

FINAL ENVIRONMENTAL ASSESSMENT

MV-22 Facilities Project Relocation

**Marine Corps Base Hawaii, Kaneohe Bay
Oahu, Hawaii**

Department of the Navy
March 2015

Cover Sheet

Proposed Action:	Change in construction location of one of two hangars and supporting facilities from the site analyzed in the Final Environmental Impact Statement for the Basing of MV-22 and H-1 Aircraft in Support of Third Marine Expeditionary Force Elements in Hawaii. This would move the proposed construction project from the northeast end of the airfield to the southeast end.
Type of Document:	Environmental Assessment
Lead Agency	Marine Corps Base Hawaii Kaneohe Bay
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Summary

This Environmental Assessment (EA) was prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C] 4321 et seq.), its implementing regulations issued by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] Part 1500 - 1508), Marine Corps Order 5090.2A (with Change 3 of 26 Aug 2013), and the United States Marine Corps (USMC) NEPA Manual (Version 2 of September 2011).

Marine Corps Base Hawaii (MCB Hawaii) Kaneohe Bay proposes to construct facilities for an MV-22 Osprey aircraft squadron (including ten aircraft parking pads, hangar, wash rack and ancillary facilities) at an area near the southeast end of the MCB Hawaii Kaneohe Bay runway. This represents an approximately 3,000-foot shift in project location from the location analyzed in the Final Environmental Impact Statement (EIS) for the Basing of MV-22 and H-1 Aircraft in Support of the Third Marine Expeditionary Force (III MEF) Elements in Hawaii (MV-22 EIS). This EA tiers from and incorporates by reference determinations made in the MV-22 EIS.

This project is needed to provide facilities for the second MV-22 squadron that will be home based at MCB Hawaii Kaneohe Bay by 2018. The purpose of the proposed action to relocate the project site is to construct facilities at a location at MCB Hawaii Kaneohe Bay that can best support III MEF mission and operational requirements, make use of existing facilities to the greatest extent practicable, and, where practicable, reduce construction costs and time. Because this action would represent a change in the siting of some of the facilities analyzed in the MV-22 EIS, and may have different impacts on site-specific resources, this EA was prepared to provide information to MCB Hawaii and the public on these possible differences. The basing decision and impacts related to squadron operations, including personnel increases, housing for personnel, socioeconomics, training impacts, and noise, were analyzed in the MV-22 EIS and the determinations made therein apply to the actions proposed in this EA.

Two archaeological sites have been documented in and adjacent to the proposed project area. The project is also located adjacent to a proposed historic district that contains World War II historic facilities. MCB Hawaii conducted National Historic Preservation Act Section 106 consultations with the Hawaii State Historic Preservation Office, the Advisory Council on Historic Preservation, the Historic Hawaii Foundation, the Office of Hawaiian Affairs and other Native Hawaiian Organizations, interested parties, and the public. MCB Hawaii developed a Memorandum of Agreement (MOA) with the aforementioned consulting parties to avoid, minimize, or mitigate known adverse effects on historic properties within the Area of Potential Effect (Appendix A). The MOA was executed in March 2015.

The proposed action would have no significant impact on the following resources or issues of concern: land use, visual effects, air quality, utilities and infrastructure, solid waste, hazardous materials, drainage, air quality, noise, vehicular traffic and circulation, soils and topography, and biological resources. The proposed action would not create environmental health and safety risks that may disproportionately affect children and minority or disadvantaged populations, and would not result in cumulative impacts to any environmental resource. Per consultation with the Hawaii State Coastal Zone Management Act program administrator, a Coastal Zone Management Act consistency determination is not required because the proposed action will be located entirely on Federal lands, which are excluded from the Hawaii Coastal Zone. Additionally, the proposed action would not have reasonably foreseeable direct or indirect effects on any coastal use or resources of the Hawaii Coastal Zone.

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- A. Memorandum Of Agreement Among The Marine Corps Base Hawaii Kaneohe, Hawaii, the Hawaii State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Relocation/Construction of Facilities for the Second MV-22 squadron in Response to the Basing of MV-22 and H-1 Aircraft in Support of III Marine Expeditionary Force Elements in Hawaii, Marine Corps Base Hawaii, Kaneohe

List of Acronyms and Abbreviations

III MEF	Third Marine Expeditionary Force	MOA	Memorandum of Agreement
ACE	Aviation Combat Element	MV-22	Osprey Tiltrotor Aircraft
ACHP	Advisory Council on Historic Preservation	MWSS	Marine Wing Support Squadron
ARPA	Archeological Resource Protection Act	NAGPRA	Native American Graves Protection and Repatriation Act
BEQ	Bachelor Enlisted Quarters	NEPA	National Environmental Policy Act of 1969
BMPs	Best Management Practices	NHL	National Historic Landmark
BRAC	Base Realignment and Closure process	NHO	Native Hawaiian Organizations
CE	Command Element	NHPA	National Historic Preservation Act
CEQ	Council on Environmental Quality	NOA	Notice of Availability
CFR	Code of Federal Regulations	NPDES	National Pollution Discharge Elimination System
cmbs	Centimeters Below Surface	OEP	Office of Environmental Planning
CZM	Coastal Zone Management	PA	Programmatic Agreement
dB	Decibels	POV	Privately-Owned-Vehicle
DNL	Day-Night Average Sound Level	NRHP	National Register of Historic Places
DOH	U.S. Department of Health	ROD	Record of Decision
EA	Environmental Assessment	SHPO	State Historic Preservation Office
EIS	Environmental Impact Statement	UFC	Unified Facilities Criteria
EISA	Energy Independence and Security Act	USMC	United States Marine Corps
EO	Executive Order	VMM	Marine Medium Tiltrotor
ESQD	Explosive Safety Quantity Distance		
FONSI	Finding of No Significant Impact		
FSEIS	Final Supplemental EIS		
ft	Feet/Foot		
ft ²	Square Feet/Foot		
GCE	Ground Combat Element		
HMLA	Marine Light Attack Helicopter		
HQ	Headquarters		
LCE	Logistics Combat Element		
LID	Low Impacts Development		
m	Meter		
m ²	Square Meters		
MAG	Marine Aviation Group		
MAGTF	Marine Air-Ground Task Forces		
MALS	Marine Aviation Logistics Support		
MCAS	Marine Corps Air Station		
MCB	Marine Corps Base		
MILCON	Military Construction		

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1. Purpose and Need

1.1. Introduction

This Environmental Assessment (EA) evaluates the construction of facilities for an MV-22 Osprey aircraft squadron (including ten aircraft parking pads, hangar, wash rack and ancillary facilities) near the southeast end of the runway at Marine Corps Base Hawaii, Kaneohe Bay (MCB Hawaii Kaneohe Bay). This EA was prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C] 4321 et seq.), its implementing regulations issued by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] Part 1500 - 1508), Marine Corps Order 5090.2A (with Change 3 of 26 Aug 2013), and the United States Marine Corps (USMC) NEPA Manual (Version 2 of September 2011).

This document tiers from and incorporates by reference the Final Environmental Impact Statement (EIS) for the Basing of MV-22 and H-1 Aircraft in Support of the Third Marine Expeditionary Force (III MEF) Elements in Hawaii, completed in June 2012 (here after referred to as the MV-22 EIS) (Department of the Navy [DON] 2012). The USMC is evaluating a proposed change in the approved location of some of the facilities analyzed in the MV-22 EIS. Analysis in this EA focuses on potential impacts at the southeast site. The MV-22 EIS basing decision and impacts related to squadron operations, including personnel increases, housing for personnel, socioeconomics, training impacts, and noise, would not be affected by this proposed action.

1.2. Purpose and Need

The purpose for the proposed action (relocate project site) is to construct facilities at a location on MCB Hawaii Kaneohe Bay that can best support III MEF mission and operational requirements, make use of existing facilities to the greatest extent practicable, and, where practicable, reduce construction costs and time. The need for the proposed action (relocate project site) is to provide facilities for the second MV-22 squadron that will be home based at MCB Hawaii Kaneohe Bay by 2018.

1.3. Background Information

1.3.1. Project Background

The MV-22 EIS analyzed the potential impacts of basing and operating two Marine Medium Tiltrotor (VMM) squadrons (up to 12 MV-22 Ospreys per squadron, for a total of 24 aircraft) and one Marine Light Attack Helicopter (HMLA) squadron (15 AH-1 Cobra attack and 12 UH-1 Huey utility helicopters, for a total of 27 aircraft) in Hawaii. The MV-22 Osprey aircraft provides the next generation equipment offering increased speed, longer range, and greater mission versatility than a helicopter. The MV-22 also satisfies the medium-lift capability needed for assault support transport of combat troops, equipment, and supplies. The HMLA squadron, which was relocated from MCB Camp Pendleton to MCB Hawaii Kaneohe Bay in 2012, provides rotary-wing light-lift and attack capabilities that were not previously based in Hawaii for routine training with infantry. The Third Marine Regiment (3d Regiment) is the major infantry command at MCB Hawaii Kaneohe Bay. It was the only infantry regiment within the Marine Corps that had not previously routinely trained with rotary-wing light-lift and attack support. Marine

Aircraft Group 24 (MAG-24), the Aviation Combat Element (ACE) of the Marine Air-Ground Task Force (MAGTF) at MCB Hawaii Kaneohe Bay, provides aviation support forces to the 3d Regiment.

The basing of two MV-22 squadrons at MCB Hawaii Kaneohe Bay and potential impacts to the environment were addressed in the MV-22 EIS. Each squadron of 12 MV-22 aircraft requires its own aircraft parking apron, hangar, and supporting facilities (e.g., utility buildings). Two alternative locations for the construction of these facilities at MCB Hawaii Kaneohe Bay were analyzed in the MV-22 EIS; Alternative A co-located facilities for the two squadrons on the northeast end of the runway, while Alternative B placed facilities for the two squadrons on the opposite side of the runway at West Field. The southeast portion of the runway was not analyzed as a potential location for the MV-22 facilities because it had been selected as the site for a hangar, additional parking apron, and miscellaneous structures to support three U.S. Navy P-8A Poseidon squadrons, scheduled to replace the Navy's P-3¹ squadrons beginning in 2019 (Final EIS for the Introduction of the P-8A Multi-Mission Maritime Aircraft into the U.S. Navy Fleet, November 2008/Record of Decision [ROD] December 2008). The ROD for the MV-22 EIS, published in August 2012, selected Alternative A, which co-located the facilities for the two MV-22 squadrons at the northeast end of the MCB Hawaii Kaneohe Bay runway. Design and construction of the facilities for the first MV-22 squadron began in 2013 under two military construction (MILCON) projects, P-904 and P-905.

Archaeological Site 7411 was discovered immediately northeast of, and partially within, the first MV-22 squadron project area during geotechnical studies. Per Stipulation VIII of the Programmatic Agreement (PA) that was developed during EIS Section 106 consultations, regarding discoveries made during construction, MCB Hawaii informed the consulting parties of the discovery of the site and a Memorandum of Agreement (MOA) was developed (P-904/P-905 MOA), to address ways to avoid, minimize, and mitigate adverse effects to Site 7411. To avoid impacts to this site, and due to other site constraints, the length of the aircraft parking apron as shown in the 2012 MV-22 EIS was reduced, resulting in the loss of two aircraft parking stalls. These two stalls would be accommodated on the P-3 parking apron at the southeast end of the runway. The remaining footprint for P-904/905 was shifted slightly to the south, but remains within the boundaries of the combined two squadron footprint analyzed in the MV-22 EIS. Details of the change in site design are discussed in Section 2.1.1.

In June 2014, the Navy published a new ROD approving the consolidation of the P-8A squadrons at two locations (Naval Air Station Whidbey Island in Washington, and Naval Air Station Jacksonville in Florida). MCB Hawaii Kaneohe Bay will receive a rotating detachment of two P-8A aircraft instead of three permanent squadrons. The P-8A detachment will not require construction of new facilities, resulting in the area near the southeast end of the runway becoming available for other uses, such as the facilities for the second MV-22 squadron. The Marine Corps considers use of this area for the construction of facilities for the second MV-22 squadron to be a better option than the original project site because the southeast end of the runway has an existing aircraft parking apron and infrastructure that can be used

¹ The Lockheed P-3 Orion is a four-engine turboprop aircraft introduced in the 1960s. The US Navy uses this platform/aircraft for maritime patrol, reconnaissance, and anti-submarine warfare. This aging platform is in the process of being replaced by the Boeing P-8A Poseidon.

to reduce the amount of new construction and demolition required for the new facilities, thereby reducing project impacts, costs and schedules. Also, the existing facilities are close to other existing MAG-24 elements and facilities, thus improving functional consolidation and operational efficiency at a land-constrained base.

1.3.2. Project Location and Surrounding Environment

MCB Hawaii Kaneohe Bay is located on the windward (northeast) side of the island of Oahu, on the Mokapu Peninsula. The airfield and MAG-24 facilities are concentrated on the southwest side of the peninsula. Construction of facilities for the proposed action would be located just north of Hangars 104 and 103, adjacent to areas currently used by the ACE (see Figure 1-1).

Neighboring civilian communities include Kailua and Kaneohe. In 2014, MCB Hawaii Kaneohe Bay supported approximately 19,400 people. Military personnel and dependents housed on base number 11,100, with the remaining 5,600 located off base, and with a civilian workforce of 2,700 (MCB Hawaii Housing Department 2014). MCB Hawaii Kaneohe Bay, along with Marine Corps Air Station (MCAS) Kaneohe Bay, provides administrative, housing, facility maintenance, and training support for most personnel stationed at MCB Hawaii facilities (DON 2012).

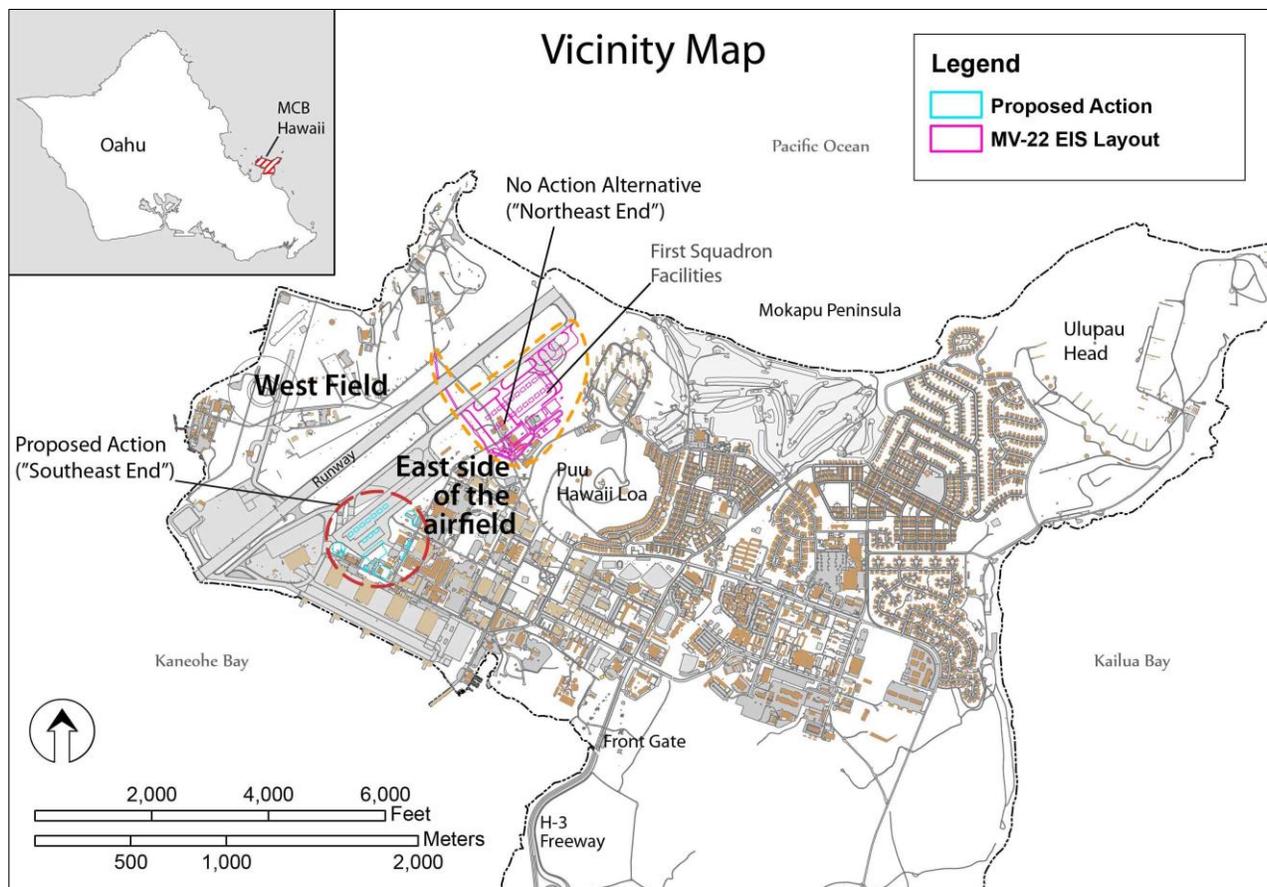


Figure 1-1 - Project Location

1.4. Environmental Permits and Agency Consultations

Table 1-1 summarizes the permits and agency consultations that may be required to implement the proposed action.

Table 1-1 - Environmental Permits or Consultations

Permit or Consultation	Agency/Stakeholders
National Pollutant Discharge Elimination Permit System	Department of Health (DOH), State of Hawaii
National Historic Preservation Act (NHPA) Section 106 Consultation	Hawaii State Historic Preservation Officer, Advisory Council on Historic Preservation, Native Hawaiian organizations, interested parties, and the public

1.5. Public Participation

MCB Hawaii conducted National Historic Preservation Act Section 106 consultations with the Hawaii State Historic Preservation Office, the Advisory Council on Historic Preservation, the Historic Hawaii Foundation, the Office of Hawaiian Affairs and other Native Hawaiian Organizations, interested parties, and the public. MCB Hawaii developed a Memorandum of Agreement (MOA) with the aforementioned consulting parties to avoid, minimize, or mitigate known adverse effects on historic properties within the Area of Potential Effect (Appendix A). As a part of the Section 106 process, MCB Hawaii solicited members of the public to provide questions or comments on this undertaking and its effects on historic properties during a 15-day period beginning with the publication of the notice on January 2, 2015. Additional information about the project, including Section 106 documentation assembled during the consultation and the draft MOA was made available to members of the public upon request. One request for information was made. The requested information was provided, and no objections or suggestions were made by the individual. No comments were received.

A Notice of Availability (NOA) of the EA and Draft Finding of No Significant Impact (FONSI) was published in the Honolulu Star-Advertiser as well as in the State of Hawai'i, Department of Health's Office of Environmental Quality Control's bulletin, The Environmental Notice, on February 8, 2015. Online copies were also made available on the MCB Hawaii website (<http://www.mcbhawaii.marines.mil/UnitHome/FeaturedInformation/MV22NOA.aspx>). Publication of the EA and Draft FONSI NOA began a 15-day public review of the Draft EA, during which the public could submit written comments on the EA via the website or regular mail. No comments were received.

2. Description of Proposed Action and Alternatives

2.1. Alternatives

The scope of the analysis in this EA is the construction of facilities for the second MV-22 squadron. All operational and training impacts associated with the basing of two MV-22 squadrons remain the same as that analyzed in the MV-22 EIS. Two alternatives are analyzed in this EA:

- No-action: Construct facilities for the second MV-22 squadron at the northeast end of the runway per the alternative selected in the 2012 ROD. This alternative was modified from what was analyzed in the MV-22 EIS to avoid impacts to archaeological Site 7411. Those changes are described in Section 2.1.1.
- Proposed action: Construct the facilities for the second MV-22 squadron on the southeast end of the runway at the site considered for the location of P-8A squadrons (present P-3 location).

One other location for these facilities, on the west side of the runway (West Field; see Figure 1.1), was analyzed in the MV-22 EIS. That analysis is incorporated by reference in this EA as applicable. The West Field alternative is considered undesirable by MCB Hawaii for several reasons discussed in Section 2.1.3.

Analysis in this EA is focused on environmental resources and issues of concern for which potential impacts may be different at the southeast site than those analyzed in the EIS for the proposed northeast site (see Sections 2.3 and 3.2). Analysis of the no-action alternative focuses on the impacts of the changes required to avoid impacts to Site 7411. The MV-22 EIS basing decision and impacts related to squadron operations would not be affected by this proposed action.

2.1.1. No-Action

The no-action alternative would develop facilities for the second MV-22 squadron at the northeast airfield site. As mentioned, archaeological Site 7411 was identified in the project footprint for the alternative selected in the MV-22 EIS. To limit impacts to this site, the aircraft parking apron was reduced in size to shift the northeast corner away from the archaeological site, resulting in the loss of two of 20 aircraft parking stalls. Because only 18 of the 20 required aircraft parking stalls could now be accommodated at the northeast site, two stalls would have to be accommodated elsewhere. A comparison of the site plan provided in the MV-22 EIS and the site plan for the no-action alternative is shown in Figure 2-1.

As analyzed in the MV-22 EIS, facility development for the second squadron at this location would require the demolition of seven structures (Buildings 574, 4000, 4005, 4040, 4075, 5019, and 5068) and realignment of a 0.4-mile section of Mokapu Road, the main artery for east-west access on the base. Based on the discovery of Site 7411 and the need to shorten the aircraft apron at the northeast site, the no-action alternative would now require pavement upgrades for two aircraft parking stalls on the P-3 parking apron (i.e., southeast site). Impacts associated with construction of these two stalls are analyzed in this EA. No additional NEPA analysis was conducted on the redesign of the parking apron at the northeast site because it remains within the original footprint analyzed in the MV-22 EIS. The site

plan for the first MV-22 squadron facilities, currently under construction, is shown in the shaded area in Figure 2-1 and as a single site plan in Figure 2-2. The aircraft rinse facility relocation was removed from the project footprint prior to construction of P-904/P-905 due to the discovery of archaeological Site 7411. Construction of the facilities for the first MV-22 squadron is underway at the northeast site; no facility construction has commenced for the second squadron.

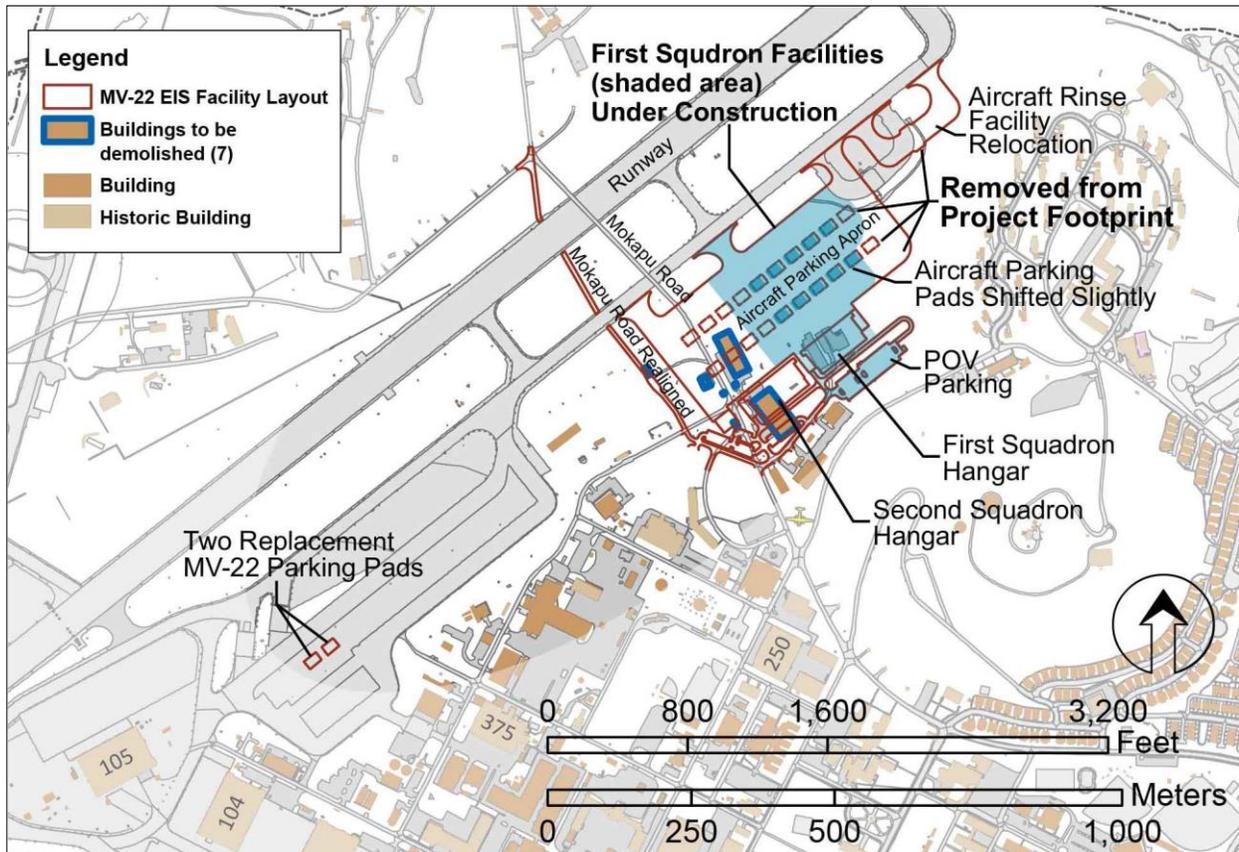


Figure 2-1 - No-action alternative/ revised MV-22 EIS site plan

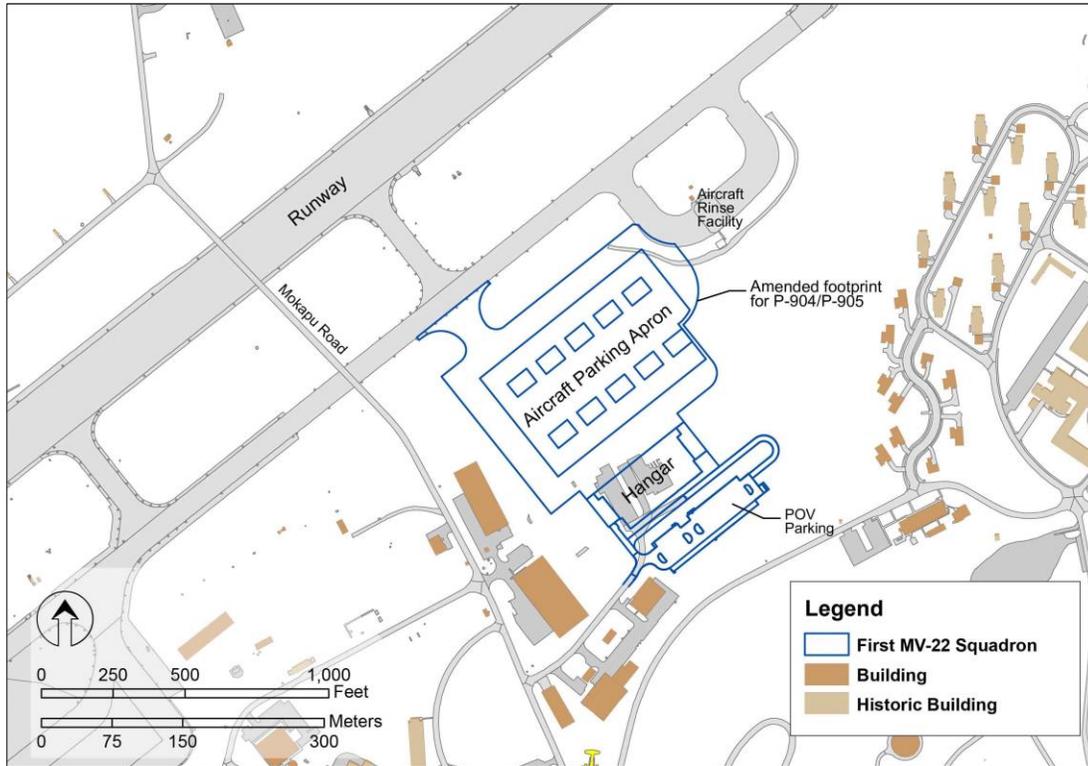


Figure 2-2 - First MV-22 squadron facility site plan (under construction)

2.1.2. Proposed Action

This alternative would construct new and renovate existing facilities for the second MV-22 squadron on the existing P-3 parking apron (southeast site); P-3 aircraft would park on the Hangar 105 ramp as needed until the squadrons they are assigned to are disestablished or permanently moved to another installation. The southeast site is adjacent to other ACE activities within MCB Hawaii Kaneohe Bay and would allow the second squadron to interact more readily with MAG-24 and Marine Aviation Logistics Support (MALS) units at the southern end of the airfield. This alternative would require less new development at the northeast end of the airfield and increase site utilization in an operationally beneficial and already developed area. The two MV-22 squadrons operate with III MEF independently, both have their own support facilities, and the result of the proposed action (separation of the two MV-22 squadrons vice co-location) would not affect their operations or unit cohesiveness. The proposed action would utilize the area that was proposed for P-8A Poseidon squadron facility development in the Final P-8A EIS as shown in Figure 2-3.

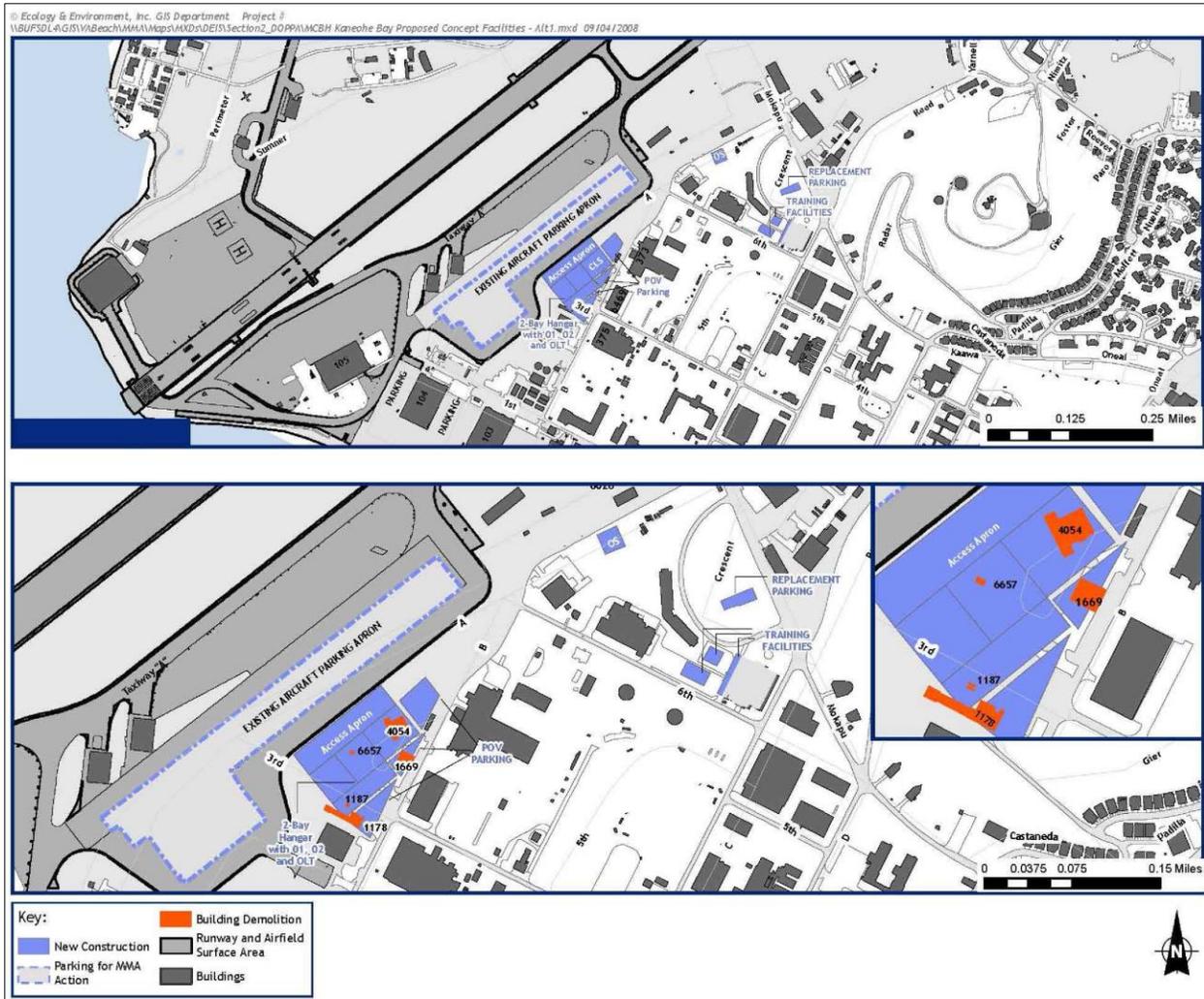


Figure 2-3 - Conceptual Layout of Facilities for the P-8A Poseidon squadrons (DON 2008)

Facilities for the second MV-22 squadron include an aircraft wash rack and supporting utility building, modifying the existing P-3 aircraft parking apron to accommodate one squadron of MV-22 aircraft (10 parking stalls—two of the 12 aircraft in a squadron are presumed to be inside the hangar at any given time), demolition of Buildings 1278 and 1279 and construction of a new privately-owned-vehicle (POV) parking lot, construction of one additional and expansion of two existing POV parking lots along B Street, installation of security lighting and fencing, relocation of an existing direct-refueling-support office (i.e., guard house; Building 6180), and construction of one Type II modified aircraft maintenance hangar and supporting utility building. Modifications to the existing P-3 aircraft parking apron would include replacing the pavement within the 10 MV-22 parking stall footprints with heat-resistant concrete and sodium silicate coating to accommodate required design loads. Two aircraft tie-downs and one grounding point would also be provided at each parking stall. The facility site plan is shown in Figure 2-4. A summary of the components is provided in Table 2.1. Expected maximum excavation depths are provided due to the potential for impacts to archaeological resources.

Table 2-1 - MV-22 Facility Requirements

Squadron Facilities	Building Area	Pavement Area	Excavation Depth ft
Aircraft Wash Rack	---	24,800 sf (2,304 m ²)	3.6 ft (1.1 m)
Wash Rack Utility Building	624 sf (58 m ²)	---	4.5 ft (1.4 m)
Guard House	301 sf (28 m ²)	---	4.5 ft (1.4 m)
POV Parking Lots	---	41,925 sf (3,895 m ²)	1.2 ft (0.4 m)
Aircraft Parking Stalls	---	35,736 sf (3,320 m ²)	3.0 ft (0.9 m)
Aircraft Maintenance Hangar	71,069 sf (6,603 m ²)	---	Piles*
Aircraft Apron to Hangar	---	21,119 sf (1,962 m ²)	3.0 ft (0.9 m)
Line Vehicle Parking	---	6,135 sf (570 m ²)	1.2 ft (0.4 m)
Utility Building For Hangar	3,197 sf (297 m ²)	---	5.5 ft (1.7 m)
Total Building Area	75,191 sf (6,986 m²)	---	
Total Paved Surfaces	---	129,715 sf (12,051 m²)	

*Pile depth to be determined (all piles would be located outside of known archaeological sites)

Planned utility corridor excavation, between the hangar and wash rack, would extend through the cultural layer of a known archaeological site

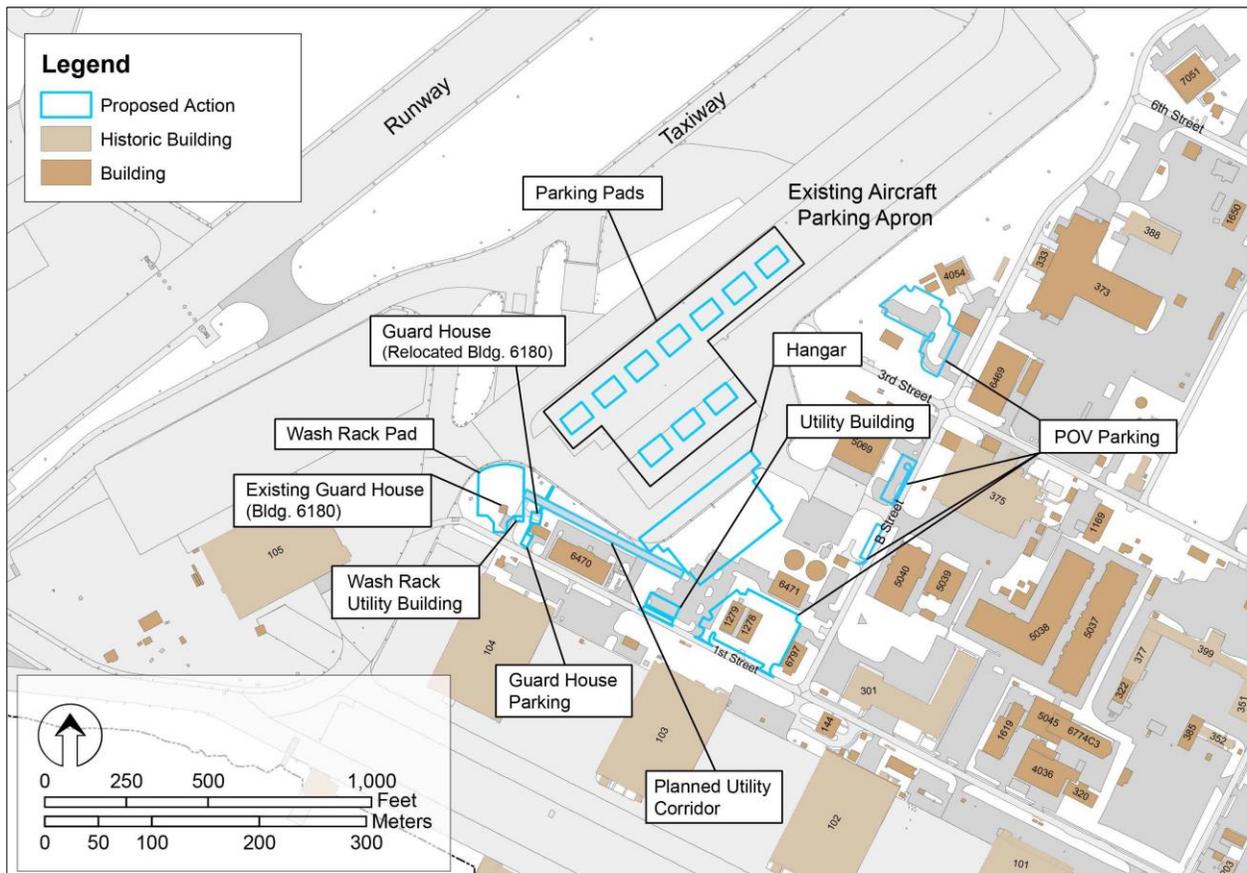


Figure 2-4 - Site Plan, MV-22 Second Squadron

2.1.3. Alternatives Considered and Dismissed

The MV-22 EIS analyzed the alternative of locating two MV-22 squadrons at West Field (see Figure 2-5). The MV-22 EIS explained that project development at West Field included the following findings: it

would require the construction of a runway underpass, would be constructed in a flood zone and tsunami evacuation zone, and include the demolition of buildings eligible for listing on the National Register of Historic Places (NRHP). Impacts of the underpass include costs, impacts to operations during construction, and removal of the approximately 140,000 cubic yards of excavation material that would be generated from construction. A traffic analysis conducted in 2012 indicated that the underpass would be required even if only one MV-22 hangar was built at West Field. Specific construction requirements if the hangar was built in the flood zone were not determined in the MV-22 EIS.

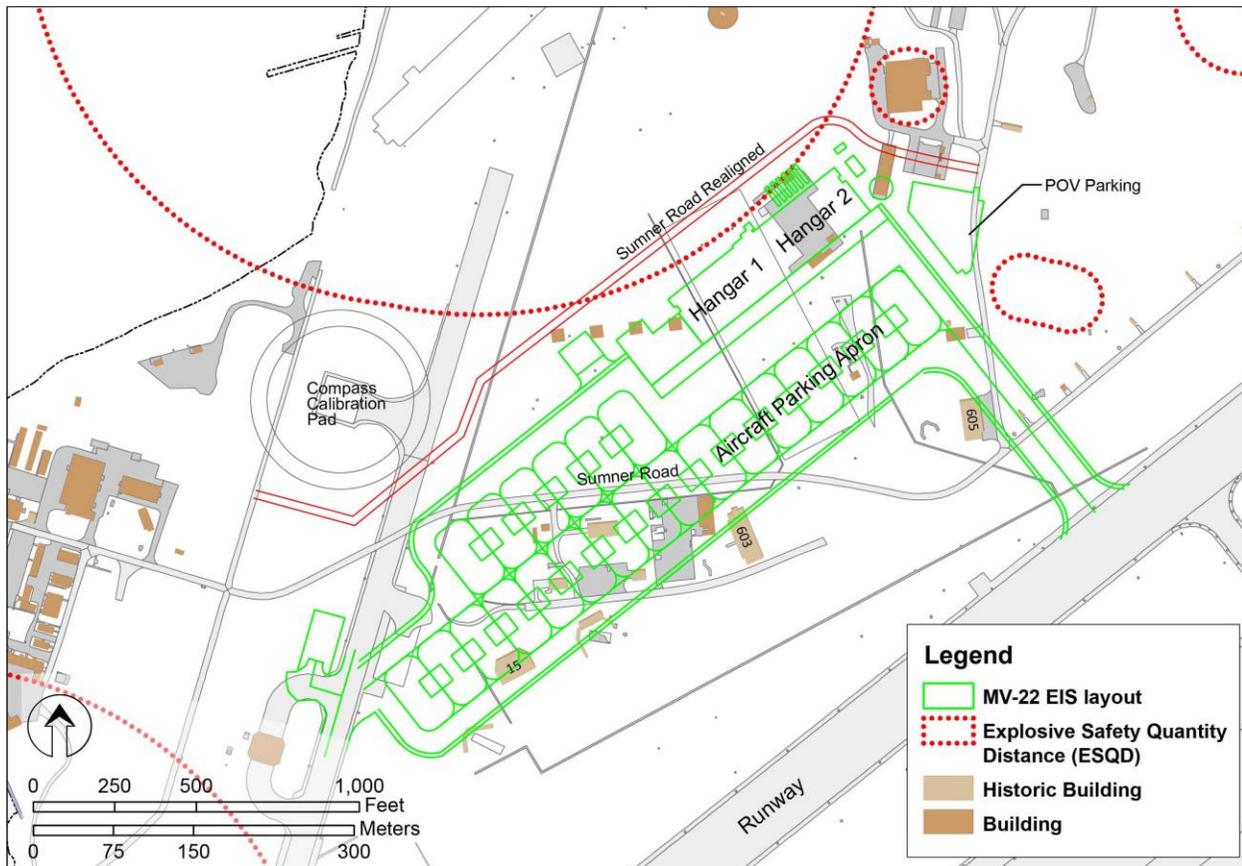


Figure 2-5 - West Field MV-22 EIS facility site plan

A West Field alternative was not selected for further consideration in this EA due to operational impacts, including the preference to have both squadrons located on the east side of the runway. It is noted that this EA considers construction of facilities for only one squadron (i.e., one hangar and ten parking stalls versus two hangars and 20 parking stalls as analyzed in the MV-22 EIS), but the determination that a West Field alternative is not preferred is still valid.

Existing hangars (e.g., Buildings 103, 104, or 105) are in use by other units and new facility construction would be required for displaced tenants if these hangars were used for the second MV-22 squadron. The interior vertical clearance of existing hangars is inadequate for MV-22 aircraft due to the height of the

rotors when positioned vertically, which is required when the aircraft is on the ground. Development elsewhere along the runway is constrained by accident potential zones at both ends of the runway, and by vertical height setbacks around the entire runway perimeter. The MCB Hawaii Kaneohe Bay runway bisects the west side of Mokapu Peninsula, with water at both ends, which reduces the amount of developable area and, particularly, access to the west end, which is only accessible via a surface road crossing the active runway.

2.2. Summary of Environmental Impacts

Table 2-2 summarizes the potential impacts that could result from the alternatives evaluated.

Table 2-2 - Summary of Environmental Impacts

Environmental Resource or Issue of Concern	Proposed Action	No-Action Alternative
Utilities and infrastructure, solid waste and hazardous material	No impacts beyond those described in the MV-22 EIS	No impacts beyond those described in the MV-22 EIS
Land use, viewplanes, drainage, air quality, noise, vehicular traffic/circulation, soils and topography, biological resources,	No impacts beyond those described in the MV-22 EIS Overall reduction in storm water drainage and impacts to topography due to the reduction in construction of new impermeable surface	No impacts beyond those described in the MV-22 EIS
Cultural resources	Impacts to Site 5829 would be mitigated with controlled excavation and data recovery; No impacts to Site 4933 are expected. Archaeological monitoring of construction activities would be carried out during ground disturbance for the undertaking.	No impacts

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3. Existing Environment and Environmental Consequences

This chapter describes the environmental setting and baseline conditions specific to the region of influence for the proposed action, and the potential environmental consequences of implementing the proposed action. Existing conditions and environmental consequences associated with the no-action alternative were described in the MV-22 EIS and approved in the ROD. The revised no-action alternative site plan is within the footprint analyzed in the EIS, except for the two stalls relocated to the P-3 apron.

3.1. Scope of Resource and Issue Analysis

The analysis in this EA is focused on those environmental resources and issues of concern (e.g., noise, traffic) for which potential impacts may be different at the southeast site than those analyzed for the northeast portion of the runway in the MV-22 EIS. The basing decision and impacts related to squadron operations, including personnel increases, housing for personnel, socioeconomics, training impacts, and noise, were analyzed in the MV-22 EIS and the determinations made therein apply to the actions proposed in this EA. Similarly, the analyses for resources and issues of concern that were addressed in the MV-22 EIS are incorporated by reference in this EA where applicable. Resources and issues of concern are addressed in three categories: 1) items that have no differences from the MV-22 EIS analysis, 2) items for which explanations on the applicability of MV-22 EIS determinations to the proposed action are provided for clarity, and 3) items for which additional analysis was conducted.

Resources and issues of concern that have no differences from the MV-22 EIS analysis (i.e., are not different along the east side of the airfield) include land use, air quality, utilities and infrastructure, solid waste, and hazardous materials. Determinations made in the MV-22 EIS for these resources or issues of concern are applicable to the proposed action, and, therefore, are not re-analyzed in this document.

MV-22 EIS determinations were considered in the analysis of potential environmental impacts of the proposed action on drainage, air quality, noise, vehicular traffic and circulation, soils and topography, and biological resources. The rationale for incorporating by reference the analyses and determinations presented in the MV-22 EIS is provided in Section 3.2.

Analysis of site-specific resources that could be impacted by the proposed action is focused on cultural resources at the southeast site. An archaeological assessment conducted for this EA determined that previously identified archaeological Sites 4933 and 5829 are located within the project area. No impacts to Site 4933 are expected to result from the implementation of the proposed action. However, archaeological testing conducted for this EA concluded that the project would impact Site 5829. The proposed action will also indirectly impact the setting/viewshed of several historic structures, a proposed historic district, and a National Historic Landmark. Analysis of cultural resources, including a summary of testing results and proposed mitigation, are described in Section 3.3.

3.2. Overview

Construction, demolition, and renovation projects have the potential to affect the natural and human environment. Potentially affected resources/issues of concern were identified through a scoping process

that included review of previous environmental documents and consultation with subject-matter experts, as well as review of investigations conducted during the preparation of the MV-22 EIS.

The proposed action would take place on the same side of the airfield as that described under the preferred alternative in the MV-22 EIS. Therefore, the proposed action (essentially a relocation of one of the components analyzed in the referenced EIS) would not affect the following resources beyond the effects described in the MV-22 EIS: utilities and infrastructure and solid waste and hazardous materials. Similarly, use of a different construction location within the base would not result in environmental justice effects or environmental health risks to children that are different from those analyzed in the MV-22 EIS. Explanations of the applicability of the MV-22 EIS determinations to land use, visual effects, drainage, air quality, noise, vehicular traffic/circulation, soils and topography, and biological resources are provided below. Potential effects to Cultural Resources are discussed in Section 3.3.

Land Use: The proposed location of the hangar is closer to the existing hangars along 1st Street than would be the case under the no-action alternative, approximately 3,000 feet from the northeast corner of the runway adjacent to the first hangar now under construction. Accordingly, the siting of the MV-22 facilities under the proposed action is compatible with surrounding uses. The proposed hangar fronts an existing aircraft apron with existing access to taxiways and the runway and is in compliance with airfield planning guidance and the Installation Master Plan. Per consultation with the Hawaii State Coastal Zone Management Act program administrator, a Coastal Zone Management Act consistency determination is not required because the proposed action will be located entirely on Federal lands, which are excluded from the Hawaii Coastal Zone. Additionally, the proposed action would not have reasonably foreseeable direct or indirect effects on any coastal use or resources of the Hawaii Coastal Zone.

Viewplane Effects: The new hangar has the potential to adversely affect public scenic viewplanes (note: historic viewplane effects are discussed in Section 3.3 below). Visual effects of the hangar were analyzed in the MV-22 EIS and are discussed here in terms of changes to the visual landscape associated with the new hangar location. The proposed hangar is a large industrial building with approximate dimensions of 365 feet long x 175 feet wide x 80 feet tall. The proposed hangar sits across 1st Street from five large existing aircraft hangars (Buildings 101, 102, 103, 104 and 105), each approximately 380 feet long x 250 feet wide x 50 feet tall. From on-base, the proposed hangar would be very visible from the west and northeast across the runway looking towards the east and southwest, with the existing hangars acting as a fairly solid backdrop. From the east, the proposed hangar would be difficult to see through the field of existing buildings. It would not intrude into longer views of the Koolau ridgeline and lower slopes, very distinctive features of Windward Oahu.

The City's Koolaupoko Sustainable Communities Plan (CCH 2000), the regional plan maintained by the City to regulate development in the Windward Area of Oahu (in which MCB Hawaii Kaneohe Bay is situated), seeks to protect significant scenic public views of ridges, upper valley slopes, shoreline areas from major public parks, highways, coastal waters and hiking trails. The Mokapu Peninsula is fairly low-lying with the exception of Ulupau Head, a prominent feature along the Windward Coast (and to a lesser degree, Puu Hawaii Loa). The existing airfield area is low-lying and the industrial like buildings grouped around the southeast end of the runway (including the project site) are visible from public vantage

points on the H-3 Freeway in the approach to the Main Gate, from Heeia State Park approximately 2.5 miles to the west and Kualoa Regional Park approximately 6.5 miles to the north. From the closest vantage point along the H-3 approach to the Main Gate, the proposed hangar would be behind the row of existing hangars along 1st Street and barely visible above the top of the hangars. From Heeia State Park the proposed hangar would be behind Hangar 105 but the distance would make it very hard to distinguish from other adjacent buildings. The hangar would stand out from the adjacent hangars from the Kualoa State Park vantage point but the intervening distance would make it blend with from adjacent buildings. In none of these site lines are public views of Ulupau Head and Puu Hawaii Loa affected. Based on the foregoing assessment, the proposed action will not have a significant impact on public viewplanes.

Drainage: As described in the MV-22 EIS, box culverts drain the runway area, which includes both the northeast and southeast sites, southward to Kaneohe Bay. Because the proposed action would not require the construction of a new aircraft parking apron, the loss of permeable land would be approximately 5 acres less than the no-action alternative. The site of the proposed action lies within the same drainage area as the original site, so the strategy for handling storm water would be similar to what was analyzed in the MV-22 EIS. As detailed in the MV-22 EIS, design standards and best management practices (BMPs) for the proposed action would be applied to control surface storm water runoff as well as to improve or maintain the quality of discharged water, per Naval Facilities Engineering and Construction Bulletin requirements, Section 438 of the Energy Independence and Security Act (EISA), as well as Unified Facilities Criteria (UFC) 3-210-10 (Low Impact Development [LID], which call for projects to maintain storm water discharge to predevelopment hydrology conditions to the maximum extent technically feasible, and for application of BMPs for water quality) (UFC 2010).

Because Kaneohe Bay is classified as Class AA water (designated to remain in a natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or action (OEP 1987)), the base's current National Pollutant Discharge Elimination System (NPDES) permit (Permit No. HI 0110078) includes restrictions on the amount of storm water that may be discharged to the bay. Projects that result in additional storm water runoff require a revision of the station's current NPDES permit. Utilizing BMPs and implementing storm water management practices as specified in the installation's Storm Water Management Plan (SWMP), impacts on water quality from erosion and off-site sedimentation during and after completion of construction and during operations would be negligible. As part of the SWMP, sampling is regularly conducted to ensure that storm water discharges meet state water quality standards. Accordingly, drainage is not addressed further in this EA.

Air Quality: Construction-related impacts to air quality would not be measurably different from those analyzed in the MV-22 EIS. Emissions would be short-term, and existing regulatory controls would minimize impacts. Emissions from generators and other stationary sources would be controlled through the existing regulatory permit process under the Clean Air Act. Emissions from mobile sources would be readily dispersed. Accordingly, air quality is not addressed further in this EA.

Noise: The frequency of runway operations, aircraft mix, and location and use of off-base aircraft flight tracks are the primary determinants of community noise-related concerns. The proposed action would

not change these factors, which were analyzed in the MV-22 EIS. The relocation of the aircraft parking pads and hangar from one end of the runway to the other would not be expected to significantly alter off-base noise levels as presented in the MV-22 EIS.

The MV-22 squadron would replace the P-3 squadron at the southeast end of the airfield, so local aircraft noise levels at that end of the runway would not change appreciatively. Additional information on noise contributors is detailed in the MV-22 EIS. Overall, actual noise levels are expected to be lower than those analyzed in the MV-22 EIS because the noise analysis anticipated the basing of three P-8A squadrons at MCB Hawaii, which was subsequently reduced to a two aircraft P-8A detachment.

Construction activities may be occasionally audible at surrounding properties. For this reason, construction curfew periods are typically implemented to minimize construction noise impacts. During construction, temporary noise would be managed by following State DOH noise permit requirements. Unavoidable but temporary noise impacts may occur during construction at the base, but they are not expected to be severe due to the location of the construction areas within the base's boundaries. Accordingly, noise is not addressed further in this EA.

Vehicular Traffic/Circulation: There would be no net increase in vehicle trip generation or off-base traffic levels associated with the proposed action from that analyzed in the MV-22 EIS. Relocation of one squadron from one end of the runway to the other would reallocate some projected local traffic increases from the northeast end of the airfield (e.g., along Mokapu Road and G and E Streets) to the southeast end (e.g., along 1st Street). The traffic study referenced in the MV-22 EIS analyzed conditions at roadways providing access into the base, the two entry gates, and nine intersections throughout MCB Hawaii Kaneohe Bay, accounting for a projected increase of over 1,000 personnel (1,000 military personnel, and 22 civilian employees, including the two MV-22 squadrons) that would operate throughout the west side of the base. The traffic study determined that off-base access roads would become slightly more congested and that additional sentries would be needed at the entry gates during peak periods to minimize queuing.

Several measures were recommended to improve levels of service at congested on-base intersections to maintain adequate traffic flow. The traffic analysis conducted for the MV-22 EIS analyzed all roadways around the airfield and identified needed improvements throughout the area. This included improvements at the intersections of G Street and Mokapu Road, G Street and Reed Road, E Street and 3rd Street, and E Street and 2nd Street. These recommended improvements are being conducted, regardless of the second MV-22 hangar location, so traffic impacts, above those analyzed for the MV-22 EIS, would not be expected. The disestablishment of the P-3 squadrons, and the decision to not base three P-8A squadrons at MCB Hawaii Kaneohe Bay, would also reduce the number of vehicle trips to the southeast end of the runway below the conditions analyzed in the MV-22 EIS. Since the proposed action would not increase the number of vehicle trips, no significant impacts would occur.

Soils and Topography: As explained in the MV-22 EIS, based on the United States Department of Agriculture Soil Natural Resources Conservation Service (USDA NRCS) web soil survey, the surface soil identified around the runway primarily consists of Fill Land (FL). Shallow borings performed for previous

runway and taxiway projects indicate that the surface soils in these areas consist of fill material. Soil types, including Mamala Stony Silty Clay Loam (MnC), Ewa Silty Clay Loam (EmB), and Molokai Silty Clay Loam (MuC), have also been mapped in the eastern and northeastern portions of the peninsula. The silty clay loams consist of well-drained soils with moderate permeability characteristics. Runoff varies from very slow to medium, erosion hazard varies from slight to moderate, and the shrink-swell potential ranges from low to moderate. Site-specific geotechnical engineering investigations were conducted to determine construction requirements.

Because the proposed action would use existing facilities and construct new facilities in an already developed area on the SE end of the runway, the overall disturbance to soils and topography are less than those analyzed in the MV-22 EIS. As noted, construction activities would be completed in compliance with a project-specific NPDES permit program. As part of the permit program, BMPs would be implemented for erosion and sediment control prior to and during construction. Excessive ground settlement, erosion, and expansive soil impacts are not anticipated with the implementation of applicable geotechnical engineering practices during design and construction.

Biological Resources: Facility construction would occur within currently developed areas along the east side of the airfield (see Figure 2-4). This area is dominated by invasive species (e.g., Bermuda grass) or planted landscape trees and shrubs.

MCB Hawaii Kaneohe Bay does not contain federally designated critical habitat. A complete inventory of species and supporting habitats found at MCB Hawaii Kaneohe Bay was documented in the MV-22 EIS. Wildlife species that occur at MCB Hawaii Kaneohe Bay are concentrated along the base's 11 miles of shoreline, within the Nuupia Ponds and Ulupau Head Wildlife Management Areas (WMA), and within the 500-yard offshore security buffer zone. The sites analyzed in this EA are not in the vicinity of the WMAs or the shoreline. Neither of the sites evaluated in this EA provide high-quality habitat for terrestrial native or naturalized flora or fauna. Implementation of BMPs to avoid or minimize storm water runoff would further reduce potential impacts on marine resources. The MV-22 EIS also explains that outdoor lights at MCB Hawaii Kaneohe Bay are shielded when possible to minimize attraction to seabirds, such as shearwaters, and discusses the Bird Aircraft Strike Hazard (BASH) Plan, developed by MCAS Kaneohe Bay to reduce the risk of air strikes involving birds, including resident and migratory bird species. No significant impacts are expected from the proposed action.

3.3. Cultural Resources

Cultural resources include archaeological, historic and traditional cultural properties that reflect our heritage and are considered important to a culture, a subculture, or a community for any scientific, traditional, spiritual, or educational reason. NHPA defines historic properties to include prehistoric and historic sites, buildings, structures, districts, or objects listed or eligible for listing in the NRHP, as well as artifacts, records, and remains related to such properties (NHPA, as amended [16 U.S.C. 470 et seq.]). Additionally, cultural resources are protected under the Archeological Resource Protection Act (ARPA) (16 U.S.C. 470aa-9 470mm; Public Law 96-95 and amendments), the Native American Graves Protection and Repatriation Act (NAGPRA) (Public Law 101-601; 25 U.S.C. 3001-3013), and the American Indian Religious Freedom Act (AIRFA), (Public Law No. 95-341, 92 Stat. 469, dated August 11, 1978, codified at

42 U.S.C. § 1996). Section 106 of the NHPA requires that federal agencies with jurisdiction over a proposed federal project take into account the effect of undertakings on properties listed, or eligible for listing, on the NRHP, and affords the Hawaii State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), Native Hawaiian Organizations (NHO), interested parties, and the public an opportunity to comment on a proposed undertaking. The NHPA and its implementing regulations at 36 CFR Part 800 also include provisions for consultation with NHO regarding cultural significance of potential religious and sacred artifacts.

Cultural resources covered under NHPA—including archaeological sites, traditional cultural properties (TCPs), and buildings and structures—are evaluated for significance using criteria established under NHPA to determine eligibility for inclusion in the NRHP, as stipulated in 36 CFR Part 60.4.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the following criteria:

- Criterion A. Properties associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B. Properties associated with the lives of persons significant in our past;
- Criterion C. Properties that embody the distinctive characteristics of a type, period, or method of construction; or
- Criterion D. Properties that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

MCB Hawaii has conducted numerous inventories of cultural resources at MCB Hawaii Kaneohe Bay to identify properties that are eligible for listing in the NRHP. The results of these studies have been summarized in MCB Hawaii’s Integrated Cultural Resources Management Plan (2014) (ICRMP).

An undertaking is defined under NHPA Section 106 regulations as a “project, activity or program funded in whole or part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval” (36 CFR 800.16 (l)(1)). Under 36 CFR Part 800, an undertaking adversely affects a historic property if it alters the characteristics that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property. “Integrity” is the ability of a property to convey its significance, based on its location, design, setting, materials, workmanship, feeling, and association. Adverse effects can be direct or indirect. They can include reasonably foreseeable impacts that may occur later in time or be farther removed in distance.

Under NEPA, whether or not an action would have a significant impact on cultural resources is determined based on the context and intensity of the impact. While a proposed action (undertaking) could be determined under 36 CFR Part 800 to have an adverse effect on historic properties, the context or intensity of that adverse effect may not be such that it constitutes a significant impact under NEPA;

adverse impacts may also be resolved, or mitigated, thus reducing the potential for an impact to be significant.

Damage, loss, or disturbance to Native Hawaiian human remains would be an impact under NAGPRA. Loss of access to sacred or ceremonial areas would be an impact under AIRFA, enacted to protect and preserve traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts, and Native Hawaiians.

3.3.1. Definition of the Area of Potential Effect

For the purposes of NHPA, effects on historic properties are analyzed within the area of potential effects (APE) of the undertaking. APE is defined at 36 CFR Part 800.16(d) as “the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist.” The APE for cultural resources includes the locations of the proposed action and activities, as well as areas that may be affected by construction or the presence of the new facilities. One example includes visual impacts of development or use, if those visual features contribute to characteristics that qualify the property for inclusion in the NRHP (i.e., the site’s “integrity of location, design, setting, materials, workmanship, feeling, and association”) (36 CFR Part 60.4).

3.3.2. Affected Environment

3.3.2.1. Proposed Action

Early in the planning process it was determined that the proposed action would have the potential to impact cultural resources; specifically, archaeological sites and historic structures/districts. Per the MCB Hawaii’s ICRMP, there are no properties at MCB Hawaii Kaneohe Bay that are officially designated, or eligible for designation, as traditional cultural properties. Additionally, the proposed action would not impact access to sacred or ceremonial areas. NHPA Section 106 consultation was initiated to review the potential for impacts to historic properties and allow input from consulting parties into the planning process. An archaeological assessment was conducted to compile data from previous studies. The assessment identified locations where construction under the proposed action would occur, but that had not been previously surveyed. Subsurface testing was conducted to confirm the extents of a known archaeological site and the depth of fills in the area. Meetings were held with the SHPO architects and archaeologists, the ACHP, the Historic Hawaii Foundation, NHO, interested parties, and the public to discuss concerns and findings from the archaeological assessment and testing conducted for this study, as well as to review design documents. Through the Section 106 process, a MOA for the proposed action (2015 MOA) was developed between MCB Hawaii and the consulting parties. The MOA was executed in March 2015. This section explains how cultural resources could be impacted by the proposed action. The areas within which impacts could occur and the measures outlined in the MOA to avoid, minimize, or mitigate effects to historic properties are summarized.

Two APEs were considered for the proposed action. The direct APE addresses the construction footprint for the proposed action, in which ground disturbance from construction activities (building footprints, utility corridors, etc.) could affect archaeological resources or demolition/alteration of a historic structure could impact that structure’s integrity. The indirect APE refers to the area within which there

could be visual or audible impacts (vibration) to historic properties from construction activities or from new structures inserted into the viewshed once construction is completed.

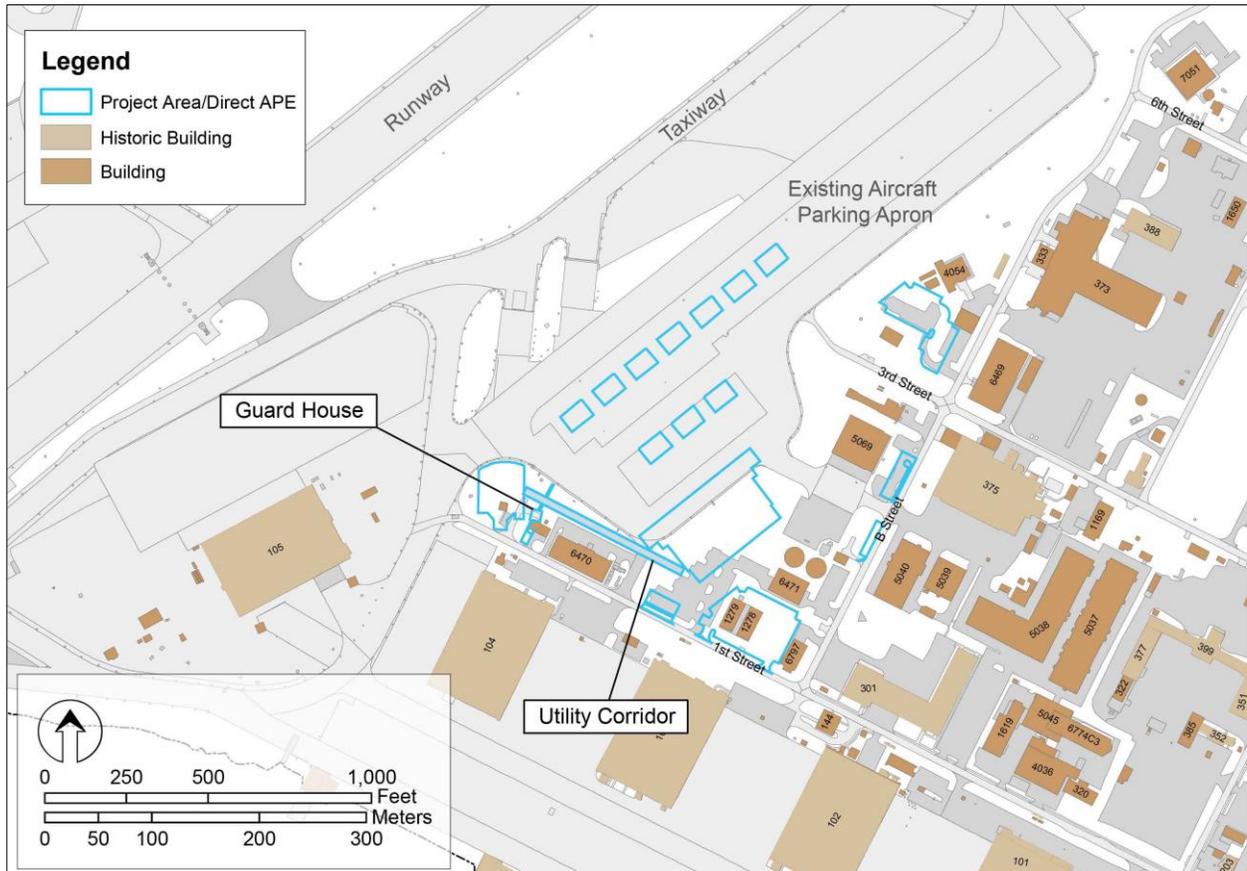


Figure 3-1 - Direct APE (utility corridor approximated for planning purposes)

Direct APE

None of the structures within the construction footprint are eligible for listing or are listed on the NRHP; therefore, there are no direct impacts anticipated to historic structures. The proposed project area encroaches upon two previously known archaeological sites, Site 4933 and Site 5829, which are eligible for listing on the NRHP. Physical remains of past human activities, and human burials are present at both sites. The direct APE is defined as the facility footprints shown as blue project area symbols on Figure 3-1.

Archaeological Resources

An assessment of archaeological resources located within the proposed construction site was prepared by International Archaeological Research Institute, Inc., (IARII) (Allen, et al., 2014). The assessment compiled and analyzed information from previous archaeological, historical, and environmental reports to establish the locations of known cultural resources, and identified areas where archaeological testing would be needed to provide more information.

The Direct APE also includes a former, now-buried, sand beach ridge located between two buried former wetlands, which originated as the estuaries of streams flowing off of nearby hills and, over time, became vegetated (Figure 3-2). Two archaeological sites, Site 4933 and Site 5829, are located on the beach ridge and both include habitation/occupation debris and human burials.

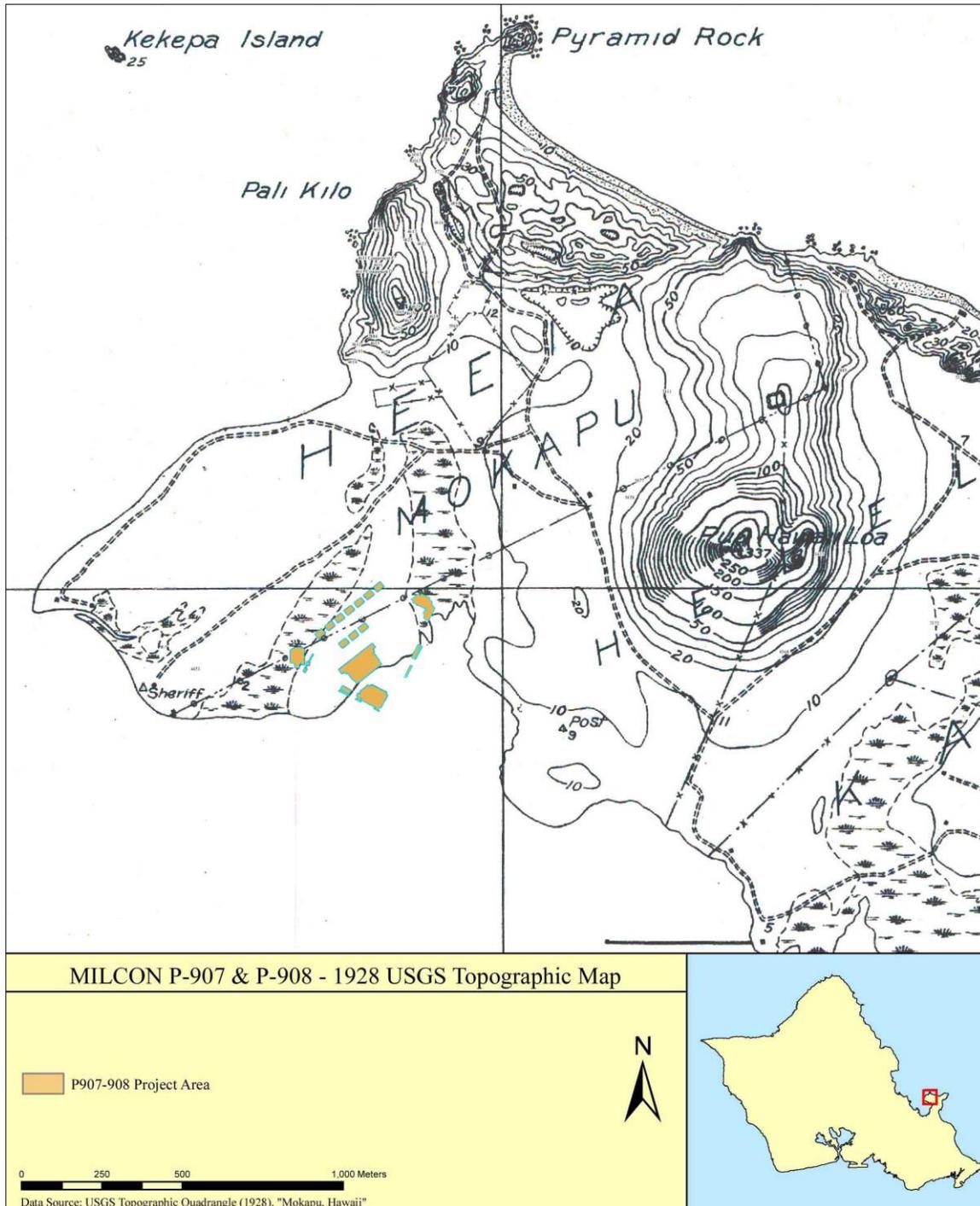


Figure 3-2 - Pre-Contact Peninsula Topography

(Source: Allen, et al., 2014; with reference to USGS Topographic Quadrangle (1928), Mokapu, Hawaii)

This ridge and the original coastline are no longer distinguishable due to the extensive use of fill material during the early 20th-century to level and expand the peninsula. Prior to the fill applications, however, the project area would have been located very near the west edge of a long embayment and estuary on the south shore, the mouth of one of two former streams. Prior to 1900—and 20th-century applications of huge volumes of bay sediments to coastal areas to create new dry land—the project area was actually located near the southeast edge of a small peninsula that jutted out to the southwest from Mokapu Peninsula, incorporating the south half of the area now occupied by the main runway and taxiways. This beach ridge is now buried under 25-180 cm of modern fill.

Site 4933

Site 4933 currently underlies a concrete aircraft parking apron. Replacement of the existing concrete with upgraded heat-resistant concrete is proposed for two MV-22 parking pads above Site 4933. The site was first recorded in 1991, during archaeological monitoring and data recovery in backhoe trenches that were excavated as part of a water main replacement project. Data recovery in 1996 identified four archaeological features. The current boundary for Site 4933 encompasses all the exposures of Layer III, where evidence of human habitation has been identified, that have been documented during the various investigations.

Site 5829

Site 5829, the only other archaeological site within the direct APE, consists of at least four traditional Hawaiian burials and evidence of habitation. The burials were discovered in units excavated along Drain Line B during monitoring of trench excavation for the Base Realignment and Closure (BRAC) project in 2001, in an area south of Site 4933 and apparently on the same former beach ridge between wetlands. Site 5829 also includes a cultural layer, Layer III, which could be a continuation of Layer III at Site 4933. Testing conducted from 2000 to 2002 encountered cultural layers in additional locations that indicate temporary habitations.

Monitored excavation in 2013, connected with construction of the Flight Line Marine Mart across Third Street from Hangar 103 and a short distance southeast of both Sites 4933 and 5829, encountered no archaeological resources or human skeletal remains. Like the Site 4933 boundary, the current Site 5829 boundary encompasses all exposures of the cultural layer documented by previous researchers.

MCB Hawaii, through the Cultural Resource Management staff, made effect determinations and discussed effect and mitigation possibilities with stakeholders as part of the NHPA Section 106 consultation. Concerns regarding potential impacts to archaeological resources from the proposed action, and requests for archaeological testing, were received from the SHPO. Testing was conducted at six locations outside of Site 5829 and one at the proposed guard house footprint within the Site 5829 boundary. The cultural layer was encountered within Site 5829 at the planned guard house relocation site and it was determined that construction would impact the site at this location. Site 4933 is located within portions of the project area but it is not likely that this site would be affected by construction because the new apron foundation and paving were designed to match existing conditions where replacement is required (i.e., new excavations in the apron would not go deeper than the depth of the existing apron).

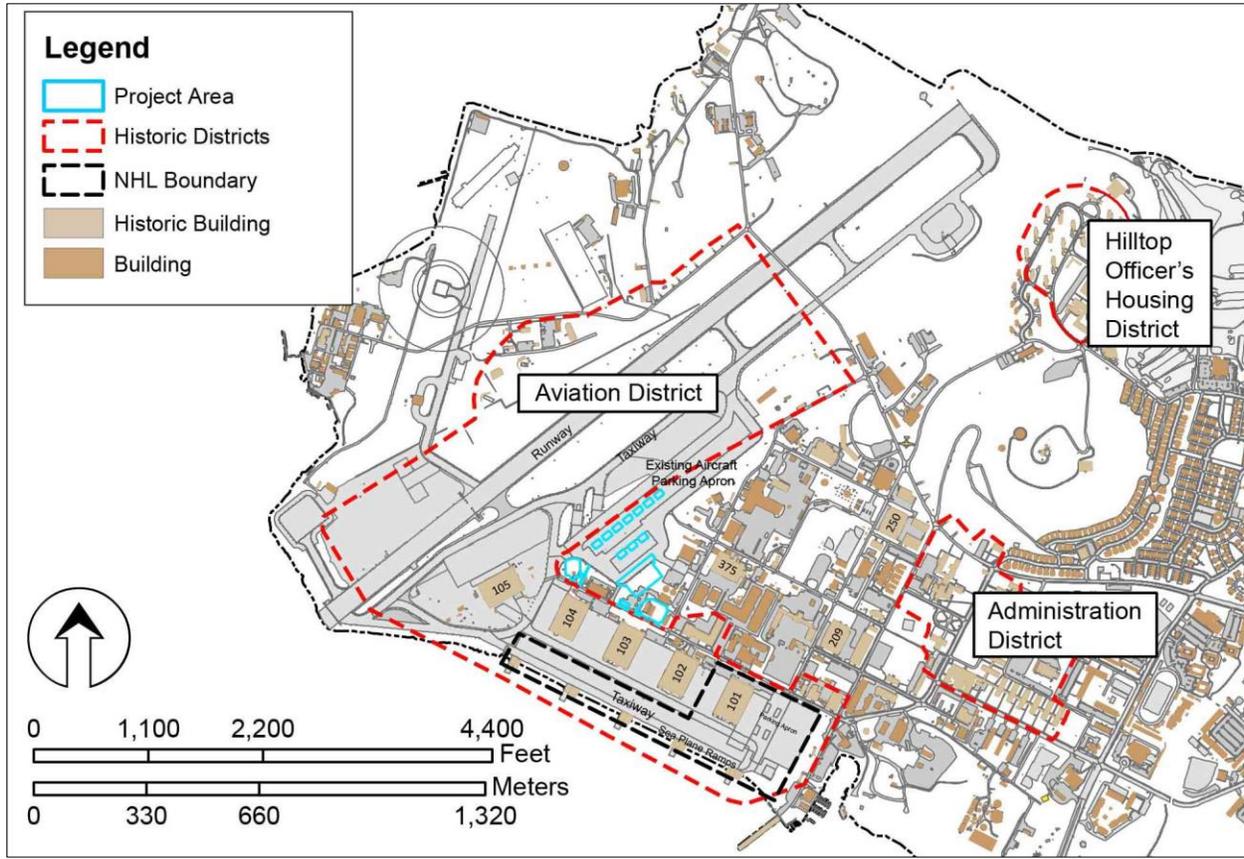


Figure 3-3 - Indirect APE

Indirect APE

The proposed action would take place adjacent to the NAS Kaneohe Historic Aviation District (Figure 3-3) and the NAS Kaneohe National Historic Landmark (NHL). The indirect APE includes all areas around the airfield from which the new hangar would be visible, including the Aviation and Officers’ Housing Districts, but not the Administration District. Potential visual and audible impacts of the proposed action on individual buildings, the historic districts, and NHL were considered during project design, and discussed during the Section 106 consultation. The potential for affect was primarily limited to the five historic hangars, along 1st Street, an area that is referred to as Hangar Row and which includes the NHL, but was also considered in regard to views to and from the airfield, including NRHP eligible Buildings 313 and 375. Because the new MV-22 hangar would be approximately 30 feet taller than the historic hangars and visible from various vantage points around the airfield, there would be adverse effects to the indicated historic districts. As stipulated in the 2015 MOA, the new hangar would be designed to be visually compatible with existing facilities.

Historic Architectural Resources

Buildings and structures at MCB Hawaii Kaneohe Bay are designated as: listed in the NRHP, determined eligible for listing, or not eligible. Historic architectural resources at MCB Hawaii

Kaneohe Bay include World War II era buildings and structures, as well as those associated with the Cold War era. World War II era buildings and structures are either listed, or determined eligible for listing, in the NRHP due to their association with the 7 December 1941 Japanese attack, which marked the start of U.S. involvement in World War II. Of these, Hangar 101 (located at the east end of “hangar row”), the parking apron east of the hangars, the taxiway south of the hangars, and the adjacent seaplane ramps extending into Kaneohe Bay, are listed in the NRHP, and together are classified as the NAS Kaneohe NHL. Three NRHP-eligible historic districts are also located at MCB Hawaii Kaneohe Bay: the NAS Kaneohe Aviation District, Administration District, and Hilltop Officers’ Housing District. The NAS Kaneohe Aviation District encompasses the NHL; Hangars 102, 103, 104, and 105 to the west of Hangar 101 (that together make up hangar row); the runway; an office building; utilities shop; torpedo workshop; and bombsight workshop (Figure 3-3). The Hilltop Officers’ Housing District has views of hangar row that could be impacted by the proposed action; however, the proposed MV-22 hangar would be designed to be visually compatible with the architecture and materials of the structures in the historic district and NHL. The Administration District and the three Cold War era NRHP eligible buildings do not have views of the NHL. No construction or use associated with the proposed action would take place within the Aviation District.

3.3.2.2. *No-action Alternative*

The no-action alternative includes facility construction for one squadron primarily within a previously disturbed area at the northeast end of the runway. This alternative includes the demolition of seven buildings, not eligible or proposed for listing on the NRHP, and relocation of a 0.4-mile section of Mokapu Road, as described in the MV-22 EIS. With the exception of relocating two aircraft parking stalls to the P-3 apron, affected areas and site history relevant to this alternative were addressed in the MV-22 EIS. The relocated parking stalls would be constructed at the same site analyzed for the proposed action and would not require excavation below the depth of the existing apron. As discussed for the proposed action, there are no properties at MCB Hawaii Kaneohe Bay that are officially designated, or eligible for designation, as traditional cultural properties. The proposed action would not impact access to sacred or ceremonial areas.

3.3.3. Environmental Impacts

3.3.3.1. *Proposed Action*

Direct Impacts

The proposed action includes the demolition of Buildings 1278 and 1279, as well as the relocation of 6180. These buildings were determined not eligible for listing on the NRHP; therefore, no direct impacts to historic architectural resources would result from the proposed action.

Sites 4933 and 5829, both of which include evidence of habitation and human burials, are the only documented sites within or adjacent to the project area. No burials are known to exist in areas where construction is planned.

The current aircraft parking apron foundation and paving at Site 4933 extends to a depth of 90 cm below surface (cmbs). Construction excavation is not expected to exceed that depth. Excavation depth for the MV-22 parking pads would be controlled by the Contractor's quality control methods and through observation during construction activities by a Government archaeological monitor. The horizontal extent of any ground disturbance would also not exceed the current extent of the area disturbed during earlier excavation. Accordingly, Site 4933 is not expected to be adversely affected by construction for the proposed action.

The footprints for the southeast corner of the proposed aircraft wash rack, the guard house, the guard house parking area, and a utility corridor between the hangar and the guard house are located within the boundaries of Site 5829. The proposed action would impact a portion of Site 5829; specifically, the portion of the site within the footprint of the guard house (see Figure 3-1). To ensure that the site deposit did not extend into the rest of the construction footprint, archaeological testing, in the form of four trenches within the proposed MV-22 hangar footprint and two trenches within the proposed wash rack footprint, was conducted. Testing confirmed that the site deposit does not occur in these areas, and no additional cultural resources are present. Therefore, impacts are restricted to the portions of Site 5829 noted above (300 square feet).

Indirect Impacts

The scale of the buildings that would be constructed under the proposed action was discussed during Section 106 consultation process. It was agreed that only the new MV-22 hangar was large enough to have a potential effect on the visual quality of the historic district and NHL, and viewsheds around the airfield. To minimize these effects, every effort will be made to make the proposed MV-22 hangar design compatible with the architecture and materials of the structures in the historic district and NHL (e.g., compatible roof lines and building fenestration). The design stipulations in the 2015 MOA are considered part of the proposed action.

3.3.3.2. No-Action Alternative

During site preparation and grading for the construction of the first squadron facilities, one feature of Site 7411 was demolished. In accordance with the PA that was developed for the MV-22 EIS proposed action, Section 106 consultation was initiated and the subsequent P-904/P-905MOA was developed that stipulated the development and implementation of a preservation plan for the remainder of the site (USMC 2012 and 2013).

Impacts associated with the no-action alternative, including the realignment of Mokapu Road, were evaluated in the MV-22 EIS. A large portion of the area was surveyed and tested as part of the MV-22 EIS preparation, and no cultural materials were found in test excavations (DON 2012).

As determined in the MV-22 EIS, no NRHP-listed or eligible structures would be demolished, renovated, or otherwise affected.

3.3.4. Proposed Mitigation Measures

3.3.4.1. Proposed Action

With the implementation of the mitigation measures outlined in the PA and 2015 MOA, the impacts of the proposed action on cultural resources are not significant.

Archaeological Resources

Site 4933 is not expected to be adversely affected by construction under the proposed action; however, archaeological monitoring would be conducted during aircraft parking pad construction to ensure that no unanticipated effects occur. No additional mitigation is proposed.

Archaeological testing confirmed that excavation for the guard house foundation and the utility corridor would impact the cultural layer at Site 5829 (300 square feet). Expanded areal (block) excavation and data recovery within potentially affected areas of Site 5829 was recommended to be conducted, after the construction contractor removes existing pavement where needed, in order to mitigate potential adverse impacts to Site 5829. Details of the controlled excavation and data recovery would be addressed in an archaeological testing plan.

No archaeological sites have been identified in the remainder of the construction footprint; however, archaeological monitoring would be conducted during construction to ensure that no unanticipated effects occur.

Historic Architectural Resources

Section 106 consultation resulted in an agreement with the SHPO, ACHP, and the Historic Hawaii Foundation that potential indirect effects would be mitigated by designing the MV-22 hangar to be compatible with the architecture and materials of the structures in the historic district and NHL. Specifically, the hangar would have straight roof lines, and hangar doors and building fenestration would be designed in a way that is compatible with the appearance of the historic hangars. The proposed hangar design meets these criteria.

3.3.4.2. No-Action Alternative

The no-action alternative represents a reduction in cultural resource impacts compared to the design shown in the MV-22 EIS. The no-action alternative would exclude a portion of the aircraft parking apron that would have impacted Site 7411. As described in Section 2.1.1, the no-action alternative also excludes the relocation of the aircraft rinse facility to a previously undisturbed area at the northeast end of the site where additional unexpected impacts could occur. No archaeological sites have been identified in the proposed construction footprint; however, archaeological monitoring would occur during construction to ensure that no unanticipated effects occur. With the implementation of the mitigation measures outlined in the PA and P-904/P-905 MOA, the impacts of the proposed action alternative on cultural resources would not be significant.

3.4. Cumulative Impacts

The CEQ's NEPA regulations define cumulative effects as: 'The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably

foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions' (40 CFR 1508.7). Cumulative impacts can arise from the individual effects of a single action or from the combined effects of past, present and/or future actions. Cumulative impacts can result from individually minor actions that collectively amount to significant actions over time.

The projects listed in Table 3-1 were considered in conducting the cumulative impact analysis and represent recent past, present, and reasonably foreseeable future projects. For the purposes of this EA, the timeframe of current and/or reasonably foreseeable projects extends from 2010 to 2017. Most of the capital improvement projects at MCB Hawaii Kaneohe Bay are related to the basing of the MV-22 Osprey squadrons and the HMLA, the small detachment of the P-8A Multi-Mission Maritime Aircraft squadron and their supporting units, and other aviation-related improvements. The Defense Policy Review Initiative (DPRI) is evaluating potential relocation of some U.S. Marines and dependents from Okinawa to Oahu, projected for the years between 2019 and 2026. The projects associated with DPRI are part of the USMC long-term planning horizon, but, at this time, are not sufficiently detailed for in-depth analysis to be included within the cumulative impacts analysis.

The cumulative impact analysis builds on the comprehensive analysis provided in the EIS with a focus on cultural resources.

3.4.1. Projects Considered in the Cumulative Analysis

Cumulative impacts were analyzed in the MV-22 EIS for projects or activities that are either in proximity to the proposed action, similar to the proposed action, large enough to have effects, and/or occurring within the same timeframe. The MV-22 EIS analysis included military and non-military actions. MILCON projects for MCBH are shown in Table 3-1. Congress approves the USMC MILCON submission on an annual basis. Table 3-1 lists projects that have been approved/funded and are being executed at MCBH as well as projects that have been proposed in respective fiscal years (i.e. "FY 2017"). It is important to note that although the projects are proposed, budget constraints and priorities limit project submission for Congressional approval. It is not possible to determine what projects will be funded/executed; it is likely that a small number may be selected. The following are proposed MILCON projects. As Congress funds MILCON projects, priorities and funding levels may change and not all projects may be executed.

Table 3-1 - Recent Past, Present and Reasonably Foreseeable Future Projects at MCB Hawaii Kaneohe Bay

Project Name	Description	Year
Bachelor Enlisted Quarters (BEQ)	Construct BEQ at Kaneohe to meet current demands.	Funded FY2010 (complete)
Child Development Center	As part of the American Recovery and Reinvestment Act of 2009, expand the existing Child Development Center to meet increased demands for infant and child care at Kaneohe.	Funded FY2010 (complete)
BEQ	New Command Headquarters (HQ), New 214 Bed BEQ, Renovation of 5070 and 5071, Demolition of Buildings 4010, 4017, 4019, 4020, 6075	Funded FY2011 (completion Feb 2015)
Waterfront Operations (Ops) Center	Construct Facility to replace Waterfront Ops deteriorated metal facilities formerly used by Navy Operational Support Center	Funded FY2011

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Project Name	Description	Year
		(in progress)
MCAS Ops Complex	Provide a consolidated MCAS operations facility to include the air passenger/cargo terminal, weather office, command spaces, and aircraft rescue and firefighting center.	Funded FY2012 (completion Feb 2015)
MV-22 Hangar	Provide hangar to support first new MV-22 Squadron to be based at K-Bay.	Funded FY2013 (in progress)
Aircraft Staging Area	Construct aircraft parking apron for the first MV-22 squadron.	Funded FY2013 (in progress)
Aircraft Maintenance Expansion	Renovates and expands the MALS maintenance facilities including the GSE compound.	Funded FY2014 (in progress)
Aviation Simulator Modernization/Addition	Simulator Center for Aviation Training to accommodate 15-17 new Aviation simulators for the HMLA, VMM, & HMH squadrons	Funded FY2014 (in progress)
Aircraft Maintenance Hangar Upgrades	Renovate Hangar 101 for HMLA and construct additional shop/admin space to meet BFR.	Funded FY2014
Armory Addition and Renovation	Expand existing armory to accommodate space deficiencies to support 3rd Marine Regiment and 1/12 Marines.	Funded FY2014
3d Radio Maintenance/Operations Complex	Construct facilities to support GTF Marines added to 3d Radio Battalion.	Funded FY2014 (in progress)
VMU, MWSD and CH53E Upgrades	Relocates 3rd Radio Motor Pool out of the Building 373 compound. Constructs Portland cement concrete pavement and wash racks to support VMU and MWSD. Upgrades and reconfigures Building 373 to accommodate VMU and MWSD. Renovates Building 388 and 6082 for MWSD. Project installs a 5 ton crane for CH53E in Hangar 102, creates a SCIF and installs OOMA infrastructure for VMU support.	Proposed FY2015
MV-22 EIS Traffic Mitigation	Traffic improvements to various areas on base to mitigate traffic per the MV-22/HMLA EIS	Proposed FY2015
BEQ (Aviation Support)	204 Bed BEQ and parking structure to support new Aviation Squadrons and Marine Wing Support Squadron (MWSS). This is first part of the original 608-bed P-886. Includes air conditioning of Bachelor Officers Quarters (BOQ) B503 and new laundry facilities to service 1600 series barracks	Proposed FY2016
Electrical Distribution, Airfield Lighting and Repairs and Improvements	Relocate airfield vault (currently in Hangar 105 i.e. clear zone) - needed upgrades/safety issues to airfield lighting controls. Upgrade some of the airfield lighting infrastructure per airfield lighting study.	Proposed FY2016
Replacement Medical/Dental Clinic	Multi-story replacement clinic to provide primary medical and dental care	Proposed FY2016
Amphibious Assault Vehicle Maintenance Facility	New amphibious assault vehicle maintenance facility	Proposed FY2017
Multi-Purpose Training Complex	Project will construct a facility to support training using simulators that are housed in temporary and semi-permanent facilities. Also included are classrooms and an auditorium, rappel tower, gas chamber and a training pool	Proposed FY2017
Artillery Battery Complex	Construct new vehicle maintenance facility, gun storage facility, renovate existing gun storage facility and provide office spaces to replace trailers and tension fabric structures that have been in place since 2009 currently used by 1/12.	Proposed FY2017

Project Name	Description	Year
Wastewater Treatment Plant Redundancy and Modernization	Upgrade the Base Wastewater Treatment Plant to provided redundant treatment systems to address State of Hawaii recommendation and for contingency operations in case of failure of critical components.	Proposed FY2017
Main Gate Improvements	Main gate Anti-Terrorism/ Force Protection (AT/FP) improvements.	Proposed FY2017
LHD Pad Conversion and MV-22 Landing Zones	Landing Zone Improvements at various locations to accommodate MV-22. Locations include MCB Hawaii Kaneohe Bay, & MCTAB. LHA/LHD Conversion	Proposed FY2017
MAG-24 Armory Expansion	Expand Armory to meet the needs of HMLA, MWSS, VMU and MV-22	Proposed FY2017
Regimental Consolidated Communications/ Electrical Facility	Consolidated Communications/Electrical Shop for 3rd Marines and 1/12 BN.	Proposed FY2017
Fire Station	Provide Larger Fire Station in new location to meet UFC requirements and sizing for Fire Station	Proposed FY2017
Puuloa Communications/ Electrical Modernization	Upgrade and restore existing failing communications infrastructure, provide power where no power currently exists and upgrade entry control points	Proposed FY2017
Electrical Distribution Modernization'	Repair and Upgrade various components of the base electrical distribution system, including substations and switching stations	Proposed FY2017
Alternate Communications Feeder	Installs new communication duct bank and renovates 213, upgrades 276A.	Proposed FY2017
Van Pad Modernization	Repair and upgrade van pads C&D to support MV22 Arrival. Construct 10,000 SF Warehouse to support MALS-24 (building demolished but not reconstructed as part of P907)	Proposed FY2017
Energy and water efficiency and security improvements and renewable energy projects	In accordance with Secretary of the Navy policy and other federal mandates, MCB Hawaii continues to implement a broad array of energy and water efficiency projects to reduce contributions to greenhouse gas emissions, and create a more secure, independent and sustainable base. Projects include simple conservation measures like lighting, water fixture and HVAC retrofits/upgrades, and renewable energy projects including rooftop photovoltaic panels and solar water heaters, and supporting the commercialization of wave energy technology (being spearheaded by Naval Engineering and Expeditionary Warfare Center in the waters off of MCB Hawaii Kaneohe Bay).	FY 2008-FY2015

Status of MILCON projects since MV-22 EIS publication that are relevant to this discussion include:

- A planned P-8A hangar was removed from the projects list
- Start of construction of the first MV-22 squadron hangar and parking Apron (2013)
- Traffic improvements to various areas on base to mitigate traffic as proposed in the MV-22 EIS

These changes would not result in cumulative impacts to the areas analyzed in this EA. Construction of the first MV-22 hangar led to the discovery of a new archaeological site and the opportunity to redesign the site plan for the first hangar, in the case of the no-action alternative, in a way that could avoid additional impacts to this site.

The smaller combined footprint for the two squadrons, and the fact that construction of the facilities for the second MV-22 squadron would occur later in time than originally proposed (phased vs. concurrent

construction) also helps to minimize potential cumulative effects on erosion, storm water pollutant transmission, noise, and traffic impacts.

Cumulative impacts analysis in this EA focuses only on cultural resources because, as with existing conditions and potential impacts, cumulative impacts to other resources would be no greater than those analyzed in the EIS, and the relevant mitigation measures proposed therein would apply. Other changes associated with the reduced project footprint for the no-action alternative include reductions of both direct and cumulative impacts to soils, topography, and drainage due to the reduced amount of impermeable surface from the parking apron.

3.4.2. Cultural Resources

The APE for the evaluation of cumulative impacts on cultural resources is MCB Hawaii Kaneohe Bay. See Figure 1-1.

In accordance with NHPA Section 106, the Marine Corps consulted with SHPO architects and archaeologists, the ACHP, the Historic Hawaii Foundation, Native Hawaiian organizations, interested parties, and the public. The Marine Corps developed the 2015 MOA with the aforementioned consulting parties to avoid, minimize, or mitigate known adverse effects on historic properties within the APE, and to establish the process whereby additional consultation would occur for those parts of the proposed action that have uncertain effects on historic properties (e.g., should construction at untested locations inadvertently reveal historic properties). The 2015 MOA references stipulations set forth in the MV-22 EIS PA (USMC 2012) that would result in minimizing and mitigating impacts to historic properties. Minimizing cumulative impacts to cultural resources would be achieved in part by mitigating the impacts to historic properties related to the proposed action and subsequent actions in this area.

The proposed action includes the demolition of two buildings and the construction of a hangar and supporting facilities. The buildings proposed for demolition are not eligible for listing on the NRHP, and, therefore, demolition would not contribute to cumulative impacts to cultural resources. Building demolition and hangar construction would alter viewsheds around the airfield. However, with the mitigation proposed in the 2015 MOA developed for the proposed action, cumulative impacts to cultural resources resulting from the altered viewsheds would not be significant. The proposed action would impact an archaeological site at the southeast end of the airfield. Due to the non-renewable nature of historic properties, the adverse impact on Site 5829, when combined with past, present and reasonably foreseeable actions, would contribute to cumulative adverse impacts on cultural resources at MCB Hawaii Kaneohe Bay. However, the proposed data recovery would document any additional resources encountered within Site 5829 and help answer many of the questions that are still unanswered concerning specifics of the site, how its occupants lived, and the nature of the surrounding environment at the time(s) of site occupation. With the implementation of the mitigation measures outlined in the 2015 MOA, cumulative impacts to cultural resources from the proposed action would not be significant.

The no-action alternative includes the demolition of seven buildings and hangar construction. The buildings proposed for demolition are not eligible for listing on the NRHP, and, therefore, demolition would not contribute to cumulative impacts to cultural resources. Building demolition and hangar

construction would alter viewsheds around the airfield. However, cumulative impacts to cultural resources resulting from the altered viewsheds would not be significant. Therefore, as determined in the MV-22 EIS, no significant cumulative impacts to cultural resources would result from the no-action alternative.

There is always a probability of encountering human skeletal remains in secondary context (sand fill) during ground disturbing activities. Although these remains have been displaced from their original context, and discovery of such remains during construction would not be considered an impact under NAGPRA, MCB Hawaii would follow the procedures for inadvertent discovery of human remains outlined in the PA and the installation's ICRMP.

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APPENDIX A

Memorandum Of Agreement Among The Marine Corps Base Hawaii Kaneohe, Hawaii, the Hawaii State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Relocation/Construction of Facilities for the Second MV-22 squadron in Response to the Basing of MV-22 and H-1 Aircraft in Support of III Marine Expeditionary Force Elements in Hawaii, Marine Corps Base Hawaii, Kaneohe

MEMORANDUM OF AGREEMENT (MOA)
 AMONG THE
MARINE CORPS BASE HAWAII KANEOHE (MCB), HAWAII,
 AND
THE HAWAII STATE HISTORIC PRESERVATION OFFICER (SHPO),
 AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP)
 REGARDING
RELOCATION/CONSTRUCTION OF FACILITIES FOR
SECOND MV-22 SQUADRON IN RESPONSE TO THE BASING OF
MV-22 AND H-1 AIRCRAFT IN SUPPORT OF
III MARINE EXPEDITIONARY FORCE ELEMENTS IN HAWAII,
MARINE CORPS BASE HAWAII, KANEOHE

WHEREAS, in July 2012, Marine Corps Base (MCB) Hawaii executed a Programmatic Agreement (PA) with the Hawaii State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) pursuant to 36 CFR § 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act for the basing and operation of MV-22 and H-1 squadrons in Hawaii; and

WHEREAS, a subset of the original Undertaking was the construction of a new hangar, wash rack, supporting utility buildings, replacement and upgrade of aircraft parking pads, and a personally owned vehicle (POV) parking lot for the second MV-22 squadron on MCB Hawaii Kaneohe Bay; and

WHEREAS, the planned siting for the facilities for the second squadron listed above was relocated from the northeast end of the runway, as proposed in 2012, to an existing aircraft parking apron at the southeast end of the runway, and

WHEREAS, the July 2012 PA does not explicitly state how to analyze effects to historic properties if the Undertaking changed, therefore, MCB Hawaii is developing this Memorandum of Agreement (MOA) pursuant to 36 CFR § 800.6 to identify historic properties and assess and resolve any adverse effects associated with the construction and operation of the facilities for the second MV-22 squadron at MCB Hawaii Kaneohe Bay; and

WHEREAS, the remaining portions of the original Undertaking, including construction of facilities and for the first MV-22 squadron and the H-1 squadron, and all H-1 and MV-22 squadron training operations, have not changed and continue to be addressed under the 2012 PA; and

WHEREAS, pursuant to 36 CFR §800.4(a)(1) and in consultation with the Hawaii State Historic Preservation Officer (SHPO) and Native Hawaiian Organizations (NHO), MCB Hawaii has determined the area of potential effect (APE) for the relocation of the facilities (including related infrastructure) for the second MV-22 squadron to be the area shown in Exhibit 1; and

WHEREAS, MCB Hawaii has determined that the construction for the facilities for the second MV-22 squadron will have adverse effects on historic properties, including a direct effect on archaeological Site 5829, which is eligible for listing in the National Register of Historic Places (NRHP) under criterion D; and

WHEREAS, in addition to being evaluated as eligible for listing in the NRHP under criterion D, Native Hawaiian organizations (NHO) have assigned cultural significance to Site 5829, and consider the further investigation and preservation of this site to have relevance to a living people and will contribute to a living culture; and

WHEREAS, MCB Hawaii has redesigned the foundation for parking pad (stall) improvements, such that excavations will extend no further than the depth of the current foundation, in order to avoid impacts to another NRHP-eligible Site 4933; and

WHEREAS, MCB Hawaii will avoid visual impacts to the Historic Aviation District and National Historic Landmark (NHL) at MCB Hawaii Kaneohe Bay (Exhibit 2) by designing the new MV-22 hangar with architectural features sympathetic to the character defining features of the hangars within the District and NHL (Exhibit 3); and

WHEREAS, the MCB Hawaii began consulting with the parties to the July 2012 PA in March 2014 when it notified those parties regarding the proposal to relocate the facilities for the second MV-22 squadron and the potential of that change to affect historic properties; and

WHEREAS, pursuant to 36 CFR §800.6(a)(2), MCB Hawaii has consulted with NHO to resolve the adverse effects on historic properties and has invited the following NHO to sign this MOA as concurring parties: Office of Hawaiian Affairs, Diamond 'Ohana, Olds 'Ohana, Paoa/Kea/Lono 'Ohana, Keko'olani, 'Ohana, Paik 'Ohana, 'Ohana Keaweamahi, 'Ohana Naihe, 'Ohana Kapu, 'Ohana Huihui, 'Ohana Keli'inoi, and 'Ohana Kaleikini, 'Ohana Kawainui; and

WHEREAS, pursuant to 36 CFR §800.6(c)(2), the Marine Corps has consulted with and invited the National Trust for Historic Preservation (NTHP) and Historic Hawaii Foundation (HHF) to sign this MOA as concurring parties; and

WHEREAS, MCB Hawaii has consulted with the Hawaii SHPO to resolve the adverse effects on historic properties; and

WHEREAS, pursuant to 36 CFR §800.6(a)(1) MCB Hawaii has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect finding and the ACHP has agreed to participate; and

NOW, THEREFORE, MCB Hawaii, the SHPO, and the ACHP agree that, upon MCB Hawaii's decision to proceed with the relocation of the facilities for the second MV-22 squadron, MCB Hawaii shall ensure that the following stipulations are implemented in

order to resolve the adverse effects of the relocation on Site 4933, Site 5829, and the Historic Aviation District.

Stipulations

MCB Hawaii shall ensure that the following stipulations are implemented as part of the Undertaking:

I. MITIGATION MEASURES

A. MCB Hawaii shall ensure that the following mitigation will be completed prior to construction related excavation within Site 5829.

1) **Controlled Excavation and Data Recovery—Field and Laboratory**

- i. Within three months of the relocation project execution, MCB Hawaii will commence controlled excavation and archaeological data recovery at the guard house footprint (relocated Building 6180 – Exhibit 4) and along planned utility corridors (Exhibit 5) (as described below in Stipulations I.A.1.ii. and I.A.1.iii.) prior to ground disturbance in the potential controlled excavation/data recovery area, dashed area noted in Exhibit 4. An archaeological monitoring and testing plan will be developed by the selected archaeological contractor detailing exact locations for data recovery, as well as the approach and steps to be taken. The plan will be submitted within 15 calendar days of the archaeological contract award. Government review and comment on the draft plan will be completed within 30 calendar days after contract award and the final work plan will be submitted within seven calendar days of receiving government comments on the draft. Archaeological testing and monitoring will be completed no later than four years after the execution of this MOA.
- ii. Controlled excavation at Site 5829 shall include removal of the overburden from the footprint of the guard house concrete foundation to the top surface of the cultural layer (where present) followed by manual skim (i.e. shallow) shoveling through the deposit to test for burials and/or human skeletal remains (see Stipulation II.A.2 below for procedures pertaining to the discovery of cultural items as defined in the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001 et seq., as appropriate). If significant artifacts and/or features are encountered they will be exposed, plotted, excavated, screened, and collected. Data recovery for identified features shall consist of photo documentation and limited excavation to expose the profile of the feature to its base to document the construction of the feature and any subsurface deposits.

- iii. Artifacts and site samples will be analyzed in the laboratory after field excavations and all collected material will be curated in the secured vault in the MCB Hawaii Environmental Department. Analysis will be completed within 60 calendar days of completing fieldwork. Curation will be completed within one year of completing fieldwork.

2) NHO Site Visit Requests

- i. MCB Hawaii shall consider requests for site visits by NHO during the controlled excavations in order to allow visitors to observe the work. All visitors shall be required to follow the construction contractor's safety instructions and Personal Protective Equipment shall be required. MCB Hawaii shall inform NHO of the start of archaeological data recovery and testing within 30 calendar days of the archaeological contract award.
- ii. Excavation is expected to take place between April 2015 and September 2016. Within 30 calendar days of receipt of the start of archaeological data recovery, NHO shall notify MCB Hawaii if they wish to make site visits during the fieldwork and/or if significant artifacts or features are encountered. This notification shall be sent to one of the MCB Hawaii Cultural Resources Managers at june.cleghorn@usmc.mil or via phone at (808) 257-7126 or coral.rasmussen@usmc.mil or via phone at (808) 257-7134.
- iii. If significant artifacts or features are encountered, NHO (who have made notifications per subsection ii. above) will be notified within 48 hours of the discovery and given an opportunity for a site visit prior to recovery of the artifacts or features. Responses to notification must be made within 48 hours of notification, and site visits will be allowed within fifteen calendar days of notification.

3) Controlled Excavation and Data Recovery—Reporting

- i. The archaeological contractor shall summarize the results of the data recovery in an end of fieldwork letter report, and a draft and final report, for submittal to MCB Hawaii after which each shall be shared with the Signatories and concurring parties.
- ii. End of Field Report will be submitted within 15 calendar days of completing fieldwork.
- iii. Draft report will be submitted to MCB Hawaii within 60 calendar days of completing fieldwork. Comments from the Signatories and concurring parties regarding the draft report shall be provided to MCB Hawaii within 30 calendar days of the receipt of the report in order to be considered for the final report. MCB Hawaii will consider all timely comments in preparing the final report.
- iv. Final Report will be submitted within 15 calendar days upon receiving government comments.

- v. The data recovery contract and work plan will be developed to accommodate site visit requests explained in subsection ii.

B. Archaeological monitoring during construction

- 1) Per Stipulation V.D. of the July 2012 PA, MCB Hawaii shall ensure that archaeological monitoring of construction activities and all ground disturbance for the undertaking will be carried out by or under the direction of an Archaeologist who meets the professional qualifications for Archaeologist under the Secretary of the Interior's Historic Preservation Professional Qualification Standards (Federal Register Vol. 62, No. 119, pp. 33712-33714, 1997).
- 2) Within 15 calendar-days prior to the start of any ground disturbing activities for the construction of facilities for the second MV-22 squadron, a cultural brief will be provided for the construction contractor. MCB Hawaii shall ensure that the construction contractor, including the construction crews, is briefed on the cultural significance of Site 4933 and Site 5829 as well as procedures for inadvertent discoveries of historic properties and NAGPRA cultural items.

C. Hangar Design. As noted above, as mitigation for potential visual effects to the Historic Aviation District and NHL, MCB Hawaii will design the new MV-22 hangar with architectural features sympathetic to the character defining features of the hangars within the District and NHL. Doors and fenestration shall be designed consistent with the design of the adjacent historic hangars such that these features would not detract from the visual quality of the historic hangars.

II. DISCOVERIES. If during the performance of the Undertaking, previously unidentified historic properties are discovered within the APE, or previously unanticipated effects occur to known historic properties within the APE, the provisions in the July 2012 PA, specifically Stipulation VIII of the PA, shall be followed.

In addition to the Stipulations of the PA, in the event that findings occur that would lead to significant impacts if the project were to continue, consultation with NHO and SHPO would be reinitiated to examine archaeological findings and consider mitigation possibilities.

III. RESOLVING OBJECTIONS. Should a Signatory or Concurring Party to this MOA object in writing to MCB Hawaii regarding the manner in which the terms of this MOA are carried out, the provisions in the July 2012 PA, specifically Stipulation XI of the PA (Dispute Resolution), shall be followed.

IV. AMENDMENTS AND TERMINATION. Only the Signatories (SHPO, MCB Hawaii, and ACHP) may propose to amend or terminate this MOA. Should any Signatory propose to amend or terminate this MOA, the provisions in the July 2012 PA,

specifically Stipulation XII of the PA (Amendments and Termination), shall be followed.

V. DURATION. This MOA shall expire five (5) years from the date of its execution, or when all the Mitigation Measures listed in Stipulation I are completed (whichever occurs first); or if terminated pursuant to Stipulation IV. MCB Hawaii will provide written updates to signatories and concurring parties every two years or until the MOA has expired or been terminated.

VI. ANTI-DEFICIENCY. MCB Hawaii's obligations under this MOA are subject to the availability of appropriated funds, and the stipulations of this MOA are subject to the provisions of the Anti-Deficiency Act and will be followed pursuant to Stipulation XIII (Anti-Deficiency) in the July 2012 PA.

VII. EXECUTION. Execution of this MOA by MCB Hawaii, SHPO, and the ACHP and implementation of its terms evidence that MCB Hawaii has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

MARINE CORPS BASE HAWAII, KANEOHE

By:  Date: 6 FEB 2015
E. W. Schaefer
Colonel, U. S. Marine Corps
Commanding Officer

STATE HISTORIC PRESERVATION OFFICER

By:  Date: 3.12.15
Dr. Alan S. Downer
Deputy Hawaii State Historic Preservation Officer
Department of Land and Natural Resources

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: John M. Fowler Date: 03/27/15
John M. Fowler
Executive Director

CONCURRING PARTIES:

HISTORIC HAWAII FOUNDATION

By: *Kiersten Faulkner* Date: Mar. 6, 2015
Kiersten Faulkner
Executive Director

NATIONAL TRUST FOR HISTORIC PRESERVATION

By: _____ Date: _____
Elizabeth Merritt
Deputy General Counsel

OFFICE OF HAWAIIAN AFFAIRS

By: _____ Date: _____
Kamana'opono M. Crabbe
Ka Pouhana, Chief Executive Officer

DIAMOND 'OHANA

By: _____ Date: _____
Ah Lan Diamond

By: _____ Date: _____
Richard Likeke Papa

OLDS 'OHANA

By: _____ Date: _____
Nalani Olds

PAOA/KEA/LONO 'OHANA

By: _____ Date: _____
Donna Kamehaiku Camvel

KEKO'OLANI 'OHANA

By: _____ Date: _____
Terrilee Keko'olani Raymond

PAIK 'OHANA

By: _____ Date: _____
Linda Kaleo Paik

'OHANA KEAWEAMAHI

By: _____ Date: _____
Ka'anohi Kaleikini

'OHANA NAIHE

By: _____ Date: _____
Kekaimalino Kimball Ka'opio

'OHANA KAPU

By: _____ Date: _____
JR Keonekapu Williams

‘OHANA HUIHUI

By: _____ Date: _____
Norman Caceres

‘OHANA KELI’INOI

By: _____ Date: _____
Kalahikiola Keli’inoi

‘OHANA KALEIKINI

By: _____ Date: _____
Kala Wa’ahila Kaleikini

‘OHANA KAWAINUI

By: _____ Date: _____
Aliikaua Keawenuiaumi Kawainui Kaleikini