CIP are driven by
10 planned major mission changes and the fact that a formal CIP hasn't been updated since 2008. This
11 updated CIP provides more current information relating to the mission changes.

12 This EA has been prepared by Nellis AFB in accordance with the requirements of the National
13 Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and Air Force
14 Environmental Impact Analysis Process, as promulgated in Title 32 of the Code of Federal Regulations
15 (CFR) Part 989.

16 **PURPOSE AND NEED FOR THE ACTION**

17 The purpose of the proposed action is to update the CIP to account for mission changes and update and
18 repair outdated facilities and infrastructure. The proposed update to the Creech AFB CIP is needed to
19 provide the installation and unit commanders with up-to-date development possibilities for the base and
20 to assist the base planners in compliance with the overall vision of the respective missions of Creech
21 AFB. Additionally, the CIP assigns projects that not only meet this need but also provide the necessary
22 repairs and maintenance for restoration, modernization, and sustainment of facilities to assure facilities
23 are capable of supporting mission needs. CIP projects address facility conditions including plans for
24 future activities such as construction, repair, maintenance, and demolition, following recommendations
25 for architectural compatibility and landscaping.

26 **PROPOSED ACTION AND NO-ACTION ALTERNATIVE**

27 Creech AFB proposes to initiate updates to the CIP that would include construction, demolition,
28 renovation, and maintenance activities at the base. By taking a comprehensive approach to planning and
29 implementing facilities and infrastructure improvements over a multi-year period, Creech AFB would
30 ensure that limited funds, energy conservation, and operational goals are maximized. Proposed
31 improvements would comply with the Department of Defense's (DoD) direction to design and build
32 Leadership in Energy & Environmental Design (LEED) facilities and decrease energy consumption on
33 military installations.

34 The projects described in the CIP are derived from the Base Comprehensive Asset Management Plan
35 (BCAMP). The BCAMP lists all of the proposed projects which have been identified as a bona fide need
36 by the individual proponents of each action. These projects are reviewed by the Civil Engineering
37 Facility Review Board and approved by the 99th Air Base Wing (99 ABW) Commander based upon
38 criteria including mission requirements, quality of life, degradation of existing facilities, and other factors.
39 While the CIP includes hundreds of projects, funding for all of the projects to be completed in the next

1 five years is not feasible because of the limited amount of funds available. These funding limitations are
 2 due to worldwide deployments and contingency operations, competing funding requests from other
 3 military installations, and general budget reductions for civil engineering projects. As a result, only a
 4 small percentage of the projects can be funded within one fiscal year.

5 Since the overall funding amount available to execute CIP projects is unknown, two construction
 6 scenarios have been developed to place reasonable limits on the analyses. Scenario 1 involves light
 7 construction and describes demolition of an unspecified 2,000 square foot existing building, and
 8 construction of representative 30,000 square foot facility including parking up to 3 acres. The vast
 9 majority of the CIP projects combined together would be an aggregate size less than that described for
 10 Scenario 1. Scenario 2 triples the size of the demolition and construction up to 10 acres and only the
 11 largest or combination of several smaller new construction projects would reach this limit. Other large
 12 projects could be implemented if aspects of Scenario 2 would not be implemented, such as roadway
 13 projects where there would be no demolition or facility construction, but would be looked at on a case-by-
 14 case basis. In addition to the proposed action, the Air Force analyzed the no-action alternative.

15 **MITIGATION MEASURES**

16 In accordance with 32 CFR 989.22, the Air Force must indicate if any mitigation measures would be
 17 needed to implement the proposed action. However, based upon the findings of this EA, no mitigation
 18 measures would be needed to arrive at a finding of no significant impact (FONSI) if the proposed General
 19 Plan update action was selected for implementation at Creech AFB.

20 **SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS**

21 This EA provides an analysis of the potential environmental consequences resulting from implementation
 22 of the proposed CIP update action and the no-action alternative. Nine resource categories were analyzed
 23 to identify potential impacts: land use and transportation, socioeconomics, cultural resources, biological
 24 resources, water resources, air quality, hazardous materials and waste, safety, and noise. According to the
 25 analysis in this EA, implementation of the proposed action or no-action alternative would result in no
 26 significant environmental impacts in any resource category. Implementing the proposed action would not
 27 significantly affect existing conditions at Creech AFB. The following Table ES-1 summarizes and
 28 highlights the results of the analysis by resource category.

Table ES-1. Comparison of Alternatives by Resource		
Resource Category	CIP Update	No-Action Alternative
Land Use	<ul style="list-style-type: none"> Land Use planning would ensure siting of compatible missions within appropriate land use categories and noise zones. 	<ul style="list-style-type: none"> Current land uses and transportation conditions would remain unchanged.
Socioeconomics	<ul style="list-style-type: none"> Construction activity on Creech AFB would temporarily increase construction activities that could result in short-term beneficial impacts to Clark County and Indian Springs. 	<ul style="list-style-type: none"> No change to existing socioeconomic resources.
Cultural Resources	<ul style="list-style-type: none"> Creech AFB has been inventoried and the proposed action would not impact any cultural resources. All proposals for federal actions would be reviewed by the Nellis AFB Cultural Resources Manager to determine and implement the appropriate consultation requirements. 	<ul style="list-style-type: none"> The effect on the environment would be unchanged relative to baseline.

Creech AFB Capital Improvements Program Environmental Assessment

Biological Resources	<ul style="list-style-type: none"> • No adverse impacts to vegetation, wetland or waters of the U.S., wildlife, or special-status species from implementation of the proposed action. • Consultation with the U.S. Army Corps of Engineers (USACE) would be conducted and a Section 404 permit obtained, if required. • Consultation with the U.S. Fish and Wildlife Service (USFWS) for desert tortoise, Section 7, Endangered Species Act compliance, if required. • Construction is not planned in the Las Vegas bearpoppy habitat areas. However, consultation with the base biologist would be implemented prior to construction to assure there would be no impacts. 	<ul style="list-style-type: none"> • No change to current baseline conditions on Creech AFB.
Water and Soil Resources	<ul style="list-style-type: none"> • Impacts would be minimized by use of best management practices required by the base and permits. • Overall water use would not increase at Creech AFB as the proposed action is not associated with any personnel increase. • Many projects include upgrades to the water system and/or use water saving devices and landscaping to conserve water. 	<ul style="list-style-type: none"> • Ongoing activities at Creech AFB would continue at baseline levels; no additional effects on water resources would occur.
Air Quality	<ul style="list-style-type: none"> • Emissions generated by construction, demolition, and paving would be localized and temporary. • Maximum emissions of any criteria pollutant would not exceed <i>de minimis</i> thresholds. 	<ul style="list-style-type: none"> • No change to existing emissions.
Hazardous Materials and Waste	<ul style="list-style-type: none"> • Any new waste streams would be handled in accordance with current Nellis AFB Hazardous Material Plan (NAFB Plan 32-7086) and Hazardous Waste Plans (NAFB Plan 12). • Proposed facilities affected by the location of an active Environmental Restoration Program (ERP) site would seek the required ERP waiver from HQ ACC at the planning phase. 	<ul style="list-style-type: none"> • Ongoing activities at Creech AFB would continue at baseline levels.
Safety	<ul style="list-style-type: none"> • Established safety guidelines and procedures which would continue to be observed. • No incompatible projects would occur within safety zones. 	<ul style="list-style-type: none"> • No change to current practices would occur.
Noise	<ul style="list-style-type: none"> • Construction noise impacts would be localized within the installations, and of short-term duration. • No long-term increase of noise is anticipated. 	<ul style="list-style-type: none"> • Baseline conditions would continue within current contours.

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CHAPTER 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

1 **1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION**

2 **1.1 INTRODUCTION**

3 The Capital Improvements Program (CIP) for Creech Air Force Base (AFB) describes discrete projects,
4 such as major utility upgrades or construction of individual facilities. It also presents planned changes to
5 enhance mission capability and correct space and/or infrastructure deficiencies. At the core of the CIP are
6 lists describing these discrete projects sorted by Military Construction (MILCON) or Operations and
7 Maintenance (O&M). The O&M lists are distinguished by; Restoration and Modernization;
8 Sustainment; and O&M Construction Projects. The latter is a master list containing all O&M projects
9 including those that are not classified as either Restoration and Modernization or Sustainment. The CIP
10 was first identified in the Creech AFB General Plan issued in 2006 and the last CIP was formalized in
11 2008 (Air Force 2008). However, internally the CIP evolves regularly as completed projects get deleted
12 from the list and as new requirements are identified and planned. Formal updates to the CIP are driven by
13 planned mission changes. A formal CIP update has not been prepared since 2008. The new CIP will
14 incorporate Restoration and Modernization, and Sustainment concepts that are new terms for describing
15 projects that was not used during the previous CIP.

16 In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States [U.S.]
17 Code [USC] 4321-4347), Nellis AFB has prepared this Environmental Assessment (EA) that considers
18 the potential consequences to the human health and the natural environment. In addition, this EA
19 complies with the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural
20 Provisions of NEPA (40 Code of Federal Regulations [CFR] Sections 1500-1508), and 32 CFR Part 989,
21 *et seq.*, Air Force Environmental Impact Analysis Process (EIAP). This EA examines the consequences of
22 implementing the proposed updates and implementation of the Creech AFB CIP and includes analysis of
23 the no-action alternative.

24 **1.2 BACKGROUND**

25 Creech AFB is under the command of Air Combat Command and is a component of the U.S. Air Warfare
26 Center (USAFWC) at Nellis AFB. Creech AFB is home to the Remotely Piloted Aircraft, Predator (MQ-
27 1) and the Reaper (MQ-9) systems. Geographically, the bases are separated by about 45 miles.

28 **Location of the Proposed Action**

29 ***Creech AFB***

30 Creech AFB is located near the town of Indian Springs, Nevada; approximately 45 miles northwest of Las
31 Vegas, along US-95 (refer to Figure 1-1). Air Force facilities are found on both the north and south side
32 of the highway, with the majority of assets located to the north (e.g., runways; hangars; and maintenance,
33 administrative, and operational facilities). The 432 Wing operates remotely piloted aircraft in support of
34 commander's need and operates worldwide. Units assigned to the 432 Wing provide theater commanders
35 with deployable long-range, long-endurance, real-time aerial reconnaissance, surveillance, target
36 acquisition and attack flying the remotely piloted MQ-1 Predator and the MQ-9 Reaper. All Predator
37 squadrons operate out of Creech AFB and the Predator Operations Center-Nellis. The MQ-9 Reaper, a
38 newer, larger version of the Predator, is operating from Creech AFB. The Reaper is able to fly at higher
39 altitudes, carry more weapons, and has a greater range than the Predators. Another one of Creech AFB's

1 primary missions is to provide an emergency divert airfield for military aircraft training in the Nevada
2 Test and Training Range (NTTR) and support the flying operations at Nellis AFB, other Air Force units,
3 Navy, Marine Corps and allied air forces. Creech AFB is also the primary training site for the United
4 States Air Force Thunderbirds flying F-16s from Nellis AFB. The 99th Security Forces Group, Ground
5 Combat Training Squadron is also based at Creech AFB.

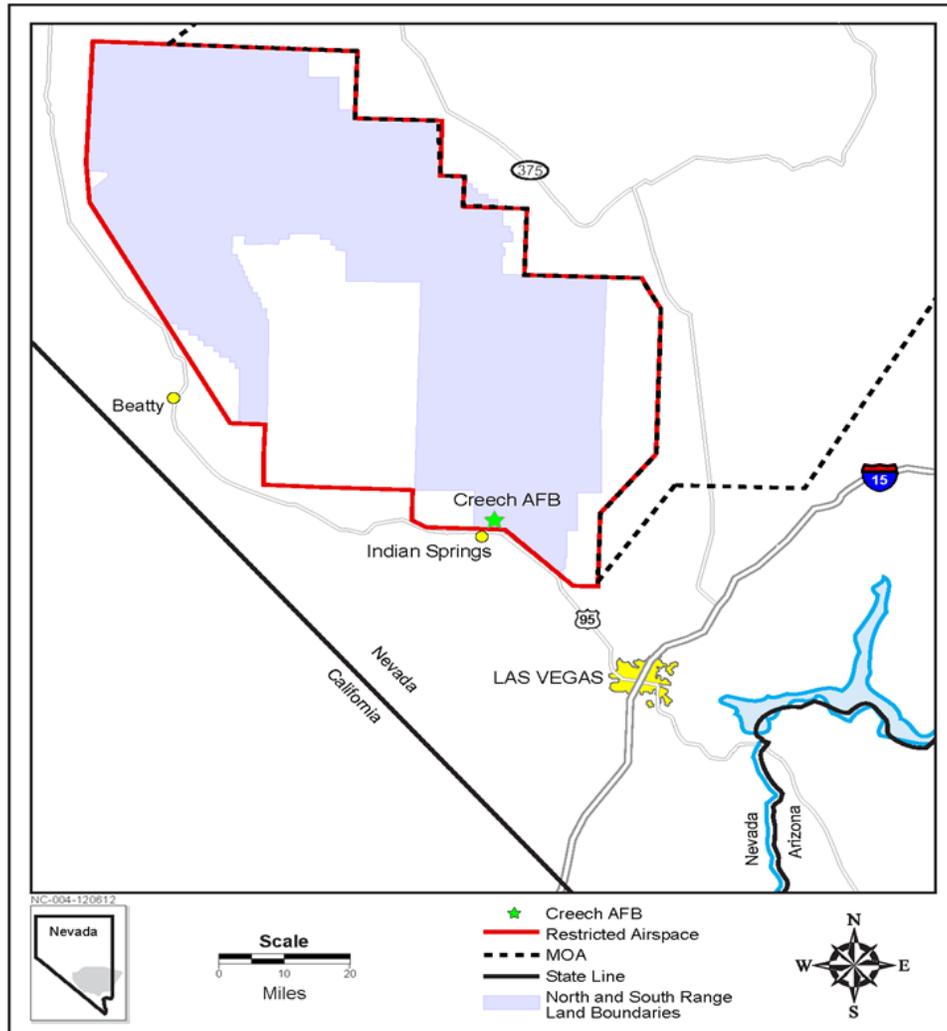


Figure 1-1. Creech AFB Location Map

6 Since the overall funding amount available to execute CIP projects is unknown, two construction
7 scenarios have been developed to place reasonable limits on the analyses. Scenario 1 involves light
8 construction and describes demolition of an unspecified 2,000 square foot existing building, and
9 construction of representative 30,000 square foot facility including parking up to 3 acres. The vast
10 majority of the CIP projects combined together would be an aggregate size less than that described for
11 Scenario 1. Scenario 2 triples the size of the demolition and construction up to 10 acres and only the
12 largest or combination of several smaller new construction projects would reach this limit. Other large
13 projects could be implemented if aspects of Scenario 2 would not be implemented, such as roadway

1 projects where there would be no demolition or facility construction, but would be looked at on a case-by-
2 case basis.

3 **1.3 PURPOSE AND NEED FOR ACTION**

4 The purpose of this update to the Creech AFB CIP is to incorporate new projects into the current projects
5 lists that are necessary to sustain the Base mission. With the implementation of asset management
6 principles through the Base Comprehensive Asset Management Plan (BCAMP), as well as changes to the
7 Installation Priority List (IPL) processes, the General Plan is no longer the primary force determining
8 which projects are funded. However, the General Plan remains a tool for the Installation Commander to
9 use in decision making and project prioritization.

10 As an integral element of the new project prioritization process, the General Plan, the CIP, and the
11 BCAMP assist the Base Civil Engineer in recommending priorities to Wing leadership. Pulling
12 information from legacy databases, the BCAMP transparently documents the current condition of base
13 assets and assists making recommendations on asset maintenance based on the assets value to the base
14 mission. With limited funding for the near future, prioritization and consolidation has become the norm.
15 Not all facilities that need repair will get the needed attention due to its value to the base mission. Another
16 component is the long range Sustainability, Restoration, and Modernization (SRM) funding. If
17 consolidation continues, many of the facilities may be demolished before repairs are funded. The IPL is a
18 composite priority list, produced by the BCAMP and previewed/approved by the five wings. Each wing
19 analyzes their mission needs and prioritizes the list of projects necessary to maintain their mission
20 capability. The five lists are combined to create a composite list for the installation. The Facility
21 Utilization Board reviews and prioritizes the composite list to forward to Air Combat Command as the
22 IPL.

23 The proposed update to the Creech AFB CIP is needed to provide the installation and unit commanders
24 with up-to-date development possibilities for the base and to assist planners in compliance with the
25 overall vision of the respective missions of Creech AFB. One of the key changes to the existing
26 conditions at Creech AFB is the beddown (permanent basing) of additional Predator and Reaper aircraft.

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CHAPTER 2

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

1 **2.0 DESCRIPTION OF THE PROPOSED ACTION AND**
2 **ALTERNATIVES**

3 **2.1 PROPOSED ACTION**

4 Nellis AFB proposes to implement an update to the Capital Improvements Program (CIP) for Creech
5 AFB. The update includes the CIP that describes discrete projects, such as major utility upgrades or
6 construction of individual facilities. It also presents planned changes to enhance mission capability and
7 correct space and/or infrastructure deficiencies. The goal of this EA is to analyze the projects defined in
8 these components of the CIP and assess their potential impacts to the environment.

9 The following provides a description of the CIP and the types of activities planned by implementing the
10 CIP. These planned activities represent the proposed action analyzed in this EA.

11 **2.1.1 Capital Improvements Program**

12 The projects described in the CIP are derived from the BCAMP. The BCAMP lists all of the proposed
13 projects which have been identified as a bona fide need by the individual proponents of each action.

14 These projects are reviewed by the Civil Engineering Facility Review Board and approved by the 99
15 ABW Commander based upon criteria including mission requirements, quality of life, degradation of
16 existing facilities, and other factors. While the list includes hundreds of projects, funding for all of the
17 projects to be completed in the next five years is not feasible because of the limited amount of funds
18 available. These funding limitations are due to worldwide deployments and contingency operations,
19 competing funding requests from every other military installation, new missions such as the Remotely
20 Piloted Aircraft, and general budget reductions for civil engineering projects. As a result, only a small
21 percentage of the projects can be funded within one fiscal year. Projects that are not funded and still
22 considered valid projects are carried over to the following fiscal year; in fact, many projects are still on
23 the list that date back to the early 2000's or before and remain vitally needed for the installation. The
24 complete list of CIP projects is provided in Appendix A.

25 New construction, additions, remodels, demolition, maintenance, and repair comprise types of projects on
26 the ACES list and are further broken down by type, such as facilities, utilities, roads, airfield,
27 administrative, recreation, and others. Table 2-1 identifies the improvement types of work, definitions
28 and examples for improvements by the type of activity.

Activity	Definition	Examples
Construction	New construction or addition, expansion, and renovation to existing facilities. All new construction must meet energy savings requirements.	Includes construction of buildings, roads, mission operation facilities, pads, access roads and parking lots and landscaping
Repair/Replace	Repair and/or replace existing equipment and infrastructure	Repair equipment, parking lots, manhole covers, fences, sprinkler systems, and fuel tanks; install exterior lighting; also includes replacing existing landscaping with xeriscaping
Installation	Installation of equipment, signs, utilities etc. to enhance the functionality of existing infrastructure	Install equipment to maintain operational mission such as emergency power, check valves, heating and air conditioning units, force protection, under-wing foam system, and fire hydrants
Maintenance	Routine maintenance	Routine maintenance to landscaping, road/parking lot pavement, ramps, water tanks, and hangars
Demolish	Demolition of existing infrastructure	Demolish roads, aged dormitories, buildings, pads, etc., potentially not related to new construction
Environmental	Monitoring and/or remediation of environmental spill sites, or other contracted documents such as Remedial Action Plans, Spill Response Plans, and Permit Fees	Long-term monitoring or planned remediation of identified sites, plans and permits which do not have physical impacts

- 1 Table 2-2 identifies the infrastructure types existing on Creech AFB and the variety of activities that are
- 2 accomplished on each infrastructure type. For example, airfield improvements could involve
- 3 construction, repair, maintenance, demolition, and perhaps, environmental remediation activities.

Facility Type	Definition	Examples
Facilities	Building construction or additions. This could include new, modular, addition/remodel, or storage facilities.	Includes all of the different classes of buildings; industrial, administrative, community service, etc. An example of a holding pad would be a munitions storage pad.
Airfield	Maintenance, installation, and repair of airfield pavements and airfield related equipment.	Revetment, paint taxi lines, install runway shoulders, extend/repair flight line, maintain airfield pavement, and aircraft arresting systems.
Utilities	Installation and repair.	Repair and install communication, electrical, sewer, natural gas, and water lines, and water conservation projects.
Roads	Installation, repair or maintenance of roads, sidewalks and parking lots.	Roads, parking lots, etc. this also includes signal lights, roundabouts, and deceleration lanes.
Security	Installation, construction, repair or maintenance of Antiterrorism/Force Protection items designed to improve the security of the installation.	Fencing, security barricades, lighting, security cameras, and vehicle inspection areas. Vegetation clearing and perimeter roads could fall in this category.
Fences/walls	Perimeter structures primary for Force Protection and/or aesthetics.	Fences and block walls, includes dumpster enclosures, fence line lighting and security equipment.
Energy Conservation Improvement Program (ECIP) and <i>Greening of the Government</i> Projects	Installing and/or retrofitting systems and equipment which directly or indirectly result in energy savings.	Photovoltaic Arrays, window film, HVAC controls, day-lighting projects.
Recreation and quality of life projects	Installing or repairing recreational areas, unit gathering places, or items to improve worker comfort and well-being.	Volleyball courts, horseshoe pits, pavilions and BBQ areas, this also includes sunshades for flightline workers.

1 Further descriptions of various types of CIP activities include construction of current mission and future
 2 mission facilities, restoration, modernization, and sustainment projects with definitions provided below.

3 **MILCON (Military Construction)** includes construction activity of sufficiently large scope to require
 4 Congressional funding and has the most potential for environmental impacts. All new facilities
 5 would be designed to comply with the Nellis AFB Design Compatibility Guidelines, August 2006,
 6 and major building projects would also comply with the Air Force Policy Memorandum requiring
 7 Leadership in Energy and Environmental Design (LEED) Green Building Rating System as the Air
 8 Force preferred self-assessment metric. The standards require energy saving building techniques,
 9 supplies and equipment to reduce environmental impacts, and provide for energy savings from the
 10 construction and operation of these new facilities.

11 **Restoration** includes repair and replacement work to restore facilities damaged by inadequate
 12 sustainment, excessive age, natural disaster, fire, accident, or other causes, to such a
 13 condition that it may be used for its designated purpose.

14 **Modernization** includes alterations of facilities to implement new or higher standards, including
 15 regulatory changes to accommodate new functions (including new mission beddowns), or to replace
 16 building components that typically last more than 50 years.

17 **Sustainment** includes maintenance and repair activities necessary to keep an inventory of facilities in
 18 good working order. Sustainment includes deferred sustainment such as anticipated major repairs or
 19 replacement of components that occur periodically over the expected service life of the facilities.

20 Table 2-3 lists the Creech AFB MILCON projects. Tables 2-4, 2-5, and 2-6 provide a list of the various
 21 O&M projects proposed for Creech AFB that are the more likely projects to be funded and executed over
 22 the next few years. Table 2-4 lists the representative Restoration and Modernization projects, and Table
 23 2-5 lists the Sustainment projects.

Project Number	Project Title	Infrastructure Type
LKTC103104	UAS Visitors Quarters	Facility
LKTC103105	UAS Joint Center Of Excellence Facility	Facility
LKTC113103	ADD/ALTER UAS Munitions Administration Facility	Facility
LKTC 11-3104	UAS Conventional Munitions Maintenance Facility	Facility
LKTC 11-3105	UAS Phase Maintenance Hangar	Facility
LKTC 11-3110	RPA Mission Complex Intrusion Detection Fence	Security
LKTC 11-3111	RPA Mission Complex Vehicle Denial Barrier	Security
LKTC 13-3101	RPA Mission Complex Physical Protection System	Security

Project Number	Project Title	Infrastructure Type
LKTC 10-1034	Repair AAS BAK 12 to BAK 14 Runway 08/26 West End	Airfield
LKTC 12-1038	Replace Base Ops/Weather Facility w/New Construction	Facility
LKTC 10-1022	Construct 432d Wing Standardization and Evaluation Facility	Facility
LKTC 12-1045	Construct Flightline Entry Gates	Security
LKTC 12-1050	Construct Flightline Perimeter Fence	Security
LKTC 12-1052	Construct Box Canyon Gate Automated Entry	Security
LKTC 12-1049	Construct Range Road Automated Entry	Security
LKTC 08-6802	Repair Aviation Gasoline (LL100) Operational Fueling System	Utility
LKTC 06-1009	Construct Apron Lighting	Utility
LKTC 10-1024	Construct Common Area Addition, Bldg. 1005	Facility
LKTC 10-1025	Construct Volleyball & Basketball Courts, And Horseshoe Pit	Recreation
C-08015	Design and Repair Fuel System for AGE Yard, Bldg. 1011	Utility
LKTC 12-1051	Renovate Facility for RPA Training, Bldg. 707	Facility

Note: Table acronyms listed in Appendix A

Project Number	Project Title	Infrastructure Type
LKTC 12-1046	Repair North Side Propane & Chilled Water Lines	Utility
C-1107	Repair LOLA Road Washout	Road
C-10157	Repair Roof, Insulation for NOC, Ventilation Repair	Facility
C-10120	Replace Road 90 Deg Turn at Munitions Suspect Holding Area	Road
C-11001	Cost Analysis Expansion of Bldg 718 for Additional GCS's	Facility
C-10179	Hangar 1003 Floor Refinishing	Facility

Note: Table acronyms listed in Appendix A

Project Number	Project Title	Infrastructure Type
LKTC036904	Repair Ground Product Piping, Bulk Storage	Utility
C-09132	Underground Storage Tank Removal Facility 24	Facility
C-09133	Underground Storage Tank Removal Facility 225	Facility
LKTC131005	Repair Electrical Service, Bldg 71	Facility
LKTC131006	Construct 2nd Floor Observation Deck, Bldg 1000	Road/Parking
LKTC131007	Install Emergency Mass Notification PA System, Bldg 1000 & 1004	Facility
LKTC131008	Construct Final Denial Barrier, Former Creech Main Gate	Road/Parking
LKTC131009	Repair CE Compound Entry/Exit Gates	Facility
LKTC131010	Construct East Gate Visitor Center	Facility
LKTC131011	Construct Various Parking Lots, 1000 Series Bldgs	Road/Parking
LKTC131014	Repair Fire Alarm/Detection System, Bldg 14	Facility
LKTC131015	Renovate Interior, 11 RS Bldg 707	Facility
LKTC131016	Repair Chilled Water & Propane Gas Lines, Bldgs 1000/1003	Facility
LKTC131017	Renovate Interior Bldg 271 For 99 ABG Standup	Security
LKTC131018	Repair Fire Alarm/Detection System, Bldg 12	Facility
LKTC131019	Repair Electrical Systems, Fuel Storage Yard & Service Station	Utility
LKTC131020	Repair Airfield Headwall (Airfield Violation)	Facility
LKTC131021	Construct 78 ATKS Administrative Facility	Facility
LKTC131022	Construct 91 ATKS Administrative Facility	Facility

Table 2-6. Representative O&M Projects		
Project Number	Project Title	Infrastructure Type
LKTC131023	Demolish Bldg 400 & 404	Facility
LKTC131025	Repair HVAC & Chiller Units, Bldg 1000	Utility
LKTC131026	Construct North Gate Electronic Vehicle Gate	Facility
LKTC131028	Construct RPA Parking Lot	Facility
LKTC131029	Construct GCS Pads, 42 ATKS	Demolition
LKTC131032	Demolish Airfield Support Facilities 80, 81, 82, 86 & 95	Demolition
LKTC131033	Construct Addition Vehicle Maintenance Facility	Demolition
LKTC131035	Construct Security Fence/Lights	Airfield
LKTC131036	Construct Communications Mission Command Post	Airfield
LKTC131037	Construct 42 ATKS Combat Support Facility	Utility
LKTC131038	Construct 42 ATKS Fixed GCS Operations Facility	Security
LKTC131039	Construct Temporary Large Area Maintenance Shelter (LAMS) Facilities	Facility
LKTC141004	Construct Secondary Power For 30 RS Relocation, Bldg 1009	Utility
LKTC141005	Install Backup Generator & Upgrade to SCIF Standards, Bldg 119	Facility
LKTC141006	Install Anti-Vehicle Boulders, 1000 Series Bldgs	Utility
LKTC141007	Repair Asphalt Shoulders at Taxiway Foxtrot Fighter LOLA	Airfield
LKTC141008	Install Backup Generator, Supply Warehouse Bldg 52	Airfield
LKTC141009	Install Backup Generator, Supply Warehouse Bldg 1013	Facility
LKTC141010	Install Backup Generator, Supply Warehouse Bldg 1012	Facility
LKTC141011	Repair Heat Pumps & HVAC Controls, Bldg 91	Airfield
LKTC141013	Construct Non-Destructive Testing Facility	Recreation
LKTC141014	Install Backup Generators, Creech Fuels Yard (FAC 661)	Security
LKTC141015	Install Permanent Eyewash/Shower Station Bldg 256	Facility
LKTC141016	Install Lightning Protection, ESPN Trailer Pad 10132	Utility
LKTC141017	Install Additional Power Outlets, Rm 109 Bldg 119	Facility
LKTC141018	Repair Interior Walls, 53 TMG Bldg 14	Utility
LKTC141019	Repair Communications Equipment Support Structure, Bldg 12	Utility
LKTC141020	Install Fence Keypad Entry System, Bldg 1038	Energy
LKTC141021	Install Security Aspects, Bldg 1012	Utility
LKTC141022	Replace Duct Detectors, Bldg 143	Airfield
LKTC141023	Install Fire Suppress & Alarm Systems, Vehicle Maintenance Bldg 225	Facility
LKTC141024	Repair Bldg 273 To Meet AFOSI Standards	Facility
LKTC141026	Install Fire Suppress & Alarm Sys Bldgs 6, 7 & 8 (SUST TEAM)	Airfield
LKTC141027	Reinforce Fenceline at Casino	Airfield
LKTC141028	Install A/C Bldg 1109 Comm Closet	Road/Parking
LKTC141029	Repair Fire Alarm System, Bldg 2	Airfield
LKTC141030	Construct Drainage Culverts Along Road	Utility
LKTC141031	Replace Heat Pump, Bldg 234	Utility
LKTC141033	Replace HVAC Filters/Grills, 99 GCTS Billeting Bldg 24	Utility
LKTC141034	Construct Parking Lot Lighting (Lots 1, 2 & 3))	Utility
LKTC141036	Design/Repair Fuel System For AGE Yard, Bldg 1011	Utility
LKTC141037	Repair LOLA Road Washout	Road/Parking
LKTC141038	Repair Roof, Insulation For NOC & Ventilation System, Bldg 1004	Facility
LKTC141039	Replace Road 90 Degree Turn at Munitions Suspect Holding Area	Road/Parking
LKTC141040	Maintain Floor, Hangar 1003	Facility
LKTC 141042	Repair Lift Station	Utility
LKTC 141047	Construct 926 RPA Operations Group HQ Facility	Facility
LKTC 151004	Repair Fuel Cell Hangar 1009	Facility

Note: Table acronyms listed in Appendix A

1 **2.2 METHODOLOGY FOR IDENTIFYING PROPOSED ACTION AND ALTERNATIVES**

2 The individual CIP projects proposed action and alternatives were identified through a process that
3 examined the basic requirements for the action; the applicability of environmental, safety, security and
4 exclusionary criteria that located actions at appropriate locations on base or eliminated actions from
5 consideration; and the need for additional analyses. Actions in locations that were not compatible,
6 violated environmental constraints (such as locations of threatened or endangered species) and require
7 additional NEPA analysis, or have already been analyzed under NEPA, were not included within the
8 proposed action and alternatives.

9 **2.2.1 Basic Requirements and Exclusionary Criteria**

10 The basic requirements for assembling the General Plan are to meet the 99 ABW Commander’s vision for
11 the future configuration of Creech AFB. Planning needs to account for current and anticipated mission
12 needs and yet still be flexible to accommodate changes to the mission. In the case of Creech AFB, which
13 is home to RPA operations, needs change frequently as airframes, tactics, and equipment are constantly
14 evolving. There are some constants, which in many respects are the focus of this EA. Flight operations
15 have to occur along the flightline, community services and other facilities are required. The following are
16 some of the more notable constraints.

17 **Compatible Land Use**

18 Land use is the classification of either natural or human-modified activities occurring at a given location.
19 Natural land use includes rangeland and other open or undeveloped areas. Human-modified land use
20 classifications include residential, commercial, industrial, airfield, recreational, and other developed areas.
21 Land uses at Creech AFB are regulated by the 2006 General Plan, which designates land use categories
22 and identifies the type and extent of land use allowable in specific areas and where environmentally
23 sensitive areas need to be protected (Air Force 2006a).

24 **Force Protection and Security Compliance**

25 As a result of potential terrorist activities, the Department of Defense (DoD) and the Air Force have
26 developed a series of Antiterrorism/Force Protection (AT/FP) guidelines for military installations. These
27 guidelines address a range of considerations that include access to the installation, access to facilities on
28 the installation, facility siting, exterior design, interior infrastructure design, and landscaping (Unified
29 Facilities Criteria [UFC] 4-010-01, 2012). The intent of this siting and design guidance is to improve
30 security, minimize fatalities, and limit damage to facilities in the event of a terrorist attack. The
31 representative projects would be constructed in accordance with UFC 4-010-01 and would help improve
32 AT/FP measures on the base.

33 **Available Utilities and Infrastructure**

34 Facility location has considered the location of existing utilities and infrastructure and/or the capacity to
35 readily extend to the new facility.

36 **Compatibility with Explosive Safety Zones**

37 Defense Department Explosives Safety Board 6055.9-STD and Air Force Manual 91-201 (Explosives
38 Safety Standards) define distances that need to be maintained between munitions storage areas and a

1 variety of other types of facilities. These distances, called quantity-distance (QD) arcs, restrict or prohibit
2 development based on the type and quantity of explosive material being stored.

3 **Compatibility with Airfield Safety Zones**

4 The Creech AFB Air Installation Compatible Zone (AICUZ) Study identifies Clear Zones (CZ) and
5 Accident Potential Zones (APZs) as areas where an aircraft mishap is statistically most likely to occur.
6 Base and local planning agencies are advised not to put incompatible structures within these zones.

7 **Environmental Constraints**

8 Projects meeting the criteria would undergo numerous environmental constraints and are discussed in
9 detail in Chapters 3 and 4 of this EA. They include air quality, Environmental Restoration Program
10 (ERP) sites, biological and cultural resources, hazardous materials and waste management, and aircraft
11 noise zones.

12 **2.3 ALTERNATIVES TO THE PROPOSED ACTION**

13 The CIP projects would provide the installation commander with overall list of projects that meet bona-
14 fide mission needs and/or upgrading of degraded facilities or infrastructure for a selection to be funded
15 and performed annually. The tables described above generally are listed in order of priority, but factors
16 can alter the prioritization and determine the number of projects that can be performed. These factors
17 include: emerging mission needs and requirements; the current condition of the facility or infrastructure;
18 amount of budget available; and/or other requirements such as fulfilling environmental, safety, or security
19 issues. Funding is always an issue and relatively few projects get implemented annually. In addition,
20 work-arounds often get implemented in the interim and while the mission or upgrade project need still
21 exists, these work-arounds can drop the priority while a different project may be elevated that can't be
22 solved by a work-around. In other words, the CIP list reflects a dynamic priority as adjustments are
23 continually made. As a result, the CIP projects list itself presents a myriad of alternatives of this action
24 and is impossible to definitively proscribe a set of alternatives. In reality, the proposed action would be
25 that any of the CIP projects could be implemented. For these reasons, the light and heavy construction
26 scenarios were developed to characterize the type of project and assess the impacts according to project
27 size. The analysis would garner the similar conclusions for the proposed action if five or ten large
28 projects are implemented as forty or more little projects. Therefore implementation the CIP represents a
29 continual alternative selection process and no formal alternatives to the proposed action are presented in
30 this EA.

31 **2.4 NO-ACTION ALTERNATIVE**

32 Under NEPA and CEQ regulations (40 CFR Part 1502.14(d)), “no action” means that the proposed action
33 (i.e., CIP updates for Creech AFB) would not take place, and the resulting environmental effects from
34 taking no action would be compared to the effects of permitting the proposed action to go forward. Under
35 the no-action alternative, some projects would still occur but would require being individually assessed
36 and documented. NEPA also requires analysis of baseline conditions as reflected by the no-action
37 alternative to compare the impacts to those resulting from the proposed action. The following
38 descriptions of the current status of Creech AFB provides a context for comparing the changes that would
39 occur with implementing the proposed action.

1 **Mission Characteristics**

2 Creech AFB, formerly Indian Springs Air Force Auxiliary Field, is located in northwestern Clark County,
3 adjacent to the town of Indian Springs. Remotely Piloted Aircraft (RPA) training and testing, as well as
4 Security Forces Expeditionary training are the primary operations occurring at Creech AFB. With the
5 RPA and the Security Forces missions, Creech AFB plays a major role in the ongoing war on terrorism.

6 **Facilities and Infrastructure**

7 Creech AFB encompasses approximately 2,380 acres on both sides of US-95, with the runways and the
8 installation facilities on the north side of the highway within the boundaries of the NTTR (refer to Figure
9 1-1). Installation facilities on Creech AFB include a newer area north and east of the runways housing
10 hangars, administration and most of the support facilities for the 432d Wing mission. The older portion on
11 the south side of the flight line houses Civil Engineering and the 99 Ground Combat Training Squadron.

12 Under the no-action alternative, previous planning for the base resulted in mixed land uses primarily
13 because of the small area involved and the relative lack of mission activity prior to the first Predator
14 Beddown (permanent basing). Recent efforts have improved planning at Creech AFB and any new
15 facilities would likely fit better within existing land uses; however, a formalized and up-to-date General
16 Plan would not be used.

17 **2.5 REGULATORY COMPLIANCE AND PERMIT REQUIREMENTS**

18 This EA examines the specific affected environment for implementation of projects at Creech AFB. The
19 analysis considers the current conditions of the affected environment, and compares those to the no-action
20 alternative. It also examines the cumulative impacts within the affected environment at each of these
21 locations as well as past, present, and reasonably foreseeable actions of the Air Force and other federal,
22 state, and local agencies. The NEPA process is intended to assist the decision maker in understanding the
23 environmental consequences and in taking appropriate actions that protect, restore, and enhance the
24 environment. Other federal statutes that may apply to the proposed action are listed in Table 2-7.

25 **Stormwater**

26 Under the proposed action, the Nellis AFB water quality program manager would update applicable base
27 permits and assist in obtaining all stormwater-related permits for new construction at Creech AFB. Nellis
28 AFB would need to reevaluate its National Pollutant Discharge Elimination System (NPDES) permit and
29 Stormwater Pollution Prevention Plans to ensure compliance.

30 **Permits**

31 Should the proposed action be implemented, the Air Force would need to obtain new permits or update
32 existing permits. These permits would apply to the removal and disposal of asbestos as a result of
33 demolition of, or modifications to, facilities; construction of new facilities; and stormwater discharge
34 permits.

35 **Asbestos and Lead-Based Paint Removal and Disposal**

36 Prior to demolition or additions to buildings, asbestos surveys are required by Air Force regulation. For
37 the removal of asbestos, a notification process with Clark County, the state health board, the U.S.
38 Environmental Protection Agency (EPA), and the base asbestos and lead-based paint (LBP) coordinator is

- 1 required. Removal would be contracted out to state-certified and licensed contractors. Contractors would
- 2 obtain the necessary permits for the removal, handling, and transportation of asbestos. Contractors must
- 3 have access to a permitted landfill for disposal of asbestos.

**Table 2-7. Other Major Environmental Statutes, Regulations, and Executive Orders
Applicable to Federal Projects**

Environmental Resource	Statutes
Noise	Noise Control Act of 1972 (PL 92-574) and Amendments of 1978 (PL 95-609); U.S. Environmental Protection Agency (EPA), Subchapter G-Noise Abatement Programs (40 CFR 201-211)
Air	Clean Air Act (CAA) of 1970 (PL 95-95), as amended in 1977 and 1990 (PL 91-604); EPA, Subchapter C-Air Programs (40 CFR 52-99)
Environmental Justice	Executive Order 12898-Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations; Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)
Water	Federal Water Pollution Control Act of 1972 (PL 92-500) and Amendments; Clean Water Act (CWA) of 1977 (PL 95-217); USEPA, Subchapter D-Water Programs (40 CFR 100-145); Water Quality Act of 1987 (PL 100-4); USEPA, Subchapter N-Effluent Guidelines and Standards (40 CFR 401-471); Safe Drinking Water Act of 1972 (PL 95-923) and Amendments of 1986 (PL 99-339); EPA, National Drinking Water Regulations and Underground Injection Control Program (40 CFR 141-149)
Biological Resources	Migratory Bird Treaty Act of 1918; Fish and Wildlife Coordination Act of 1958 (PL 85-654); Sikes Act of 1960 (PL 86-97) and Amendments of 1986 (PL 99-561) and 1997 (PL 105-85 Title XXIX); Endangered Species Act of 1973 (PL 93-205) and Amendments of 1988 (PL 100-478); Fish and Wildlife Conservation Act of 1980 (PL 96-366); Lacey Act Amendments of 1981 (PL 97-79)
Wetlands and Floodplains	Section 401 and 404 of the Federal Water Pollution Control Act of 1972 (PL 92-500); EPA, Subchapter D-Water Programs 40 CFR 100-149 (105 ref); Floodplain Management-1977 (Executive Order 11990); Emergency Wetlands Resources Act of 1986 (PL 99-645); North American Wetlands Conservation Act of 1989 (PL 101-233)
Cultural Resources	National Historic Preservation Act of 1966 (16 USC 470 et seq., PL 89-665) and Amendments of 1980 (PL 96-515), 1992 (PL 102-575), and 2006 (PL 109-453); Protection and Enhancement of the Cultural Environment-1971 (Executive Order 11593); Indian Sacred Sites-1966 (Executive Order 13007); American Indian Religious Freedom Act of 1978 (PL 94-341); Antiquities Act of 1906; Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm; Public Law 96-95); Native American Graves Protection and Repatriation Act of 1990 (PL 101-601); Protection of Historic Properties (36 CFR Part 800); Preserve America (EO 13287)
Solid/Hazardous Materials and Waste/Oil Pollution	Resource Conservation and Recovery Act of 1976 (PL 94-5800), as Amended by PL 100-582; EPA, subchapter I-Solid Wastes (40 CFR 240-280); Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601) (PL 96-510); Toxic Substances Control Act (PL 94-496); EPA, Subchapter R-Toxic Substances Control Act (40 CFR 702-799); Federal Insecticide, Fungicide, and Rodenticide Control Act (40 CFR 162-180); Emergency Planning and Community Right-to-Know Act (40 CFR 300-399); Oil Pollution Prevention Act (40 CFR 112); 40 CFR 280 Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)

- 4 **Construction:** For new buildings, Creech AFB would submit plans and a request for location to the
- 5 Nellis AFB zoning and development board. An air quality dust permit must be obtained from Clark
- 6 County if construction at any site causes 0.25 acres or more of topsoil disturbance, trenching of 100 feet
- 7 or more, or demolition of structures 1,000 square feet or more. Shoulder stabilization instead of paving
- 8 must be maintained in compliance with the stabilization standards in section 9.3.2.1.5 of the Clark County

1 Air Quality Regulations. Nellis AFB would apply for a Clark County Surface Disturbance Permit after
 2 finalization of the Creech AFB building footprints and prior to construction. An Authority to Construct
 3 permit is required for construction projects, whereas, demolition projects require completion of a Clark
 4 County Demolition Notification form. Additionally, all proposals for removing or altering existing
 5 facilities would be reviewed by the Nellis AFB Cultural Resources Manager to determine and implement
 6 the appropriate consultation requirements.

7 **Nellis AFB Plans and Protocols:** In addition to the federal, state, and local regulations, Nellis AFB
 8 implements its environmental programs (and those of Creech AFB) through various plans and protocols
 9 (Table 2-8). All of these plans conform to requirements defined in federal regulations and guidance.
 10 Project managers would coordinate with Nellis AFB Environmental Flight (99 CES/CEIE) to ensure
 11 compliance with all local, state, and federal environmental regulations.

Table 2-8. Nellis AFB Environmental Plans		
Resource Area	Title	Date
Cultural Resources	Integrated Cultural Resources Management Plan	2012
Air Quality	NAFB Air Emissions Inventory	2011
	NTTR Air Emissions Inventory	2011
Environmental Restoration Program	Environmental Restoration Plan. Management Action Plan	2004
Noise, Land Use and Planning	Air Installation Compatible Use Zone Study	2010 (draft)
	General Plan for Nellis Air Force Base, Nevada. Includes General Plan Summary for Creech AFB	2006
Asbestos	Asbestos Management and Operations Plan	2003
Lead-Based Paint	Lead-based Paint Management Plan	2003
Environmental Emergencies	Facility Response Plan	2011
Hazardous Waste	Hazardous Waste Management Plan	2010
Hazardous Materials	Hazardous Materials Management Plan	2010
Natural Resources	Integrated Natural Resources Management Plan	2010
Stormwater	Storm Water Pollution Prevention Plan	2010
Fuels	Spill Prevention, Control and Countermeasures Plan	2013 (est, Oct)

CHAPTER 3

DESCRIPTION OF THE AFFECTED ENVIRONMENT

1 **3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT**

2 **3.1 INTRODUCTION**

3 NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative.
4 It also provides that an EA should consider, but not analyze in detail, those areas or resources not
5 potentially affected by the proposal. Therefore, the Air Force must provide sufficient detail and depth of
6 both description and analysis in this EA to allow decision makers and the public to differentiate among the
7 alternatives.

8 This EA focuses on those resources that would be affected by proposed facility and infrastructure
9 construction, additions, remodels, demolition, maintenance, and repair CIP projects at Creech AFB. The
10 analysis considers the current conditions of the affected environment at Creech AFB and compares those
11 to conditions that might occur with implementation of projects that have not been addressed in previous
12 NEPA documents.

13 **3.1.1 Affected Environment**

14 The proposed action affects the areas defined by Creech AFB. Evaluation and analysis of the proposed
15 projects indicate that resources subjected to ground disturbing activities have the greatest potential to be
16 affected, particularly areas that have not been previously disturbed. These areas could contain natural and
17 cultural resources, disturbance can cause air quality impacts, and paving open areas decreases permeable
18 areas limiting groundwater recharge and can cause greater stormwater runoff. The potential environmental
19 impact of implementing the CIP projects on Creech AFB will be discussed in detail under each of the
20 affected resources in Chapter 4; Environmental Consequences.

21 **3.1.2 Resources Analyzed**

22 Based on the components of the proposed action, the Air Force defined the environment potentially
23 affected by construction or renovation projects at Creech AFB. This definition focused on specific
24 resource categories. As a result of this review, nine resource categories are evaluated: land use;
25 socioeconomics; cultural resources; biological resources; water and soil resources; air quality; hazardous
26 materials and waste; safety; and noise.

27 **3.1.3 Resources Eliminated from Further Analysis**

28 The Air Force assessed numerous resources for potential to be affected by the proposed action or no-action
29 alternative. In accordance with CEQ regulations, this evaluation determined two resources did not warrant
30 further examination in the EA: 1) visual resources, and 2) environmental justice and protection of
31 children.

32 **Visual Resources**

33 The Air Force anticipates no negative effects on or conflicts with visual resources as a result of the
34 proposed projects for Creech AFB. The justification is that construction and/or improvement projects
35 would: 1) take place on the installation and would be consistent with the existing visual landscapes;
36 2) primarily occur in the developed portion of the installation; 3) be built of similar materials as other
37 structures on the installation; and 4) be landscaped consistent with the existing habitat. For these reasons,

1 implementation of the proposed action or no-action alternative would not have an adverse impact on the
2 visual environment at Creech AFB or the lands surrounding the installation.

3 **Environmental Justice and Protection of Children**

4 Environmental justice addresses the disproportionate effect a federal action may have on low-income or
5 minority populations. Executive Order 12898, *Federal Actions to Address Environmental Justice in*
6 *Minority Populations and Low-Income Populations*, ensures the fair treatment and meaningful
7 involvement of all people regardless of race, color, national origin, or income with respect to the
8 development, implementation, and enforcement of environmental laws, regulations and policies. The
9 existence of disproportionately high and adverse impacts depends on the nature and magnitude of the
10 effects identified for each of the individual resources. The affected area includes locations of proposed
11 projects within the confines of Creech AFB. Local emissions from construction activities would not
12 approach any state or federal thresholds for the protection of human health and safety (see Section 3.8, Air
13 Quality).

14 In 1997, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*
15 *(Protection of Children)*, was issued to ensure the protection of children. The proposed CIP projects at the
16 base would not pose environmental or safety risks to children due to the fact that changes and
17 improvements would be limited to the administrative, industrial, and operational areas on Creech AFB.
18 Access by the general public is prohibited and procedures prevent children from visiting these areas on the
19 base. In summary, since there would not be a disproportionately high or adverse impact to minority or
20 low-income groups and no aspect of the proposed action or no-action alternative would increase the health
21 or safety risk to children, further analysis of environmental justice and protection of children as a resource
22 was eliminated from further analysis.

23 **3.2 LAND USE**

24 Land can be used for residential, commercial, industrial, agricultural, transportation, recreational, or
25 conservation purposes. Management plans, policies, ordinances, and regulations determine the manner in
26 which a specific tract of land may be used. The status of land ownership is the primary driver that
27 determines appropriate land use in a specific area. Creech AFB is an Air Force military reservation. Thus,
28 appropriate land use is primarily determined by federal laws, DoD directives, and Air Force policy and
29 instructions. Transportation refers to roadway and street systems and the movement of vehicles on
30 roadway networks on base and off-base feeder routes and intersections.

31 **Affected Environment**

32 Creech AFB includes developed and undeveloped lands. Main categories of developed land uses include
33 airfield, industrial support areas, administrative services areas, and temporary lodging and services areas.
34 Undeveloped lands are commonly called open space in planning documents and may include natural or
35 cultural resources preservation sites, safety buffers, or other similar land uses. The affected environments
36 are the locations proposed for CIP projects on Creech AFB.

37 Creech AFB lies approximately 45 miles northwest of Las Vegas, Nevada, along US-95. Creech AFB
38 encompasses approximately 2,380 acres of land, mostly designated as open space in order to ensure safety-
39 of-flight Clear Zones (CZ) around the airfield. The main Creech AFB runway runs east-west across the

1 base, whereas the northwest-southeast runway supports MQ-1 Predator and MQ-9 Reaper RPA operations.
2 An inactive third runway extends southwest-northeast across the base.

3 Creech AFB serves as the home to the 432d Wing operating MQ-1 and MQ-9 RPA squadrons that are
4 permanently based at Creech AFB. It serves as the alternate practice base for the Nellis AFB-based
5 Thunderbirds aerial demonstration team, as well as other related squadrons. In addition, Creech AFB
6 supports Expeditionary Readiness Training (ExpeRT), and Security Forces Training, and it also forms the
7 primary emergency divert base for aircraft using the large Nevada Test and Training Range.

8 Most aircraft operations and maintenance facilities at Creech AFB lie northeast of the main and crosswind
9 runway. Facilities including a munitions storage buildings are situated northwest of the runway. The older
10 base area south of the main runway contains several industrial land uses (i.e., supply, vehicle maintenance,
11 and transportation facilities) as well as the Ground Combat Training Squadron facilities. Figure 3-1 shows
12 the existing land use as of the 2011 Creech AFB Site Master Plan. There have been a couple of
13 modifications to the 2011 Plan, such as the acquisition of the Casino property, but the majority of Figure 3-
14 1 is still current.

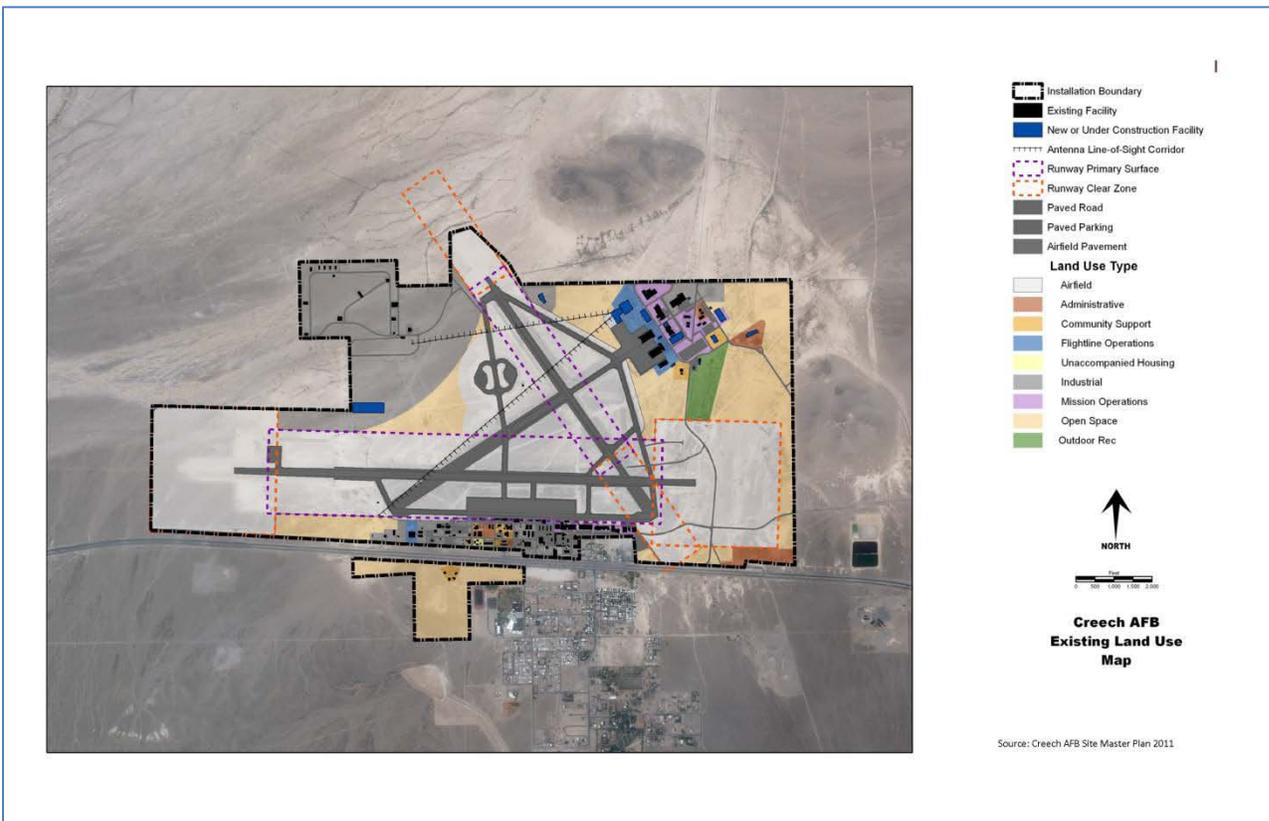


Figure 3-1. Creech AFB Existing Land Use Map

1 **3.3 SOCIOECONOMICS**

2 Socioeconomics is defined as the social and economic activities associated with the human environment,
3 particularly population and economic activity. Economic activity typically includes employment, personal
4 income, and industrial growth. Impacts on these two fundamental socioeconomic indicators can also
5 influence other components such as housing availability and public services.

6 Socioeconomic data are presented at the county level in order to analyze baseline socioeconomic
7 conditions in the context of county trends. Data have been collected from previously published documents
8 issued by federal, state, and local agencies; from state and national databases (e.g., U.S. Census Bureau
9 (USCB); University of Nevada Center for Business and Economic Research; and from Nellis AFB (e.g.,
10 the base’s Public Affairs Office).

11 **Affected Environment**

12 Analyses of impacts to socioeconomic characteristics potentially resulting from implementation of ADP
13 and other projects requires establishment of an affected environment – a primary geographical area within
14 which direct and secondary socioeconomic effects would be noticed.

15 Analyses of impacts to socioeconomic characteristics potentially resulting from implementation of the
16 proposed action require establishment of an affected environment – a primary geographical area within
17 which direct and secondary socioeconomic effects of the Creech AFB proposed action and alternative
18 actions would be noticed. Because direct socioeconomic effects associated with implementation of the
19 alternative actions would occur in the immediate vicinity of Creech AFB and since infrastructure resources
20 are generally influenced by the socioeconomic environment, the primary focus for socioeconomics at
21 Creech AFB is the town of Indian Springs.

22 The community of Indian Springs has few employment opportunities, primarily limited to the combined
23 elementary/middle/high school, the county branch library, and highway services. The population of Indian
24 Springs has decreased in the last 10 years. In 2000 it was 1,302 (USCB 2006). However, the 2010 census
25 puts the population of Indian Springs at 991 (USCB 2010). The primary economic influences in the area
26 are Department of Defense (DoD) and Department of Energy (DoE) operations in the region. In 2011,
27 Creech AFB had over 2,200 assigned personnel (Air Force 2011). The Southern Desert Correctional
28 Center (SDCC) and Indian Springs Conservation Camp and Boot Camp, located just east of the
29 community of Indian Springs and Creech AFB, provide additional influence on the local economy through
30 employees and inmate visitors.

31 The population growth in the surrounding Clark County has slowed from the boom years of the early
32 2000s, and construction employment has slowed proportionally (University of Nevada Las Vegas [UNLV]
33 2011). The University of Nevada Las Vegas’ Center for Business and Economic Research’s Clark County
34 Construction Index has maintained a steady slide, showing continued weakness in this hard-hit sector of
35 the Southern Nevada economy. The index has fallen approximately 70 percent from its January 2007 value
36 (UNLV 2011). Until there is sustained population growth to absorb excess real estate inventories, low
37 levels of construction activity are likely to persist.

1 **3.4 CULTURAL RESOURCES**

2 Cultural resources management is directed by federal laws. Section 106 of the National Historic
3 Preservation Act (NHPA) of 1966 requires that federal agencies take into account the effects of their
4 undertakings on historic properties, which are locations, features, and objects older than 50 years and
5 determined eligible for nomination to the National Register of Historic Places (NRHP). Section 101(d)(6)(A)
6 of the NHPA provides that properties of traditional religious and cultural importance to an Indian tribe or
7 Native Hawaiian organization may be determined to be eligible for inclusion on the NRHP. Section 110 of
8 the NHPA directs federal agencies to assume responsibility and establishes procedures for the stewardship
9 and protection of historic properties that are owned or controlled by the agency.

10 A cultural resource is a location of human activity, occupation, or use that is more than 50 years old and is
11 identifiable through inventory, historical documentation, or oral evidence. A historic property is a resource
12 that has been determined to be eligible for listing on the *National Register of Historic Places*. Cultural
13 resources include archaeological, historic, architectural, structural, places, artifacts, and objects.
14 Archaeological resources can be classed as either sites or isolates and may be either prehistoric or historic
15 in age. Isolates often contain only one or two artifacts, while sites are usually larger and contain more
16 artifacts.

17 Architectural resources are standing buildings, dams, canals, bridges, and other structures. Traditional
18 cultural properties are resources associated with the cultural practices and beliefs of a living community
19 that link that community to its past and help maintain its cultural identity. Traditional cultural properties
20 may include archaeological resources, locations of historic events, sacred areas, sources of raw materials
21 for making tools, sacred objects, or traditional hunting and gathering areas.

22 **Affected Environment**

23 The affected environment for cultural resources includes the Air Force-managed land within the boundaries
24 of Creech AFB where construction or renovation projects under the proposed action could have an impact.

25 Methods for inventory and evaluation are described in Attachment A of the 2012 Integrated Cultural
26 Resources Management Plan (Air Force 2012). Efforts to identify and evaluate cultural resources properties
27 for this project according to 36 CFR 800.4 were initiated in 1978 and continue to the present. Nellis AFB
28 initiated a Native American Program in 1996 as a foundation for government-to-government consultation.
29 Activities have included annual meetings, NTTR field trips, participation in professional meetings, and the
30 formation in 1999 of a Document Review Committee which reads and comments on cultural resources
31 reports prior to State Historic Preservation Office (SHPO) reviews.

32 The affected environment for cultural resources includes the Air Force-managed land within the boundaries
33 of Creech AFB where construction or renovation projects under the proposed action could have an impact.

34 Creech AFB (formerly Indian Springs Air Force Auxiliary Field) has been 100 percent inventoried for
35 archaeological resources. No sites eligible for nomination to the NRHP exist on the installation (Air Force
36 2012). A historic building inventory is currently underway at Creech AFB.

1 **3.5 BIOLOGICAL RESOURCES**

2 Biological resources encompass plant and animal species and the habitats within which they occur. Plant
3 species are often referred to as vegetation and animal species are referred to as wildlife. Habitat can be
4 defined as the area or environment where the resources and conditions are present that cause or allow a
5 plant or animal to survive at that location (Hall *et al.* 1997). Biological resources for this EA include
6 vegetation, wetlands, wildlife, and special-status species occurring in the vicinity of the proposed projects
7 on Creech AFB.

8 **Vegetation**

9 Vegetation includes all existing upland terrestrial plant communities with the exception of wetlands or
10 special-status species. The affected environment for vegetation includes those areas subject to demolition
11 and construction ground disturbance.

12 **Wetlands and Jurisdictional Waters of the United States**

13 Wetlands are considered special category sensitive habitats and are subject to regulatory authority under
14 Section 404 of the Clean Water Act and Executive Order 11990, *Protection of Wetlands*. They include
15 jurisdictional and non-jurisdictional wetlands. Jurisdictional wetlands are those defined by the United
16 States Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA) as those areas
17 that meet all the criteria defined in the USACE’s 1987 *Wetlands Delineation Manual* and under the
18 jurisdiction of the USACE (USACE 1987). Wetlands are generally associated with drainages, stream
19 channels, and water discharge areas (natural and man-made). The discussion on wetlands pertains to the
20 potential to affect wetlands and jurisdictional waters of the U.S. due to construction or demolition
21 activities under the proposed action.

22 **Wildlife**

23 For the purposes of this EA wildlife includes all vertebrate animals (i.e., fish, amphibians, reptiles, birds,
24 and mammals) with the exception of those identified as threatened, endangered, or sensitive species.
25 Wildlife potentially affected by demolition and construction activities and construction noise will be
26 discussed.

27 **Special-Status Species**

28 Special-status species are defined as those plant and animal species listed as threatened, endangered, or
29 proposed as such by the U.S. Fish and Wildlife Service (USFWS). The federal Endangered Species Act
30 (ESA) protects federally listed, threatened, and endangered plant and animal species. Species of concern
31 are not protected by the ESA; however, these species could become listed and protected at any time. Their
32 consideration early in the planning process could avoid future conflicts that might otherwise occur. The
33 discussion of special-status species focuses on those species with the potential to be affected by
34 demolition, construction, and construction-related noise.

35 **Affected Environment**

36 The affected environment for biological resources includes areas of Creech AFB potentially affected by
37 ground-disturbing activities such as demolition, construction, or noise. All baseline data were gathered
38 from previous studies such as the *Integrated Natural Resources Management Plan for Nellis Air Force*

1 *Base* (Air Force 2010a). The desert tortoise and the Western burrowing owl have the potential to affect
2 development on Creech AFB.

3 ***Vegetation***

4 Creech AFB is located in the northeastern portion of the Mojave Desert. The surrounding landscape is
5 typical of the Mojave Desert, with low-lying enclosed basins surrounded by low mountains and bajadas
6 formed of coalescing alluvial fans. On the bajadas and mountain slopes, the vegetation is typically
7 dominated by creosote bush where white bursage is commonly codominant. On valley bottoms and dry
8 lake beds (playas) at lower elevations where soils are relatively fine, alkaline and clayey, saltbush,
9 shadscale (*A. confertifolia*), and allscale (*A. polycarpa*) dominate. Matchweed (*Gutierrezia sarothrae*),
10 buckwheat (*Eriogonum* spp.), and cheesebush (*Hymenoclea salsola*) also occur in saltbush scrub (Air
11 Force 1996).

12 Vegetation surrounding Creech AFB was systematically evaluated and mapped by Nellis AFB (Air
13 Force 2010a). Mixed scrub vegetation typical of the Mojave Desert occurs on lands surrounding Creech
14 AFB, where several associations including creosote bush, bursage, and different species of saltbush can be
15 distinguished (Air Force 1996). Within the fenced area of the airfield, the vegetation is very sparse due to
16 disturbance and is dominated by non-native Russian thistle. Surrounding vegetation and wildlife habitat
17 outside of the fence consists of creosote bush scrub and saltbush scrub. Two different associations of
18 creosote bush scrub are recognized: one dominated by creosote bush and white bursage, occurring to the
19 southwest to southeast and to the south surrounding Indian Springs; and another including a mixed scrub
20 association of creosote bush, fourwing saltbush, and shadscale, throughout the area north of Creech AFB.
21 The saltbush scrub occurs on the northeast side of the airfield.

22 ***Wetlands and Jurisdictional Waters of the United States***

23 There are no wetlands within the affected areas for the proposed actions at Creech AFB. However, there
24 may be jurisdictional waters of the U.S. present as defined under Section 404 of the Clean Water Act.
25 Appropriate documentation would be submitted and consultation conducted with the USACE to determine
26 if jurisdictional waters of the U.S. are present for any project with the potential of affecting jurisdictional
27 waters.

28 ***Wildlife***

29 Wildlife that typically occur in creosote bush scrub and saltbush scrub habitats, have been observed on
30 Creech AFB, primarily outside of the fenced area. Mammals include black-tailed jackrabbits (*Lepus*
31 *californicus*), desert woodrat (*Neotoma lepida*), kangaroo rats (*Dipodomys* spp.), coyote, and desert kit fox
32 (*Vulpes macrotis arsipus*). Several species of bats may occur in the general area, attracted by water and
33 associated insects at the municipal sewage ponds and the springs in Indian Springs Valley (Air Force
34 1997a). Pipistrelle (*Pipistrellus hesperus*) and California myotis (*Myotis californicus*) were documented in
35 surveys at Indian Springs (Air Force 1997b).

36 A diverse herpetofauna is present that includes desert iguana (*Dipsosaurus dorsalis*), zebra-tailed lizard
37 (*Callosaurus draconoides*), side-blotched lizard, horned lizards (*Phrynosoma* spp.), western whiptail
38 (*Cnemidophorus tigris*), and the desert tortoise. Several snakes may also be present, including kingsnake

1 (*Lampropeltus getulus*), rosy boa (*Lichanura trivirgata*), gopher snake (*Pituophis melanoleucus*), and
2 Mojave rattlesnake (*Crotalus scutulatus*).

3 Bird species that include a variety of ground-dwelling seed or insect eaters such as jays, wrens, shrikes,
4 towhees, sparrows, Gambel's quail, sage thrasher (*Oreoscoptes montanus*) and mourning dove; the
5 omnivorous raven (*Corvus corax*); greater roadrunner (*Geococcyx californianus*), which feeds on snakes
6 and lizards; and several species of raptors, including golden eagle (*Aquila chrysaetos*), redtailed hawk
7 (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), and northern harrier (*Circus cyaneus*). Burrowing
8 owls occur at the northern end of the runways at Creech AFB (Air Force 2010a).

9 ***Special-Status Species***

10 With the exception of the desert tortoise and burrowing owl, no special-status plant or animal species are
11 known or likely to occur in the areas subject to ground disturbance at Creech AFB. Desert tortoise occur
12 on land surrounding Creech AFB, but were not detected in a survey of the airfield area (Air Force 2010a),
13 and their occurrence is unlikely given the level of disturbance and activity. Burrowing owls have been
14 observed in burrows in the disturbed soil at the north end of the runway at Creech AFB (Air Force 2010a).
15 Prior to the initiation of any project construction, surveys coordinated through the Nellis AFB Natural
16 Resources Manager would be conducted to determine the presence of burrowing owls or special status
17 plant and wildlife species. The Gila monster protected by state law could potentially be found on Creech
18 AFB. The Nevada Department of Wildlife (NDOW) protocols would be implemented if Gila Monsters are
19 encountered during construction (See Appendix E).

20 **3.6 WATER AND SOIL RESOURCES**

21 **Water Resources**

22 Water resources include surface and groundwater. Lakes, rivers, and streams comprise surface water
23 resources that are important for economic, ecological, recreational, and human health reasons.
24 Groundwater is used for potable water consumption, agricultural irrigation, and industrial applications.
25 Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water
26 quality, and surrounding geologic composition. Attributes of water resources considered in this EA
27 include hydrologic setting, availability, use, quality (including protection zones), floodplains, flood hazard,
28 and adjudicated claims to water rights for both surface and groundwater. The Clean Water Act (CWA) of
29 1972 is the primary federal law that protects the nation's waters, including lakes, rivers, and aquifers.
30 Jurisdictional waters of the U.S. are regulated resources and are subject to federal authority under Section
31 404 of the CWA. This term is broadly defined to include navigable waters (including intermittent
32 streams), impoundments, tributary streams, and wetlands.

33 Criteria for water quality within the State of Nevada are contained in the Nevada Administrative Code
34 (NAC), Chapter 445A.119, and apply to existing and designated beneficial uses of surface water bodies.
35 Water quality standards are driven by the beneficial uses of specific water bodies. Beneficial uses include
36 agriculture (irrigation and livestock watering), aquatic life, recreation (contact and non-contact), municipal
37 or domestic supply, industrial supply, and wildlife propagation.

38 The State of Nevada has adopted drinking water standards established by the EPA, under the Safe
39 Drinking Water Act. The Nevada Department of Health regulates drinking water quality for public supply

1 systems. Drinking water standards consist of maximum contaminant levels established for various water
2 quality constituents to protect against adverse health effects.

3 **Soil Resources**

4 Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure,
5 elasticity, strength, shrink-swell potential, and erodibility all determine the ability for the ground to support
6 structures and facilities. Relative to development, soils typically are described in terms of their type, slope,
7 physical characteristics, and relative compatibility or limitations with regard to particular construction
8 activities and types of land use.

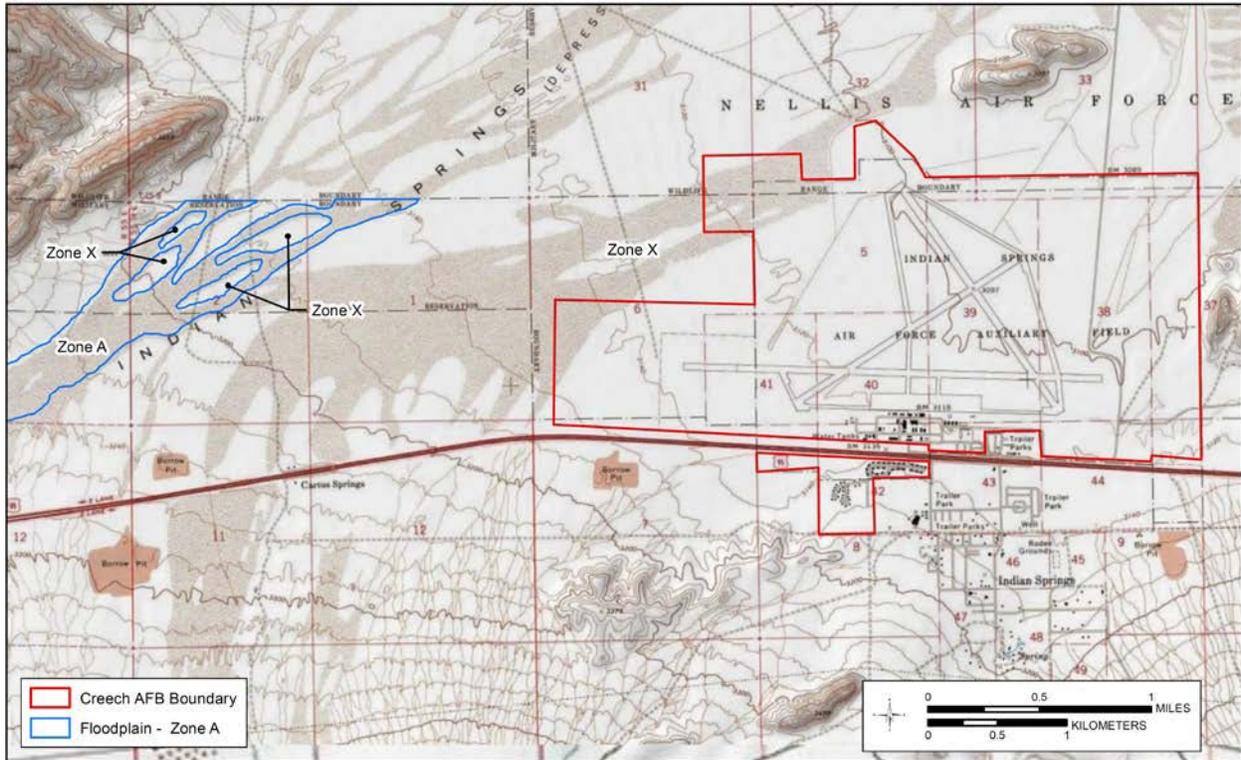
9 **Affected Environment**

10 ***Water Resources***

11 Natural surface water is scarce on and around Creech AFB. Average annual precipitation is approximately
12 4 inches. Surface flow is primarily towards the two local playas, located north of the airfield where it
13 collects and evaporates. Playas are not substantial recharge zones due to low infiltration and high
14 evaporation rates. Evaporation rates in the area are very high and have been estimated at approximately 58
15 to 69 inches per year (Air Force 1999b). The Creech AFB General Plan identifies the current water supply
16 at Creech AFB as adequate, yet stressed.

17 The northwest corner of the installation is reported to be within a 100-year floodplain according to a
18 floodplain inventory performed in 1997. However, the authors of the report admit that site visits were not
19 accomplished and the floodplain study conducted in 1997 is not considered completely accurate or
20 comprehensive and recommended a more definitive delineation of 100-year floodplains. A review of the
21 Federal Emergency Management Agency maps indicate the 100 year floodplain (Zone A) is located
22 approximately one mile west of Creech AFB. Zone X shown on FEMA maps are not considered 100-year
23 floodplains. Other than constructed ponds and structures, no permanent surface water occurs on or in the
24 vicinity of Creech AFB. Surface water in the vicinity of Creech AFB flows through braided, ephemeral
25 streams, which usually flow for brief periods immediately following precipitation events.

26 Groundwater in the region is high in total dissolved solids at levels of 500-1,000 mg/l and rich in calcium
27 and magnesium bicarbonate; however, the groundwater is well within the EPA standards for drinking
28 water quality (Air Force 2002b).



Note: The extents of FEMA mapping stops at the border of the NTTR

Figure 3-2. FEMA Floodplain Map

1 **Soil Resources**

2 Creech AFB is located in the southern opening of the Indian Springs Valley. The valley is bound by the
3 Spotted Range and Buried Hills to the west and the Pintwater Range to the east. The valley areas are
4 dominated by Quaternary alluvial deposits with patches of Quaternary playa and marsh deposits north of
5 Creech AFB. The local mountains (southern Pintwater Range and Spotted Range) are primarily paleozoic
6 limestone, dolomite, shale, and quartzite. Due to western winds, the west sides of the mountains in the
7 area are commonly flanked by dunes on top of deep alluvial fans (Air Force 1999b).

8 Soils in the vicinity of Creech AFB have not been mapped in detail. Soil information for the area is based
9 on general descriptions from various resource surveys, geologic studies in adjacent areas, and general
10 observations. Soils in the area are aridisols developed in carbonate parent material from local mountains
11 (Air Force 1999b). Aridisols generally have poorly developed A horizons with clear B and C horizons and
12 are sandy, loose, and prone to erosion in areas not protected by desert pavement. Soils can form anywhere
13 that sediments accumulate; however, soils develop very slowly in desert environments and are easily
14 disturbed. Much of the area has a surface crust known as desert pavement, which is an armored surface
15 crust of packed angular to sub-rounded rock fragments covering the soils surface. Desert pavement is
16 common to arid environments and acts as a shell to softer, more vulnerable soils below. Lenses of caliche
17 (sediment cemented together with sodium salts) and clay are also known to be present at depth (USACE
18 2003).

1 **3.7 AIR QUALITY**

2 Air quality is defined by ambient air concentrations of specific pollutants determined by the USEPA to be
3 of concern related to the health and welfare of the general public and the environment. Widespread across
4 the U.S., the primary pollutants of concern are called “criteria pollutants” and include carbon monoxide
5 (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), suspended particulate matter less than or
6 equal to 10 microns in diameter (PM₁₀), fine particulate matter less than or equal to 2.5 microns in
7 diameter (PM_{2.5}), and lead. Under the Clean Air Act (CAA), the USEPA has established National Ambient
8 Air Quality Standards (NAAQS) (40 CFR Part 50) for these pollutants. These standards represent the
9 maximum allowable atmospheric concentrations that may occur while ensuring protection of public health
10 and welfare, with a reasonable margin of safety. Short-term standards (1-, 8-, and 24-hour periods) are
11 established for pollutants contributing to acute health effects, while long-term standards (quarterly and
12 annual averages) are established for pollutants contributing to chronic health effects.

13 **Applicable Regulatory Requirements**

14 The Nevada Division of Environmental Protection, Bureau of Air Pollution Control has adopted the
15 NAAQS, with the exception of an additional 8-hour CO standard specific to elevations greater than 5,000
16 feet above mean seal level and a 1-hour standard for hydrogen sulfide (H₂S).The national and state ambient
17 air quality standards are presented in Appendix B.

18 In addition to the ambient air quality standards for criteria pollutants, national standards exist for
19 hazardous air pollutants (HAPs) which are regulated under Section 112(b) of the 1990 CAA Amendments.
20 The National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulate HAP emissions from
21 stationary sources (40 CFR Part 61). HAPs emitted from mobile sources are called Mobile Source Air
22 Toxics (MSATs); these are compounds emitted from highway vehicles and non-road equipment (including
23 aircraft engines) that are known or suspected to cause cancer or other serious health and environmental
24 effects. In 2001, USEPA issued its first MSAT Rule, which identified 21 compounds as being HAPs that
25 required regulation. In February 2007, USEPA issued a second MSAT Rule which generally supported the
26 findings in the first rule and provided additional recommendations of compounds having the greatest
27 impact on health. The rule also identified several engine emission certification standards that must be
28 implemented. The primary control methodologies for MSATs involve reducing their content in fuel and
29 altering engine operating characteristics to reduce the volume of pollutants generated during combustion.
30 MSATs would be the primary HAPs emitted by mobile sources during construction and
31 operations. The equipment used during construction would likely vary in age and have a range of
32 pollution reduction effectiveness. Construction equipment, however, would be operated intermittently
33 over a large area and would produce negligible ambient HAPs in a localized area. Therefore MSAT
34 emissions are not considered further in this analysis.

35 The CAA requires each state to develop a State Implementation Plan (SIP) which is its primary mechanism
36 for ensuring that the NAAQS are achieved and/or maintained within that state. According to plans
37 outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria
38 pollutants. The CAA provides that federal actions in nonattainment and maintenance areas do not hinder
39 future attainment with the NAAQS and conform with the applicable SIP. All federal actions must also
40 comply with state and local regulations.

1 Pollutants considered in the analysis for this EA include the criteria pollutants measured by state and
2 federal standards. These criteria pollutants are generated by the types of activities (e.g., construction and
3 aircraft operations) associated with the proposed action.

4 **Greenhouse Gases (GHGs)**

5 GHGs are gases that trap heat in the atmosphere. These emissions occur from natural processes as well as
6 human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature.
7 Scientific evidence indicates a trend of increasing global temperature over the past century due to an
8 increase in GHG emissions from human activities. The climate change associated with this global
9 warming is predicted to produce negative environmental, economic, and social consequences across the
10 globe.

11 Individual sources of GHG emissions are not large enough to have an appreciable effect on climate
12 change. Therefore, an appreciable impact on global climate change would only occur when proposed
13 GHG emissions combine with other GHG emissions from other man-made activities on a global scale.

14 **Affected Environment**

15 The area of potential affect for the air quality analysis includes the Las Vegas Intrastate Air Quality
16 Control Region, which is comprised of Clark County. Air quality in a given location is described by the
17 concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors
18 including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air
19 basin, and the prevailing meteorological conditions. Pollutant emissions typically refer to the amount of
20 pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant
21 emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the
22 pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria
23 pollutants. Primary pollutants, such as CO, SO₂, lead, and some particulates, are emitted directly into the
24 atmosphere from emission sources. Secondary pollutants, such as O₃, NO₂, and some particulates are
25 formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and
26 other atmospheric processes. Airborne emissions of lead are not addressed in this EA because there are no
27 significant lead emission sources associated with the proposed action.

28 Areas that are and have historically been in compliance with the NAAQS are designated as attainment
29 areas. Clark County, which includes Creech AFB is in attainment or unclassifiable for a. Part of the
30 County (the Las Vegas area, but excluding Creech AFB) is designated nonattainment for 8-hour ozone and
31 PM₁₀ and is a maintenance area for CO (40 CFR 81.329). Because the portion of the Air Quality Control
32 Region containing Creech AFB is attainment for all criteria pollutants, the Clean Air Act General
33 Conformity Rule (40 CFR Parts 51 and 93) does not apply and is not addressed in the impact analysis.

34 Ground-based air emissions at Creech AFB are primarily generated from maintenance shops, aerospace
35 ground equipment (AGE), boilers, and paint booths. Emission totals from the Creech AFB 2009 stationary
36 source emission inventory were used to reflect the baseline for this EA (Table 3-1). Clark County
37 emission data are from the latest USEPA National Emission Inventory, which is for the year 2010. Table
38 3-1 provides a summary of actual emissions at Creech AFB for 2009 and compares the emissions with the
39 overall Clark County emissions.

Source	CO	VOCs	NO_x	SO_x	PM₁₀	PM_{2.5}
Creech AFB	5.71	6.17	29.56	1.37	1.21	1.21 ¹
Clark County ²	264,408	169,725	47,822	6,725	132,741	17,977
Creech AFB Percent Contribution	0.002	0.004	0.062	0.020	0.000	0.007

Sources: Ground-based emissions, Air Emissions Inventory for 2009 at Creech AFB (Air Force 2010b); Aircraft emissions (Air Force 1999a)

¹The 2009 Creech AFB emission inventory did not include PM_{2.5}. The PM₁₀ data have been used for PM_{2.5}.

²Clark County 2010 Emissions (EPA 2012).

1 The total annual CO emissions at Creech AFB represent less than 0.01 percent of the 2010 CO emissions
 2 for Clark County. PM₁₀ emissions for Creech AFB account for 0 percent of the Clark County 2010 total.
 3 VOCs and NO_x (ozone precursors) at Creech AFB represent less than 0.01 percent and approximately 0.06
 4 percent, respectively of the total Clark County emissions. None of these pollutants represents a
 5 substantive contributor to nonattainment for the Las Vegas Valley area.

6 **3.8 HAZARDOUS MATERIALS AND WASTE**

7 Hazardous materials (HAZMAT), listed under the Comprehensive Environmental Response,
 8 Compensations, and Liability Act (CERCLA), and the Emergency Planning and Community Right-to-
 9 Know Act (EPCRA), are defined as any substance that, due to quantity, concentration, or physical,
 10 chemical, or infectious characteristics, may present substantial danger to public health, welfare, or the
 11 environment. Examples of HAZMAT include petroleum products, synthetic gas, and toxic chemicals.
 12 Hazardous wastes, listed under the Resource Conservation and Recovery Act (RCRA), are defined as any
 13 solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes, that pose a substantial
 14 present or potential hazard to human health or the environment. Additionally, hazardous wastes must
 15 either meet a hazardous characteristic of ignitability, corrosivity, or reactivity under 40 CFR Part 261, or
 16 be listed as a waste under 40 CFR Part 263.

17 Hazardous materials and wastes are federally regulated by the EPA, in accordance with the Federal Water
 18 Pollution Control Act; CWA; Toxic Substance Control Act; RCRA; CERCLA; and CAA. The federal
 19 government is required to comply with these acts and all applicable state regulations under Executive
 20 Order 12088 and DoD Directive 4150.7, Air Force Instruction 32-1053. Additionally, Executive Order
 21 12088, under the authority of the EPA, ensures that necessary actions are taken for the prevention,
 22 management, and abatement of environmental pollution from HAZMAT or hazardous waste due to federal
 23 activities. Other topics commonly addressed under hazardous materials and waste include underground
 24 storage tanks and potential contaminated sites designated under the Air Force’s ERP.

25 Asbestos-containing material (ACM) is any material containing more than 1 percent by weight of asbestos
 26 and can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure. Asbestos is made up
 27 of microscopic bundles of fibers that may be airborne when distributed or damaged. Due to its availability
 28 to withstand heat, fire, and chemicals, asbestos was historically used in construction materials, and is
 29 typically found in ceiling tiles, pipe and vessel insulation, floor tile, linoleum, mastic, and on structural
 30 beams and ceilings. Laws which address the health risks of exposure to asbestos and ACMs include Toxic
 31 Substance Control Act, Occupational Health and Safety Administration regulations (29 CFR), and CAA
 32 (Section 112 of the CAA, as amended, 42 USC § 7401 *et seq.*). EPA regulations concerning asbestos are

1 contained in 40 CFR 61. The regulations require that the EPA or authorized state agencies be notified of
2 asbestos removal projects.

3 Lead-based paint (LBP) was commonly used from the 1940s until the 1970s for exterior and interior
4 painted surfaces. In 1978, the U.S. Consumer Product Safety Commission lowered the legal maximum
5 lead content in most kinds of paint to trace amounts; therefore, buildings constructed after 1978 are
6 presumed not to contain LBP. The use and management of LBP is regulated under Section 1017 of the
7 Residential Lead-Based Paint Hazard Reduction Act of 1992. Section 1017 requires the implementation of
8 federally supported work involving risk assessments, inspection, interim controls, and abatement of lead-
9 based paint hazards. Regulations relating to LBP can be found at 29 CFR, 40 CFR, and 49 CFR.

10 **Affected Environment**

11 This discussion of HAZMAT and waste includes the sites and facilities at Creech AFB where hazardous
12 materials are used, stored, or disposed. The affected areas for potential impacts related to HAZMAT and
13 waste consists of Creech AFB, with an emphasis on aircraft maintenance and munitions handling areas.
14 Potential hazardous waste contamination areas that are under investigation as part of the Air Force ERP are
15 also discussed. Constraints to development could occur when proposed projects are sited on or near ERP
16 sites.

17 ***Hazardous Materials and Hazardous Waste Generation***

18 Activities at Creech AFB require the use and storage of a variety of hazardous materials associated with
19 general aviation and vehicle maintenance activities. These include, but are not limited to, batteries, anti-
20 freeze, paint, aerosol cans, and solvents (Air Force 2003a). The NTTR contracts management of a 180-
21 day storage area at the base and accepts all types of hazardous wastes from Creech AFB units. Creech
22 AFB organizations operate satellite accumulation points storing no more than 55 gallons of hazardous
23 wastes or 1 quart of acutely hazardous waste prior to transfer to the storage area. Both the satellite
24 accumulation points and the 180-day storage area are subject to regular inspections, which could include
25 operation and facility surveys, waste stream analyses, personnel review for training requirements, and
26 documentation requirements. The Defense Logistics Agency (DLA), Disposition Services, contracts for
27 the removal of accumulated hazardous waste and shipment for disposal.

28 ***Environmental Restoration Program Sites***

29 For approximately 60 years, Creech AFB, formerly Indian Springs Air Force Auxiliary Field, has been
30 used as a support area for activities at the NTTR. There are 13 ERP sites present on Creech AFB. Of these
31 ERP sites, 11 are identified as “No Further Action Required” and two have “Long-Term Monitoring”
32 Requirements.

1 **3.9 SAFETY**

2 Safety for this EA addresses ground and munitions safety. Ground safety considers issues associated with
3 operations and maintenance activities. Munitions safety assesses the management and use of ordnance or
4 munitions associated with air base operations.

5 Operations and maintenance activities are performed in accordance with applicable Air Force safety
6 regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational
7 Safety and Health (AFOSH) requirements. In addition, Unified Facilities Criteria (UFC) 3-260-01,
8 *Airfield and Heliport Planning and Design Criteria*, limits locations and heights of objects and facilities
9 around and in the immediate vicinity of an airfield to minimize hazards to airfield and flight operations.
10 Any condition not meeting these requirements is classified as an approved waiver, a permissible deviation,
11 an exemption, or a violation (UFC 3-260-01). Quantity-distance criteria specified in DoD 6055.9-Std,
12 *DoD Ammunition and Explosives Safety Standards* and Air Force Manual 91-201, *Explosive Safety*
13 *Standards*. The standards include implementation of safe distances between non-explosive related
14 facilities and personnel from weapons-loaded aircraft. Antiterrorism/Force protection measures are
15 required in facility siting and construction to reduce the vulnerability of personnel and property.

16 Munitions are handled and stored in accordance with Air Force Manual 91-201, *Explosive Safety*
17 *Standards*, and trained, qualified personnel using Air Force-approved technical data carry out all munitions
18 maintenance.

19 **Affected Environment**

20 This section addresses the day-to-day operations and maintenance activities conducted at Creech AFB.

21 ***Ground Safety***

22 Day-to-day operations and maintenance activities conducted at Creech AFB are performed in accordance
23 with applicable Air Force safety regulations, published Air Force Technical Orders, and standards
24 prescribed by AFOSH requirements. The fire department of Creech AFB is fully capable of responding to
25 existing fires and accidents. However, on the installation, fire protection systems are degraded for Life
26 Safety Code deficiencies at the combined briefing facility and a hangar with only water fire suppression
27 systems. The Air Force and Clark County are party to mutual support fire suppression agreements
28 (personal communication, Williams 2005).

29 ***Munitions Safety***

30 Ordnance is handled and stored in accordance with Air Force explosive safety directives in Air Force
31 Manual 91-201, and all munitions maintenance is carried out by trained, qualified personnel using Air
32 Force-approved technical data. Safety clearance zones protect areas where munitions are stored,
33 maintained, and handled. These zones are geographically defined as Quantity-Distance arcs, and are based
34 on the types and amounts of explosive material involved. On Creech AFB, no encroachment into these
35 safety areas currently occurs (Air Force 2003b).

1 **3.10 NOISE**

2 *Noise* is often defined as any sound that is undesirable because it interferes with communication, is intense
3 enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Response
4 to noise varies by the type and characteristics of the noise source, distance between source and receptor,
5 receptor sensitivity, and time of day. Noise may be intermittent or continuous, steady or impulsive, and
6 may be generated by stationary or mobile sources.

7 The time of day when a sound is emitted is an important factor in its annoyance potential. Sounds that
8 may be barely noticeable at midday may be disruptive at midnight. A number of measurement scales that
9 attempt to account for this time factor have been developed. One of the more commonly used and
10 accepted metrics of this type is the Day-Night Average A-Weighted Sound Level (DNL). DNL represents
11 a 24-hour average sound level in which a 10-dBA penalty is added to any sounds occurring between the
12 hours of 10:00 p.m. and 7:00 a.m. DNL has been widely accepted as the best metric to determine
13 community reaction to noise.

14 **Affected Environment**

15 Local agencies, including cities and counties, are responsible for defining and enforcing land use
16 compatibility in various noise environments. The Air Installation Compatible Use Zone (AICUZ) study is
17 the Air Force’s vehicle for presenting the noise environment at Creech AFB.

18 The AICUZ program promotes compatible land development in areas subject to aircraft noise and accident
19 potential. Clark County has incorporated these AICUZ recommendations as an integral part of their
20 comprehensive planning process and are regulated in the Clark County Unified Development Code, Title
21 30, Section 30.48, Part A, Airport Environs Overlay District, dated June 21, 2000, under the authority of
22 Chapter 278, Planning and Zoning, of the Nevada Revised Statutes. Noise compatibility and airport
23 environs implementing standards have also been adopted in the Clark County “Public Health and Safety
24 Programs: Airport Environs Plan,” an amendment of the Clark County Comprehensive Plan (Clark County
25 1998).

26 Modeling for the AICUZ study noise contours were developed using the following data: aircraft types,
27 runway utilization patterns, engine power settings, altitude profiles, flight track locations, airspeed, number
28 of operations per flight track, engine maintenance, and time of day. These studies were based on a
29 representative day which evaluated airfield activity during a 24-hour period when the airfield is in full
30 operation. The advantage of this approach is that it is unaffected by daily, monthly, and yearly fluctuations
31 in the tempo (rate) of use by individual aircraft at the base. The AICUZ study employed the same
32 fundamental computer-aided modeling approach using the NOISEMAP model.

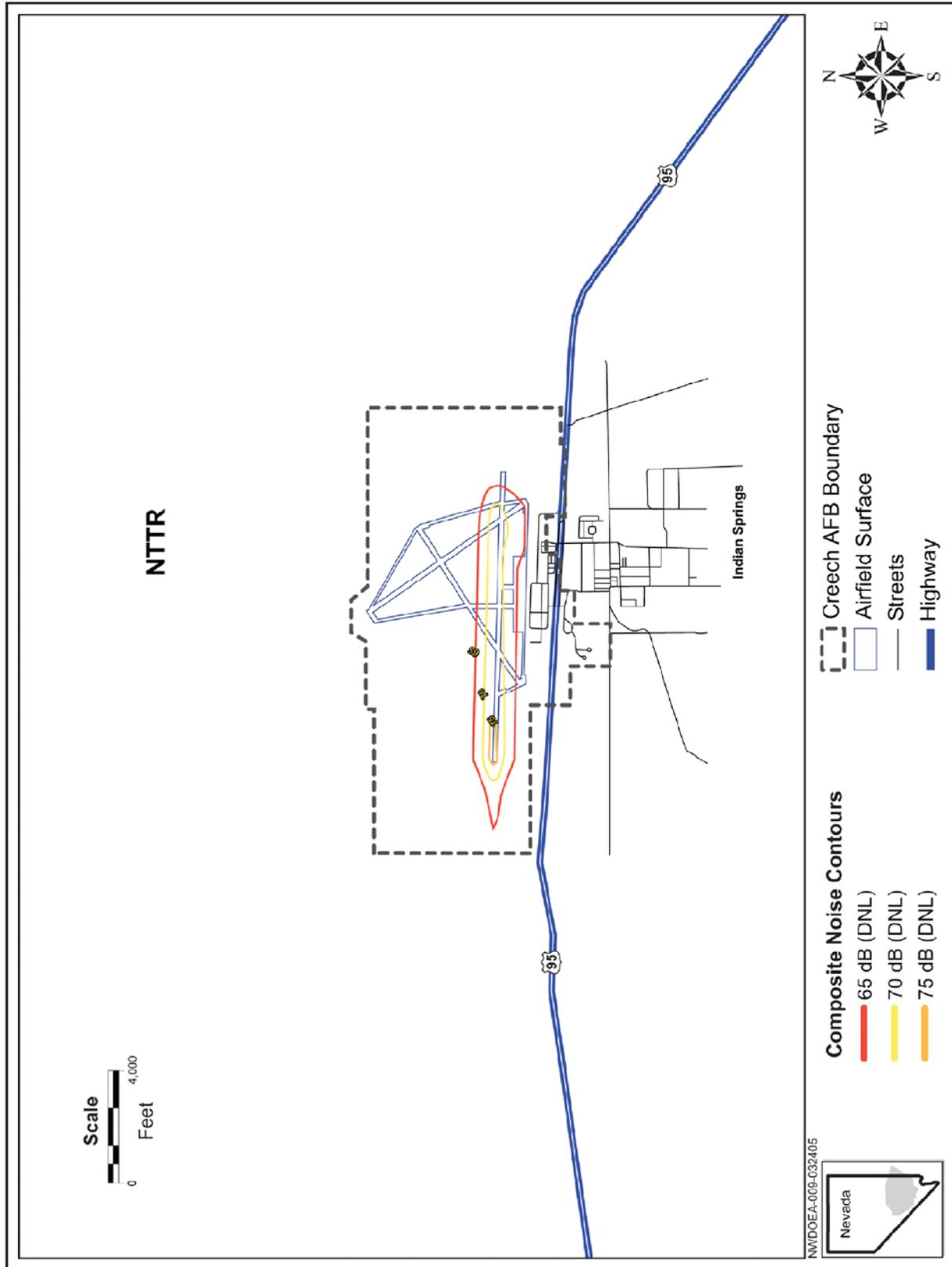
33 Analysis of existing aircraft noise exposure and compatible land uses around Creech AFB was
34 accomplished using the NOISEMAP suite of computer programs. The existing operating characteristics of
35 Creech AFB were used with the NOISEMAP model to simulate the propagation of noise in the vicinity,
36 and to develop noise contours. In addition to the operating data for the base, aircraft approaches,
37 departures, and closed pattern operations were assigned appropriate flight tracks, power applications,
38 altitudes, and speeds. Consistent with the requirements of the DNL metric, all operations between 10 p.m.
39 and 7 a.m. were assigned a 10 dB penalty to reflect heightened sensitivity during that time period. The
40 noise contours for Creech AFB, which cover the range of noise levels from 85 to 65 DNL in 5 dB

1 increments, are presented in Table 3-2 along with the total area within each contour. Figure 3-3 presents
2 the existing noise contours at Creech AFB.

	65-70^a	70-75	75-80	80-85	>85	Total
Acres	448	320	0	0	0	768

Source: Air Force 2003b

3 The Nellis-based Thunderbirds demonstration team uses Creech AFB for training and practice. Creech
4 AFB is also used as a field for realistic military training during Red Flag and other exercises. The current
5 noise environment at the airfield is dominated by F-15 and F-16 aircraft, which average 0.15 and 0.46
6 operations per day. Although these operating levels are quite low, they are equivalent in noise to over 600
7 UAS operations per day due to the dominant noise characteristics of these jet-powered aircraft.



Source: Air Force 2003b

Figure 3-3. Creech AFB Baseline Noise Contours

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

1 **4.0 ENVIRONMENTAL CONSEQUENCES**

2 **4.1 ANALYSIS APPROACH**

3 The approach used for this environmental impact analysis is to assess and compare potential impacts to
4 environmental resources with implementation of the proposed action or the no-action alternative at
5 Creech AFB. Alternatives to the proposed action are discussed in Chapter 2 and vary from the proposed
6 action in terms of placement of facilities within an area; therefore, the impacts associated with the
7 alternatives would be approximately the same as the proposed action and need not be discussed further in
8 this EA. The direct and indirect effects are identified, and where appropriate, the implementation of best
9 management practices to minimize potential environmental impacts along with any additional practical
10 mitigation to minimize impacts is identified. Short- and long-term impacts are identified, where possible.
11 In general, one long-term beneficial impact from implementation of the proposed action projects would
12 be energy conservation for Creech AFB. Potential impacts are quantified wherever possible and
13 discussed at a level of detail necessary to determine the significance of the impacts. Cumulative effects of
14 the proposed action and alternatives when considering past, present, and foreseeable future actions are
15 presented in Chapter 5.

16 **4.1.1 Environmental Effects**

17 This portion of the analysis considers the potential environmental impact to resources from
18 implementation of proposed construction and renovation projects. Just as cumulative effects in Chapter 5
19 (see Section 5.1) consider potential environmental impacts resulting from “the incremental impacts of an
20 action when added to other past, present, and reasonably foreseeable future actions...” this analysis
21 evaluates the potential effects to individual resources due to the projects occurring in close proximity to
22 each other.

23 Each section in this chapter includes two parts: proposed action impacts, and the no-action alternative.

24 **4.2 LAND USE**

25 This section focuses on the impacts to land use from implementation of the proposed action. The
26 threshold level of significance for land use is the potential for the proposed action to change the land use
27 in such a manner as to cause incompatibility with adjacent land management or uses.

28 **4.2.1 Proposed Action**

29 Proposed projects at Creech AFB would not conflict with existing land uses or management plans and
30 would occur within areas of compatible land use, not in safety zones, and away from environmentally
31 sensitive locations. Proposed actions for Creech AFB require expansion and development of the base for
32 existing and possible future missions. Most of the expansion planned is through infill and consolidation
33 in addition to redeveloping existing facilities. Projects would be sited in areas of compatible land use.
34 Neither existing, nor future land use, management, nor ownership would be changed affected by the
35 proposed projects; no adverse impacts would be anticipated.

1 **4.2.2 No-Action Alternative**

2 Under the no-action alternative, Creech AFB would only implement projects identified in previous EIAP
3 documents and analyze future projects individually on a case-by-case basis. Existing conditions to land
4 use resources would remain unchanged under the no-action alternative.

5 **4.3 SOCIOECONOMICS**

6 Socioeconomic resources are defined as the basic attributes associated with the human environment,
7 particularly population and economic activity. Population is described by the change in magnitude,
8 characteristics, and distribution of people. Economic activity is typically composed of employment
9 distribution, personal income, and business growth. Socioeconomics for this EA focus on the general
10 features of the Clark County economy that could be affected by the proposed action.

11 **4.3.1 Proposed Action**

12 Construction activity on Creech AFB under the proposed action is unknown with respect to how many of
13 the CIP projects would be implemented and depends upon budgeting and funding. Even under low to
14 medium funding levels, however, there could be added expenditures of millions of dollars in the next few
15 years. Construction activity would contribute to the Indian Springs and Clark County economy although
16 the potential effects would be temporary. However, direct and indirect economic impacts to the town of
17 Indian Springs are difficult to quantify because of the close proximity of Las Vegas to Creech AFB.
18 Impacts to socioeconomics would apply to either Scenario 1, light construction, or Scenario 2, heavy
19 construction.

20 **4.3.2 No-Action Alternative**

21 The CIP projects would not occur under the no-action alternative. Some construction, demolition, or
22 renovation would still occur using the old CIP; therefore, socioeconomic impacts resulting from the no-
23 action alternative would only be slightly increased from current conditions.

24 **4.4 CULTURAL RESOURCES**

25 Procedures for assessing adverse effects to cultural resources are discussed in 36 CFR Part 800 of the
26 National Historic Preservation Act. An action results in adverse effects to a cultural resource eligible to
27 the National Register when it alters the resource characteristics that qualify it for inclusion in the register.
28 Adverse effects are most often a result of physical destruction, damage, or alteration of a resource;
29 alteration of the character of the surrounding environment that contributes to the resource's eligibility;
30 introduction of visual, audible, or atmospheric intrusions out of character with the resource or its setting;
31 and neglect of the resource resulting in its deterioration or destruction; or transfer, lease, or sale of the
32 property. In the case of the proposed action, potential effects to cultural resources could result from
33 ground-disturbing activities associated with construction or demolition of significant structures.

34 **4.4.1 Proposed Action**

35 Under the proposed action, numerous buildings, parking lots, and concrete pads would be constructed,
36 and roads built and rerouted over the period of the next 5 to 10 years. Some buildings would also be
37 demolished during this time to make room for the improved facilities.

1 Proposals for federal actions are reviewed following 36 CFR 800 guidelines by the Nellis AFB Cultural
2 Resources Manager. Areas of Potential Effect that have not been inspected would be field surveyed by
3 qualified archaeologists. Native Americans would be invited to participate in the process. Actions in
4 areas not previously reviewed through consultation, regardless of the need for field inventory or the
5 ability to ensure avoidance of eligible properties would be subjected to consultation with Native
6 Americans, THPOs and SHPO to ensure no adverse effects to cultural resources occur due to the
7 proposed actions. Since each project would be assessed individually, impacts to cultural resources would
8 be independent of either Scenario 1, light construction, or Scenario 2, heavy construction.

9 **4.4.2 No-Action Alternative**

10 Under the no-action alternative, CIP projects would not occur; however, some construction or renovation
11 projects would still occur. Therefore, impacts to cultural resources would require individual analyses on a
12 project-by-project basis to ensure there would be no impact to National Register-eligible or listed
13 resources.

14 **4.5 BIOLOGICAL RESOURCES**

15 Impacts to biological resources would be considered significant if one or more of the following conditions
16 would result:

- 17 • Substantial adverse effect, either directly or through habitat modifications, on any species
18 identified as a candidate, sensitive, or special-status species in local or regional plans, policies or
19 regulations by the Nevada Department of Wildlife or the U.S. Fish and Wildlife Service;
- 20 • Substantial adverse effect on any riparian habitat or other sensitive natural community identified
21 in local or regional plans, policies or regulations by the Nevada Department of Wildlife or the
22 U.S. Fish and Wildlife Service;
- 23 • Substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean
24 Water Act;
- 25 • Interfere substantially with the movement of native resident or migratory fish or wildlife species,
26 wildlife corridors, or wildlife nursery sites;
- 27 • Conflict with local policies or ordinances protecting biological resources; or
- 28 • Conflict with the provisions or an approved local, regional, or State habitat conservation plan.

29 The definition of “substantial” is dependent on the species and habitats in question and the regional
30 context in which the impact would occur as determined through consultation with the U.S. Fish and
31 Wildlife Service, and the appropriate State and local natural resources management agencies. Impacts
32 may be considered more adverse if the action affects previously undisturbed habitat or if the impact
33 would occur over a large portion of available habitat in the region. These issues are discussed below with
34 regard to their potential significance. Prior to the initiation of any project construction, surveys would be
35 conducted to determine the presence of burrowing owls or special-status plant and wildlife species,
36 coordinated through the Nellis AFB Natural Resources Manager.

37 **4.5.1 Proposed Action**

38 Under the proposed action, no adverse impacts to vegetation or wildlife would occur. Proposed projects
39 would occur in previously developed or disturbed areas resulting in insignificant impacts to biological

1 resources. Because construction activities on Creech AFB would occur on previously developed areas
2 within the main cantonment areas of the base, there would be no impact to water sources or wetlands, or
3 jurisdictional waters of the U.S. located within the affected areas for the proposed infrastructure
4 improvements. Wildlife in the area may be potentially impacted from construction noise; however, the
5 period of construction would be short term and limited to the vicinity of the construction site. No adverse
6 impacts to rare plants species would be expected. In addition, potential adverse impacts to wildlife
7 special-status species from construction and infrastructure improvement activities would not be expected.
8 If during any ground-disturbing activity the presence of desert tortoise is observed, the Air Force would
9 comply with the requirements of the 2003 U.S. Fish and Wildlife Service Biological Opinion for the
10 protection of the species (USFWS 2003). Since projects involving sensitive areas would be looked at
11 individually and the vast majority of the projects would be located on previously developed portions of
12 the base, impacts to biological resources would apply to either Scenario 1, light construction, or Scenario
13 2, heavy construction.

14 **4.5.2 No-Action Alternative**

15 The proposed CIP would not be implemented, but some construction, demolition, or infrastructure
16 improvement projects would be implemented in accordance with the old CIP. Impacts to vegetation,
17 wildlife, or special-status species would require individual analyses on a project-by-project basis under
18 the no-action alternative at Nellis AFB.

19 **4.6 WATER AND SOIL RESOURCES**

20 In terms of water resources, no aspect of current operations at Creech AFB affects either the hydrologic
21 setting or water resources; this would not change under the proposed action. Therefore, this analysis
22 focuses on potential effects on water use, availability and quality. The principal factors influencing
23 stability of structures are soil and seismic properties. Soil, in general, refers to unconsolidated earthen
24 materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell
25 potential, and erodibility all determine the ability for the ground to support structures and facilities.
26 Relative to development, soils typically are described in terms of their type, slope, physical
27 characteristics, and relative compatibility or limitations with regard to particular construction activities
28 and types of land use.

29 A significant impact on water resources would (a) violate any water quality standards; (b) substantially
30 deplete groundwater supplies or interfere substantially with groundwater recharge; or (c) otherwise
31 substantially degrade water quality. A significant impact on soils would result in substantial soil erosion
32 or loss of topsoil.

33 **4.6.1 Proposed Action**

34 **Water Resources**

35 Construction-related excavation and grading activities required for the proposed action could potentially
36 impact surface water quality during stormwater run-off and erosion events. Standard erosion control
37 measures would be included in construction procedures. Design and construction would follow all
38 applicable and appropriate regulations and ordinances regarding stormwater retention and treatment.
39 Additional hard surfaces from structures and paving would have the potential to concentrate rain water

1 and to increase stormwater run-off and erosion events. Facilities constructed as part of the proposed
2 development would include stormwater runoff control features such as gutters, concrete swales, and
3 culvert drain systems. If the area of disturbance for the proposed action is one acre or more, it is subject
4 to National Permit Discharge Elimination System permit conditions. The entity executing construction
5 will obtain a Construction Stormwater Permit in accordance with Nevada Division of Environmental
6 Protection procedures. The entity executing construction may contact the Nellis Water-Wastewater
7 Program Manager (702-652-2834) for additional guidance if necessary. The lack of precipitation and
8 existing spill prevention, control, and countermeasure procedures would provide for protection of surface
9 water during construction and use of facilities, so the potential for base or off-base surface water quality
10 to be affected would be negligible.

11 Construction of new facilities with more efficient water conservation design and measures and demolition
12 of existing facilities would help offset any increased water use. Xeriscaping (drought-tolerant
13 landscaping) projects are planned throughout the base for conservation of water resources.

14 No areas of Creech AFB lie within a 100-year floodplain. The nearest FEMA floodplain is approximately
15 one mile west of Creech AFB. Since the existing potential for flooding on Creech AFB is minimal, the
16 proposed action would not increase flood hazards on the base.

17 **Soil Resources**

18 The soil erosion potential from water and wind from construction projects would be generally slight to
19 moderate due to the type of soil as well as slight slope found at Creech AFB. Construction activities
20 would involve removal of a minimal amount of vegetation and soils as well as grading. These activities
21 would expose underlying soil to wind and water erosion and could result in sedimentation in surface
22 impoundments. However, best management practices such as proper grading, stabilization, culverts to
23 channel storm water runoff, and watering construction sites to limit fugitive dust, would minimize adverse
24 effects.

25 Under the proposed action, construction of new facilities at Creech AFB would occur over several years.
26 New construction may be subject to conditions of existing discharge permits depending on the
27 disturbance area. The existing Storm Water Pollution Prevention Plan would be updated to reflect new
28 facilities upon construction completion. The storm water plan would specify measures to reduce or
29 eliminate any adverse erosion and sedimentation impacts (e.g., culvert and storm water runoff drainage).
30 Compliance with established plans and policies and incorporation of standard erosion control measures
31 into project design and construction requirements would reduce erosion potential to less than significant.

32 Generic construction projects that do not have definitive locations or designs could impact Environmental
33 Restoration Program sites. Some proposed CIP projects may also never occur. The impact of these
34 projects on restoration sites is only able to be assessed in a general manner, using broad assumptions;
35 specific analysis would be accomplished upon project approval. Usually, facilities can be located on
36 restoration sites with a waiver acquired from Headquarters Air Combat Command and the State. Design
37 of the facility would need to make provisions for monitoring and ongoing remediation efforts if
38 applicable. Planners would coordinate with the installation restoration manager for requirements and to
39 apply for a waiver. A waiver must be obtained prior to construction. Impacts to soils and ERP sites
40 would apply to either Scenario 1, light construction, or Scenario 2, heavy construction.

1 **4.6.2 No-Action Alternative**

2 Implementation of the no-action alternative would not implement the Capital Improvements Plan and
3 older substandard facilities would continue to be used. Nellis AFB would continue to manage the soils
4 and water resources found at Creech AFB in accordance with State and federal regulations.

5 **4.7 AIR QUALITY**

6 A significant impact would occur if the project would violate any federal or State ambient air quality
7 standards; increase the number or frequency of violations; contribute substantially to an existing or
8 projected air quality violation; conflict with or obstruct implementation of the applicable air quality plan;
9 result in a cumulatively considerable net increase of any criteria pollutant for which the project region is
10 non-attainment under an applicable ambient air quality standard; expose sensitive receptors to substantial
11 pollutant concentrations; or create objectionable odors affecting a substantial number of people.

12 **4.7.1 Proposed Action**

13 Two demolition/construction scenarios were developed to calculate pollutant emissions. The primary
14 emissions for the activities would be fugitive dust and exhaust emissions from transport vehicles and
15 heavy equipment. Scenario 1 modeled demolition of a two-story, 2,000 square-foot concrete building
16 located on 1 acre of land, and 3 acres of construction for a 30,000 square-foot concrete maintenance shop
17 with a 100,000 square-foot parking lot. Scenario 2 increased demolition to 3 acres and tripled the sizes of
18 the building and parking lot to be demolished. Construction under Scenario 2 tripled the sizes of the
19 building and parking lot and the overall project disturbance area increased to 10 acres. These scenarios
20 assumed that all best management practices, such as watering loose soil and avoiding unnecessary periods
21 of engine-idle, would be in place. Table 4.1 contains the results of the emissions calculations and
22 Appendix B provides the worksheets from which these figures were derived.

23 The majority of the proposed CIP projects typically would average less than a quarter acre in size. Road
24 and airfield projects would be larger; however, most would be less than a few acres. In addition, funding
25 and manpower constrain the amount of development that could occur in a single year. Therefore, impacts
26 to air quality in any year would be less than significant.

Table 4-1. Creech AFB Projected Scenarios Pollutant Emissions (tons/year)

	VOCs	CO	NO _x	SO ₂	PM ₁₀	PM _{2.5}
Scenario 1	0.30	2.14	4.49	0.07	20.39	2.24
Scenario 2	1.35	8.50	20.80	0.35	66.53	7.53

27 Annual GHG emissions associated with the Proposed Action were compared to U.S. 2010 GHG
28 emissions. The estimated annual GHG emissions attributed to the proposed construction activities under
29 Scenario 2 are less than three hundred thousandth of 1 percent of the total CO₂ emissions generated by the
30 United States in 2010. Emissions of GHGs from the Proposed Action alone would not cause appreciable
31 global warming that would lead to climate changes. However, these emissions would increase the
32 atmosphere's concentration of GHGs, and in combination with past and future emissions from all other
33 sources, contribute incrementally to the global warming that produces the adverse effects of climate
34 change. At present, no methodology exists that would enable estimating the specific impacts (if any) that
35 this increment of warming would produce locally or globally.

1 Note that regardless of the results of a conformity analysis for any project, Clark County air regulations
2 would still apply. The installation would therefore need to review each project to determine whether
3 fugitive dust and authority to construct permits would be required and would need to apply for and follow
4 such permits as necessary. Project specific emissions would be determined on a case-by-case basis.

5 **4.7.2 No-Action Alternative**

6 Under this alternative, planning for additional facilities would continue evaluating specific activities on
7 Creech AFB on a case-by-case basis. Impacts to air quality would require individual analyses on a
8 project-by-project basis under the no-action alternative at Creech AFB.

9 **4.8 HAZARDOUS MATERIALS AND WASTE**

10 The nature and magnitude of potential impacts associated with hazardous and toxic materials and wastes
11 depends on the toxicity, storage, use, transportation, and disposal of these substances. The threshold level
12 of significance for hazardous materials, toxic substances, and hazardous waste is surpassed if the storage,
13 use, handling, or disposal of these substances substantially increases the risk to human health due to direct
14 exposure, substantially increases the risk of environmental contamination, or violates applicable federal,
15 state, Department of Defense and local regulations.

16 **4.8.1 Proposed Action**

17 Construction and maintenance activities associated with the CIP actions would require the use of
18 hazardous substances, such as petroleum, oil, and lubricants. During construction, use of these substances
19 for fueling and equipment maintenance would have the potential for minor spills and releases. Use of
20 best management practices, such as secondary containment for construction vehicles and storage
21 containers, would substantially reduce the probability of these substances being released into the
22 environment.

23 Asbestos may be encountered as structures are remodeled or demolished to accommodate new support
24 facilities. It is current Air Force practice to remove exposed friable (crumbling) asbestos and manage
25 other asbestos-containing materials in place, depending on the potential threat to human health. Friable
26 asbestos, if encountered would be removed by licensed contractors and disposed of in an appropriate
27 disposal facility.

28 All materials purchased and used in construction projects on Creech AFB are tracked through the
29 Hazardous Material Control Program which manages the procurement, handling, storage, and issuing of
30 hazardous materials used on Creech AFB. The Air Force would continue to manage the 180-day
31 Hazardous Waste Storage Site for hazardous waste generators. Basic processes and waste handling and
32 disposal procedures for wastes generated at Creech AFB are identified in the Nellis AFB Plan 12,
33 Hazardous Waste Management (Air Force 2010c). These procedures would handle potential waste
34 increases due to implementing the capital improvement projects. It is possible, but unlikely, for one of
35 the proposed projects to introduce a new waste stream; however, it would be characterized to determine
36 the correct waste disposition. Nellis AFB would continue to be responsible for ensuring that any
37 hazardous waste generated at Creech AFB is disposed of in compliance with all federal, State, and local
38 regulations.

1 Standard design and construction techniques would be employed to ensure that no hazardous fumes
2 permeate facilities, such as use of clean soil and vapor barriers. Environmental program managers review
3 project designs and inspect construction activities to ensure that appropriate engineering controls are in
4 place. Impacts from hazardous materials and waste operations would apply to either Scenario 1, light
5 construction, or Scenario 2, heavy construction.

6 **4.8.2 No-Action Alternative**

7 Under this alternative, installation improvement projects would be implemented in accordance with the
8 old General Plan. Pollution prevention measures are the same for all construction and demolition
9 projects, regardless of the existence or status of a general plan.

10 **4.9 SAFETY**

11 In evaluating safety, the impacts would be considered adverse if human safety would be threatened.

12 **4.9.1 Proposed Action**

13 During construction and demolition, all actions would be performed in accordance with Air Force
14 Occupation Safety and Health directives and Occupational Safety and Health Administration regulations.
15 There are no specific aspects of construction or demolition projects that would create any unique or
16 extraordinary safety issues. The handling, processing, storage, and disposal of hazardous by-products
17 from these activities would be accomplished in accordance with all federal, State, and local requirements,
18 as well as applicable Nellis AFB plans. All current day-to-day operations have established safety
19 guidelines and procedures which would continue to be observed. No adverse impact to safety would be
20 anticipated under the proposed action.

21 **4.9.2 No-Action Alternative**

22 Under the no-action alternative, effects to human safety would be the same for construction and
23 demolition projects. However, planned changes to re-route traffic may not occur, resulting in maintaining
24 the status quo rather than a potential increase in public safety.

25 **4.10 NOISE**

26 In terms of aircraft operations, changes in noise levels of 3 decibels or greater would constitute a
27 significant change in the noise environment. However, to achieve such changes would require doubling
28 of the number of operations at Creech AFB. No part of the proposed action would produce changes in
29 operations. Relative to construction, significant effects from noise would need to exceed occupational
30 health and safety standards. All construction would operate with appropriate time and duration
31 constraints, thereby adhering to required standards.

32 **4.10.1 Proposed Action**

33 The Remotely Piloted Aircraft mission at Creech AFB is expected to expand greatly in the coming years.
34 To that end, numerous construction projects are planned to meet operational requirements at Creech AFB.
35 However, no specific information on the number or size of facilities, or a timeframe for any construction
36 has yet been determined. These are variables based on funding availability, mission needs, and other
37 unforeseen circumstances for which project priorities are established. Regardless of these unknown

1 factors, construction and demolition activities at Creech AFB would occur over a multi-year timeframe,
2 and minimal to negligible impacts from construction noise would result for the following reasons:

- 3 • Heavy equipment that would generate the highest noise levels would not be used consistently
4 enough to exceed the hourly equivalent noise level of 75 averaged decibels for more than one
5 hour and be within the boundaries of Creech AFB.
- 6 • Noise levels from infrastructural improvements would be contained within Creech AFB and
7 would be short-term in nature.
- 8 • Construction and demolition activities would be expected to occur between 7:30 a.m. and
9 4:30 p.m.

10 In general, construction and demolition noise at Creech AFB would be intermittent and short-term in
11 duration, and no long-term (recurring) noise impacts would result from implementation of the proposed
12 action. Noise contours would remain unchanged from existing conditions.

13 **4.10.2 No-Action Alternative**

14 Since construction and demolition would continue to occur at Creech AFB regardless of the existence of a
15 specific plan, impacts would be the same.

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CHAPTER 5

CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

1 **5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND**
2 **IRRETRIEVABLE COMMITMENT OF RESOURCES**

3 **5.1 CUMULATIVE EFFECTS**

4 CEQ regulations stipulate that the cumulative effects analysis within an environmental assessment should
5 consider the potential environmental impacts resulting from “the incremental impacts of the action when
6 added to other past, present, and reasonably foreseeable future actions regardless of what agency or
7 person undertakes such other actions” (40 CFR 1508.7). CEQ guidance in *Considering Cumulative*
8 *Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve
9 defining the scope of the other actions and their interrelationship with the proposed action. The scope
10 must consider other projects that coincide with the location and timetable of the proposed action and other
11 actions. Cumulative effects analysis must also evaluate the nature of interactions among these actions.

12 Cumulative effects are most likely to arise when a relationship or synergism exists between a proposed
13 action and other actions expected to occur concurrently or in a similar location. Actions overlapping with
14 or in close proximity to the proposed action would be expected to have more potential for a relationship
15 than those more geographically separated. Actions that coincide, even partially, in time would tend to
16 offer a higher potential for cumulative effects.

17 To identify cumulative effects the analysis needs to address three fundamental questions:

- 18 1. Does a relationship exist such that elements of the proposed action might interact with elements
19 of past, present, or reasonably foreseeable actions?
- 20 2. If one or more of the elements of the proposed action and another action could be expected to
21 interact, would the proposed action affect or be affected by impacts of the other action?
- 22 3. If such a relationship exists, then does an assessment reveal any potentially significant impacts
23 not identified when the proposed action is considered alone?

24 **5.1.1 Scope of Cumulative Effects Analysis**

25 The scope of the cumulative effects analysis involves both the geographic extent of the effects and the
26 time frame in which the effects could be expected to occur. For this EA, the affected area defines the
27 geographic extent of the cumulative effects analysis. This area includes Creech AFB and their vicinities,
28 including Indian Springs. Examination of other actions not occurring within or adjacent to this affected
29 area reveals that they lack the necessary interactions to result in cumulative effects.

30 Past actions within the two affected areas relate predominantly to activities on and use of Creech AFB.
31 Under the no-action alternative, the current environmental conditions of the affected area underwent
32 analysis in this EA. Since those conditions represent the result of long-term use occurring at Creech
33 AFB, analysis of the no-action alternative has considered those past and present effects engendered by the
34 operation and use of the base. Previous analyses addressing the affected area include *Nellis and Creech*
35 *Air Force Bases Capital Improvements Program Environmental Assessment* (Air Force 2008), *AAFES*
36 *Gas Station at Creech Air Force Base Environmental Assessment* (Air Force 2009b), and *Wing*

1 *Infrastructure Development Outlook (WINDO) Nellis Air Force Base Environmental Assessment* (Air
2 Force 2006).

3 Another factor influencing the scope of cumulative effects analysis involves identification and
4 consideration of other actions. Beyond determining that the geographic scope and time frame for the
5 actions interrelate with the proposed action, the analysis employs the measure of “reasonably foreseeable”
6 to include or exclude other actions. For the purposes of this analysis, public documents prepared by
7 federal, state, and local government agencies form the primary sources of information regarding
8 reasonably foreseeable actions. Documents used to define other actions included notices of intent for
9 EISs and EAs, management plans, land use plans, other NEPA studies, and economic and demographic
10 projections.

11 **5.1.2 Cumulative Effects of Reasonably Foreseeable Actions**

12 Actions potentially relating to the cumulative effects for implementing the CIP update for Creech AFB
13 could include those of the DoD, Department of Energy, Department of the Interior, and local counties.
14 The following outlines these actions and assesses their relationship to the proposed action and alternative.

15 **DoD Actions**

16 Creech AFB are active military installations that undergo continuous change in mission and in training
17 requirements. This process of change is consistent with the United States defense policy that the Air
18 Force must be ready to respond to changing threats to American interests throughout the world. Mission
19 and training requirements have resulted in facility construction and upgrades on Creech AFB.

20 Similar to this proposed action, the WINDO and the previous CIP projects at Nellis AFB, Creech AFB,
21 and Tonopah Test Range included repair, maintenance, installation, renovation, construction, and
22 demolition. The Air Force has determined the WINDO and CIP projects are necessary for Creech AFB to
23 achieve its test, training, and evaluation missions, both now and in the future. Creech AFB would ensure
24 that these goals are not only achieved, but also maximized.

25 Most of the WINDO and CIP projects previously assessed consist of minor improvements, repairs, and
26 maintenance projects that represent routine activities as classified under 32 CFR Part 989, Air Force
27 EIAP, and result in negligible effects to the environment. All of these proposed projects would occur
28 within functionally compatible areas on the base. Given their functional relationships with existing
29 facilities, these projects would be sited on previously used and disturbed ground.

30 Traditionally, only a fraction of these projects would be funded in ensuing years, other projects listed
31 would be based on mission needs and priorities, and some structures would be demolished as they
32 become non-functional. This is a typical growth pattern found in any town.

33 **Local Actions**

34 While not involving specific actions, planning and anticipated growth in local cities as well as Clark, Nye,
35 and Lincoln counties in Nevada represent factors worthy of consideration for cumulative effects when
36 combined with the proposed action. Creech AFB, the city of Las Vegas and the town of Indian Springs
37 lie within Clark County. Census data and other information indicate that Clark County exhibited the
38 greatest growth in population within the United States over the last 15 years. From 1990 through 2000,

1 the population increased approximately 86 percent. Estimates for 2005 place the county population at
2 1.69 million people representing a 128 percent increase since 1990. This amount exceeds that anticipated
3 in the Regional Transportation Plan for Clark County (Regional Transportation Commission 1994), which
4 anticipated that Clark County's population would increase to approximately 1.2 to 1.4 million persons by
5 2005. The growth and economic development in Clark County far overshadows the influence of Nellis
6 and Creech AFBs. As such, the minimal effects on local socioeconomic conditions from the CIP update
7 actions would not be perceptible given the context.

8 **5.1.3 Assessment of Cumulative Effects by Resource Area**

9 Analysis of the proposed action resulted in a finding of no direct or indirect effects on socioeconomics
10 and infrastructure; cultural resources; and hazardous materials and waste. Therefore, these resources
11 would not be discussed further in this section. This analysis of the proposed action indicated that
12 cumulative effects of other actions could interact with potential direct or indirect effect on noise, air
13 quality, water and soil resources, and biological resources. The following analyzes these resources
14 further.

15 **Conservation Measures**

16 Energy and water conservation, recycling, and habitat conservation considerations have been incorporated
17 into many, if not all of the proposed CIP projects. Some are specifically designed to improve the
18 environment, such as installing water efficient landscaping, while others would utilize environmentally
19 friendly systems such as higher efficiency HVAC systems and water conserving faucets. Similarly, many
20 facilities in the community are also moving towards this trend of "green" construction. Cumulatively, the
21 impacts to the rapid growth of the Las Vegas Valley and Nellis and Creech AFBs are somewhat abated
22 through better planning and engineering to reduce the use of consumptive resources. Naturally, the
23 impacts would be least if no growth occurred, but utilizing "green" construction techniques result in less
24 impact than construction that doesn't attempt to conserve resources.

25 **Noise**

26 No change in noise would result from the proposed actions. As such, it could not combine with any other
27 action to produce cumulative effects. Construction noise from proposed projects would be temporary and
28 short term in nature. No location would experience a permanent increase in noise. Since the CIP would
29 not involve any new aircraft, the noise impact associated with flying operations would be unchanged.

30 **Air Quality**

31 Cumulative impacts from multiple actions occurring simultaneously on the installation include emissions
32 from construction and airfield operations due to overlap of the CIP update actions.

33 **Water and Soil Resources**

34 Construction of new facilities under the CIP updates, combined with the other cumulative actions poses a
35 potential for impact on soils, including soil loss and erosion. However, several factors indicate that
36 erosion and soil loss would be negligible. Precipitation in the Creech AFB area is low, most construction
37 would occur on previously developed land, and the Air Force and Clark County require employment of
38 standard construction practices. Overall, the proposed action combined with the other planned

1 construction would not result in potential incremental impacts from ongoing activities and no cumulative
2 adverse impacts to soils.

3 This action would generally use water for construction purposes and long-term water use would typically
4 be for office space restrooms. Additionally, a number of the projects replace heavily irrigated lawns with
5 xeriscape and other projects designed to reduce water use. Personnel using the planned CIP projects
6 would be personnel already located on base; the proposed actions would not include additional personnel
7 at Creech AFB. Construction activities would be temporary and water use limited to less than one percent
8 of the base's daily allotment. Creech AFB has a requirement for 88,000 gpd and cumulative impacts
9 from proposed projects should not affect water supply at Creech AFB to any significant level as no
10 additions of personnel are planned because of these proposed CIP projects.

11 **Biological Resources**

12 Combined impacts to vegetation would be insignificant due to the already disturbed nature found at all
13 locations. Wildlife impacts would be minimal given the already disturbed nature of each proposed
14 infrastructure improvement location. Areas affected by construction of CIP projects at Creech AFB
15 would be in areas not likely to contain these rare plant species. Combined impacts to the desert tortoise
16 known to exist in the vicinity surrounding Creech AFB would be limited to potential loss of desert
17 tortoise habitat and individuals. However, there are no current plans to develop desert tortoise habitat in
18 the vicinity of Creech AFB. Due to the low concentrations of the desert tortoise found in these locations
19 and adherence to the measures required by USFWS Biological Opinions (USFWS 2007, 2003), these
20 impacts would be insignificant.

21 **5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

22 NEPA requires that environmental analysis include identification of "...any irreversible and irretrievable
23 commitments of resources which would be involved in the proposed action should it be implemented."
24 Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and
25 the effects this use could have on future generations. Irreversible effects primarily result from the use or
26 destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable
27 time frame. Irretrievable resource commitments involve the loss in value of an affected resource that
28 cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the
29 disturbance of a cultural resource).

30 For the CIP proposed actions, most resource commitments are neither irreversible nor irretrievable. Most
31 impacts are short-term and temporary, or longer lasting but negligible. Those limited resources that may
32 involve a possible irreversible or irretrievable commitment under the proposed action are discussed
33 below.

34 Facilities construction and maintenance for support activities would require consumption of limited
35 quantities of aggregate, steel, concrete, petroleum, oil, and lubricants. Construction would occur on
36 previously disturbed areas or in areas lacking significant habitat or concentrations of wildlife, so no
37 irreversible loss of habitat and wildlife would result. No eligible or National Register properties are in the
38 Area of Potential effect. Similarly, construction on both bases would avoid significant cultural resources.
39 Any discoveries of cultural resources during construction or infrastructure upgrades would evoke an
40 investigation and evaluation according to procedures in 36 CFR Part 60 and the Nellis AFB Integrated

1 Cultural Resources Management Plan to ensure preservation of the resources. While construction of new
2 facilities on the bases would incur some soil disturbance and loss, measures to localize and minimize soil
3 loss would be implemented. The Air Force would continue to comply with all requirements of the
4 USFWS Biological Opinions and subsequent modifications to minimize desert tortoise mortality,
5 harassment, or habitat destruction on Creech AFB (USFWS 2007, 2003).

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CHAPTER 6

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CHAPTER 7

**PERSONS AND
AGENCIES CONTACTED**

1 **7.0 PERSONS AND AGENCIES CONTACTED**

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CHAPTER 8

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1 **8.0 LIST OF PREPARERS AND CONTRIBUTORS**

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APPENDIX A

**CREECH AFB CAPITAL
IMPROVEMENTS PROGRAM**

1 **APPENDIX A**

2 **CREECH AFB CAPITAL IMPROVEMENTS PROGRAM**

3 The Creech AFB CIP is a component of the planning process that provides the installation and unit
 4 commanders with up-to-date development possibilities for the base. The CIP is used in conjunction with
 5 the Base Comprehensive Asset Management Plan (BCAMP), as well as changes to the Installation
 6 Priority List (IPL) and to assist planners in compliance with the overall vision of the respective missions
 7 of Creech AFB. Asset management principles of determining current condition of facilities and
 8 infrastructure, assignment of mission importance to the asset, and other factors such as, cost of
 9 restoration, sustainment, and or modernization or replacement of facilities combine to set priority levels
 10 for each project. Along with recommendations from installation and unit leadership, the IPL integrates the
 11 priorities of each unit and determines the overall priorities for the base. The list is forwarded to
 12 Headquarters Air Combat Command for approval and funding.

13 The projects described in the CIP list all of the proposed projects which have been identified as a bona
 14 fide need by the individual proponents of each action. These projects are reviewed by the Civil
 15 Engineering Facility Review Board and approved by the 99th Air Base Wing Commander based upon
 16 criteria including mission requirements, quality of life, degradation of existing facilities, and other factors.
 17 While the list includes hundreds of projects, funding for all of the projects to be completed in the next 5
 18 years is not feasible because of the limited amount of funds available. These funding limitations are due
 19 to the war in Southwest Asia; competing funding requests from every other military installation; new
 20 missions such as the proposed F-35 Joint Strike Fighter (JSF) beddown; and general budget reductions for
 21 civil engineering projects. As a result, only a small percentage of the projects can be funded within one
 22 fiscal year. Projects not funded are carried over to the following fiscal year; in fact, many projects are
 23 still on the list that date back to the early 2000's or before. A full list of acronyms is found after the tables.

24 New construction, additions, remodels, demolition, maintenance, and repair comprise types of projects on
 25 the BCAMP list and are further broken down by type, such as facilities, utilities, roads, airfield,
 26 administrative, recreation, and others. Table A-1 identifies the improvement types of work, definitions
 27 and examples for improvements by the type of activity.

Table A-1. Capital Improvements Identification by Activity Type		
Activity	Definition	Examples
Construction	New construction or addition, expansion, and renovation to existing facilities. All new construction must meet energy savings requirements.	Includes construction of buildings, roads, mission operation facilities, pads, access roads and parking lots and landscaping.
Repair/Replace	Repair and/or replace existing equipment and infrastructure.	Repair equipment, parking lots, manhole covers, fences, sprinkler system, as well as fuel tanks; install exterior lighting, also includes replacing existing landscaping with xeriscaping.
Installation	Installation of equipment, signs, utilities etc. to enhance the functionality of existing infrastructure.	Install equipment to maintain operational mission such as emergency power, check valves, heating and air conditioning units, force protection, under-wing foam system, and fire hydrants.

Activity	Definition	Examples
Maintenance	Routine maintenance.	Routine maintenance to landscaping, road/parking lot pavement, ramps, water tanks, and hangars.
Demolish	Demolition of existing infrastructure.	Demolish roads, aged dormitories, buildings, pads, etc., potentially not related to new construction.
Environmental	Monitoring and/or remediation of environmental spill sites, or other contracted documents such as Remedial Action Plans, Spill Response Plans, and Permit Fees.	Long-term monitoring or planned remediation of identified sites, plans and permits which do not have physical impacts.

- 1 Table A-2 identifies the infrastructure types existing on Creech AFB and the variety of activities that are
- 2 accomplished on each infrastructure type. For example, airfield improvements could involve
- 3 construction, repair, maintenance, demolition, and perhaps, environmental remediation activities.

Facility Type	Definition	Examples
Facilities	Building construction or additions. This could include new, modular, addition/remodel, or storage facilities.	Includes all of the difference classes of buildings; industrial, administrative, community service, etc. An example of a holding pad would be a munitions storage pad.
Airfield	Maintenance, installation, and repair of airfield pavements and airfield related equipment.	Revetment, paint taxi lines, install runway shoulders, extend/repair flight line, maintain airfield pavement, and aircraft arresting systems.
Utilities	Installation and repair.	Repair and install communication, electrical, sewer, natural gas, and water lines, and water conservation projects.
Roads	Installation, repair or maintenance of roads, sidewalks and parking lots.	roads, parking lots, etc. this also includes signal lights, roundabouts, and deceleration lanes.
Security	Installation, construction, repair or maintenance of Antiterrorism/Force Protection items designed to improve the security of the installation.	Fencing, security barricades, lighting, security cameras, and vehicle inspection areas. Vegetation clearing and perimeter roads could fall in this category.
Fences/walls	Perimeter structures primary for force protection and/or aesthetics.	Fences and block walls, includes dumpster enclosures, fence line lighting and security equipment.
Energy Conservation Improvement Program (ECIP) and <i>Greening of the Government</i> Projects	Installing and/or retrofitting systems and equipment which directly or indirectly result in energy savings.	Photovoltaic Arrays, window film, HVAC controls, day-lighting projects.
Recreation and quality of life projects	Installing or repairing recreational areas, unit gathering places, or items to improve worker comfort and well being.	Volleyball courts, horseshoe pits, pavilions and barbeque areas.

- 4 Projects Further definitions of various types of CIP activities are; construction of current mission and
- 5 future mission (primarily F-35 aircraft basing) facilities, restoration, modernization, and sustainment
- 6 projects with definitions provided below.

1 **MILCON (Military Construction)** includes construction activity of sufficiently large scope to require
 2 Congressional approval for funding and has the most potential for environmental impacts. All new
 3 facilities would be designed to comply with the Creech AFB Design Compatibility Guidelines,
 4 August 2006 and major building projects must also comply with the Air Force Policy Memorandum
 5 requiring Leadership in Energy and Environmental Design (LEED) Green Building Rating System as
 6 the Air Force preferred self-assessment metric. The standards require energy saving building
 7 techniques, supplies and equipment to reduce environmental impacts and provide for energy savings
 8 from the construction and operation of these new facilities.

9 **Restoration** includes repair and replacement work to restore facilities damaged by inadequate
 10 sustainment, excessive age, natural disaster, fire, accident, or other causes to such a condition
 11 that it may be used for its designated purpose.

12 **Modernization** includes alterations of facilities to implement new or higher standards, including
 13 regulatory changes to accommodate new functions (including new mission beddowns), or to replace
 14 building components that typically last more than 50 years.

15 **Sustainment** includes maintenance and repair activities necessary to keep an inventory of facilities in
 16 good working order. Sustainment includes deferred sustainment such as anticipated major repairs or
 17 replacement of components that occur periodically over the expected service life of the facilities.

18 Table A-3 represents MILCON projects to support the RPA missions currently based and conducted from
 19 Creech AFB. Tables A-4 and A-5 provide a list of the various Operations and Maintenance (O&M)
 20 projects proposed for Creech AFB that are the more likely projects to be funded and executed over the
 21 next few years and are Restoration and Modernization projects, and Sustainment projects respectively.
 22 Table A-6 rounds out the rest of the O&M projects lists from BCAMP.

23 The following tables list all of the CIP projects currently on the BCAMP for Creech AFBs. The project
 24 number is broken down by base, year and project identifier number. LKTC denotes Nellis, the first two
 25 numbers are the program year, and the last four are the identifier number. For example, project number
 26 LKTC 10-3104, UAS Visitors Quarters, LKTC is on Creech AFB and programmed for FY 2010 with the
 27 unique identifier 3104.

Project Number	Project Title	Infrastructure Type
LKTC 10-3104	UAS Visitors Quarters	Facility
LKTC 10-3105	UAS Joint Center Of Excellence Facility	Facility
LKTC 11-3103	ADD/ALTER UAS Munitions Administration Facility	Facility
LKTC 11-3104	UAS Conventional Munitions Maintenance Facility	Facility
LKTC 11-3105	UAS Phase Maintenance Hangar	Facility
LKTC 11-3110	RPA Mission Complex Intrusion Detection Fence	Security
LKTC 11-3111	RPA Mission Complex Vehicle Denial Barrier	Security
LKTC 13-3101	RPA Mission Complex Physical Protection System	Security

Table A-4. Representative Restoration/Modernization Construction/Repair Projects		
Project Number	Project Title	Infrastructure Type
LKTC 10-1034	Repair AAS BAK 12 to BAK 14 Runway 08/26 West End	Airfield
LKTC 12-1038	Replace Base Ops/Weather Facility w/New Construction	Facility
LKTC 10-1022	Construct 432d Wing Standardization and Evaluation Facility	Facility
LKTC 12-1045	Construct Flightline Entry Gates	Security
LKTC 12-1050	Construct Flightline Perimeter Fence	Security
LKTC 12-1052	Construct Box Canyon Gate Automated Entry	Security
LKTC 12-1049	Construct Range Road Automated Entry	Security
LKTC 08-6802	Repair Aviation Gasoline (LL100) Operational Fueling System	Utility
LKTC 06-1009	Construct Apron Lighting	Utility
LKTC 10-1024	Construct Common Area Addition, Bldg 1005	Facility
LKTC 10-1025	Construct Volleyball & Basketball Courts, And Horseshoe Pit	Recreation
C-08015	Design and Repair Fuel System for AGE Yard, Bldg 1011	Utility
LKTC 12-1051	Renovate Facility for RPA Training, Bldg 707	Facility

Table A-5. Representative Sustainment Construction/Repair Projects		
Project Number	Project Title	Infrastructure Type
LKTC 12-1046	Repair North Side Propane & Chilled Water Lines	Utility
C-1107	Repair LOLA Road Washout	Road
C-10157	Repair Roof, Insulation for NOC, Ventilation Repair	Facility
C-10120	Replace Road 90 Deg Turn at Munitions Suspect Holding Area	Road
C-11001	Cost Analysis Expansion of Bldg 718 for Additional GCS's	Facility
C-10179	Hangar 1003 Floor Refinishing	Facility

Table A-6. Representative O&M Projects		
Project Number	Project Title	Infrastructure Type
LKTC036904	Repair Ground Product Piping, Bulk Storage	Utility
C-09132	Underground Storage Tank Removal Facility 24	Facility
C-09133	Underground Storage Tank Removal Facility 225	Facility
LKTC131005	Repair Electrical Service, Bldg 71	Facility
LKTC131006	Construct 2nd Floor Observation Deck, Bldg 1000	Road/Parking
LKTC131007	Install Emergency Mass Notification PA System, Bldg 1000 & 1004	Facility
LKTC131008	Construct Final Denial Barrier, Former Creech Main Gate	Road/Parking
LKTC131009	Repair CE Compound Entry/Exit Gates	Facility
LKTC131010	Construct East Gate Visitor Center	Facility
LKTC131011	Construct Various Parking Lots, 1000 Series Bldgs	Road/Parking
LKTC131014	Repair Fire Alarm/Detection System, Bldg 14	Facility
LKTC131015	Renovate Interior, 11 RS Bldg 707	Facility
LKTC131016	Repair Chilled Water & Propane Gas Lines, Bldgs 1000/1003	Facility
LKTC131017	Renovate Interior Bldg 271 For 99 ABG Standup	Security
LKTC131018	Repair Fire Alarm/Detection System, Bldg 12	Facility
LKTC131019	Repair Electrical Systems, Fuel Storage Yard & Service Station	Utility
LKTC131020	Repair Airfield Headwall (Airfield Violation)	Facility
LKTC131021	Construct 78 ATKS Administrative Facility	Facility
LKTC131022	Construct 91 ATKS Administrative Facility	Facility
LKTC131023	Demolish Bldg 400 & 404	Facility

Table A-6. Representative O&M Projects		
Project Number	Project Title	Infrastructure Type
LKTC131025	Repair HVAC & Chiller Units, Bldg 1000	Utility
LKTC131026	Construct North Gate Electronic Vehicle Gate	Facility
LKTC131028	Construct RPA Parking Lot	Facility
LKTC131029	Construct GCS Pads, 42 ATKS	Demolition
LKTC131032	Demolish Airfield Support Facilities 80, 81, 82, 86 & 95	Demolition
LKTC 13-1033	Construct Addition Vehicle Maintenance Facility	Demolition
LKTC 13-1035	Construct Security Fence/Lights	Airfield
LKTC 13-1036	Construct Communications Mission Command Post	Airfield
LKTC 13-1037	Construct 42 ATKS Combat Support Facility	Utility
LKTC 13-1038	Construct 42 ATKS Fixed GCS Operations Facility	Security
LKTC 13-1039	Construct Temporary Large Area Maintenance Shelter (LAMS) Facilities	Facility
LKTC141004	Construct Secondary Power For 30 RS Relocation, Bldg 1009	Utility
LKTC141005	Install Backup Generator & Upgrade to SCIF Standards, Bldg 119	Facility
LKTC141006	Install Anti-Vehicle Boulders, 1000 Series Bldgs	Utility
LKTC141007	Repair Asphalt Shoulders at Taxiway Foxtrot Fighter LOLA	Airfield
LKTC141008	Install Backup Generator, Supply Warehouse Bldg 52	Airfield
LKTC141009	Install Backup Generator, Supply Warehouse Bldg 1013	Facility
LKTC141010	Install Backup Generator, Supply Warehouse Bldg 1012	Facility
LKTC141011	Repair Heat Pumps & HVAC Controls, Bldg 91	Airfield
LKTC141013	Construct Non-Destructive Testing Facility	Recreation
LKTC141014	Install Backup Generators, Creech Fuels Yard (FAC 661)	Security
LKTC141015	Install Permanent Eyewash/Shower Station Bldg 256	Facility
LKTC141016	Install Lightning Protection, ESPN Trailer Pad 10132	Utility
LKTC141017	Install Additional Power Outlets, Rm 109 Bldg 119	Facility
LKTC141018	Repair Interior Walls, 53 TMG Bldg 14	Utility
LKTC141019	Repair Communications Equipment Support Structure, Bldg 12	Utility
LKTC141020	Install Fence Keypad Entry System, Bldg 1038	Energy
LKTC141021	Install Security Aspects, Bldg 1012	Utility
LKTC141022	Replace Duct Detectors, Bldg 143	Airfield
LKTC141023	Install Fire Suppress & Alarm Systems, Vehicle Maintenance Bldg 225	Facility
LKTC141024	Repair Bldg 273 To Meet AFOSI Standards	Facility
LKTC141026	Install Fire Suppress & Alarm Sys Bldgs 6, 7 & 8	Airfield
LKTC141027	Reinforce Fenceline at Casino	Airfield
LKTC141028	Install A/C Bldg 1109 Communications Closet	Road/Parking
LKTC141029	Repair Fire Alarm System, Bldg 2	Airfield
LKTC141030	Construct Drainage Culverts Along Road	Utility
LKTC141031	Replace Heat Pump, Bldg 234	Utility
LKTC141033	Replace HVAC Filters/Grills, 99 GCTS Billeting Bldg 24	Utility
LKTC141034	Construct Parking Lot Lighting (Lots 1, 2 & 3))	Utility
LKTC141036	Design/Repair Fuel System For AGE Yard, Bldg 1011	Utility
LKTC141037	Repair LOLA Road Washout	Road/Parking
LKTC141038	Repair Roof, Insulation For NOC & Ventilation System, Bldg 1004	Facility
LKTC141039	Replace Road 90 Degree Turn at Munitions Suspect Holding Area	Road/Parking
LKTC141040	Maintain Floor, Hangar 1003	Facility
LKTC 14-1042	Repair Lift Station	Utility
LKTC 141047	Construct 926 RPA Operations Group HQ Facility	Facility
LKTC 15-1004	Repair Fuel Cell Hangar 1009	Facility

1 Previously mentioned CIP projects for Restoration, Modernization, and Sustainment only make up a
 2 fraction of all of the CIP projects in BCAMP. Although those projects have a higher priority, there are
 3 numerous miscellaneous construction, repair, installation and maintenance projects that also fall under
 4 the funding category for Operations and Maintenance. Table A-7 lists all of the O&M CIP projects in the
 5 BCAMP list regardless of the category.

Table A-7. O&M Construction Projects		
Project Number	Project Title	Infrastructure Type
LKTC031011	Repair Fuel Tanks 1, 2, & 3	Facility
LKTC031028	Construct Munitions Storage Structure	Facility
LKTC031031	Construct Aircraft Restraint System	Airfield
LKTC041032	Construct Range Towers Silver Flag Alpha	Facility
LKTC051018	Construct Loading Ramps MSA	Facility
LKTC051020	Construct Munitions Holding Pad MSA	Facility
LKTC051021	Construct Bomb Storage Facility	Facility
LKTC051022	Construct Munitions Storage Facility MSA	Facility
LKTC061009	Construct Additional Apron Lighting	Airfield
LKTC061010	Install Airfield Signage Creech AFB	Airfield
LKTC061013	Install Edge Lights, Predator LOLA	Airfield
LKTC061014	Construct Predator Storage Creech AFB	Facility
LKTC061043	Construct Interim Facilities Predator Ops Center	Facility
LKTC071004	Construct MQ9 POS/MRSP Facility	Facility
LKTC071006	Construct 432 WG UAS HQ Facility	Facility
LKTC071010	Construct Security Enhancement GCS Pad	Security
LKTC071027	Construct Temporary Modular Facility, Air National Guard	Facility
LKTC081013	Install HVAC GSHP Multiple Facilities Creech AFB	Utility
LKTC081032	Annual Water Tanks Calibration, Test, And Repair	Utility
LKTC091004	Construct Gas Station	Facility
LKTC091007	Construct Highway Deceleration Lanes, W. Muns Gate	Road/Parking
LKTC101001	Construct Admin Facility, 53rd TMG	Facility
LKTC101002	Upgrade Runway Lights and Taxiway Signs	Airfield
LKTC101003	Install A/C System To Airfield Lighting And Control Vault	Utility
LKTC101004	Construct Mail Handling Facility	Facility
LKTC101005	Maintain Cathodic Protection Systems, Fac 24	Utility
LKTC101006	Maintain Cathodic Protection Systems, Fac 102	Utility
LKTC101007	Maintain Cathodic Protection Systems, Fac 105	Utility
LKTC101008	Maintain Cathodic Protection Systems, Fac 221	Utility
LKTC101009	Maintain Cathodic Protection Systems, Fac 225	Utility
LKTC101010	Maintain Cathodic Protection Systems, Fac 1001	Utility
LKTC101012	Local Facility Energy Audit	Utility
LKTC101014	Install Cardboard Bailer, Bldg 96	Facility
LKTC101022	Construct 432 Wing STAN/EVAL Facility	Facility
LKTC101025	Construct Volleyball & Basketball Courts, And Horseshoe Pit	Recreation
LKTC101031	Maintain Runway 08L/26R Paint, Fac 58118	Airfield
LKTC101032	Maintain Airfield Apron Marking Paint, Fac 631	Airfield
LKTC101033	Maintain Taxiway Marking Paint, Fac 649	Airfield
LKTC101034	Repair BAK-12 TO BAK-14 AAS (West Barrier)	Airfield
LKTC101035	Repair Creech AFB Perimeter Fence	Security
LKTC101036	Construct Parking Lot UAS JCOE, Bldgs 55 & 56	Road/Parking
LKTC101042	Utility Study, Creech AFB	Utility
LKTC111001	Sustainable Infrastructure Assessment	Utility
LKTC111002	Construct Aircraft Power Check Pad	Airfield

Table A-7. O&M Construction Projects		
Project Number	Project Title	Infrastructure Type
LKTC111003	Map Above and Below Ground Utilities	Utility
LKTC111004	Survey West Room For OSSA, Bldg 64	Facility
LKTC111007	Install Backflow Prevention Devices, Various Locations	Utility
LKTC111008	Install Fire Suppress & Alarm Systems, Control Tower Bldg 93	Facility
LKTC111012	Install Power Upgrades & Air Conditioning, Bldg 707	Utility
LKTC111014	Renovate Interior, Bldg 1005	Facility
LKTC111015	Alter Rm 106 To SCIF, Bldg 703	Facility
LKTC111018	Construct Concrete Pads W/Grounding Points, Runway 08/26	Airfield
LKTC111020	Repair Water Storage Tank SCADA System, Bldg 1011	Utility
LKTC111024	Install Taxiway Edge Lights, Bravo North	Airfield
LKTC111028	Construct GCTS Laundry Facility	Facility
LKTC111040	Repair Rm 138 To OSSA Standards, Bldg 707	Facility
LKTC111041	Install Taxiway Edgelights, Fighter LOLA	Airfield
LKTC111042A	Construct Addition to SSO & IFTU, Bldg 12	Facility
LKTC111042B	Repair SSO & IFTU, Bldg 12	Facility
LKTC111054	Construct Connection Shower/Shave Fac To Fitness Center	Facility
LKTC111057	Construct RPA Secure Area Lighting	Facility
LKTC111062	Construct 2 (25)K Gallon Diesel Storage Tank	Facility
LKTC121001	Install Two Electrical Circuits, Bldg 1000 Perimeter Rd	Utility
LKTC121002	Construct 99 CS/OL-A Storage Warehouse	Facility
LKTC121008	Renovate Interior, Bldg 231	Facility
LKTC121009	Replace Diesel Boiler, Bldg 707	Facility
LKTC121011	Maintain Landscaping, Hunter's Rd Roundabout	Facility
LKTC121013	Repair Rooms For GCS Installation, Bldg 1005	Facility
LKTC121025	Upgrade Electrical System, Fuel Yard & Service Station	Utility
LKTC121026	Repair Age JP-8 Fuel Dispenser Piping & Bollards	Utility
LKTC121027	Repair Fuels Compound Lighting System	Utility
LKTC121028	Repair Bulk Fuel Storage Area Pipe Supports & Expansion Loops	Utility
LKTC121029	Repair Pressure Relief System On JP-8 Hydrant System	Utility
LKTC121030	Install Fence Cabling System, East & North Fencelines	Security
LKTC121031	Construct Tank Truck Unloading Stand RTB Equipment	Facility
LKTC121032	Repair 432 OG Theater Room, Bldg 1000	Facility
LKTC121034	Construct Brick Storage Enclosure, Bldg 1005	Facility
LKTC121036	Construct Security Fence, Various 1000 Series Facilities	Security
LKTC121037	Construct Perimeter Fence Around 1000 Series Bldg Area	Security
LKTC121038A	Demolish Flightline Facilities, Bldgs 80, 81, 82 & 95	Facility
LKTC121038B	Construct Combined Base Ops & Weather Facility (Red Horse)	Facility
LKTC121041	Install Backup Generator, 432 WG HQ Bldg 1065	Utility
LKTC121042	Install Backup Generator For NOC, Bldg 1004	Utility
LKTC121045	Construct Flightline Entry Gates	Security
LKTC121046	Repair Chilled Water & Propane Gas Lines Bldgs 1000/1001/1003	Facility
LKTC121048	Repair Structural Damage, GCS Bldg 1005	Facility
LKTC121049	Construct Range Rd Automated Entry	Security
LKTC121050	Construct Flightline Perimeter Fence	Security
LKTC121051	Repair Facility for RPA Training, Bldg 707	Facility
LKTC121052	Construct Box Canyon Electronic Vehicle Gate	Security
LKTC121053	Install Grounding for Comm Equipment, Various Fac	Utility
LKTC121054	Upgrade Electr/Mech Systems for GCS Expansion, Bldg 718	Utility
LKTC121057	Construct Parking Lots at Northside Area	Road/Parking
LKTC121058	Construct Perimeter Fence, Creech Leased Land	Security

Table A-7. O&M Construction Projects		
Project Number	Project Title	Infrastructure Type
LKTC121060	Construct 42 ATKS Administrative Facility	Facility
LKTC121064	Repair SOC, 42 ATKS Bldg 1022	Facility
LKTC121066	Upgrade BAK-14 AAS at East Barrier	Airfield
LKTC121068	Construct 99 CS Storage Facility	Facility
LKTC121069	Construct 99 CS Administrative Facility	Facility
LKTC121073	Construct Outdoor Basketball Court	Recreation
LKTC131005	Repair Electrical Service, Bldg 71	Facility
LKTC131006	Construct 2nd Floor Observation Deck, Bldg 1000	Road/Parking
LKTC131007	Install Emergency Mass Notification PA System, Bldg 1000 & 1004	Facility
LKTC131008	Construct Final Denial Barrier, Former Creech Main Gate	Road/Parking
LKTC131009	Repair CE Compound Entry/Exit Gates	Facility
LKTC131010	Construct East Gate Visitor Center	Facility
LKTC131011	Construct Various Parking Lots, 1000 Series Bldgs	Road/Parking
LKTC131014	Repair Fire Alarm/Detection System, Bldg 14	Facility
LKTC131015	Renovate Interior, 11 RS Bldg 707	Facility
LKTC131016	Repair Chilled Water & Propane Gas Lines, Bldgs 1000/1003	Facility
LKTC131017	Renovate Interior Bldg 271 For 99 ABG Standup	Security
LKTC131018	Repair Fire Alarm/Detection System, Bldg 12	Facility
LKTC131019	Repair Electrical Systems, Fuel Storage Yard & Service Station	Utility
LKTC131020	Repair Airfield Headwall (Airfield Violation)	Facility
LKTC131021	Construct 78 ATKS Administrative Facility	Facility
LKTC131022	Construct 91 ATKS Administrative Facility	Facility
LKTC131023	Demolish Bldg 400 & 404	Facility
LKTC131025	Repair HVAC & Chiller Units, Bldg 1000	Utility
LKTC131026	Construct North Gate Electronic Vehicle Gate	Facility
LKTC131028	Construct RPA Parking Lot	Facility
LKTC131029	Construct GCS Pads, 42 ATKS	Demolition
LKTC131032	Demolish Airfield Support Facilities 80, 81, 82, 86 & 95	Demolition
LKTC 13-1033	Construct Addition Vehicle Maintenance Facility	Demolition
LKTC 13-1035	Construct Security Fence/Lights	Airfield
LKTC 13-1036	Construct Communications Mission Command Post	Airfield
LKTC 13-1037	Construct 42 ATKS Combat Support Facility	Utility
LKTC 13-1038	Construct 42 ATKS Fixed GCS Operations Facility	Security
LKTC141004	Construct Secondary Power For 30 RS Relocation, Bldg 1009	Utility
LKTC141005	Install Backup Generator & Upgrade to SCIF Standards, Bldg 119	Facility
LKTC141006	Install Anti-Vehicle Boulders, 1000 Series Bldgs	Utility
LKTC141007	Repair Asphalt Shoulders at Taxiway Foxtrot Fighter LOLA	Airfield
LKTC141008	Install Backup Generator, Supply Warehouse Bldg 52	Airfield
LKTC141009	Install Backup Generator, Supply Warehouse Bldg 1013	Facility
LKTC141010	Install Backup Generator, Supply Warehouse Bldg 1012	Facility
LKTC141011	Repair Heat Pumps & HVAC Controls, Bldg 91	Airfield
LKTC141013	Construct Non-Destructive Testing Facility	Recreation
LKTC141014	Install Backup Generators, Creech Fuels Yard (FAC 661)	Security
LKTC141015	Install Permanent Eyewash/Shower Station Bldg 256	Facility
LKTC141016	Install Lightning Protection, ESPN Trailer Pad 10132	Utility
LKTC141017	Install Additional Power Outlets, Rm 109 Bldg 119	Facility
LKTC141018	Repair Interior Walls, 53 TMG Bldg 14	Utility
LKTC141019	Repair Communications Equipment Support Structure, Bldg 12	Utility
LKTC141020	Install Fence Keypad Entry System, Bldg 1038	Energy
LKTC141021	Install Security Aspects, Bldg 1012	Utility

Table A-7. O&M Construction Projects		
Project Number	Project Title	Infrastructure Type
LKTC141022	Replace Duct Detectors, Bldg 143	Airfield
LKTC141023	Install Fire Suppress & Alarm Systems, Vehicle Maintenance Bldg 225	Facility
LKTC141024	Repair Bldg 273 To Meet AFOSI Standards	Facility
LKTC141026	Install Fire Suppress & Alarm Sys Bldgs 6, 7 & 8	Airfield
LKTC141027	Reinforce Fenceline at Casino	Airfield
LKTC141028	Install A/C Bldg 1109 Comm Closet	Road/Parking
LKTC141029	Repair Fire Alarm System, Bldg 2	Airfield
LKTC141030	Construct Drainage Culverts Along Road	Utility
LKTC141031	Replace Heat Pump, Bldg 234	Utility
LKTC141033	Replace HVAC Filters/Grills, 99 GCTS Billeting Bldg 24	Utility
LKTC141034	Construct Parking Lot Lighting (Lots 1, 2 & 3))	Utility
LKTC141036	Design/Repair Fuel System For AGE Yard, Bldg 1011	Utility
LKTC141037	Repair LOLA Road Washout	Road/Parking
LKTC141038	Repair Roof, Insulation For NOC & Ventilation System, Bldg 1004	Facility
LKTC141039	Replace Road 90 Degree Turn at Munitions Suspect Holding Area	Road/Parking
LKTC141040	Maintain Floor, Hangar 1003	Facility
LKTC 14-1042	Repair Lift Station	Utility
LKTC 15-1004	Repair Fuel Cell Hangar 1009	Facility

ACRONYMS USED

AAS	Aircraft Arresting System	RPA	Remotely Piloted Aircraft
ABG	Air Base Group	RS	Reconnaissance Squadron
A/C	Air Conditioning	RV	Recreational Vehicle
AFOSI	Air Force Office of Special Investigations	SCADA	System Control and Data Acquisition
AGE	Aerospace Ground Equipment	SCIF	Sensitive/Secure Compartmentalized Information Facility
AT/FP	Antiterrorism Force Protection	STAN/EVAL	Standardization/Evaluation
ATKS	Attack Squadron	TMG	Tactical Missile Group
BAK	Barrier Arresting Kit	TWXY	Taxiway
BCAMP	Base Comprehensive Asset Management Plan	UAS	Unmanned Aerial Systems
CE	Civil Engineering	USAFWC	United States Air Force Warfare Center
CIP	Capital Improvements Program	UST	Underground Storage Tank
CS	Communications Squadron	VAQ	Visiting Airmen's Quarters
CSAR	Combat Search and Rescue	VM	Vehicle Maintenance
FAC	Facility	WSA	Weapons Storage Area
FTD	Flight Training Device		
FTI	Flight Test Instrumentation		
GCS	Ground Control Station		
GCTS	Ground Combat Training Squadron		
GSHP	Ground Source Heat Pump		
HVAC	Heating, Ventilation, and Air Conditioning		
JCOE	Joint Center of Excellence		
LEED	Leadership in Energy and Environmental Design		
LOLA	Live Ordnance Loading Area		
MPF	Military Personnel Flight		
MRSP	Mobility Readiness Spare Package		
MSA	Munitions Storage Area		
MUNS	Munitions Squadron		
MX	Maintenance		
MXG	Maintenance Group		
NATCF	Nellis Air Traffic Control Facility		
NOC	Network Operations Center		
O/H	Overhead		
OSSA	Open Storage Secure Area		
PA	Public Address		
POL	Petroleum, Oil, and Lubricants		
POS	Pre_Operational Support		
PT	Physical Training		
RHS	RED HORSE Squadron		

APPENDIX B

AIR QUALITY ANALYSIS

1 **APPENDIX B**

2 **AIR QUALITY ANALYSIS**

3 **Air Quality Standards**

4 As described in Section 3.7, Air Quality in a given location is described by the concentration of
5 various pollutants in the atmosphere. The significance of the pollutant concentration is determined by
6 comparing it to the federal and state ambient air quality standards. These standards (Table B-1)
7 represent the maximum allowable atmospheric concentrations that may occur while ensuring
8 protection of public health and welfare, with a reasonable margin of safety. The Nevada Division of
9 Environmental Protection, Bureau of Air Pollution Control has adopted the NAAQS, with the
10 exceptions of an additional 8-hour CO standard specific to elevations greater than 5,000 feet above
11 mean seal level and a 1-hour standard for hydrogen sulfide (H₂S). The state ambient air quality
12 standards are summarized in Table B-1 along with the Federal standards.

13 Because Creech AFB has not determined the exact projects to be undertaken, the order in which they
14 would occur, or when they would occur, the exact emissions from any given project during any year is
15 impossible to calculate. Therefore, a more programmatic approach has been developed to identify the
16 amount of land disturbance that could occur at Creech AFB during one year for light and heavy
17 construction projects. To determine the amount of construction and demolition activities generating
18 emissions that would meet these scenarios, the following factors were considered: contributions from
19 engine exhaust emissions (i.e., construction equipment, material handling, and transportation), fugitive
20 dust emissions (e.g., from digging and grading activities) and emissions from vehicles needed for
21 transport of demolition debris offsite.

22 Emissions from construction worker personally owned vehicles (POVs) have also been included in the
23 total calculated emissions. The following worksheets were developed to estimate emissions from two
24 scenarios:

25 Scenario 1: demolition of 1 acre of land, including materials associated with the demolition of a 2,000
26 square foot, 2-story concrete building, debris removal, and site preparation; the construction portion of
27 this scenario involved site disturbance of 3 acres to include construction of a 30,000 square-foot concrete
28 maintenance shop with a 100,000 square-foot parking area; and

29 Scenario 2: combined demolition and construction acreage was increased to 13, and the sizes of the
30 buildings and parking lots to be demolished and constructed were tripled from those used in Scenario 1.

31 The emissions factors and assumptions are provided in the following worksheets. In conclusion, Nellis
32 AFB will use this worksheet to estimate the potential emissions from projects at the base during a given
33 year in determine air pollution emissions.

Table B-1. State and National Ambient Air Quality Standards				
	<i>Nevada Standards</i>		<i>National Standards</i>	
	AVERAGING TIME	CONCENTRATION	PRIMARY	SECONDARY
Ozone	1 Hour	0.12 ppm (235 µg/m ³)	None	None
Ozone	8 Hours	None	0.075 ppm	Same as Primary
Carbon Monoxide less than 5,000 ft above MSL	8 Hours	9.0 ppm (10,500 µg/m ³)	9.0 ppm	None
Carbon Monoxide at or greater than 5,000 ft above MSL	8 Hours	6.0 ppm (7,000 µg/m ³)	9.0 ppm	
Carbon Monoxide at any elevation	1 Hour	35 ppm (40,500 µg/m ³)	35 ppm	
Nitrogen Dioxide	1 Hour	None	100 ppb	None
Nitrogen Dioxide	Annual Mean	0.053 ppm (100 µg/m ³)	53 ppb	Same as Primary
Sulfur Dioxide	1 Hour	0.03 ppm (80 µg/m ³)	75 ppb	None
	3 Hour	0.14 ppm (365 µg/m ³)		0.5 ppm
Particulate Matter as PM ₁₀	Annual Arithmetic Mean	50 µg/m ³	None	None
	24 Hours	150 µg/m ³	150 µg/m ³	Same as Primary
¹ Particulate Matter as PM _{2.5}	Annual	None	12 µg/m ³	15 µg/m ³
	24 Hours	None	35 µg/m ³	Same as Primary
Lead (Pb)	Rolling 3 month average	1.5 µg/m ³	0.15 µg/m ³	Same as Primary
² Hydrogen Sulfide (H ₂ S)	1 Hour	0.08 ppm (112 µg/m ³)		

Notes:

(a) µg/m³ means micrograms per cubic meter.

(b) ppm means part per million by volume.

¹Published December 14, 2012. EPA anticipates making initial attainment/nonattainment designations by December 2014, with those designations likely becoming effective in early 2015.

² The ambient air quality standard for hydrogen sulfide does not include naturally occurring background concentrations.

Sources:

Nevada Division of Environmental Protection, 2010. Accessed at <http://ndep.nv.gov/baqp/monitoring/aaqstd.html>

USEPA, 2012. Accessed at <http://www.epa.gov/air/criteria.html>



Department of Air Quality & Environmental Management

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Alan Pinkerton, Deputy Director • Lewis Wallenmeyer, Acting Director

February 12, 2008

Bruce W. MacDonald, P.E.
Department of the Air Force
Headquarters Air Combat Command
Langley AFB VA, 23665

Re: F-35 Beddown at Nellis AFB

Dear Mr. MacDonald:

The Clark County Department of Air Quality and Environmental Management (DAQEM) is in receipt of your letter dated January 16, 2008 with regard to Headquarters Air Combat Command's request that our agency include nitrogen oxide (NO_x) emissions from the planned F-35 Beddown at Nellis AFB in the Ozone State Implementation Plan for Clark County.

Before Air Force staff met with DAQEM regarding this request, DAQEM had already completed the ozone modeling analysis for the nonattainment area in Clark County, which includes the majority of Nellis AFB. Emissions from the proposed F-35 Beddown were therefore not included in that analysis. After reviewing the proposed emissions detailed in the letter of request, DAQEM is confident that the emissions can be incorporated in the SIP.

The ozone modeling was extensive, and at this time DAQEM is not intending to remodel. DAQEM is, however, committed to incorporating discussion of the emissions from the Nellis expansion and explain how such emissions would have little impact on the nonattainment area. DAQEM believes this should be satisfactory to EPA. If EPA requests a formal modeling reanalysis, DAQEM would accommodate that request.

It is important to note, however, that EPA is scheduled to promulgate a new ozone standard in March 2008, and issue reclassifications of the current 8-hour ozone standard in 2009. DAQEM does not know at this time how those actions may impact the County's attainment demonstration. DAQEM staff is meeting with EPA Region 9 later this month to discuss these issues, but it is anticipated that only preliminary information will be obtained.

DAQEM is committed to working with the Air Force as is within the agency's means and within EPA direction. DAQEM will contact and coordinate with your staff if concerns arise.

Please contact me if you have any questions.

Sincerely,

Stephen Deyo
Assistant Planning Manager, DAQEM

cc: Sheryl K. Parker, Langley AFB
Shimi Mathew, Nellis AFB
Dennis Ransel, DAQEM

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On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC ² lb/mile	CO ² lb/mile	NOx ² lb/mile	SO ₂ ² lb/mile	PM10 ² lb/mile	PM2.5 ² lb/mile	CO ₂ ² lb/mile	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Diesel Pickup Truck	11	400	30	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	0.54	2.78	12.71	0.01	0.55	0.53	1,096
Delivery Truck	720	365	60	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	71.69	370.63	1694.32	0.79	73.05	70.94	146,121
Subtotal (lbs):											206	1080	4525	64	195	189	438,731

Table 5. Concrete Work - Foundation and Sidewalks - 2013

Foundation Work 1,111 CY
 Total 1,111 CY Note: Assume all excavated soil is accounted for in Excavate/Fill and Trenching

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹ g/hp-hr	CO ¹ g/hp-hr	NOx ¹ g/hp-hr	SO ₂ ¹ g/hp-hr	PM10 ¹ g/hp-hr	PM2.5 ¹ g/hp-hr	CO ₂ ¹ g/hp-hr	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Concrete Mixer (3 mixers total to one truck)	59	3.5	0.43	0.69	3.04	6.17	0.13	0.54	0.52	588	0.13	0.59	1.20	0.02	0.10	0.10	114
Concrete Truck	106	300	0.43	0.38	1.75	6.18	0.11	0.27	0.26	530	11.42	52.54	186.06	3.43	8.09	7.84	15,947
Subtotal (lbs):											12	53	187	3	8	8	16,061

Table 6. Gravel Work for Building Construction - 2013

741 CY

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹ g/hp-hr	CO ¹ g/hp-hr	NOx ¹ g/hp-hr	SO ₂ ¹ g/hp-hr	PM10 ¹ g/hp-hr	PM2.5 ¹ g/hp-hr	CO ₂ ¹ g/hp-hr	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dozer	7	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536	0.61	2.15	7.27	0.21	0.40	0.39	955
Wheel Loader for Spreading	9	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536	0.37	1.31	4.44	0.12	0.25	0.24	561
Compactor	5	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536	0.19	0.72	2.39	0.06	0.14	0.13	287
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC ² lb/mile	CO ² lb/mile	NOx ² lb/mile	SO ₂ ² lb/mile	PM10 ² lb/mile	PM2.5 ² lb/mile	CO ₂ ² lb/mile	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dump Truck (gravel delivery)	96	230	26	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	4.10	21.18	96.84	0.04	4.18	4.05	8,352
Subtotal (lbs):											5	25	111	0	5	5	10,155

Table 7. Site Prep for Parking Area- 2013

Grading (SY) 100,680 SF Convert 11,186 SY Assume compact 0.5 feet (0.166 yards) 1,864 CY compacted

Off-road Equipment	Cumulative Hours of Operation ¹	Engine HP	Load Factor	VOC ¹ g/hp-hr	CO ¹ g/hp-hr	NOx ¹ g/hp-hr	SO ₂ ¹ g/hp-hr	PM10 ¹ g/hp-hr	PM2.5 ¹ g/hp-hr	CO ₂ ¹ g/hp-hr	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Excavator	0	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	535.79	0.00	0.00	0.00	0.00	0.00	0.00	0
Skid Steer Loader	0	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	535.67	0.00	0.00	0.00	0.00	0.00	0.00	0
Grader	83	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	535.79	10.38	36.47	122.90	3.48	6.81	6.61	16,178
Backhoe	0	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	535.77	0.00	0.00	0.00	0.00	0.00	0.00	0
On-road Equipment	Cumulative Hours of Operation ¹	Engine HP	Productivity based Speed (miles/hour)	VOC ² lb/mile	CO ² lb/mile	NOx ² lb/mile	SO ₂ ² lb/mile	PM10 ² lb/mile	PM2.5 ² lb/mile	CO ₂ ² lb/mile	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dump Truck (12 CY capacity)	0	230	16	0.00165950	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0
Delivery Truck	0	365	45	0.00165950	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0
Subtotal (lbs):											10	36	123	3	7	7	16,178

Table 8. Paving Surface and Paving HMA - 2013

Pavement - Surface Area 100,000 SF 1,235 CY
 Paving - HMA 33,333 CF

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹ g/hp-hr	CO ¹ g/hp-hr	NOx ¹ g/hp-hr	SO ₂ ¹ g/hp-hr	PM10 ¹ g/hp-hr	PM2.5 ¹ g/hp-hr	CO ₂ ¹ g/hp-hr	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Grader	306	145	0.59	0.38	1.41	4.16	0.12	0.30	0.29	536	21.74	81.57	240.36	6.66	17.08	16.57	30,942
Steel drum roller/vibratory roller	613	401	0.59	0.34	2.46	5.53	0.12	0.34	0.33	536	109.05	786.80	1,768.26	36.82	108.20	104.96	171,175
Paving Machine	613	164	0.59	0.38	1.44	4.25	0.12	0.30	0.29	536	49.65	188.48	555.58	15.06	39.20	38.02	69,991
Asphalt Curbing Machine	61	130	0.59	0.40	1.57	4.57	0.12	0.32	0.31	536	4.09	16.26	47.29	1.19	3.31	3.21	5,548
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC ² lb/mile	CO ² lb/mile	NOx ² lb/mile	SO ₂ ² lb/mile	PM10 ² lb/mile	PM2.5 ² lb/mile	CO ₂ ² lb/mile	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dump Truck	739	230	17	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	20.49	105.93	484.24	0.22	20.88	20.27	41,762
Water Truck	980	230	10	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	16.26	84.08	384.36	0.18	16.57	16.09	33,148
Hot Mix Asphalt (HMA)	Volume of HMA (ft ³)	Weight of HMA (tons)		VOC ³ lb/ton of asphalt	CO lb/ton of asphalt	Nox lb/ton of asphalt	SO ₂ lb/ton of asphalt	PM10 lb/ton of asphalt	PM2.5 lb/ton of asphalt	CO ₂ lb/ton of asphalt	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Standard Hot Mix Asphalt	33,333	2,417		0.04	-	-	-	-	-	-	96.67	-	-	-	-	-	-
Subtotal (lbs):											318	1,263	3,480	60	205	199	352,565

Table 9. Gravel Work for Parking Area - 2013

1,235 CY

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹ g/hp-hr	CO ¹ g/hp-hr	NOx ¹ g/hp-hr	SO ₂ ¹ g/hp-hr	PM10 ¹ g/hp-hr	PM2.5 ¹ g/hp-hr	CO ₂ ¹ g/hp-hr	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dozer	12	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536	1.02	3.59	12.12	0.34	0.67	0.65	1,592
Wheel Loader for Spreading	15	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536	0.61	2.18	7.39	0.20	0.42	0.40	936
Compactor	9	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536	0.32	1.20	3.98	0.10	0.23	0.22	478
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC ² lb/mile	CO ² lb/mile	NOx ² lb/mile	SO ₂ ² lb/mile	PM10 ² lb/mile	PM2.5 ² lb/mile	CO ₂ ² lb/mile	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dump Truck (gravel delivery)	159	230	26	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	6.83	35.31	161.40	0.07	6.96	6.76	13,919
Subtotal (lbs):											9	42	185	1	8	8	16,925

¹US EPA NONROAD2008a Model

²MOVES (Motor Vehicle Emission Simulator) 2010

Table 10. Fugitive Dust for Demolition and Construction Projects

Year	PM ₁₀ tons/acre/mo	acres	days of disturbance	PM ₁₀ Total	PM _{2.5} /PM ₁₀ Ratio	PM _{2.5} Total
2013	0.42	4	240	20.2	0.1	2.0

Table 11. Annual Construction Worker POVs 2013 (¹while onsite)

50 construction workers

Vehicles	# vehicles	# days	¹ mi/day	² VOCs lb/mi	² CO lb/mi	² NOx lb/mi	² SO ₂ lb/mi	² PM ₁₀ lb/mi	² PM _{2.5} lb/mi	³ CO ₂ g/mi	³ CH ₄ g/mi	³ N ₂ O g/mi	VOCs lb	CO lb	NOx lb	SO ₂ lb	PM ₁₀ lb	PM _{2.5} lb	CO ₂ g	CH ₄ g	N ₂ O g										
passenger vehicles	125	240	4	0.00011658	0.01381833	0.00081832	0.00000618	0.00006769	0.00006138	182.00	0.02	0.02	13.99	1658.20	98.20	0.74	8.12	7.37	21,840,000	1,920	1,920										
Tons per Year													0.01	0.83	0.05	0.00	0.00	0.00													
Metric Tons per Year																															
																			CO₂e in metric tons/year		22										

¹Construction worker vehicle emissions based on driving onsite (lunch, breaks, ingress, egress).

²Emission factors from MOVES2010

³Emission Factors from *Federal Greenhouse Gas Accounting and Reporting Guidance: Technical Support Document* (CEQ, 2010), Table D-11

Table 12. Scenario 1 Summary

VOC T/yr	CO T/yr	NOx T/yr	SO ₂ T/yr	PM10 T/yr	PM2.5 T/yr	CO ₂ e MT/yr
0.30	2.14	4.49	0.07	20.39	2.24	424

Diesel Generator for on-site power tools and office support (Assume 5 generators at 40 HP each)	360	200	0.43	0.33	2.54	4.53	0.13	0.54	0.53	595	22.37	173.46	309.02	8.74	36.99	35.88	40,623
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC²	CO²	NOx²	SO₂²	PM10²	PM2.5²	CO₂²	VOC	CO	NOx	SO2	PM10	PM2.5	CO₂
Diesel Pickup Truck	32	400	30	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	1.61	8.34	38.12	0.02	1.64	1.60	3,288
Delivery Truck	2,160	365	60	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	215.07	1111.89	5082.97	2.36	219.16	212.82	438,364
Subtotal (lbs):											618	3240	13574	191	584	567	1,316,193

Table 5. Concrete Work - Foundation and Sidewalks - 2013

Foundation Work 90,000 CY
 Total 90,000 CY Note: Assume all excavated soil is accounted for in Excavate/Fill and Trenching

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹	CO ¹	NOx ¹	SO ₂ ¹	PM10 ¹	PM2.5 ¹	CO ₂ ¹	VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
Concrete Mixer (3 mixers total to one truck)	4,739	3.5	0.43	0.69	3.04	6.17	0.13	0.54	0.52	588	10.81	47.87	97.05	1.99	8.50	8.24	9,251
Concrete Truck	8,571	300	0.43	0.38	1.75	6.18	0.11	0.27	0.26	530	925.26	4,255.61	15,070.85	277.86	655.01	635.36	1,291,718
Subtotal (lbs):											936	4,303	15,168	280	664	644	1,300,969

Table 6. Gravel Work for Building Construction - 2013

2,222 CY

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹	CO ¹	NOx ¹	SO ₂ ¹	PM10 ¹	PM2.5 ¹	CO ₂ ¹	VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
Dozer	22	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536	1.84	6.46	21.82	0.62	1.21	1.17	2,865
Wheel Loader for Spreading	28	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536	1.10	3.92	13.31	0.36	0.75	0.73	1,684
Compactor	16	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536	0.58	2.15	7.16	0.19	0.41	0.40	861
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC²	CO²	NOx²	SO₂²	PM10²	PM2.5²	CO₂²	VOC	CO	NOx	SO2	PM10	PM2.5	CO₂
Dump Truck (gravel delivery)	287	230	26	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	12.29	63.55	290.52	0.13	12.53	12.16	25,055
Subtotal (lbs):											16	76	333	1	15	14	30,465

Table 7. Site Prep for Parking Area- 2013

Grading (SY) 345,600 SF Convert 38,396 SY Assume compact 0.5 feet (0.166 yards) 6,399 CY compacted

Off-road Equipment	Cumulative Hours of Operation ¹	Engine HP	Load Factor	VOC ¹	CO ¹	NOx ¹	SO ₂ ¹	PM10 ¹	PM2.5 ¹	CO ₂ ¹	VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
Excavator	0	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	535.79	0.00	0.00	0.00	0.00	0.00	0.00	0
Skid Steer Loader	0	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	535.67	0.00	0.00	0.00	0.00	0.00	0.00	0
Grader	284	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	535.79	35.63	125.20	421.86	11.95	23.38	22.68	55,534
Backhoe	0	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	535.77	0.00	0.00	0.00	0.00	0.00	0.00	0
On-road Equipment	Cumulative Hours of Operation¹	Engine HP	Productivity based Speed (miles/hour)	VOC²	CO²	NOx²	SO₂²	PM10²	PM2.5²	CO₂²	VOC	CO	NOx	SO2	PM10	PM2.5	CO₂
Dump Truck (12 CY capacity)	0	230	16	0.00165950	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0
Delivery Truck	0	365	45	0.00165950	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0
Subtotal (lbs):											36	125	422	12	23	23	55,534

Table 8. Paving Surface and Paving HMA - 2013

Pavement - Surface Area 300,000 SF 3,704 CY
 Paving - HMA 100,000 CF

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹	CO ¹	NOx ¹	SO ₂ ¹	PM10 ¹	PM2.5 ¹	CO ₂ ¹	VOC	CO	NOx	SO2	PM10	PM2.5	CO ₂
Grader	919	145	0.59	0.38	1.41	4.16	0.12	0.30	0.29	536	65.22	244.70	721.08	19.97	51.24	49.70	92,826
Steel drum roller/vibratory roller	1,838	401	0.59	0.34	2.46	5.53	0.12	0.34	0.33	536	327.16	2,360.41	5,304.79	110.46	324.61	314.87	513,524
Paving Machine	1,838	164	0.59	0.38	1.44	4.25	0.12	0.30	0.29	536	148.95	565.43	1,666.73	45.17	117.59	114.07	209,974
Asphalt Curbing Machine	184	130	0.59	0.40	1.57	4.57	0.12	0.32	0.31	536	12.28	48.79	141.87	3.58	9.92	9.62	16,643
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC²	CO²	NOx²	SO₂²	PM10²	PM2.5²	CO₂²	VOC	CO	NOx	SO2	PM10	PM2.5	CO₂
Dump Truck	2,217	230	17	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	61.47	317.78	1,452.72	0.67	62.64	60.82	125,285
Water Truck	2,940	230	10	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	48.79	252.23	1,153.08	0.54	49.72	48.28	99,444
Hot Mix Asphalt (HMA)	Volume of HMA (ft³)	Weight of HMA (tons)		VOC³	CO	Nox	SO₂	PM10	PM2.5	CO₂	VOC	CO	NOx	SO2	PM10	PM2.5	CO₂
Standard Hot Mix Asphalt	100,000	7,250		0.04	-	-	-	-	-	-	290.00	-	-	-	-	-	-
Subtotal (lbs):											954	3,789	10,440	180	616	597	1,057,695

Table 9. Gravel Work for Parking Area - 2013

3,704 CY

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC ¹ g/hp-hr	CO ¹ g/hp-hr	NOx ¹ g/hp-hr	SO ₂ ¹ g/hp-hr	PM10 ¹ g/hp-hr	PM2.5 ¹ g/hp-hr	CO ₂ ¹ g/hp-hr	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dozer	37	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536	3.06	10.76	36.36	1.03	2.01	1.95	4,775
Wheel Loader for Spreading	46	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536	1.83	6.54	22.18	0.60	1.25	1.21	2,807
Compactor	27	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536	0.96	3.59	11.93	0.31	0.69	0.67	1,435
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC ² lb/mile	CO ² lb/mile	NOx ² lb/mile	SO ₂ ² lb/mile	PM10 ² lb/mile	PM2.5 ² lb/mile	CO ₂ ² lb/mile	VOC lb	CO lb	NOx lb	SO ₂ lb	PM10 lb	PM2.5 lb	CO ₂ lb
Dump Truck (gravel delivery)	478	230	26	1.66E-03	8.58E-03	3.92E-02	1.82E-05	1.69E-03	1.64E-03	3	20.49	105.92	484.20	0.22	20.88	20.27	41,758
Subtotal (lbs):											26	127	555	2	25	24	50,776

¹US EPA NONROAD2008a Model

²MOVES (Motor Vehicle Emission Simulator) 2010

Table 10. Fugitive Dust for Demolition and Construction Projects

Year	PM ₁₀ tons/acre/mo	acres	days of disturbance	PM ₁₀ Total	PM _{2.5} /PM ₁₀ Ratio	PM _{2.5} Total
2013	0.42	13	240	65.5	0.1	6.6

Table 11. Annual Construction Worker POVs 2013 (¹while onsite)

50 construction workers

Vehicles	# vehicles	# days	¹ mi/day	² VOCs lb/mi	² CO lb/mi	² NOx lb/mi	² SO ₂ lb/mi	² PM ₁₀ lb/mi	² PM _{2.5} lb/mi	³ CO ₂ g/mi	³ CH ₄ g/mi	³ N ₂ O g/mi	VOCs lb	CO lb	NOx lb	SO ₂ lb	PM ₁₀ lb	PM _{2.5} lb	CO ₂ g	CH ₄ g	N ₂ O g		
carpool	0	0	0	0.00011658	0.01381833	0.00081832	0.00000618	0.00006769	0.00006138	182.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0		
passenger vehicles	375	240	4	0.00011658	0.01381833	0.00081832	0.00000618	0.00006769	0.00006138	182.00	0.02	0.02	41.97	4974.60	294.60	2.22	24.37	22.10	65,520,000	5,760	5,760		
Tons per Year													0.02	2.49	0.15	0.00	0.01	0.01					
Metric Tons per Year																			66	0.01	0.01		
CO₂e in metric tons/year																			67				

¹Construction worker vehicle emissions based on driving onsite (lunch, breaks, ingress, egress).

²Emission factors from MOVES2010

³Emission Factors from *Federal Greenhouse Gas Accounting and Reporting Guidance: Technical Support Document* (CEQ, 2010), Table D-11

Table 12. Scenario 2 Summary

VOC T/yr	CO T/yr	NOx T/yr	SO ₂ T/yr	PM10 T/yr	PM2.5 T/yr	CO ₂ MT/yr
1.35	8.50	20.80	0.35	66.53	7.53	1844

TAB C. CONSTRUCTION SUMMARY BY PROJECT, CREECH AIR FORCE BASE

Project Name	Scenario	Type (Demolition or Construction)	Task	FootPrint (AC)	Clearing (AC)	Grading (sf)	Demo Bldgs (SF)	Demo asphalt/concrete (SF)	Site Prep - Excavate/Fill (CY)	Trenching (LF)	Building Construction - Total Size (sf)	Building Construction- foundation footprint (sf)	Number of Stories	Paving - Surface area (SF)	Pavement type, vehicle or aircraft	Paving - HMA (CF)	Sidewalks (sf)	Gravel Work (CY)	Concrete Work - sidewalks, etc (CY)	Concrete Work -foundation (CY)	Additional excavation, please specify type (washrack, sw pond, etc.)
CONSTRUCTION PROJECTS																					
Demolition of Concrete Building	1	Demolition	1	1	N/A	N/A	2,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Demolition of Parking Area	1	Demolition	2	1	N/A	N/A	N/A	50,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Construct Aircraft Concrete Maintenace Shop	1	Construction	3	3	N/A	30,000	N/A	N/A	370	N/A	30,000	30,000	1	N/A	N/A	N/A	N/A	741	N/A	1,111	N/A
Construct Parking Area	1	Construction	4	3	N/A	100,680	N/A	N/A	1,243	N/A	N/A	N/A	N/A	100,000	vehicle	33,333	N/A	1,235	N/A	N/A	N/A
Demolition of Concrete Building	2	Demolition	1	3	N/A	N/A	6,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Demolition of Parking Area	2	Demolition	2	3	N/A	N/A	N/A	150,000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Construct Aircraft Concrete Maintenace Shop	2	Construction	3	10	N/A	90,000	N/A	N/A	1111	N/A	90,000	90,000	1	N/A	N/A	N/A	N/A	2,222	N/A	3,333	N/A
Construct Parking Area	2	Construction	4	10	N/A	345,600	N/A	N/A	4,267	N/A	N/A	N/A	N/A	300,000	vehicle	100,000	N/A	3,704	N/A	N/A	N/A

APPENDIX C

ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL CHECKLIST

for Nellis Air Force Base Project Managers

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INSTRUCTIONS FOR USE

This environmental checklist is designed to assist project managers at Nellis Air Force Base (AFB) in ensuring compliance with all federal, state, and local environmental permitting and reporting requirements.

1. Complete each section.

The environmental checklist is divided into ten sections. Each section contains a flowchart of questions designed to identify projects or components of projects that may require environmental permits, notifications, or registrations. Answer all questions.

2. Use the terms and acronyms list.

Although this checklist has been designed to minimize the use of "enviro-speak," the user of this manual must have an understanding of certain key regulatory terms, which are defined in the glossary.

3. Talk to the experts.

The flow charts are intended to be used as a preliminary screening tool. If the screening process identifies a permit or regulatory requirement, the project manager should talk to the appropriate Nellis AFB Environmental Program Manager(s) who will assist in obtaining permit(s), implement reporting and/or testing requirements.

4. "I don't know" is not an acceptable answer.

If information is not provided in the AF 813, then the proponent and the environmental program managers need to get together and determine the data requirements necessary to definitively answer any questions.

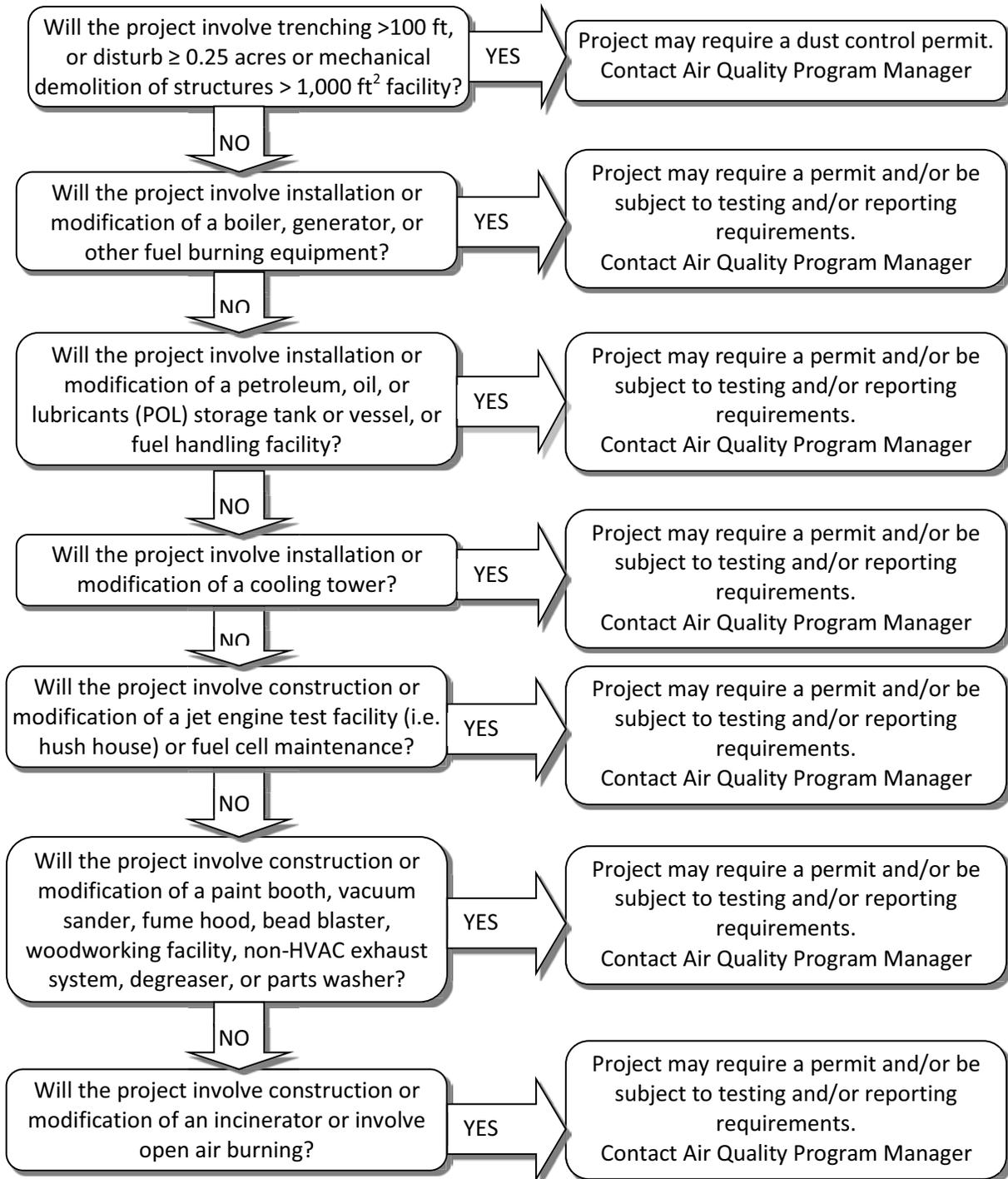
AIR QUALITY

99 CES/CEIEC, 652-2882

Air emissions sources may be regulated based on the type of emission source, the type and/or quantity of pollutants being emitted, and the quality of air in the region where the emission source is located. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Air Quality Program Manager at 652-2882.

AIR QUALITY FLOW CHART

99 CES/CEIEC 652-2882



WATER QUALITY

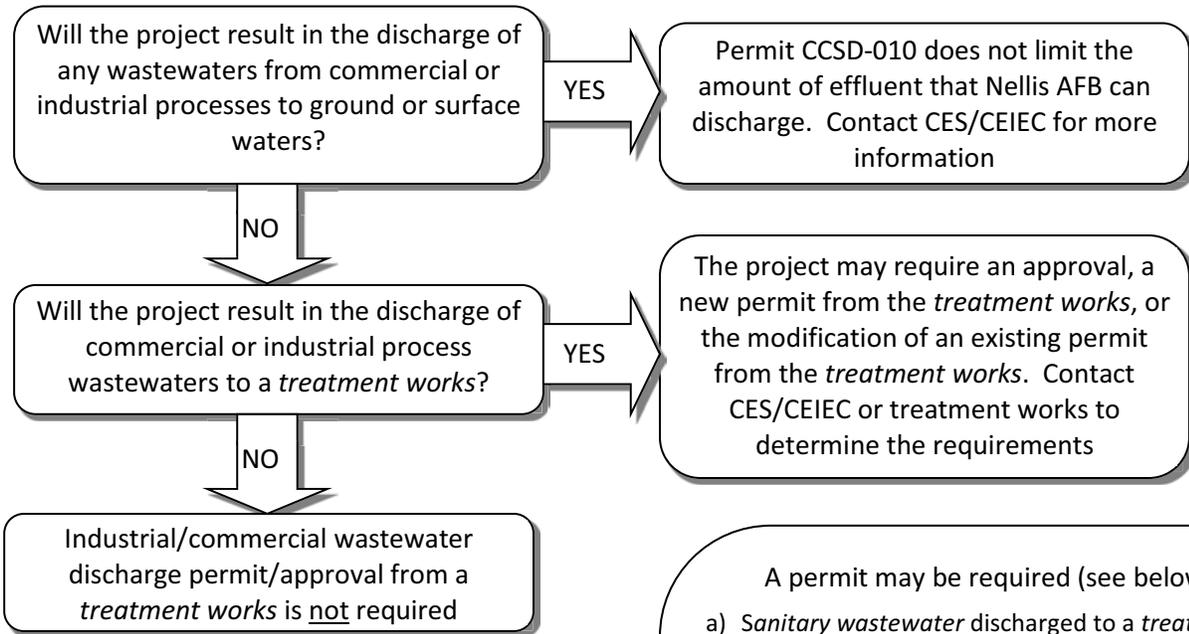
99 CES/CEIEC, 652-2834

Any process that discharges to sanitary or industrial wastewater systems, storm drains or involves a discharge that can flow into surface or leech into groundwater affects water quality. Additionally, any modification to the drinking water system could require state approval. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Water Quality Program Manager at 652-2834.

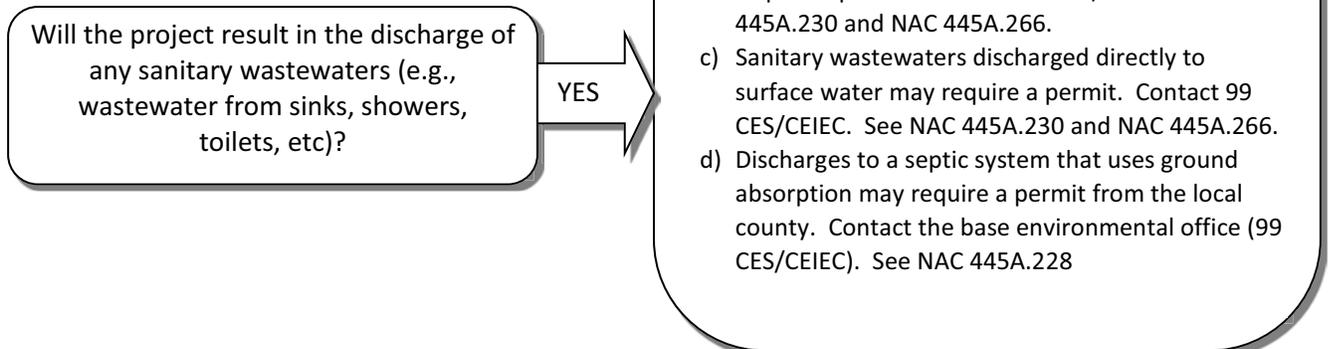
WATER QUALITY FLOW CHART

99 CES/CEIEC, 652-2834

Industrial Wastewater Discharges



Sanitary Wastewater



Stormwater Discharges

Does the project involve clearing, grading, or excavation activities on a total land area greater than 1 acre?

YES

A stormwater permit or modification to an existing National Pollution Discharge Elimination System (NPDES) permit may be required. Contact the 99 CES/CEIEC to determine requirements. See NAC 445A.230 and NAC 445A.266.

NO

Does the project involve the *construction* or modification of any of the following types of facilities?

- Transportation facilities which have vehicle maintenance, equipment cleaning or deicing (airfield) operations.
- *Hazardous waste* treatment, storage, or disposal facilities.
- Landfills, land application sites, open dumps.
- Recycling facilities, including metal scrap yards, battery reclaimers, salvage and junk yards (does not include gas stations or repair shops that collect tires or batteries).
- Steam electric power generating facilities, including coal handling sites.
- Electroplating, metal finishing facilities.
- Facilities whose effluent is otherwise subject to NPDES effluent standards.
- General warehousing and storage facilities or activities in which *stormwater* actually contacts materials, products, *material handling equipment* or *activities* or other associated industrial equipment.

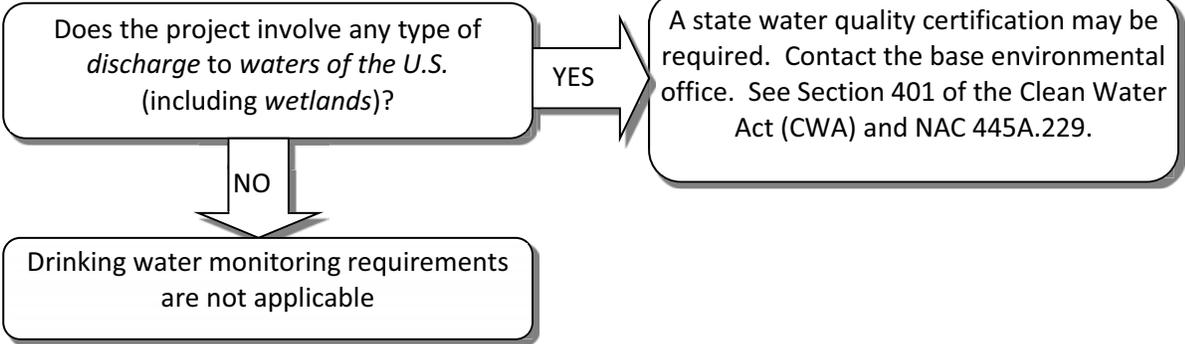
YES

Will the project result in the discharge of *stormwater* through a pipe, culvert or ditch to *surface waters* or to a separate storm sewer system?

YES

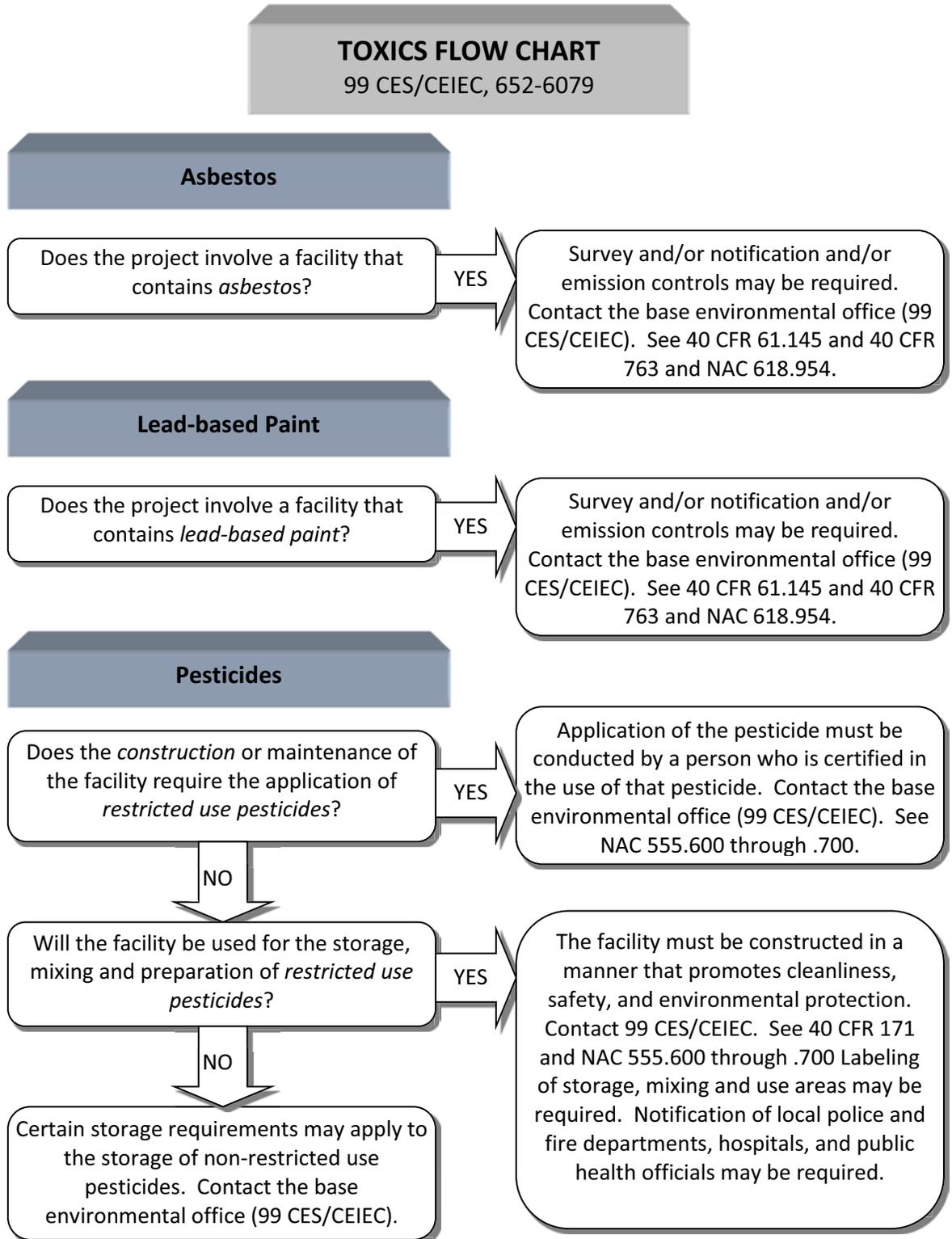
A stormwater permit or modification to an existing NPDES permit may be required. Contact 99 CES/CEIEC, the base environmental office. See NAC 445A.230 and NAC 445A.266.

Drinking Water



TOXICS
99 CES/CEIEC, 652-6079

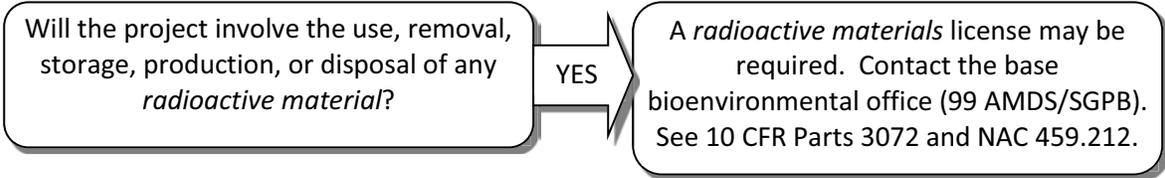
Activities involving disturbing, use, storage or disposal of asbestos, lead-based paint or pesticides require review by the toxics program manager. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Toxics Program Manager at 652-6079.



RADIOACTIVE MATERIALS/OCCUPATIONAL HEALTH
99 AMDS/SGPB, 653-3310

Activities involving disturbing, use, storage or disposal of radioactive materials require review by the Bioenvironmental Flight. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Bio-environmental Flight at 653-3310.

RADIOACTIVE MATERIALS
FLOW CHART
99 AMDS/SGPB, 653-3310



HAZARDOUS MATERIALS/ HAZARDOUS WASTE
99 CES/CEIEC, 652-9722/99 CES/CEIEC, 652-3159

Storage, use, treatment or disposal of hazardous materials and waste require prior approval. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB HAZMART Program Manager at 652-9722 or the Nellis AFB RCRA Program Manager at 652-3159.

**HAZARDOUS MATERIALS/
HAZARDOUS WASTE
FLOW CHART**
99 CES/CEIEC, 652-9722/3159

Usage

Will any chemicals, paints, paint thinners, ozone depleting substances (ODS), *PCB items* or other hazardous materials be used or stored at the facility or during the construction of the facility?

YES

Contact 99 CES/CEIEC to determine usage, storage, packaging, tracking, and disposal requirements applicable to these materials.

Storage

Will the facility store *hazardous waste* for more than 90 days or out of service *PCB items* or PCBs for more than 1 year?

YES

A Resource Conservation and Recovery Act (RCRA) Treatment, Storage or Disposal (TSD) (for *hazardous waste*) and/or Toxic Substances Control Act (TSCA) Permit or modification to the existing facilities permit may be required. Contact the base environmental office (99 CES/CEIEC). Exemptions exist for storage of small quantities of hazardous waste for more than 90 days. See 40 CFR 261.5 and 262.34 and 40 CFR 761.65. Note that 40 CFR Parts 260 to 270 are incorporated by reference in NAC 444.8632. See NAC 444.9485 and NAC 444.9535 for PCBs.

Treatment

Will the facility treat *hazardous wastes* other than in a *totally enclosed treatment facility* or in an *elementary neutralization unit* or in a unit permitted under the CWA (see Section 1)?

YES

A RCRA TSD, and/or a TSCA permit or a modification to the facility's existing permit may be required. Contact 99 CES/CEIEC. See 40 CFR Parts 264 and 761 for design requirements. Note that 40 CFR Parts 260 to 270 are incorporated by reference in NAC 444.8632. See NAC 444.9485 and NAC 444.9535 for PCBs.

Will the facility treat *PCB items*?

YES

A TSCA treatment plant permit may be required. Contact 99 CES/CEIEC. See 40 CFR 761.70 and NAC 444.9485 and NAC 444.9535.

Disposal

Will the facility be used for the *disposal* of *hazardous wastes* or *PCB items*?

YES

A RCRA TSD permit, or TSCA Permit, or a modification to the facilities existing permit may be required. Contact the base environmental office (99 CES/CEIEC). See 40 CFR Parts 264 and 761 for design requirements. Note that 40 CFR Parts 260 to 270 are incorporated by reference in NAC 444.8632. See NAC 444.9485 for PCBs.

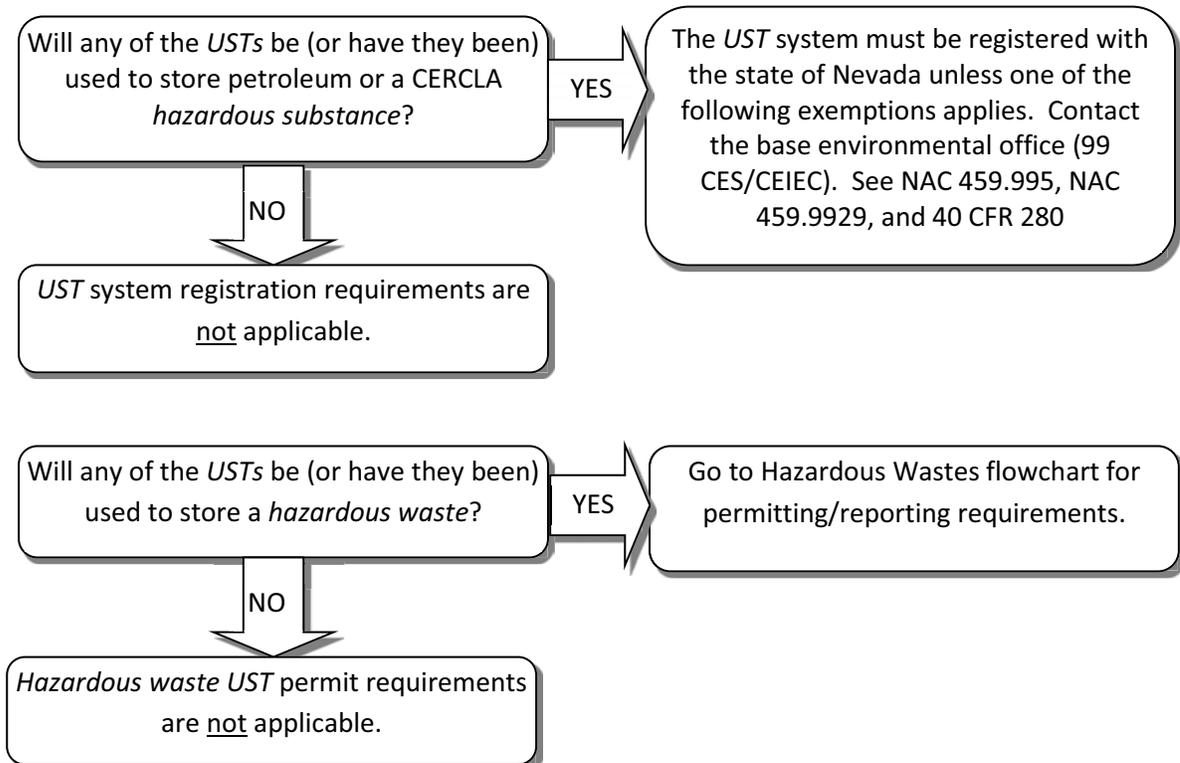
STORAGE TANK (ASTs and USTs) 99 CES/CEIEC, 652-6121

Storage tanks used for fuel, heating oil or other fluids are required to meet certain standards and could require permitting. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB POL Program Manager at 652-6121.

STORAGE TANKS (USTs/ASTs) FLOW CHART 99 CES/CEIEC, 652-6121

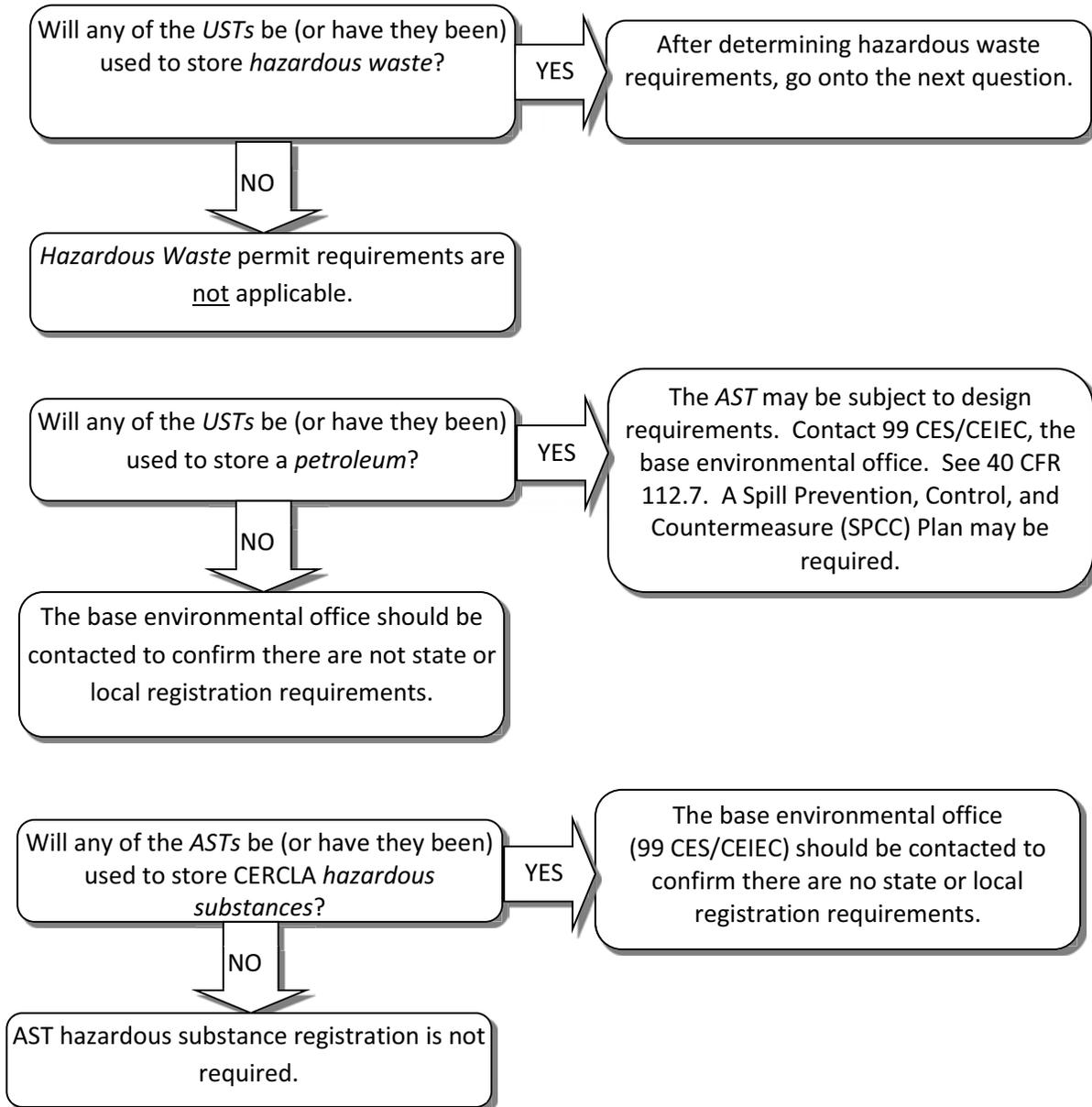
Underground Storage Tanks (USTs)

If any project involves the construction, removal or modification of an underground storage tanks (USTs) or associated piping, contact the Nellis AFB POL Program Manager, 99 CES/CEIEC at 652-6121.



Aboveground Storage Tanks (ASTs)

If any project involves the construction, removal or modification of an aboveground storage tanks (ASTs) or AST system, contact Nellis AFB POL Program Manager 99 CES/CEIEC at 652-6121

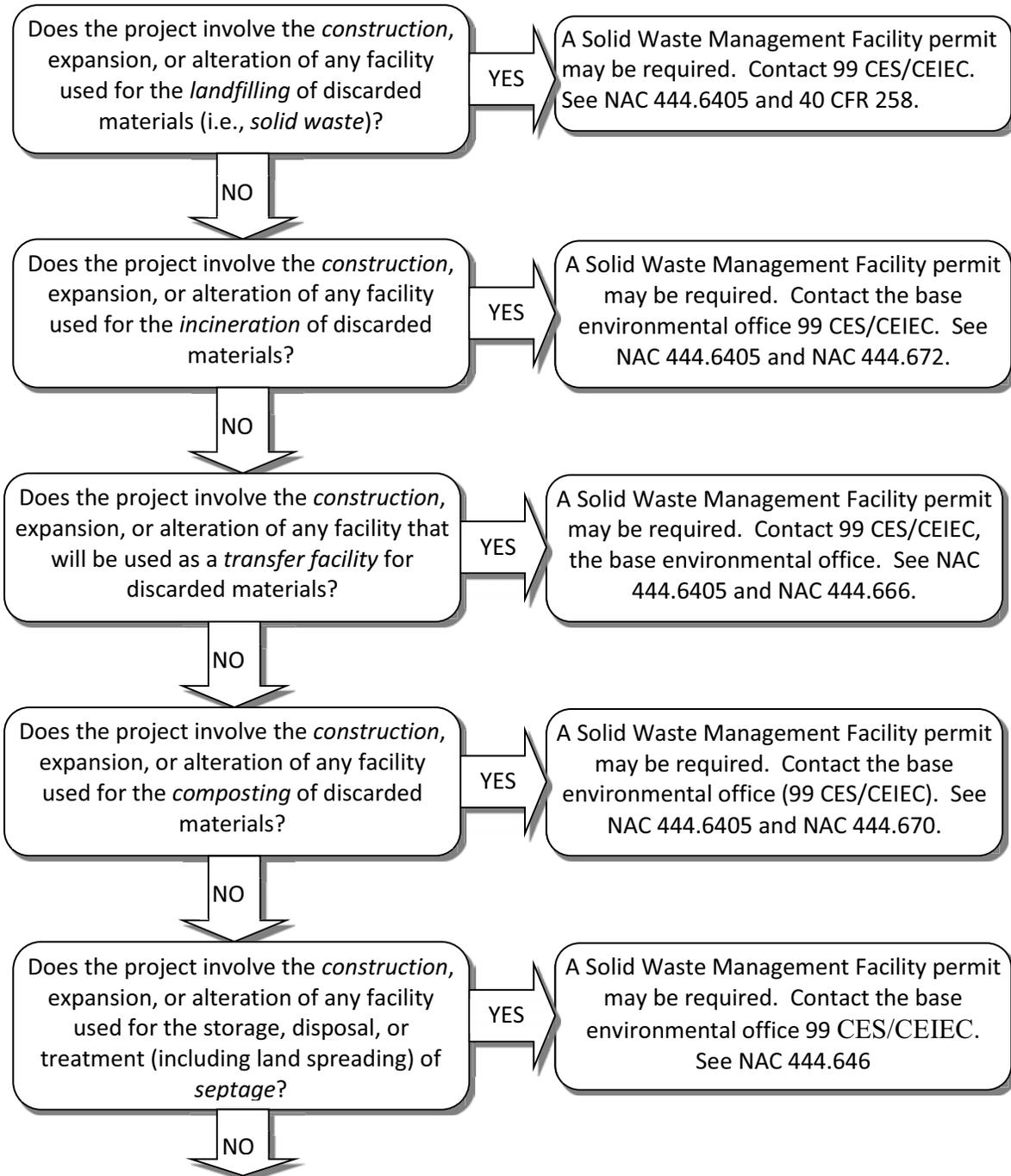


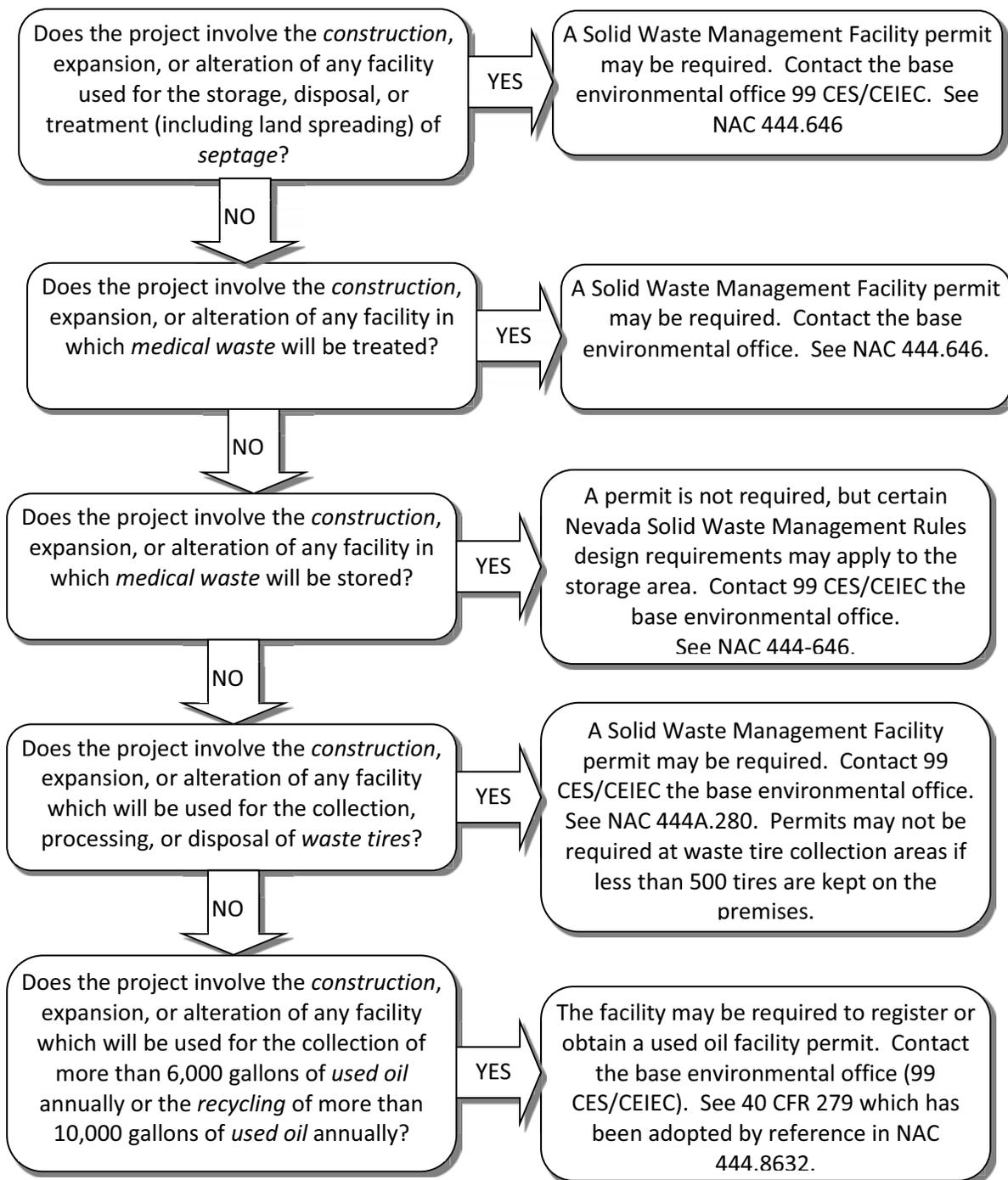
SOLID WASTE
99 CES/CEIEC, 652-9722

Waste generated by construction or other activities are required to be disposed of properly depending on the waste involved. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Solid Waste Program Manager at 652-9722.

SOLID WASTE FLOW CHART

99 CES/CEIEC, 652-9722

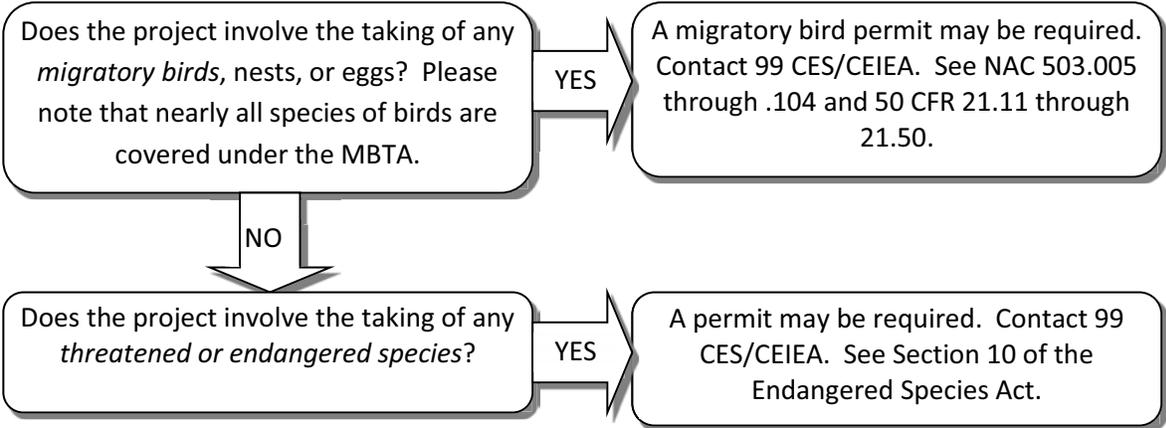




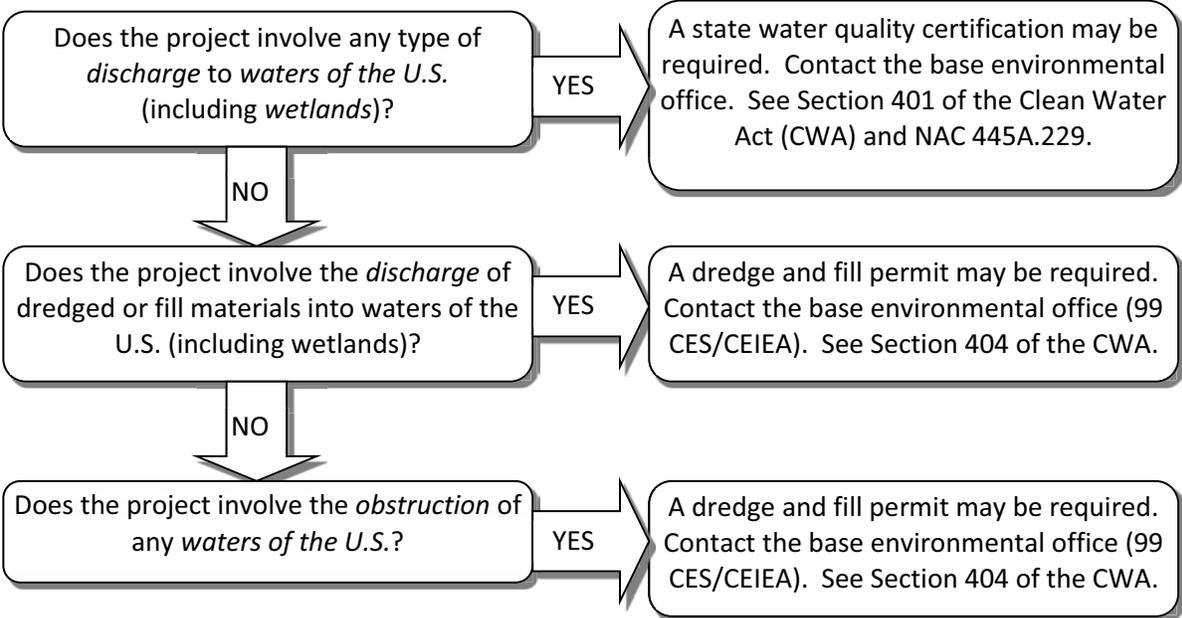
NATURAL RESOURCES
99 CES/CEIEA, 652-4354

Any project that has the potential to impact wildlife, habitat, or potential wetlands may require permitting or other management activities. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Natural Resources Program Manager at 652-4354.

NATURAL RESOURCES
FLOW CHART
 99 CES/CEIEA, 652-4354



Dredge or Fill Activities



CULTURAL RESOURCES

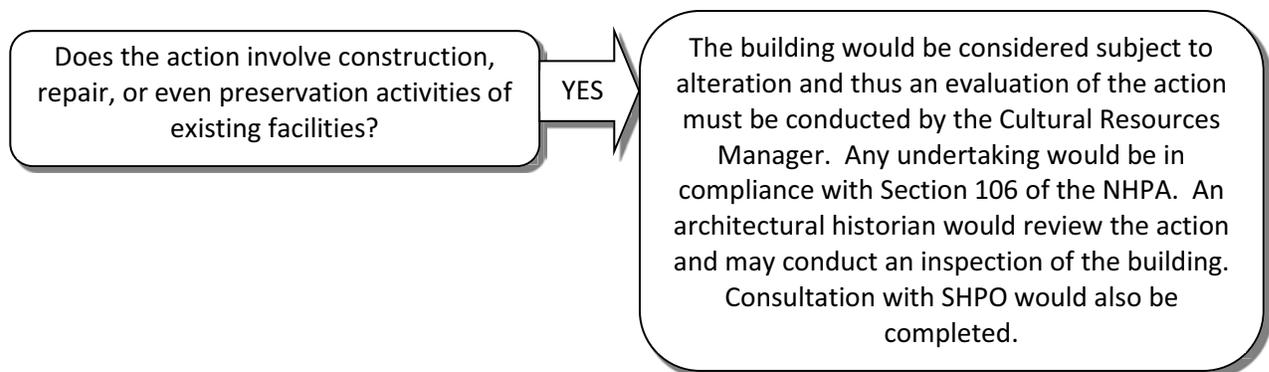
99 CES/CEIEA, 652-5813

Federal laws require the Air Force to take efforts to identify and evaluate significant archaeological and Native American sites, and traditional cultural properties within all Areas of Potential Effect. The surface of Nellis Air Force Base land within Las Vegas Valley has been inventoried for prehistoric and historic cultural resources with consultation with the State in 2001. One eligible or significant site is located in Area II. As buildings age their cultural values may be increased. Building inventories for historic and Cold War era significance are conducted on a 5-7 year periodic basis. The last inventory was completed in 2007. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB Cultural Resources Program Manager at 652-5813.

CULTURAL RESOURCES

FLOW CHART

99 CES/CEIEA, 652-5813



ENVIRONMENTAL RESTORATION PROGRAM SITES

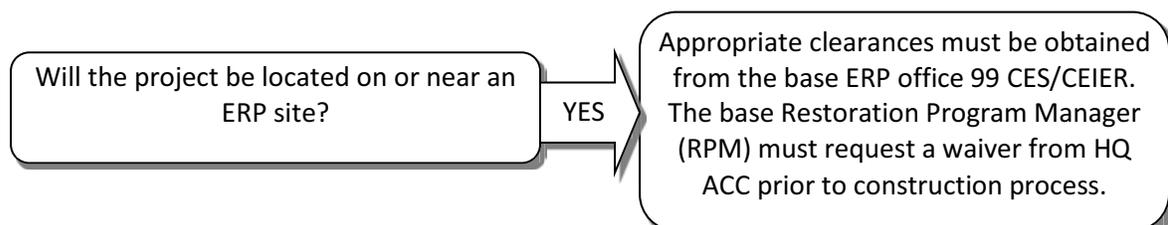
99 CES/CEIER, 652-3042

Construction activities located on or near Environmental Restoration Sites could require HQ ACC and State approval. The flow chart in this section is designed to identify sources that could potentially require a permit, modification to an existing permit, or be subject to other regulatory requirements. In order to determine actual permitting requirements, contact the Nellis AFB ERP Program Manager at 652-3042.

ENVIRONMENTAL RESTORATION PROGRAM SITES

FLOW CHART

99 CES/CEIER, 652-3042



TERMS AND ACRONYMS

Aboveground storage tank — a tank that is situated in such a way that the entire surface of the tank is above the plane of the ground and the entire surface area of the tank (including the bottom) can be visually inspected.

Air pollutant — an air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive substance, or matter which is emitted into or otherwise enters the ambient air.

The following is a list of federally regulated air pollutants:

- (1) nitrogen oxides and volatile organic compounds;
- (2) any air pollutants for which a national ambient air quality standard has been promulgated including PM-10, sulfur dioxide, carbon monoxide, and lead;
- (3) any air pollutant or contaminant that is subject to any standard promulgated pursuant to Section III of the Clean Air Act including new source performance standards (NSPS) in 40 CFR part 60;
- (4) any class I or II substance (ozone depleting) subject to a standard promulgated pursuant to Section 601(a) of the Clean Air Act (see Appendix B);
- (5) any hazardous air pollutant identified in Section 112 of the Clean Air Act (see Appendix B).

Ambient air — that portion of the atmosphere outside of buildings and other enclosed structures, stacks or ducts, and which surrounds human, animal or plant life, or property.

Asbestos — substance comprised of or derived from actinolite, amosite, anthophyllite, chrysotile, crocidolite, or tremolite (40 CFR 61.14).

Asbestos Containing Materials (ACM) — any material or product which contains more than one percent asbestos.

Category 1 Nonfriable Asbestos Containing Material (ACM) — asbestos containing packing, gaskets, resilient floor coverings, and asphalt roofing products containing more than 1 percent asbestos.

Category 2 Nonfriable Asbestos — any material including Category 1 nonfriable ACM containing more than 1% asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure (40 CFR 61.141).

Characteristic hazardous waste — any waste that exhibits the following characteristics:

- a liquid with a flash point of less than 140° F (40 CFR 261.21).
- a liquid with a pH less than or equal to 2 or greater than or equal to 12.5 (40 CFR 261.22).
- it is normally unstable, reacts violently with water, or is readily capable of detonation (40 CFR 261.23).
- an extract from a representative sample of the waste contains a listed contaminant at levels exceeding a given concentration (40 CFR 261.24).

Composting — the controlled decomposition of organic waste by naturally occurring bacteria.

Construction — change in method of operation or any physical change, including on-site fabrication, erection, installation, replacement, demolition, or modification of a source, that results in a change in emissions or affects the compliance status.

Corrective action — abatement measures associated with a response to a release of a hazardous waste, a hazardous substance or petroleum product.

Demolition — the wrecking or cutting out of any load supporting structural member of a facility (40 CFR 61.141).

Discharge — includes, but is not limited to, spilling, leaking, pumping, pouring, emitting, emptying or dumping.

Discrete conveyance — includes, but is not limited to, any pipe, ditch, channel, conduit, well, discrete fissure, or landfill leachate collection system through which wastewater or stormwater can be collected and discharged.

Disposal — the discharge, deposit, injection, dumping, spilling, leaking or placing of waste into or on any land or water so that it may enter the environment.

Elementary neutralization unit — a tank or container used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic (40 CFR 260.10).

Fill — any materials used to replace an aquatic area with dry land or to change the bottom elevation of a waterway.

Fluid — any material or substance that flows or moves whether in a semi-solid, liquid, sludge, gas, or any other form or state.

Friable Asbestos Material — any material that contains more than 1% asbestos by weight and can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure (40 CFR 61.141).

Fuel burning equipment — equipment whose primary purpose is the production of energy or power from the combustion of fuel. The equipment is generally used for, but not limited to, heating water, generating or circulating steam, heating air as in warm air furnace, or furnishing process heat by transferring energy by fluids or through process vessel walls.

Groundwater — water below the ground surface in a zone of saturation (40 CFR 144.3; 40 CFR 258.2).

Hazardous substance — any substance designated pursuant to Section 101(14) of CERCLA (including any substance regulated as a hazardous waste).

Hazardous waste — for a material to be classified as a hazardous waste it must be a *solid waste* and either exhibit a hazardous characteristic or be listed in 40 CFR 261.3 (40 CFR 261.10).

Incineration — process of burning solid waste.

Industrial wastewater — wastewater generated in a commercial or industrial process (40 CFR 503.9[n])

Landfilling — placement of waste in or on the ground.

Lead Based Paint (LBP) — lead was used as an ingredient in paint until 1978. It is highly toxic and poses a health threat, especially to children. Workers should avoid breathing dusts or fumes. Workers are covered under OSHA and contractors should comply with all requirements of 29 CFR 1926.62. Food and cosmetics should not be stored or used in work areas.

Marine mammal — any mammal that is morphologically adapted to the marine environment, or primarily inhabits the marine environment, including any part of any such marine mammal.

Material handling equipment or activities — include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, finished product, by-product, or waste product.

Medical waste — waste which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining to or in the production of testing of biologicals.

Migratory bird — any bird, including any part, nest, or egg of any such bird, designated as such in a treaty to which the United States is a party.

Obstruction — may include construction of a wharf, pier, breakwater or any other structure and the excavation, filling or any other alteration of a navigable water.

Open burning — any outdoor fire or outdoor smoke producing process from which air contaminants are emitted directly into the outdoor atmosphere.

Ozone depleting substances (ODS) — compounds that contribute to stratospheric ozone depletion. ODS include CFCs, HCFCs, halons, methyl bromide, carbon tetrachloride, and methyl chloroform. ODS are generally very stable in the troposphere and only degrade under intense ultraviolet light in the stratosphere. When they break down, they release chlorine or bromine atoms, which then deplete ozone.

PCB Item — an article, container, or equipment that deliberately or unintentionally contains or has in part of it any PCB or PCBs (40 CFR 761.3).

Polychlorinated Biphenyl (PCB) — a synthetic, organic chemical once widely used in electrical equipment, specialized hydraulic systems, heat transfer systems, and other industrial products. PCBs are highly toxic and a potent carcinogen. Any hazardous wastes that contain more than 50 parts per million of PCBs are subject to regulation under the Toxic Substances Control Act.

Pesticide — any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, or intended for use as a plant regulator, defoliant.

Petroleum — petroleum, including crude oil or any fraction thereof that is liquid at standard temperature and pressure conditions.

Pretreatment — the reduction in the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants to a publicly owned treatment works (40 CFR 403.3[q]).

Process wastewater — any water that comes into direct contact with, or results from the production or use of, any raw material, intermediate product, finished product, or waste product during manufacturing or processing (40 CFR 401.44[q]).

Public water system — a system for providing piped water to the public for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Radioactive materials — any substance that emits radiation including alpha particles, beta particles, gamma rays, x-rays, neutrons, and other particles capable of producing ions. Radioactive materials that produce ionizing radiation are not covered in this manual (e.g. radio & microwaves).

Recycling — to prepare used oil for re-use as a petroleum product.

Regulated Asbestos Containing Material (RACM) — including friable asbestos material; category I nonfriable ACM that has become friable; Category I nonfriable ACM that has been subject to grinding, casting, cutting or abrading; and Category II nonfriable ACM that has a highly probability of becoming crumbled, crushed or pulverized (40 CFR 61.141).

Renovation — means the altering of a facility or facility component in any way, including the stripping or removal of RACM from a facility component.

Restricted use pesticides — See 40 CFR 171.2 for listing of Restricted Use Pesticides.

Runoff — rainwater, leachate, or other liquid that drains overland on any part of a ground surface and runs off of the ground surface (40 CFR 503.9[v]).

Sanitary wastewater — wastewater generated by toilets, sinks, and non-industrial/domestic activities; domestic sewage.

Scrap tires — tires that are no longer suitable for their original intended purpose because of wear or damage.

Septage — a fluid mixture of untreated and partially treated sewage solids, liquids, and sludge of human or domestic origin which is removed from a wastewater system.

Solid waste — any garbage refuse or sludge or other material that is either discarded or being accumulated, stored, or treated prior to being discarded or has served its original intended use and is generally discarded. Includes industrial and municipal wastes are examples of solid wastes. Solid waste does not include wastewater discharges regulated under the Clean Water Act or domestic sewage and sludges generated in sanitary sewage collection systems designed to discharge effluents to surface waters.

Source — any stationary article, machine, process equipment, or other contrivance, or combination thereof, or any tank-truck, trailer or railroad car from which air pollutants emanate or are emitted, either directly or indirectly.

Store — hold hazardous waste for a temporary period. Accumulation time is calculated from the time hazardous waste is first placed in a container.

Stormwater — stormwater runoff, snow melt runoff, and surface runoff and drainage (40 CFR 122.26[b][13]).

Surface water — all water that is open to the atmosphere and subject to surface runoff (40 CFR 141.2).

Threatened or endangered species — any species that is in danger of extinction throughout all or a significant portion of its range (see 50 CFR 81.1).

Totally enclosed treatment facility — facility for treatment of hazardous waste which is directly connected to any industrial production process (40 CFR 260.10).

Transfer station/Transfer facility — permanent structure with mechanical equipment used for the collection or compaction of solid waste prior to transportation for final disposal.

Treatment — any method, technique or process, including neutralization, designed to change the physical, chemical or biological character of a hazardous waste (40 CFR 260.10).

Treatment works — either a federally owned, publicly owned, or privately owned device or system used to treat either sanitary wastewater or a combination of sanitary wastewater and industrial or process wastewater (including recycle and reclaim) (40 CFR 503.9[aa]).

Underground Storage Tank (UST) — any one or combination of tanks (including underground pipes) the volume of which is 10% or more beneath the surface of the ground.

Underground well injection — the subsurface placement of fluids through a bored, drilled, or driven shaft (well), or a dug well, where the depth of the dug well is greater than the largest surface dimension.

Used oil — any oil which has been refined from crude oil or synthetic oil and, as a result of use, storage or handling has become unsuitable for its original purpose but which may be suitable for further use.

Wastewater reservoir — a pond, lagoon, retention basin, or other surface impoundment that is used to receive industrial or process wastewater.

Waters of the U.S. — all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including:

- all waters which are subject to the ebb and flow of the tide;
- all interstate waters, including interstate wetlands (see definition);
- all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters used for recreation, commercial fishing, and industrial purposes; impoundments of waters otherwise defined as waters of the U.S. under this definition;
- tributaries of waters identified above;
- territorial seas; and
- wetlands adjacent to waters other than wetlands identified above (40 CFR 122.2).

Wetlands — those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions; wetlands generally include swamps, marshes, bogs, and similar areas (40 CFR 122.2).

ENVIRONMENTAL PERMIT SCREENING MODEL CHECKLIST

Base: _____

Project Name: _____

Project Number: _____

Project Location: _____

Date: _____

Name of Preparer: _____

	Potential Permit/Approval Requirements		Comments
	Y	N	
WATER (Section 1)			
Underground injection Well			
Industrial Wastewater			
Sanitary Wastewater			
Stormwater			
Dredge or Fill			
Drinking Water			
HAZARDOUS MATERIAL/HAZARDOUS WASTE/PCBs/ODSs (Section 2)			
Usage			
Tracking			
Storage			
Treatment			
Disposal			
SOLID WASTE (Section 3)			
Landfilling			
Incineration			
Transfer			
Composting			
Landspreading			
Medical Waste			
Scrap Tires			
Used Oil			

ENVIRONMENTAL PERMIT SCREENING MODEL CHECKLIST (con't)

	Potential Permit/Approval Requirements		Comments
	Y	N	
AIR (Section 4)			
Boilers			
Incinerators			
Fuel Burning Equipment			
Miscellaneous Units			
Petroleum Storage			
Jet Engine Test Facilities			
Transportation Facilities			
STORAGE TANKS (Section 5)			
USTs			
ASTs			
PESTICIDES (Section 6)			
Application			
Use			
ASBESTOS (Section 7)			
Regulated Asbestos Containing Materials			
RADIOACTIVE MATERIALS (Section 8)			
Radioactive Materials			
WILDLIFE AND WILDLIFE HABITAT (Section 9)			
Migratory Birds			
Threatened or Endangered Species			
Marine Mammals			
INSTALLATION RESTORATION PROJECT (Section 10)			
Installation Restoration Project			

FEDERAL REGULATIONS CITED

<u>CITATION</u>	<u>TITLE</u>
10 CFR 30-72	Licensing of Radioactive Materials
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 112	Oil Pollution Prevention
40 CFR 122	National Pollutant Discharge Elimination System
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 144	Underground Injection Control Program
40 CFR 145	State UIC Program Requirements
40 CFR 165	Pesticides
40 CFR 258	Criteria for Municipal Solid Waste Landfills
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Wastes
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities
40 CFR 279	Standards for the Management of Used Oil
40 CFR 280	Technical Standards and Corrective Action Requirements for Owners and Operators of USTs
40 CFR 401	General Provisions
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution
40 CFR 413	Electroplating Point Source Category
40 CFR 433	Metal Finishing Point Source Category
40 CFR 459	Photographic Point Source Category
40 CFR 460	Hospital Point Source Category
40 CFR 503	Standards for the Use or Disposal of Sewage Sludge
40 CFR 761	PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR 763	Asbestos
50 CFR 21	Wildlife and Fisheries
50 CFR 81	Conservation of Endangered and Threatened Species of Fish, Wildlife, and Plants

FEDERAL LAWS CITED

Clean Water Act (CWA)	Section 401	Certification
Clean Water Act (CWA)	Section 404	Permits for Dredge and Fill Material
Rivers and Harbors Act of 1989	Section 10	Obstruction of Excavations and Filling in of Navigable Waters
Clean Air Act (CAA)	Title I	Air Pollution Prevention and Control
Clean Air Act (CAA)	Title VI	Stratospheric Ozone Protection
Endangered Species Act	Section 10	Exceptions
Marine Mammal Protection Act	Section 104	Permits

OTHER REGULATORY REFERENCES

County

Clark County Air Quality Regulations (includes regulations on NESHAP, Asbestos, boilers and steam generators, fuel burning equipment, and testing/monitoring)

Construction Activities Dust Control Handbook, Clark County Department of Air Quality and Environmental Management

State

<u>CITATION</u>	<u>TITLE</u>
NAC 444	Sanitation
NAC 444A	Programs for recycling
NAC 445A	Water Controls
NAC 445B	Air Pollution
NAC 459	Hazardous Materials
NAC 555	Control of Insects, Pests, and Noxious Weeds
NAC 590	Petroleum Products and Antifreeze
NAC 503	Hunting, Fishing, and Trapping; Miscellaneous Protective Measures
NAC 618	Occupational Safety and Health

APPENDIX D

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE AND PUBLIC PARTICIPATION

**PUBLIC NOTIFICATION, DISTRIBUTION,
AND COMMENTS TO THE
DRAFT ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT**

PUBLIC NOTIFICATION

As part of the public involvement process, Nellis AFB has published a Notice of Availability of the Draft Environmental Assessment and Finding of No Significant Impact on September 24, 2013 in the Las Vegas Review-Journal.

*Notice of Availability
Draft Environmental Assessment
For Creech Air Force Base Capital Improvements Program*

The U.S. Air Force has prepared a draft Environmental Assessment (EA) that analyzed the Capital Improvements Program (CIP) resulting from updating the 2008 Creech AFB CIP to account for significant mission changes. The CIP would include construction, demolition, renovation, and maintenance at Creech AFB. By taking a comprehensive approach to planning and implementing the facilities and infrastructure improvements over a multi-year period, Creech AFB would maximize the use of funds, conserve energy, and meet operational goals. This EA has been prepared in accordance with the National Environmental Policy Act.

A copy of the Draft EA and Draft Finding of No Significant Impact are available for review and comment at the following libraries beginning September 27, 2013.

Las Vegas Library – *Las Vegas*

Indian Springs Library – *Indian Springs*

You may request a copy of the document from the Creech AFB Public Affairs Office by calling (702) 652-2750 or by writing to the address below. An electronic version of the EA is available for public review at www.Creech.af.mil/library/environment.asp. Please provide any comments on the Draft EA by October 27, 2013. Comments should be forwarded to: 99 ABW/PA Director, 4430 Grissom Avenue, Ste 107, Creech AFB NV 89191.

**DISTRUBUTION AND COMMENTS OF THE
DRAFT EA AND FONSI**

DISTRIBUTION LIST

Nevada State Clearinghouse
Department of Administration
Division of Budget & Planning
209 East Musser Street, Room 200
Carson City, NV 89701-4298
clearinghouse@budget.state.nv.us
(electronic coordination)

Commissioner Steve Sisolak, Chairperson
Clark County Commission
500 Grand Central Parkway
Las Vegas, NV 89109

Mr. John Mendoza, S. Planner
Clark County Department of Air Quality & Environmental Management
500 S. Grand Central Parkway
P.O. Box 555210
Las Vegas, NV 89155

Ms Jennifer Olsen
Southern Nevada Regional Planning Coalition
Clark County Clearinghouse
240 Water Street Mail Stop 115
Henderson, NV 89009

Indian Springs Town Advisory Board
P.O. Box 12
Indian Springs, NV 89018

Mr. Mario Bermudez, Planning Manager
Clark County Department of Comprehensive Planning
500 S. Grand Central Parkway, First Floor
Las Vegas, NV 89155

Las Vegas Library
Reference Department
833 Las Vegas Blvd North
Las Vegas, NV 89101

Indian Springs Library
P.O. Box 629
Indian Springs, NV 89018

SAMPLE DISTRIBUTION LETTER



DEPARTMENT OF THE AIR FORCE
99TH CIVIL ENGINEER SQUADRON (ACC)
NELLIS AIR FORCE BASE, NEVADA

Ms. Lynn Haarklau
99 CES/CENP
6020 Beale Avenue
Nellis AFB, NV 89191-7260

Commissioner Steve Sisolak, Chairperson
Clark County Commission
500 Grand Central Parkway
Las Vegas, NV 89109

SEP 25 2013

Dear Mr. Sisolak

The United States Air Force has prepared a draft Environmental Assessment (EA) for the proposed action to update the Creech Air Force Base (AFB) Capital Improvements Program (CIP). This update reflects current conditions and make recommendations for improvements to Creech AFB. The CIP for Creech AFB describes discrete projects, such as major utility upgrades or construction of individual facilities, also reflects planned changes to enhance mission capability, correct space and/or infrastructure deficiencies, and to support future development through modernization, restoration, and sustainment projects.

In addition to the proposed action, this draft EA assesses the no-action alternative. Under the no-action alternative, the proposed CIP would not be implemented, but some construction, demolition, or infrastructure improvement projects would be implemented in accordance with the old CIP. Projects not previously identified in the 2008 CIP would be analyzed individually in a case-by-case basis.

In accordance with 32 CFR 989, the Air Force *Environmental Impact Analysis Process (EIAP)*, and 40 CFR 1500-1508, the *Council on Environmental Quality* guidelines, pursuant to the *National Environmental Policy Act*, as amended, Nellis AFB requests your agency review the assessment of the proposed action. Please send any comments no later than October 27, 2013 to Mr. Tod Oppenborn at the above address or e-mail him at tod.oppenborn@nellis.af.mil. Thank you for your participation.

Sincerely


LYNN HAARKLAU
Chief, Portfolio Optimization

Attachment
Draft Creech AFB Capital Improvements Program Environmental Assessment and FONSI

APPENDIX E

**NEVADA DIVISION OF WILDLIFE – GILA
MONSTER STATUS, IDENTIFICATION AND
REPORTING PROTOCOL FOR
OBSERVATIONS**



NEVADA DEPARTMENT OF WILDLIFE

Southern Region

4747 W. Vegas Drive, Las Vegas, Nevada 89108
Phone: 702-486-5127, Fax: 702-486-5133



7 September 2012

GILA MONSTER STATUS, IDENTIFICATION AND REPORTING PROTOCOL FOR OBSERVATIONS

Gila Monster Status

- Per Nevada Administrative Code 503.080, the Gila monster (*Heloderma suspectum*) is classified as a Protected reptile.
- Per Nevada Administrative Codes 503.090, and 503.093, no person shall capture, kill, or possess any part thereof of Protected wildlife without the prior written permission by the Nevada Department of Wildlife (NDOW).

This species is rarely observed relative to other species which is the primary reason for its Protected classification by the State of Nevada. The USDI Bureau of Land Management has recognized this lizard as a sensitive species since 1978. Most recently, the Gila monster was designated as an *Evaluation* species under Clark County's Multiple Species Habitat Conservation Plan (MSHCP). The evaluation designation was warranted because inadequate information exists to determine if mitigation facilitated by the MSHCP would demonstrably cover conservation actions necessary to insure the species' persistence without protective intervention as provided under the federal Endangered Species Act.

The banded Gila monster (*H.s. cinctum*) is the subspecies that occurs in Clark, Lincoln, and Nye counties of Nevada. Found mainly below 5,000 feet elevation, its geographic range approximates that of the desert tortoise (*Gopherus agasizii*) and is coincident to the Colorado River drainage. Gila monster habitat requirements center on desert wash, spring and riparian habitats that inter-digitate primarily with complex rocky landscapes of upland desert scrub. They will use and are occasionally encountered out in gentler terrain of alluvial fans (bajadas). Hence, Gila monster habitat bridges and overlaps that of both the desert tortoise and chuckwalla (*Sauromalus ater*). Gila monsters are secretive and difficult to locate, spending >95% of their lives underground.

The Gila monster is the only venomous lizard endemic to the United States. Its behavioral disposition is somewhat docile and avoids confrontation. But it will readily defend itself if threatened. Most bites are considered illegitimate and consequential to harassment or careless handling. These lizards are not dangerous unless molested or handled and should not be killed.

Scant information exists on detailed distribution and relative abundance in Nevada. The Nevada Department of Wildlife (NDOW) has ongoing management investigations addressing the Gila monster's status and distribution, hence additional distribution, habitat, and biological

information is of utmost interest. In assistance to gathering additional information about Gila monsters in Nevada, NDOW will be notified whenever a Gila monster is encountered or observed, and under what circumstances (see Reporting Protocol below).

Identification



The Gila monster is recognizable by its striking black and orange-pink coloration and bumpy, or beaded, skin. In keeping with its namesake, the banded Gila monster retains a black chain-link, banded appearance into adulthood. Other lizard species are often mistaken for the Gila monster. Of these, the non-venomous western banded gecko (*Coleonyx variegatus*) and non-venomous chuckwalla are most frequently confused with the Gila monster. All three species share the same habitats.

The western banded gecko is often mistakenly identified as a baby or juvenile Gila monster. Western banded geckos do have a finely granular skin and pattern that can be suggestive of the Gila monster to the untrained eye. However, western banded gecko heads are somewhat pointed at the snout and the relatively large eyes have vertical pupils. Snouts of Gila monsters are bluntly rounded and the smallish eyes have round pupils.



Newly hatched Gila monsters are about 5-6 inches long with a vivid orange and black, banded pattern. Adult western banded geckos are at best cream to yellow and brown in pattern and do not exceed 5 inches.



Both juvenile and adult chuckwallas are commonly confused with the Gila monster. Juvenile chuckwallas have an orange and black, banded tail. Although banding of the tail fades as chuckwallas mature, their large adult size (up to 17 inches) rivals that of the Gila monster. Adult chuckwallas have a body shape somewhat suggestive of the Gila monster, but they lack the coarsely beaded skin and black and orange body pattern of the Gila monster.

Reporting Protocol for Gila Monster Observations

Field workers and personnel in southern Nevada should at least know how to: (1) identify Gila monsters and be able to distinguish it from other lizards such as chuckwallas and western banded geckos (see Identification section above); (2) report any observations of Gila monsters to the Nevada Department of Wildlife (NDOW); (3) be alerted to the consequences of a Gila monster bite resulting from carelessness or unnecessary harassment; and (4) be aware of protective measures provided under state law.

- 1) Live Gila monsters found in harms way on the construction site will be captured and then

detained in a cool, shaded environment ($\leq 85^{\circ}\text{F}$) by the project biologist or equivalent personnel until a NDOW biologist can arrive for documentation, marking and obtaining biological measurements and samples prior to releasing. Despite that a Gila monster is venomous and can deliver a serious bite, its relatively slow gate allows for it to be easily coaxed or lifted into an open bucket or box carefully using a long handled instrument such as a shovel or snake hook (*Note: it is not the intent of NDOW to request unreasonable action to facilitate captures; additional coordination with NDOW will clarify logistical points*). A clean 5-gallon plastic bucket with a secure, vented lid; an 18"x 18"x 4" plastic sweater box with a secure, vented lid; or, a tape-sealed cardboard box of similar dimension may be used for safe containment. Additionally, written information identifying the mapped capture location, Global Positioning System (GPS) coordinates in Universal Transverse Mercator (UTM) using the North American Datum (NAD) 83 zone 11. Date, time, and circumstances (e.g. biological survey or construction) and habitat description (vegetation, slope, aspect, substrate) will also be provided to NDOW.

- 2) Injuries to Gila monsters may occur during excavation, blasting, road grading, or other construction activities. In the event a Gila monster is injured, it should be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Rehabilitation or euthanasia expenses will not be covered by NDOW. However, NDOW will be immediately notified of any injury to a Gila monster and which veterinarian is providing care for the animal. If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, date, time, habitat, and mapped location (GPS coordinates in UTM using NAD 83 Z 11).
- 3) Should NDOW's assistance be delayed, biological or equivalent acting personnel on site should detain the Gila monster out of harms way until NDOW personnel can respond. **The Gila monster should be detained until NDOW biologists have responded.** Should NDOW not be immediately available to respond for photo-documentation, a digital (5 mega-pixle or higher) or 35mm camera will be used to take good quality images of the Gila monster in situ at the location of live encounter or dead salvage. The pictures will be provided to NDOW at the address above or the email address below along with specific location information including GPS coordinates in UTM using NAD 83 Z 11, date, time and habitat description. Pictures will show the following information: (1) Encounter location (landscape with Gila monster in clear view); (2) a clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view and be in sharp focus); (3) a clear, overhead close-up of the head (head should fill camera's field of view and be in sharp focus).

Please contact NDOW Biologist Jason L. Jones at 702-486-5127 x3718
or by e-mail at jljones@ndow.org for additional information regarding these protocols.

