EXECUTIVE SUMMARY

Draft

Environmental Impact Statement for F-15 Beddown and Infrastructure Upgrades at Andersen Air Force Base, Guam

Department of the Air Force

June 2024

This Executive Summary of the *Draft Environmental Impact Statement (EIS) for F-15 Beddown and Infrastructure Upgrades at Andersen Air Force Base (AFB), Guam* provides an overview of the in-depth analysis of the Proposed Action that is presented in the full Draft EIS.

Printed copies of the Draft EIS are available at each of the public libraries listed below. In addition, an electronic copy of the Draft EIS is available on the project website at www.AAFBInfraAndF15EIS.com.

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PRIVACY ADVISORY

This Draft Environmental Impact Statement (EIS) has been provided for public comment in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality NEPA Implementing Regulations (Title 40 Code of Federal Regulations [CFR] Parts 1500–1508), and Environmental Impact Analysis Process (EIAP) (32 CFR Part 989). The EIAP provides an opportunity for public input on United States Department of the Air Force (DAF) decision making, allows the public to offer input on alternative ways for the DAF to accomplish what it is proposing, and solicits comments on DAF's analysis of environmental effects.

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Abbreviations and Acronyms

AFB	Air Force Base
DAF	Department of the Air Force
DAFMAN	Air Force Manual
DoD	Department of Defense
DON	Department of the Navy
ECM	earth covered magazine
EIS	Environmental Impact Statement
ESQD	Explosive Safety Quantity Distance
HQ	Headquarters
JRM	Joint Region Marianas
MITT	Mariana Islands Training and Testing
MSA	Munitions Storage Area
NEPA	National Environmental Policy Act
OEIS	Overseas Environmental Impact Statement
PACAF	Pacific Air Forces
RSAF	Republic of Singapore Air Force
SPCC	Spill Prevention, Control, and Countermeasures
U.S.	United States

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ES-1. Purpose of and Need for the Proposed Action

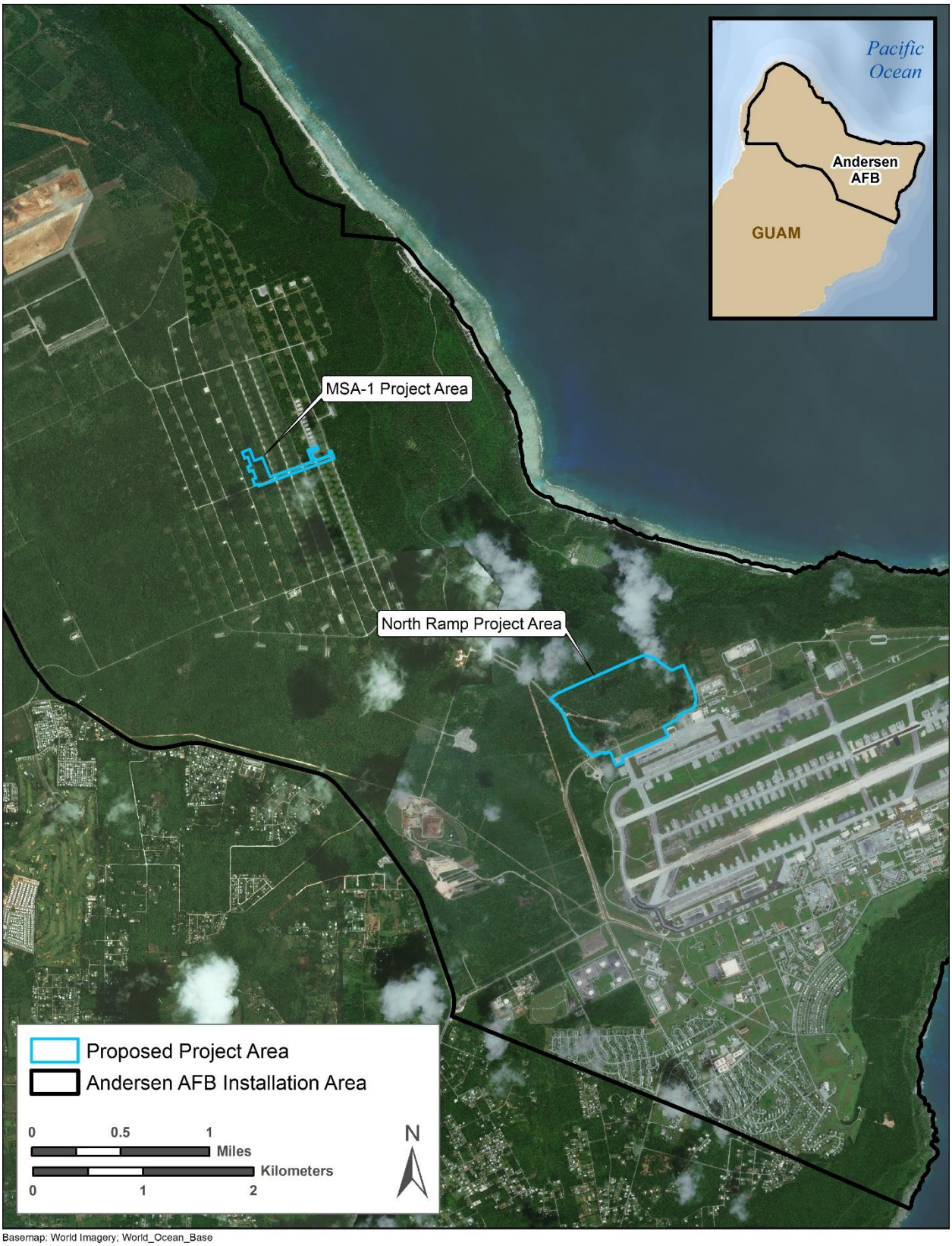
ES-1.1 Introduction

The Department of the Air Force (DAF) prepared this Draft Environmental Impact Statement (EIS) for the proposal to construct infrastructure upgrades, and to beddown and support the mission requirements of up to 12 F-15 fighter aircraft at Andersen Air Force Base (AFB), Guam. The use of this infrastructure is consistent with the types of operations currently occurring on the installation. This Draft EIS analyzes the potential for significant environmental impacts associated with the Proposed Action and other alternatives, including the No Action Alternative.

The proposed infrastructure upgrades would occur at Andersen AFB, which is the most forward United States (U.S.) sovereign Air Force Base in the Pacific, located on the island of Guam. Proposed infrastructure upgrades on Andersen AFB would occur adjacent to the airfield operations area and within Munitions Storage Area (MSA) 1 (see **Figure ES-1**). The proposed infrastructure upgrades at Andersen AFB would be conducted in alignment with the evolving DAF and Department of Defense (DoD) strategies and initiatives for the Indo-Pacific region to improve operationally relevant infrastructure and enhance U.S. forward-posture capabilities, and would allow the DAF and DoD to maintain agile defense capabilities within the region.

This Draft EIS incorporates by reference relevant plans, studies, and material from previously completed National Environmental Policy Act (NEPA) documents. It addresses the proposal to construct infrastructure upgrades at Andersen AFB that would accommodate aircraft types and flight operations, which have been addressed in these previously completed NEPA documentation and associated materials: *Mariana Islands Testing and Training Activities Environmental Impact Statement/Overseas Environmental Impact Statement, 2015* (DON 2015)*;* and *Mariana Islands Testing and Training Activities Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement, 2020* (DON 2020)*.* These documents are also available for review at http://www.AAFBInfraAndF15EIS.com.

The DAF is the lead agency for this EIS. Headquarters (HQ) Pacific Air Forces (PACAF) is the DAF major command developing this EIS, as the proponent for this Proposed Action, on behalf of the DAF. The Department of the Navy (DON) has been identified as a cooperating agency for this EIS. DON's role as a cooperating agency is based in Joint Region Marianas' (JRM's) designated responsibility to oversee the installation management functions of Andersen AFB and provide environmental compliance oversight for activities on JRM installations.



Basemap: World Imagery; World_Ocean_Base

Figure ES-1. Andersen AFB Location Map

ES-1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide critical infrastructure that enhances U.S. posture west of the International Date Line. Additionally, the purpose of the Proposed Action is to beddown and operate Republic of Singapore Air Force (RSAF) fighter aircraft at Andersen AFB to support training requirements.

The Proposed Action is needed to enhance DAF capability to support U.S. and partner nation forces within the Indo-Pacific region, and strengthen the U.S.'s ability to respond regionally and worldwide through construction of infrastructure upgrades and increased support of fighter aircraft, in alignment with evolving DAF and DoD strategies and initiatives for the region. Increasing and improving airfield and munitions infrastructure would address capability gaps and allow for greater efficiencies and agility in the way ground operations are conducted.

ES-2. Alternatives, Including the Proposed Action

To meet the purpose and need described in **Section ES-1.2**, the DAF proposes to beddown and support the mission requirements of up to 12 RSAF F-15 fighter aircraft, and construct infrastructure upgrades at Andersen AFB, Guam, in support of DAF and DoD strategies and initiatives for the Indo-Pacific. Once construction is completed, the use of this infrastructure would be consistent with the types of operations currently occurring on the installation.

The proposed infrastructure would have multiple uses, and could support both the F-15 beddown and other DAF, service component, and partner nation aircraft or missions operating from Andersen AFB now or in the future. The infrastructure would provide options for parking, storing, maintaining, refueling, loading, and unloading the F-15s and other aircraft on the installation, as well as storing munitions, which would improve upon current strategic capabilities and posture with regard to ground maneuverability. The F-15 beddown and proposed infrastructure each have standalone value for supporting the defense of U.S. interests in the Indo-Pacific region, in accordance with the Pacific Deterrence Initiative and as described in **Section ES-1.1**.

The F-15 beddown of up to 12 RSAF F-15 fighter aircraft at Andersen AFB would include airfield operations, supporting aircraft operations, and personnel to support the F-15 squadron's mission requirements. The F-15 beddown is anticipated to begin in 2029 and would not be wholly dependent upon completion of the infrastructure upgrade construction. Infrastructure upgrades would occur adjacent to the existing airfield operations area and in MSA-1, totaling approximately 209 acres (see **Figure ES-1**). Infrastructure upgrades adjacent to the existing airfield operations area would occur in a location that this Draft EIS refers to as the "North Ramp" project area. **Sections ES-2.1, ES-2.2,** and **ES-2.3** present a description of the activities associated with the Proposed Action for the F-15 beddown, construction, and operations.

ES-2.1 F-15 Beddown

Key elements associated with the F-15 beddown under the Proposed Action with the potential to affect environmental resources at and surrounding Andersen AFB include:

- Beddown up to 12 F-15 fighter aircraft, with anticipated arrival in 2029
- Conduct F-15 aircraft operations (i.e., flight operations that include a takeoff and landing) from Andersen AFB, to include hosting periodic, temporary aircraft in support of the training mission requirements for the F-15s
- Increase personnel at the installation to support mission requirements

The following sections identify the specific beddown requirements under the Proposed Action.

Sections ES-2.1.1 and **ES-2.1.2** identify the specific beddown requirements under the Proposed Action.

ES-2.1.1 F-15 and Supporting Aircraft Operations

Three terms are used to describe aircraft operations: sortie, closed pattern, and airfield operation. A sortie consists of a single military aircraft flight from takeoff through landing, as does a closed pattern. An airfield operation represents the single movement or individual portion of a flight in the installation airfield airspace environment, such as a departure or an arrival.

Airfield Flight Operations. F-15 aircrews would complete flight operations to maintain proficiency in the aircraft. Flight training provides basic and continuation aircrew training needs. The beddown of up to 12 F-15s at Andersen AFB would include an increase of approximately 32 percent in total airfield operations, sorties, and closed patterns. It is assumed that approximately 10 percent of total airfield operations and sorties would be conducted during the environmental night, from 10 p.m. until 7 a.m. Additionally, It is estimated that each sortie would be approximately 2 hours, resulting in approximately 3,600 flight hours per year for all based F-15s.

In accordance with the proposed F-15 mission, Andersen AFB would also support periodic, temporary training events with the based RSAF F-15s, which would include hosting additional, non-permanent aircraft at Andersen AFB. Each training event would include an additional 12 F-15s (i.e., total of 24 F-15s per training event), 1 tanker/refueling aircraft (e.g., KC-135s, KC-46s, A-330s), and 1 early warning aircraft (e.g., G-550). It is anticipated that training events with these additional aircraft would begin in 2030, after the F-15 beddown action is complete, and would occur for 4 weeks per event, twice per year.

Training Flight Operations. Aircraft operating from Andersen AFB currently conduct training operations in existing special use airspace. No aspect of the Proposed Action would alter the structure, or overall nature or use, of the local or remote airspace units, or the type, frequency, or location of munitions expenditures. The proposed F-15 mission at Andersen AFB would use the existing fighter flight tracks; no new airspace is proposed, and no changes to the manner in which the existing airspace is used would occur. Rather, changes to the aircraft inventory at Andersen AFB would only result in minor modifications to the amount of activity within the

airspace. All F-15 training flight and supporting aircraft flight operations and munitions expenditures would occur within the Mariana Islands Range Complex, as described in the 2015 Mariana Islands Training and Testing (MITT) EIS/ Overseas Environmental Impact Statement (OEIS) and 2020 Supplemental MITT EIS/OEIS (DON 2015, 2020). All operations proposed within this EIS that occur within the Mariana Islands Range Complex (MITT study area) would need to be within the operations authorizations established by the MITT EISs.

ES-2.1.2 F-15 and Support Personnel

F-15 Personnel. Beddown of the F-15s would require additional personnel to operate and maintain the aircraft, and to provide necessary support services. Approximately 205 personnel would be required, which would include DAF and/or partner nation personnel (officer, enlisted, civilian) and contractor support. Personnel would be accompanied by approximately 35 family members and dependents. Therefore, the total Andersen AFB personnel and dependent population would increase by approximately 3 percent. The personnel increase is expected to occur concurrent with the basing of aircraft. It is assumed that all personnel would reside in off-installation housing on Guam.

Periodic, Temporary Support Personnel. During periodic, temporary training events with the based F-15s, additional aircraft would be hosted at Andersen AFB in support of the F-15 training mission. These training events would include an increase in DAF and/or partner nation personnel (officer, enlisted, civilian) and contractor support required to operate and maintain the support aircraft. During each 4-week training event, which would occur twice per year, approximately 200 personnel would be required for the duration of the event. It is assumed that support personnel would not be accompanied by dependents, and would be housed in off-installation housing on Guam.

ES-2.2 Infrastructure Construction

The DAF proposes to construct or install the following infrastructure at the North Ramp:

- Airfield pavements
- Aircraft hangar and maintenance facility
- Flightline maintenance facility and utility building
- Jet fuel receipt, storage, and distribution system extension
- Fencing and utilities extension
- Roadways and parking
- Stormwater management infrastructure

The DAF proposes to construct or install the following infrastructure within MSA-1:

- Three earth covered magazines (ECMs)
- Pavements along utilities corridors
- Utilities
- Temporary infrastructure to support construction
- Stormwater management infrastructure

Sections ES-2.2.1 and **ES-2.2.2** provide detailed information, including infrastructure sizes and descriptions, associated with construction of the Proposed Action at the North Ramp and MSA-1, respectively. Depending on the scale of the proposed facility, this Draft EIS provides infrastructure sizes either in acres or square footage to provide the most relatable context for the reader.

ES-2.2.1 North Ramp

Construction at the North Ramp would occur over approximately 3 to 7 years, and it is estimated to begin in 2025. Airfield facilities would be constructed in accordance with all DoD and DAF criteria, as applicable.

Construction of infrastructure upgrades at the North Ramp project area would disturb approximately 192 acres, and would include the development of approximately 96 acres of facilities and infrastructure (see **Figure ES-2**). Of this acreage, approximately 80 acres would be paved surfaces, 16 acres would be stormwater management infrastructure, and the remaining 96 acres would be revegetated and maintained. **Table ES-1** provides a summary of the proposed infrastructure upgrades at the North Ramp. Site preparations for construction would include demolition of Buildings 2550, 2551, and 2552 as well as clearing and grading. Due to the existing slope, grade, and topography of the North Ramp project area, the DAF would clear surface vegetation from and grade the entire 192-acre project area within the site layout boundary shown in **Figure ES-2**. Grading would create slopes of approximately 1.5 percent to no more than 10 percent across the entire North Ramp project area. Due to the existing topography of the North Ramp project area, it is estimated that preparation of the site could require approximately 35 feet of fill in some locations, and may require in excess of 1 million cubic meters of fill across the site. It is assumed that fill material would be obtained from higher elevations within the North Ramp project area and from fill suppliers on Guam, such as the Smith Bridge quarry in Yigo.

Table ES-1. Facilities and Infrastructure Projects within the North Ramp Project Area

Project	Size[a] (acres)
Airfield pavements (parking apron, taxiways, trim pad)	68.00
Aircraft hangar and maintenance facility	2.00
Flightline maintenance facility	0.05
Utility building	0.10
Jet fuel receipt, storage, and distribution system	4.00
Fencing and utilities extensions	N/A[b]
Roadways and parking	6.00
Stormwater management infrastructure	16.00
Total Acreage	**96.15**

N/A = not applicable
[a] Size provided is the footprint (i.e., first floor) for the facility.
[b] These extensions would be located within the proposed project footprints, or within areas that would be revegetated and maintained.

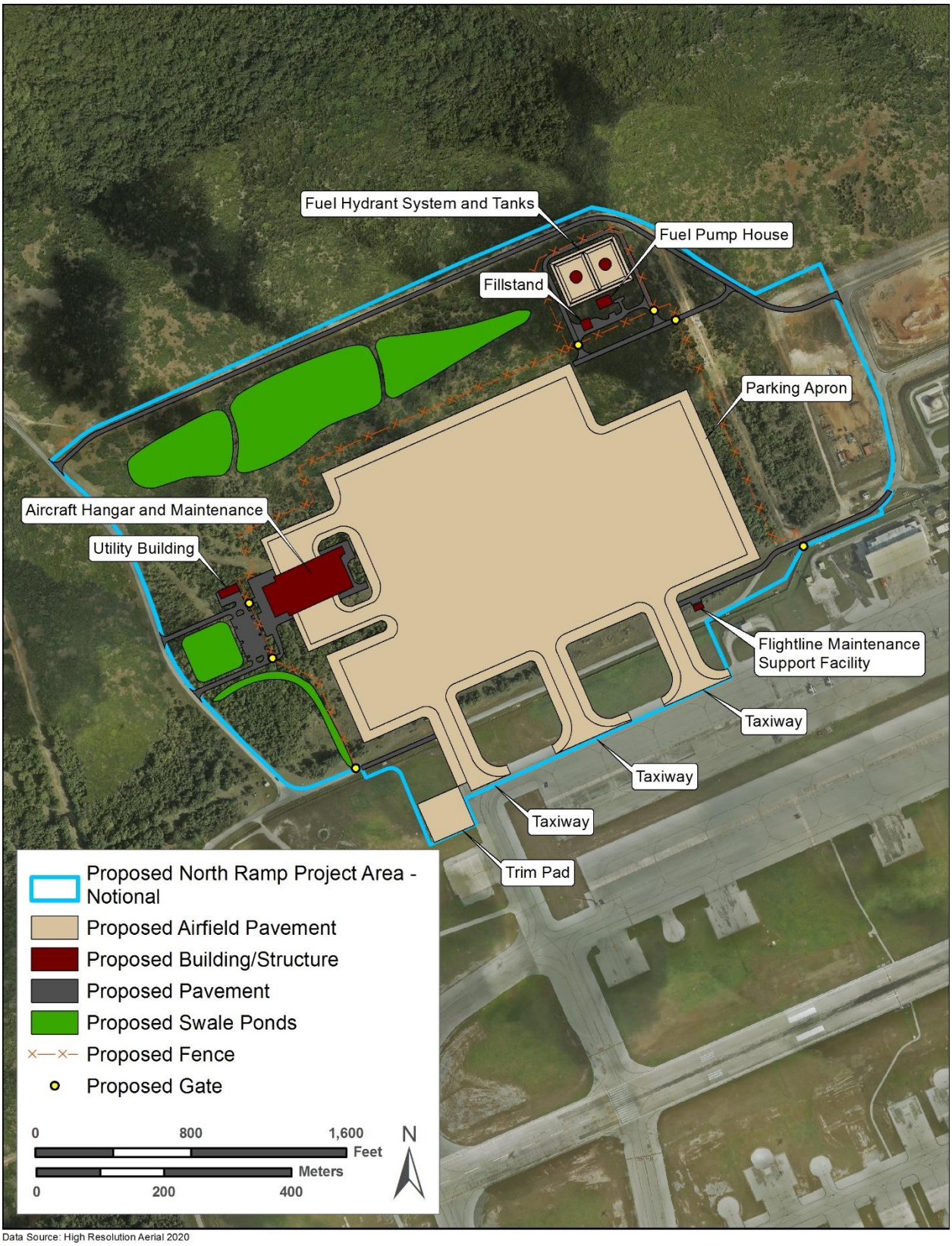


Figure ES-2. Proposed North Ramp Infrastructure Upgrades – Notional

The North Ramp project area includes the construction footprint of all proposed infrastructure, land to be used during construction as a laydown area, land to support a concrete batch plant during construction, and vegetated areas that would be permanently maintained after completion of construction. The actual construction footprint or location of infrastructure proposed within the project area could change from the notional layout provided in **Figure ES-2** based on engineering- or design-limiting factors as the planning process progresses and the site layout is finalized.

Approximately 500 construction workers would be required to construct the infrastructure upgrades proposed at the North Ramp during the construction period. This analysis anticipates that the infrastructure would be constructed sequentially, meaning that personnel support would not increase and decrease but would remain consistent across the construction period.

ES-2.2.2 Munitions Storage Area 1

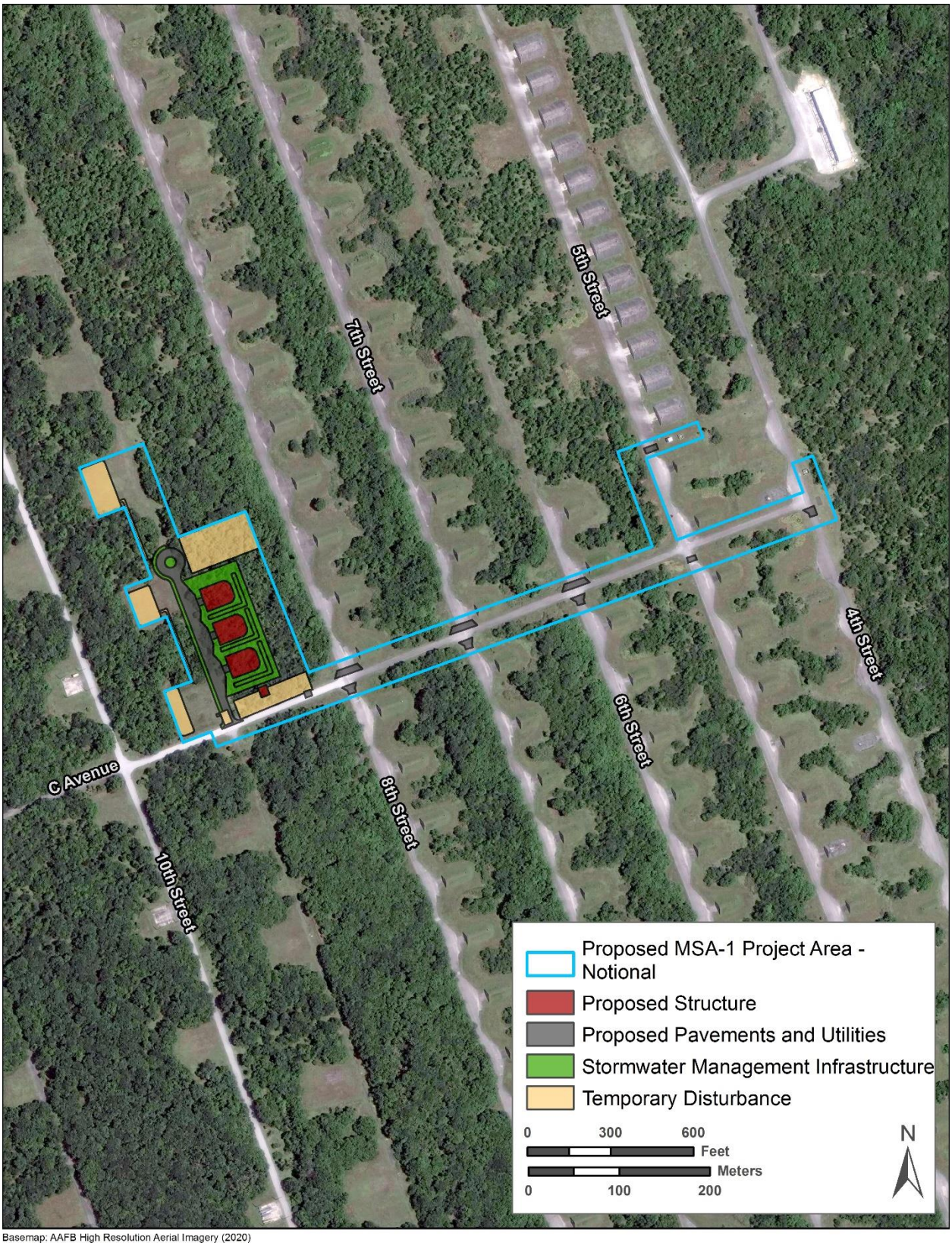
Infrastructure upgrades within MSA-1 would improve utilities connections and provide supplemental munitions storage capacity for aircraft at Andersen AFB, including training detachments. Construction within MSA-1 would be expected to occur over approximately 2 years and coincide with North Ramp construction. Proposed MSA-1 facilities would be constructed in accordance with all DoD and DAF criteria, as applicable, including Unified Facilities Criteria 3-201-1, *Civil Engineering*; Department of the Air Force Manual (DAFMAN) 32-1084, *Facility Requirements Standards*; and DAFMAN 91-201, *Explosives Safety Standards.*

Construction of infrastructure upgrades within the MSA-1 project area would disturb approximately 17 acres and include the development of approximately 5.8 acres, or 253,000 square feet, of facilities and infrastructure. Of this total acreage, approximately 2 acres would be paved surfaces (87,000 square feet), 1.5 acre (67,000 square feet) would be stormwater management infrastructure, and the remaining 11.2 acres would be revegetated and maintained. **Table ES-2** provides a summary of the proposed infrastructure upgrades at MSA-1. **Figure ES-3** shows proposed MSA-1 infrastructure upgrades.

Table ES-2. Facilities and Infrastructure Projects within the MSA-1 Project Area

Project	Size[a] (acres)
ECMs	0.62
Pavements and utilities	1.35
Generator	0.002
Stormwater management infrastructure	1.50
Temporary disturbance to support construction[b]	11.20
Total acres[c]	**11.20**

[a] Size provided is the footprint (i.e., first floor) for the facility.
[b] Some temporary disturbance (i.e., stabilized construction entrance and temporary laydown yard) would overlap proposed pavements (i.e., access road and generator location); however, temporary disturbance areas are calculated as separate disturbances in this EIS to provide a conservative estimate of disturbance.
[c] Totals may not sum exactly due to rounding.



Basemap: AAFB High Resolution Aerial Imagery (2020)

Figure ES-3. Proposed MSA-1 Infrastructure Upgrades

The MSA-1 project area includes the construction footprint of all proposed infrastructure, land to be used during construction as laydown area, and vegetated areas that would be permanently maintained after completion of construction. The actual construction footprint or location of infrastructure proposed within the project area could change from the notional layout provided in **Figure ES-3** based on engineering- or design-limiting factors as the planning process progresses and the site layout is finalized. Prior to construction, contractors would clear surface vegetation and "grub" (i.e., remove roots remaining in the soil) the project area. It is not anticipated that the MSA-1 project area would need substantial grading or fill material.

The construction workforce anticipated to support construction in the North Ramp project area would also be used to support MSA-1 construction, and it is not anticipated that additional construction workers beyond those 500 workers would be required.

ES-2.3 Operations

Once construction is complete, the North Ramp project area would be used for aircraft parking, storage, maintenance, refueling, loading, and unloading consistent with existing installation operations. MSA-1 would be used for munitions storage for aircraft at Andersen AFB, including partner nations and training detachments. **Sections ES-2.3.1** and **ES-2.3.2** provide details regarding ground operations for the proposed infrastructure.

ES-2.3.1 North Ramp

Once installed, it is not anticipated that the fencing, utilities, roadways, vehicle parking, or stormwater swales and basins would be involved in "active" ground operations, require regular recurring maintenance (e.g., on a weekly basis), be staffed with personnel, or be operated differently than other similar infrastructure currently on Andersen AFB. Following construction, access to the North Ramp project area from the west on Marianas Boulevard would be gate access only, and general base traffic on Marianas Boulevard would be routed northwestward on 5th Street and around the North Ramp project area, rather than through it. However, this updated base traffic pattern would not require "active" management once established. Therefore, discussion in this section focuses on the North Ramp facilities that aircraft and personnel would regularly use. The entire North Ramp project area would be subject to regular vegetation maintenance to prevent overgrowth adjacent to the parking apron and airfield.

Additional personnel would be required for maintenance of the North Ramp infrastructure. It is estimated that up to five additional personnel would be hired to assist with facility and jet fuel system maintenance. It is assumed that these personnel would be civilians and hired from the local community.

ES-2.3.2 Munitions Storage Area 1

ECMs would be located within MSA-1, adjacent to other existing ECMs. Therefore, use of the proposed ECMs for munitions storage would not require any changes to existing munitions protocols at Andersen AFB and would not require a change in the MSA-1 Explosive Safety Quantity Distance (ESQD) arcs. Munitions would be loaded into and out of the ECMs, and transported to and from the ECMs using the same routes, processes, and procedures currently

used at Andersen AFB. Additionally, it is not anticipated that the pavements or stormwater management infrastructure proposed within the MSA-1 project area would be involved in "active" ground operations, require regular recurring maintenance (e.g., on a weekly basis), be staffed with personnel, or be operated differently than other similar infrastructure currently on Andersen AFB. To prevent overgrowth within land adjacent to the ECMs, the entire MSA-1 project area would be subject to ongoing regular vegetation maintenance. No additional personnel would be hired to support MSA-1 infrastructure once it is operational.

ES-2.4 Identification of Alternatives

ES-2.4.1 Strategic Location

To identify priority actions that would align with DAF and DoD strategies for the region, the DAF evaluated forward operating locations within the Indo-Pacific, in accordance with the following criteria for each location:

1. Be on U.S. territory to allow implementation of procedures for security protection of forces;
2. Allow all upgraded capabilities to be on one installation;
3. Support aircraft capable of reaching potential areas of conflict in East Asia;
4. Have existing DoD airfield infrastructure (e.g., runways, aircraft parking, associated airfield support systems) that could be expanded upon without interfering with existing operations;
5. Have adequate base operating support and weapon storage areas so these capabilities may provide for operational efficiencies;
6. Be near an airspace training range with live fire Air-to-Air and Air-to-Ground not requiring aerial refueling; and
7. Have base and community service availability to support a recurring rotational increase in population of up to 240 people.

The DAF reviewed these criteria for installations with airfields on the following islands within the PACAF area of responsibility: Iwo To (formerly known as Iwo Jima), Japan; Saipan, Commonwealth of the Northern Mariana Islands; Diego Garcia, British Indian Ocean Territory; Wake Island, U.S.; Hawai'i, U.S.; and Guam, U.S. All locations except for Guam (Andersen AFB) failed to meet one or more of the above listed selection standards

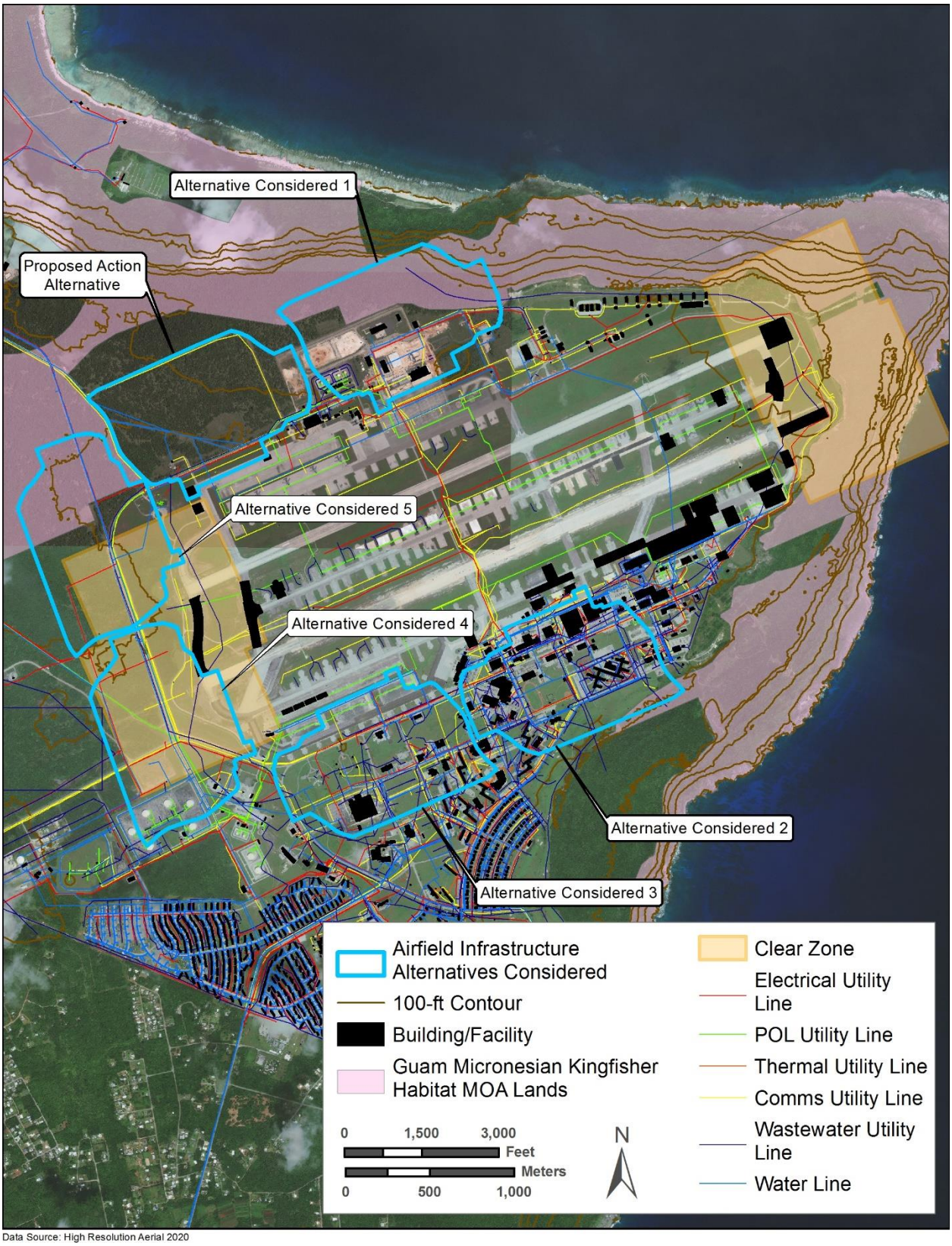
ES-2.4.2 Airfield Infrastructure

DAF planners considered the renovation and replacement of existing facilities as well as construction of new airfield infrastructure for the upgrades. For alternatives considered that would require new construction, DAF planners reviewed potential construction locations around the airfield. Locations not immediately adjacent to the airfield were not considered because they would not meet the selection standard to provide collocation of resources and mission capabilities. Similarly, smaller or discontiguous configurations of the Proposed Action footprint were not considered because they would not allow for all aircraft operations activities to be collocated. Lastly, locations surrounding the northeastern end of the airfield were not considered due to the topography, which changes in elevation by approximately 500 feet and would make

construction in these locations unfeasible or inaccessible. **Figure ES-4** provides the Proposed Action location, construction alternative locations considered around the airfield, and existing built and environmental constraints on Andersen AFB adjacent to the airfield.

Renovating or replacing the existing airfield infrastructure would not meet the need for the Proposed Action because it would not improve strategic capabilities or posture with regard to ground maneuverability as it would not provide additional locations for conducting ground operations. Additionally, renovating or replacing existing airfield infrastructure would require relocation of aircraft from Andersen AFB, which would not meet the operational constraints selection standard because it would interfere with the mission requirements for these aircraft and could also interfere with the existing mission at the relocation airfield.

Under the Proposed Action, the North Ramp project area is a contiguous location adjacent to the airfield and is capable of meeting the selection standards (see **Chapter 2.2** of the Draft EIS for more detail). As shown in **Figure ES-4**, all other 150- to 200-acre locations adjacent to the airfield would: interfere with existing operations; require facilities demolition and relocation; be located adjacent to the shoreline or within areas set aside for the Guam Micronesian kingfisher, increasing environmental impacts; interfere with future development; require longer utilities and fuel transfer line connections; and/or not be easily accessible.



Data Source: High Resolution Aerial 2020

Figure ES-4. Alternatives Considered for Airfield Infrastructure Upgrades

ES-2.4.3 Munitions Storage Infrastructure

In addition to the Proposed Action, the DAF considered locations for the proposed ECMs elsewhere within MSA-1, on Andersen AFB outside the existing MSAs, and within MSA-2. The DAF also considered renovating or replacing existing munitions storage facilities to provide adequate and upgraded storage capabilities.

All undeveloped locations within MSA-1 were considered because MSA-1 is categorized as "operations" land use in the 2017 Andersen AFB Installation Development Plan (Andersen AFB 2017) and is used exclusively for the receiving, storage, and maintenance of munitions. The DAF recognizes that, for safety purposes, munitions operations are restricted to MSAs; therefore, development of munitions infrastructure within MSA-1 will continue in accordance with the land use designation, and as dictated by explosives safety standards and mission needs. Siting within MSAs is unique compared to other DAF installation development processes as it focuses on identifying a location that meets all safety and operations needs. The development of MSA-1 is dictated by explosives safety requirements, in accordance with DAFMAN 91-201, *Explosives Safety Standards*, which include conducting an explosives siting study, identifying explosives safety arcs from surrounding existing facilities, and identifying proposed explosives storage and operations facilities planned in the future. Additionally, the DAF conducts development in MSA-1 to consolidate and collocate infrastructure and resources to the extent practicable to maximize operational efficiency and security while operating within the confines of explosives safety requirements. The DAF determined that the Proposed Action location is the only undeveloped location within MSA-1 that meets all selection standards. All other alternative locations considered for proposed munitions storage infrastructure would not meet explosives safety siting requirements, would interfere with existing operations, would not provide collocation of resources and mission capabilities, and/or would not be easily accessible.

Construction of the proposed ECMs within the MSA-1 project area meets the selection standards (see **Chapter 2.2** of the Draft EIS for more detail).

All other alternatives considered for proposed munitions storage infrastructure would not meet explosives safety siting requirements, would interfere with existing operations, would not provide collocation of resources and mission capabilities, and/or would not be easily accessible.

ES-2.5 No Action Alternative

Section 1502.14(d) of NEPA requires the analysis of a No Action Alternative, which provides a benchmark that enables decision makers to compare the magnitude of the environmental effects to a proposed action and alternatives. No action means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward.

Under the No Action Alternative, the proposed infrastructure upgrades, as described in **Section ES-2.1**, would not be constructed or used to support aircraft at Andersen AFB, including training detachments.

ES-2.6 Identification of Preferred Alternative

The DAF has identified the Proposed Action as the Preferred Alternative. The Proposed Action would enhance Andersen AFB's capability to support forces within the Indo-Pacific, and strengthen the U.S.'s ability to respond regionally and worldwide.

ES-3. Affected Environment and Environmental Consequences

In the analysis of anticipated impacts, the DAF has done its best to accurately predict potential impacts and anticipate future conditions using the best available information and tools for the EIS analysis. This Executive Summary presents the potential environmental consequences associated with the Proposed Action and No Action Alternative. **Chapter 3** in the Draft EIS presents more detailed descriptions of each affected resource and associated environmental consequences.

Table ES-3 summarizes environmental consequences that could result from implementing the Proposed Action and the No Action Alternative. Impacts presented in **Table ES-3** include consideration of compliance with federal and local regulations and requirements. Potential impacts identified in **Table ES-3** are also based on consultations with federal and Guam agencies responsible for ensuring compliance with resource-specific regulations; for example, consultation with the Guam State Historic Preservation Officer under Section 106 of the National Historic Preservation Act of 1966.

Table ES-3. Summary of Proposed Action and No Action Alternative Environmental Impacts

Resource Area	Proposed Action	No Action Alternative
Biological Resources	**Vegetation**: Long-term, less than significant, adverse impacts would be expected from removal of native vegetation and habitat at both the North Ramp and MSA-1 project areas. Loss of vegetation also would generate long-term, less than significant, adverse impacts on vegetation within the surrounding region of influence through reduction in native seed and pollen sources for wildlife and special status species, and increased opportunity for introduction of non-native species. **Wildlife**: Short- and long-term, less than significant, adverse impacts on wildlife would occur from habitat loss, modification, and fragmentation. Short-term, less than significant, adverse impacts on wildlife during construction would occur as a result of physical disturbance and construction-related noise, lighting, and dust emissions. Long-term, less than significant, adverse impacts on wildlife would occur from operational noise associated with F-15 aircraft operations, aircraft ground equipment operation on the North Ramp, maintenance activities, and operational vehicle traffic. **Special Status Species**: Short- and long-term, less than significant, adverse impacts would occur from loss or modification of suitable habitat for foraging, nesting, breeding, or roosting, affecting special status species. Long-term, significant, adverse impacts on special status plant species would occur from physical disturbance and removal within the project areas. For wildlife species, short-term, less than significant, adverse impacts would occur as a result of physical disturbance and construction-related noise, lighting, and dust emissions, and from introduction of noise due to rerouted traffic. Long-term, less than significant, adverse impacts on special status species would occur from operational noise associated with F-15 aircraft operations, aircraft ground equipment operation on the North Ramp, maintenance activities, and operational vehicle traffic. Adverse impacts on special status species would be reduced through the implementation of the conservation measures outlined in the Biological Opinion issued by U.S. Fish and Wildlife Service. **Essential Fish Habitat**: Short- and long-term, less than significant, adverse impacts would occur from increased impervious surfaces that generate additional stormwater runoff, which could alter hydraulic patterns and may contain elevated sediment concentrations that could flow into surface and groundwater, eventually reaching coastal waters. Construction of stormwater management infrastructure and revegetation of disturbed areas would protect coastal waters and Essential Fish Habitat from stormwater runoff. Short- and long-term, less than significant, adverse impacts also may occur from accidental spills, or leaks of fuel, lubricants, or other chemicals from equipment or infrastructure, if these hazardous materials enter groundwater or surface water before discharging into nearby coastal waters where Essential Fish Habitat resources reside. The DAF would amend the Andersen AFB Spill Prevention, Control, and Countermeasures (SPCC) Plan or develop a site-specific SPCC Plan to manage accidental release to surface and groundwater.	No impacts on biological resources would occur.
Cultural Resources	Construction activities would have the potential to affect the physical integrity of surface and subsurface cultural resources, resulting in short- and long-term, less than significant, adverse impacts on cultural resources present within the North Ramp and MSA-1 project areas. Areas identified for replanting of threatened and endangered cycads may require additional cultural resources investigations, which would be coordinated with the Guam State Historic Preservation Officer, as appropriate. Impacts on cultural resources would not occur from increases in aircraft operations or additional personnel associated with the F-15 beddown.	No impacts on cultural resources would occur.

Resource Area	Proposed Action	No Action Alternative
Socioeconomics	Short- and long-term, less than significant, adverse impacts would occur from the temporary increase in construction workforce, permanent increase in personnel and dependents, and intermittent increase in temporary personnel, which would increase demand for long- and short-term housing, local health/medical services, law enforcement, firefighting, and emergency services. Short- and long-term, beneficial economic impacts would occur through the direct and indirect creation of jobs for Guam residents and foreign workers; increases in wages; business sales; increased spending on local and regional services, housing, and goods; and potential increases in tourism. Purchase of fill for North Ramp construction would result in short-term, adverse impacts from an increase in competition for such resources and short-term, beneficial impacts from an increase in local spending. Short- and long-term, less than significant, adverse impacts on local housing, public services, and sociocultural matters would occur because foreign workers would relocate to Guam for the duration of construction, and a majority of new permanent personnel would relocate to Guam from outside the island, increasing the total island population.	Socioeconomic conditions would remain unchanged. The projected economic benefits of the proposed infrastructure upgrades would not be realized.
Environmental Justice	Construction and operation of the proposed infrastructure upgrades would not result in significant or disproportionately high and adverse impacts to environmental justice communities. Long-term, less than significant, adverse, intermittent impacts would occur from increases in aircraft noise from the F-15 beddown, which would expand the noise contours from the airfield and result in approximately 60 additional homes within the 65 A-weighted-decibel noise contour. Additionally, long-term, adverse impacts would occur from an increase in off-installation housing demand, increased demand for local utilities, and additional reliance on emergency services. Long-term, beneficial impacts would occur because environmental justice communities would benefit from increased employment opportunities and local spending associated with the Proposed Action. Construction-related adverse impacts (air quality, noise, and traffic effects) would be short-term, less than significant, and not disproportionate. Long-term and intermittent, less than significant, adverse impacts may occur from the potential for fuel line leaks, which would affect health and safety as well as water quality for surrounding communities. Compliance with DoD and DAF regulations, as well as industry standard procedures for fuel pipeline maintenance and operation, would protect biological resources, water resources, and health and safety for surrounding environmental justice populations.	No adverse impacts on environmental justice communities would occur.
Geology and Soils	Short- and long-term, less than significant, adverse impacts on soils and topography would occur from clearing and grading, compaction of soils at the North Ramp and MSA-1 project areas during construction, and an increased potential for erosion and sedimentation. Long-term, less than significant, adverse impacts on topography would occur from the addition of up to 35 feet of fill within some areas, which would change the topography of Guam. Long-term, less than significant, adverse impacts on soils would occur in the event of a spill or leak during construction activities or subsequent operations. The DAF would amend the Andersen AFB SPCC Plan or develop a site-specific SPCC Plan to manage accidental release to soils. Continued vegetation maintenance as well as additional foot and vehicle traffic would result in additional long-term, less than significant, adverse impacts. Impacts on geology and soils would not occur from increases in aircraft operations or additional personnel associated with the F-15 beddown.	No impacts on geology and soils would occur.

Resource Area	Proposed Action	No Action Alternative
Water Resources	Short-term, less than significant, adverse impacts on groundwater (and consequently, potable water sources) would occur from the potential for pollution from construction and stormwater runoff. Short-term, less than significant, adverse impacts on groundwater would result from increased stormwater runoff, which can degrade water quality, alter hydrologic conditions, and displace soils and sediment. Short-term, less than significant, adverse impacts would occur from the potential for accidental spills or leaks, which could lead to aquifer contamination. The DAF would adhere to a Stormwater Pollution Prevention Plan prepared in accordance with the U.S. Environmental Protection Agency National Pollutant Discharge Elimination System Construction General Permit to manage discharge of pollutants to surface waters and underlying groundwater subbasins, and would adhere to the Andersen AFB SPCC Plan or develop a site-specific SPCC Plan to manage accidental release of a hazardous materials. Long-term, less than significant, adverse impacts on groundwater would occur from a reduction in groundwater recharge rates from the increase in impervious surfaces and removal of vegetation. During the operational phase, increases in groundwater withdrawals during fire suppression events would temporarily decrease available water storage, which would result in short-term and intermittent, less than significant, adverse impacts. Impacts on water resources would not occur from increases in aircraft operations or additional personnel associated with the F-15 beddown. No impacts on coastal waters, wetlands, or floodplains would occur from the Proposed Action.	No impacts on water resources would occur.
Infrastructure and Utilities	Infrastructure and utilities requirements during North Ramp and MSA-1 construction would result in short-term, less than significant, adverse impacts on potable water, wastewater treatment and disposal, solid waste, electrical power, liquid fuels, and stormwater management. F-15, North Ramp, and MSA-1 operations would result in long-term, less than significant, adverse impacts on infrastructure and utilities, primarily from the increase in permanent and temporary personnel, fuel demand, and impervious surfaces. Construction of stormwater management infrastructure as well as additional fuel storage and fuel distribution extension would result in long-term, beneficial impacts.	No impacts on infrastructure and utilities would occur.
Noise	Short-term, less than significant, adverse noise impacts would be generated by construction activities. Long-term, less than significant, adverse impacts would occur from an increase in installation-wide noise from F-15 operations. Long-term, less than significant, adverse impacts would occur from relocation of aircraft staging areas and ground activities; intermittent use of stand-by generators; and reconfiguration of roads, which would change vehicle traffic patterns within the installation. No violation of noise regulations is anticipated from construction or operation for the F-15 beddown and infrastructure upgrades.	No noise impacts would occur.
Air Quality	Construction would generate temporary increases in fugitive dust and engine exhaust, resulting in short-term, less than significant, adverse impacts. The increase in overall aircraft operations, ground equipment use, fueling operations, traffic from additional personnel, and stand-by generator use from the F-15 beddown and operation of the North Ramp and MSA-1 would result in long-term, less than significant, adverse impacts. No exceedances of air quality thresholds or regulations would occur.	No impacts on air quality would occur.

Resource Area	Proposed Action	No Action Alternative
Health and Safety	Short-term, less than significant, adverse impacts on health and safety would occur from exposure of workers and personnel to construction hazards, occurrence of construction within Surface Danger Zones and ESQD arcs associated with nearby live-fire ranges and munitions storage, and increased construction traffic that could affect response times for emergency services. Long-term, less than significant, adverse impacts would occur from the F-15 beddown because an increase in aircraft operations would increase the potential for aircraft mishaps. No new impacts on health and safety would occur from operation of the North Ramp and MSA-1.	No impacts on health and safety would occur.
Land Use	Short- and long-term, less than significant, adverse impacts on land use would occur from the temporary increase in noise during construction and the permanent increase in noise from an increase in aircraft operations, which would expand the noise contours from the airfield. No impacts would occur from changes in land uses, and the Proposed Action would not result in reasonably foreseeable effects on Guam's coastal resources.	No impacts on land use would occur.
Recreation	Short-term, less than significant, adverse impacts on recreation would occur from the visibility of construction equipment during construction of the North Ramp and MSA-1, construction noise, potential increases in traffic congestion, and presence of staged construction equipment. Long-term, less than significant, adverse impacts would occur from the permanent decrease in the amount of open space available for recreation and the increase in noise from F-15 aircraft operations. No direct impacts on installation or adjacent recreation areas, access, or use would occur.	No impacts on recreation areas or use would occur.
Transportation	Short-term, less than significant, adverse impacts on regional and installation roadways would occur from construction-related worker and material transport, and the re-route of Marianas Boulevard on the installation. Long-term, less than significant, adverse impacts on transportation would occur from the additional commuter traffic within northern and central Guam traveling to the installation daily. The re-route of Marianas Boulevard would have long-term, beneficial impacts on installation traffic patterns for vehicles and pedestrians. Additional long-term, beneficial impacts would occur from construction of new roadways, which would increase connectivity on the North Ramp, and replacement of existing roadways, which would improve the longevity of the Andersen AFB road network. Short-term, less than significant, adverse impacts would occur on pedestrian and bicycle transportation systems and public transit services.	No impacts on transportation would occur.
Hazardous Materials and Wastes	Construction activities would result in short-term, less than significant, adverse impacts from the use of hazardous materials and petroleum products, and generation of hazardous wastes during construction of the North Ramp and MSA-1. Additional impacts could result from the discovery of unknown environmental contaminants or munitions and explosives of concern. The presence of radon in occupied structures within the North Ramp project area may introduce long-term, less than significant, adverse impacts on operations personnel. Additionally, long-term, less than significant, adverse impacts would occur from additional quantities of hazardous materials being used and hazardous wastes being generated from F-15 airfield operations, and from the creation of new hazardous material storage and collection points.	No impacts on hazardous materials and wastes would occur.

ES-4. Mitigation

Relevant mitigation measures have been identified and will be carried forward, to the extent practicable, in implementing the Proposed Action, and will be defined in the Record of Decision. **Chapter 3** (Affected Environment and Environmental Consequences) of the Draft EIS includes and analyzes mitigation measures for impacts identified or that are required by regulation or agency guidance for affected resources.

The mitigation measures discussed in the Draft EIS cover a range of issues. Generally, mitigation measures could be applied in development of the Proposed Action or alternatives (i.e., mitigation by avoidance), or applied during impact analysis. Mitigation measures may also be applied for impacts that, by themselves, would not be considered "adverse." The Proposed Action is considered as a whole to address specific effects on the environment (regardless of the level of impacts), and mitigation measures are developed where it is feasible to do so. Council on Environmental Quality regulations define mitigation in the following ways:

1. **Avoiding** the impact altogether by not taking a certain action or parts of an action
2. **Minimizing** impacts by limiting the degree or magnitude of the action and its implementation
3. **Rectifying** the impact by repairing, rehabilitating, or restoring the affected environment
4. **Reducing** or eliminating the impact over time by preservation and maintenance operations during the life of the action
5. **Compensating** for the impact by replacing or providing substitute resources or environments

Mitigation measures for implementing the Proposed Action and avoiding, minimizing, rectifying, reducing, or compensating for potential impacts on specific resource areas have been identified in the Draft EIS and would be implemented as required. To comply with Section 7 of the Endangered Species Act, the DAF is identifying specific conservation measures to mitigate the proposed impacts on federally listed threatened and endangered species (see a summary of the Section 7 consultation in **Appendix B** of the Draft EIS). The DAF is coordinating with the Guam State Historic Preservation Officer under Section 106 of the National Historic Preservation Act (see a summary of the Section 106 consultation in **Appendix C** of the Draft EIS). Mitigation measures for adverse effects on cultural resources would be implemented in accordance with the requirements in the existing JRM region-wide Programmatic Agreement.

Following the Record of Decision, a Mitigation Plan will be prepared in accordance with 32 Code of Federal Regulations 989.22(d). This Mitigation Plan will address specific mitigation measures identified and agreed to during the Environmental Impact Analysis Process. The Mitigation Plan will identify principal and subordinate organizations having responsibility for oversight and execution of specific mitigation and management actions. The plan will be prepared in accordance with the Council on Environmental Quality mitigation and monitoring guidance.

ES-5. References

Andersen AFB (Andersen Air Force Base). 2017. *Naval Support Activity (NSA) Andersen/Andersen Air Force Base (AFB) Installation Development Plan.* Final. March 2017.

DON (Department of the Navy). 2015. *Mariana Islands Training and Testing Activities Final Environmental Impact Statement/Overseas Environmental Impact Statement*. May 2015.

DON. 2020. *Mariana Islands Training and Testing Activities Final Supplemental Environmental Impact Statement/Overseas Environmental Impact Statement*. July 2020.

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