

**Final**

# **Guam Training Ranges Review and Analysis (TRRA)**

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**Public Version**

*Prepared for:*

Joint Guam Program Office  
Washington, DC

*Prepared by:*

Naval Facilities Engineering Command Pacific  
Pearl Harbor, HI

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# TABLE OF CONTENTS

Acronyms and Abbreviations .....	ii
<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 Organization of the TRRA.....	1
<b>2 Background .....</b>	<b>2</b>
2.1 2012 Roadmap Adjustments and the SEIS.....	2
2.2 Development of LFTRC Alternatives .....	2
<b>3 2011 PROGRAMMATIC AGREEMENT .....</b>	<b>4</b>
3.1 Stipulation on the Guam Training Ranges .....	4
3.2 Public Participation .....	4
<b>4 CULTURAL RESOURCES REVIEW AND ASSESSMENT FOR THE FIVE LFTRC ALTERNATIVES.....</b>	<b>7</b>
4.1 Cultural Resources Investigations.....	7
4.2 PDIA Reviews .....	8
4.3 PIIA Reviews .....	8
4.4 Common Characteristics of the LFTRC Alternatives .....	9
<b>5 ALTERNATIVE 1: ROUTE 15 .....</b>	<b>11</b>
5.1 Summary of Resources in the PDIA for Alternative 1 .....	11
5.2 Summary of Resources in the PIIA for Alternative 1.....	12
<b>6 ALTERNATIVE 2: NAVMAG (EAST/WEST) .....</b>	<b>15</b>
6.1 Summary of Resources in the PDIA for Alternative 2 .....	15
6.2 Summary of Resources in the PIIA for Alternative 2.....	15
<b>7 ALTERNATIVE 3: NAVMAG (NORTH/SOUTH).....</b>	<b>24</b>
7.1 Summary of Resources in the PDIA for Alternative 3 .....	24
7.2 Summary of Resources in the PIIA for Alternative 3.....	25
<b>8 ALTERNATIVE 4: NAVMAG (L-SHAPED) .....</b>	<b>42</b>
8.1 Summary of Resources in the PDIA for Alternative 4 .....	42
8.2 Summary of Resources in the PIIA for Alternative 4.....	43
<b>9 ALTERNATIVE 5: NORTHWEST FIELD .....</b>	<b>61</b>
9.1 Summary of Resources in the PDIA for Alternative 5 .....	62
9.2 Summary of Resources in the PIIA for Alternative 5.....	62

**10 SUMMARY OF THE PREFERRED LFTRC ALTERNATIVE (ALTERNATIVE 5, NWF) ..... 70**  
10.1 Construction..... 70  
10.2 Operation ..... 70  
**11 REFERENCES CITED ..... 72**

**APPENDICES**

Appendix A Figures  
Appendix B Surface Danger Zone Models  
Appendix C Summary of Impacts  
Appendix D Draft TRRA Comment Response Matrix

**LIST OF TABLES**

Table 1. Known Archaeological Sites within the PDIA and PIIA for Alternative 1..... 13

Table 2. Known Architectural Properties within the PDIA and PIIA for Alternative 1 ..... 14

Table 3. Known Archaeological Sites within the PDIA and PIIA for Alternative 2..... 17

Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3 ..... 26

Table 5. Known Architectural Properties within the PDIA and PIIA for LFTRC Alternative 3 ..... 40

Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4..... 44

Table 7. Known Architectural Properties within the PDIA and PIIA for Alternative 4 ..... 59

Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5..... 63

### Acronyms and Abbreviations

AAFB	Andersen Air Force Base	MPMG	Multi-Purpose Machine Gun
APE	Area of Potential Effects	MPPEH	Material Potentially Presenting an Explosive Hazard
ACHP	Advisory Council on Historic Preservation	MRF	Modified Record of Fire
ADNL	A-weighted DNL	NAVFAC	Naval Facilities Engineering Command
CFR	Code of Federal Regulations	NAVMAG	Naval Magazine
CNMI	Commonwealth of the Northern Mariana Islands	NHPA	National Historic Preservation Act
dB	Decibels	NOI	Notice of Intent
DoD	Department of Defense	NRHP	National Register of Historic Places
DON	Department of the Navy	NWF	Northwest Field
EIS	Environmental Impact Statement	PDIA	Potential Direct Impacted Area
ESS	Explosives Safety Submission	PIIA	Potential Indirect Impacted Area
FR	Federal Register	RMP	Range Mitigation Plan
GHPI	Guam Historic Properties Inventory	ROD	Record of Decision
GovGuam	Government of Guam	SDZ	Surface Danger Zone
Ha	Hectares	SEIS	Supplemental Environmental Impact Statement
HG	Hand Grenade	SHPO	State Historic Preservation Officer
JGPO	Joint Guam Program Office	TCP	Traditional Cultural Property
JRM	Joint Region Marianas	TRRA	Training Ranges Review and Analysis
KD	Known Distance	USAR	United States Army
LFTRC	Live Fire Training Range Complex	USFWS	U.S. Fish and Wildlife Service
MEC	Munitions and Explosives of Concern	WWII	World War II

## **1 INTRODUCTION**

The U.S. Department of the Navy (DON) prepared this document, “Guam Training Ranges Review and Analysis (TRRA),” to present information on the development of alternatives and potential adverse effects to historic properties within each of the alternatives the DON analyzed as a potential location for the Marine Corps Live Fire Training Range Complex (LFTRC) on Guam in the Guam and Commonwealth of the Northern Mariana Islands Military Relocation (2012 Roadmap Adjustments) Supplemental Environmental Impact Statement (SEIS). Preparation and distribution of this TRRA complies with Stipulation V.C of the *Programmatic Agreement among the Department of Defense, the Advisory Council on Historic Preservation, the Guam State Historic Preservation Officer, and the Commonwealth of the Northern Mariana Islands State Historic Preservation Officer Regarding the Military Relocation to the Islands of Guam and Tinian* (2011 PA). Once published, the Final SEIS (FSEIS) can be accessed at <http://guambuildupeis.us>.

Following completion of this TRRA, measures to avoid, minimize, and mitigate adverse effects to historic properties and other cultural resources impacts developed during the consultation effort will be incorporated into a Range Mitigation Plan (RMP). The RMP will be subject to additional consultation with the parties to the 2011 PA, consistent with Stipulation V.C.4.

### **1.1 Organization of the TRRA**

In this TRRA, Section 2 provides the background on the 2012 Roadmap Adjustments and development of LFTRC alternatives. Section 3 presents an overview of the 2011 PA, with emphasis on its provisions for the LFTRC decision. Section 4 summarizes the process and methodology used for the cultural resources review and assessment of the each of the five LFTRC alternatives. Sections 5 through 9 provide an assessment of adverse effects and other impacts associated with each alternative. Section 10 provides additional discussion of Alternative 5, which was identified as the preferred alternative in the FSEIS. Should a different alternative be selected in the Record of Decision (ROD), this TRRA will be modified, as necessary.

## **2 Background**

In September 2010, the DON signed an ROD (77 Federal Register [FR] 60438-60440, September 30, 2010) regarding the 2010 Final Environmental Impact Statement (EIS) for the Guam and Commonwealth of the Northern Mariana Islands (CNMI) Military Relocation; Relocating Marines from Okinawa, Visiting Aircraft Carrier Berthing, and Army Air and Missile Defense Task Force (DON 2010). The 2010 ROD documented the DON's decision to implement the preferred alternatives identified in the 2010 Final EIS for the main base (cantonment), aviation, and waterfront operations to support relocation of approximately 8,600 Marines and approximately 9,000 dependents from Okinawa to Guam. The ROD deferred a decision on the development of the LFTRC along Route 15 in the northeastern part of Guam.

In the months following issuance of the ROD, the DON committed to the Government of Guam (GovGuam) that, if the Route 15A area was selected for the LFTRC, the DON would ensure access 24 hours a day and 7 days a week to Pãgat Village and Pãgat Cave historical sites, to include the existing trail from Route 15A leading to both locations (DON 2011, Department of Defense [DoD] 2011). To meet this commitment, the DON applied more precise modeling to determine the size of the surface danger zone (SDZ) associated with the proposed Multi-Purpose Machine Gun (MPMG) Range, which requires the largest SDZ in the LFTRC. Application of this additional modeling reduced the size of the overall footprint for the LFTRC SDZs (Appendix B). Based on the reduced SDZ footprint, the DON was able to identify several additional LFTRC preliminary alternatives and elected to prepare an SEIS to evaluate potential impacts associated with the location, construction, and operation of an LFTRC on Guam for the new alternatives. The DON issued a Notice of Intent (NOI) to prepare the LFTRC SEIS in February 2012 (77 FR 6787, February 9, 2012) and held public scoping meetings on Guam in March 2012.

### **2.1 2012 Roadmap Adjustments and the SEIS**

On April 27, 2012, the U.S. Japan Security Consultative Committee issued a joint statement announcing its decision to adjust the plans outlined in the May 2006 Roadmap for Realignment Implementation. In accordance with these 2012 Roadmap Adjustments, the DoD adopted a new force posture in the Pacific providing for a smaller and reconfigured force on Guam. In conjunction with changes in the mix of personnel involved in the relocation, the adjustments reduced the originally planned relocation of approximately 8,600 Marines with approximately 9,000 dependents to relocation of a force of approximately 5,000 Marines with approximately 1,300 dependents. That decision prompted the DON's review of the actions previously planned for Guam and approved in the September 2010 ROD. This review concluded that, while some actions remained unchanged, others, such as the size and location of the cantonment and family housing areas, could significantly change because of the force modification.

As a result, in October 2012, the DON published an NOI (77 FR 61746, October 11, 2012) to amend the scope of the LFTRC SEIS to address those relocation actions that materially changed due to the new force posture. The DON conducted additional public scoping meetings on Guam for this expanded SEIS in November 2012. Input received from the public, existing cultural resources survey data, and operational requirements were incorporated throughout the planning process to maximize opportunities to avoid adverse effects to historic properties and to support meaningful consultation on the alternatives.

### **2.2 Development of LFTRC Alternatives**

The FSEIS documents a methodology for identifying and evaluating LFTRC alternatives based initially on a search for land areas on Guam large enough to accommodate the LFTRC and application of preliminary

screening criteria reflecting the essential training requirements of the relocating forces. In the initial review of LFTRC alternatives, the DON applied preliminary screening criteria to seven possible LFTRC site alternatives (FSEIS [2015], Section 2.5.2: Evaluation of Preliminary Alternatives for Live-Fire Training Range Complex). The initial screening criterion for the LFTRC was the availability of sufficient area, including land, sea, and airspace, to conduct the training mission of the LFTRC. For each alternative, the total area includes the space for the range facilities (including firing points, berms, and impact areas) and associated SDZs. Due to variations in site topography and conditions, there was no singular land acreage requirement for the LFTRC. The evaluation also included considerations of grading and other earthwork expected to be required during facility construction at any of the alternative sites. All screening criteria are described in detail in the FSEIS [2015], Section 2.3: Alternatives Development Methodology.

Using the initial screening criteria described above, the DON evaluated the seven preliminary LFTRC site alternatives. Based on the evaluation, DON determined that five LFTRC alternatives were sufficiently aligned with the screening criteria and the Marine Corps Guiding Principles to be carried forward for impacts analysis in the SEIS. Following are the five LFTRC Alternatives analyzed in the FSEIS [2015]:

- Route 15 (Alternative 1)
- Naval Magazine (NAVMAG) - East/West (Alternative 2)
- NAVMAG - North/South (Alternative 3)
- NAVMAG - L-Shaped (Alternative 4)
- Northwest Field (NWF) (Alternative 5)

Appendix A of this TRRA includes maps for each of the five LFTRC alternatives. See Appendix C for a table that compares cultural resources impacts and potential mitigation measures for each LFTRC alternative.



### **3 2011 PROGRAMMATIC AGREEMENT**

Consultations under Section 106 of the National Historic Preservation Act (NHPA) for the Military Relocation to Guam (2010 Final EIS) resulted in execution of the 2011 PA, a formal agreement establishing a program alternative to accomplish Section 106 compliance for the overall relocation action. Consistent with 36 Code of Federal Regulations (CFR) § 800.14(b) (3), the DON developed the 2011 PA in consultation with invited signatories, including the DoD Joint-Region Marianas (JRM), , United States Marine Corps, Department of Transportation, United States Army (USAR), United States Air Force, the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs) from Guam and the CNMI, the National Park Service, the, concurring parties, interested groups, and the public.<sup>1</sup>

The 2011 PA incorporates procedures to account for the size, complexity, duration, and as-yet undetermined aspects of the relocation action (undertaking) and is a process-based agreement designed to incorporate meaningful reviews and stakeholder participation as projects are defined over time. The 2011 PA accommodates changes and new information in the overall relocation action by establishing specific procedures for addressing such changes and their potential effects to historic properties and other cultural resources. These processes provide measures for reviewing projects associated with the relocation action as they are developed, and for considering the views of the public and the parties to the 2011 PA to determine mitigation measures when historic properties and other cultural resources may be adversely affected.

#### **3.1 Stipulation on the Guam Training Ranges**

For the LFTRC, the 2011 PA incorporates a process for consulting with the PA Parties and considering the views of the public to address the potential effects to historic properties associated with a decision on the LFTRC. This was necessary because when the 2011 PA was signed, a decision had not yet been made for the LFTRC. Accordingly, Stipulation V.C of the 2011 PA, entitled “Guam Training Ranges,” sets forth a requirement to conduct focused reviews and consultation with the PA Parties and to involve the public in order to afford their participation in reviewing potential effects associated with the location, orientation, design, and operation of the ranges within any area that may be selected in the ROD for the LFTRC. The process includes consultation with the PA Parties and measures to seek public input, in order to review and assess potential direct and indirect effects to historic properties, consistent with the documentation standards defined under 2011 PA Stipulation IV.E.

Accordingly, this TRRA provides information on historic properties for each of the five LFTRC alternatives analyzed in the SEIS. Because LFTRC Alternative 5, Northwest Field, is identified in the FSEIS as the preferred alternative, it is analyzed in greater detail. Should a different alternative be selected in the ROD for the FSEIS, this TRRA will be modified accordingly.

#### **3.2 Public Participation**

Throughout the development of the LFTRC alternatives, the DON worked to support meaningful public participation and coordinate reviews under the National Environmental Policy Act and NHPA.

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<sup>1</sup> For this TRRA, invited signatories, concurring parties, interested groups, and the public are identified as PA Parties throughout this document.

The DON conducted two SEIS public scoping periods, the first time for the LFTRC SEIS in February-April 2012, and the second time in October-December 2012 after the scope of the SEIS was expanded. The public input from the scoping periods was taken into consideration in the planning efforts and the development of the SEIS. Similar to the public scoping meetings held on Guam in March 2012, three public scoping meetings were held on Guam on November 8-12, 2012. During the scoping meetings, the DON cultural resources subject matter experts were on hand to explain how the 2011 PA supports NHPA requirements for the revised relocation action, and to discuss the public's concerns about cultural resource issues.

A 75-day public comment period, which commenced with the release of the Draft SEIS to the public, took place from April-July 2014. The Draft SEIS was distributed to federal, state, and local agencies, elected officials, and other interested individuals and organizations in order to provide opportunities for those involved to learn about the proposed action and express their views. Three public meetings were held on Guam between May 17 through 20, 2014. Each meeting began with a two-hour open house session that provided the opportunity for project team members and subject matter experts to inform the public about the proposed action and potential environmental impacts, and to receive their comments. A poster station provided cultural resources information related to the Draft SEIS. At each of the three Draft SEIS public meetings, DON cultural resources subject matter experts were on hand to present information related to the Draft SEIS. They communicated to the public that the 2011 PA remains in place to fulfill the requirements under Section 106 of the NHPA for the revised action described in the Draft SEIS. They also explained how the 2011 PA would be applied to engage the public and the PA Parties in project review processes, as projects are developed for the revised action and answered questions and discussed concerns with members of the public. Public hearings followed each open house session to provide the public with a forum to communicate views about the proposed action to government officials and fellow members of the public.

During the public comment period for the Draft SEIS, individuals from GovGuam agencies, federal agencies, non-governmental organizations, and the public commented on cultural resources issues related to the LFTRC. Comments collected during the Draft SEIS review period were taken into account as part of the DON's consideration of the proposed action.

On October 22, 2014, the DON made the Draft TRRA available for a 45-day comment period to the public and those United States and Guam agencies and non-governmental organizations that participated in the 2011 PA consultations. The comment period ended on December 9, 2014, Chamorro Standard Time.

During consultation on the Draft TRRA, the DON emailed copies to the PA Parties, and a public version was made available via Naval Facilities Engineering Command (NAVFAC) Pacific's Cultural Resource Information and JRM websites. The DON also provided hard copies of the public version of the Draft TRRA at the Guam SHPO office for dissemination to the interested public. The availability of the Draft TRRA and the reminder of the review period timelines were announced in the NAVFAC Public Service Announcements.

During the Draft TRRA review period, the DON held three consultation meetings/calls with the 2011 PA Parties to identify the Parties' key issues and concerns with the Draft TRRA. The PA Parties provided their comments on the meetings/calls and followed up with written comments. The DON received written comments from four PA Parties: USAR, Guam SHPO, ACHP, and Guam Preservation Trust. The DON also received comments from 11 public commenters via NAVFAC Pacific's Cultural Resource Information website.

The DON has reviewed and addressed the comments on the Draft TRRA during the finalization of this TRRA. As noted in Section 1, consultations on the TRRA will contribute to the development of an RMP for historic properties in the LFTRC alternative selected in the ROD. The Draft TRRA comment response matrices are provided in Appendix D.

## 4 CULTURAL RESOURCES REVIEW AND ASSESSMENT FOR THE FIVE LFTRC ALTERNATIVES

For each LFTRC alternative location carried forward for analysis in the FSEIS, the DON conducted focused reviews to identify historic properties that could be affected. Each LFTRC alternative includes both the footprints of the ranges (direct effects) and the SDZs associated with each range (indirect effects). The DON used different inventory methodologies for each type of area. This differentiation of inventory methods is consistent with the standards included in Stipulation IV.F of the 2011 PA and 36 CFR § 800.4(b) (1), as well as guidance from the ACHP. Specifically, in its publication “Meeting the Reasonable and Good Faith Identification Standard in Section 106 Review,” the ACHP advises agencies to determine appropriate identification efforts based on: past planning, research and studies; the magnitude and nature of the undertaking and the degree of federal involvement; the nature and extent of potential effects on historic properties; and the likely nature and location of historic properties within areas that may be affected (ACHP 2007).

### 4.1 Cultural Resources Investigations

In preparation for the investigations, the DON developed work plans summarizing the background and methods to be conducted and submitted them to the Guam SHPO for review and comment. The study areas were separated into two major categories: areas where proposed actions could directly affect historic properties and those where proposed actions could indirectly affect historic properties. The differentiation was made consistent with the NHPA definitions of direct and indirect effects. For purposes of this analysis, these categories are referred to as the Potential Direct Impacted Area (PDIA) and the Potential Indirect Impacted Area (PIIA), defined comparably to the Area of Potential Effects (APE) under NHPA. PDIA is those areas proposed for range, road, or cantonment construction and utility (electric, water, communication) improvements. PIIAs are those areas proposed for SDZs and adjacent areas within the 65-decibel (dB) noise contour, where ground disturbance and construction are not proposed.

The work plan for LFTRC PDIA is titled *Archaeological Surveys and Cultural Resource Studies, Live-Fire Training Range Complex Naval Munitions Site and Route 15 Alternatives, Territory of Guam* (Dixon et al. 2013a). The work plan for the PIIAs, where direct impacts are not anticipated, is titled *Archaeological Surveys and Cultural Resource Studies, Live-Fire Training Range Complex NCTS Finegayan and Northwest Field Alternatives and Main Cantonment Alternatives, Territory of Guam* (Dixon et al. 2013b). In addition to detailing the essential components of the in-fill surveys, the work plans present the approach, methodology, personnel, and schedule for accomplishing the studies. The work plans also include historic contexts, summaries of previous archaeological research, and examinations of historic maps of the areas.

During the inventory efforts in both PDIA and PIIAs, the beginning and ending transect coordinates were recorded with sub-meter accuracy, using a survey-grade Trimble GeoXH GeoExplorer 2008 Series Global Positioning System unit, to ensure the survey area was completely covered. Transect orientation was determined by terrain and access. Additionally, terrain in either area that could not be surveyed for safety reasons, such as areas for which access was prohibited or areas too steep to safely navigate on foot, or areas covered in standing water were marked on a map. Explanations for why certain areas were not surveyed are provided in the results section of respective chapters in the cultural resources technical reports.

The results of the in-fill surveys for the PDIA and the PIIAs were summarized in technical reports detailing a review of previous surveys, methods, site and structure descriptions, National Register of Historic Places (NRHP) evaluations (for resources identified in the PDIA), and possible effects from the proposed action (Dixon *et al.* 2013c, 2013d). These reports were submitted to the Guam SHPO for review, summaries were discussed during the annual PA meeting in May 2014, and several consultation meetings/conference calls were held to discuss the reports and Guam SHPO comments. Guam SHPO comments were taken into account in preparation of the pre-final PDIA and PIIA reports, which were submitted to the Guam SHPO in December 2014.

The utility improvement corridors were analyzed through an in-depth literature review of previous studies and primary source archival/historic documents that were used to establish a chronology of pre-contact and post-contact activity, and land-use patterns, to support assessments of potential sensitivity for historic properties.

Methodologies for the PDIA, PIIA, and utility improvement corridors are described in detail in the FSEIS [2015], Section 3.10.3.1: Methodology.

#### **4.2 PDIA Reviews**

As described in the work plans, the DON surveyed all of the PDIA that had not been previously surveyed. For these areas, pedestrian surveys were conducted using pedestrian survey transects spaced no more than 5-meters apart. When a site was identified in a PDIA, it was recorded in terms of the horizontal and vertical dimensions, number and type of associated features, morphology, function, presence of surface artifacts, cultural affiliation or occupation period, vegetation, and ground surface visibility. The field teams prepared detailed maps, site descriptions, and photo-documented all archaeological resources identified during the in-fill surveys of the PDIA and collected sufficient data to complete NRHP evaluations of these sites. In-fill surveys in PDIA also included subsurface testing (shovel test pits or controlled test units) for the purpose of determining presence or absence of intact subsurface cultural deposits judged to have potential for intact buried deposits.

Architectural properties subject to Section 106 review within the PDIA were recorded through detailed descriptions of construction techniques, existing conditions, character-defining features, and alterations. Some built properties in this section are covered by *Program Comments* executed by the ACHP, which resolve Section 106 responsibilities for certain DoD facilities (FSEIS, Section 3.10.2 Regulatory Framework). For architectural properties in the PDIA that were constructed between 1946 and 1991, the Navy Cold War Context (Aaron 2011) provided a primary analytical basis for NRHP evaluation. The context supported consideration of NRHP eligibility and for identifying properties with a potential for meeting the higher threshold of exceptional significance for properties less than 50 years old (Criteria Consideration G). Architectural properties were photographed and evaluated using the NRHP criteria, and Guam Historic Properties Inventory (GHPI) forms were completed. Additional measures will be undertaken for those unevaluated architectural properties that fall under the LFTRC alternative selected in the ROD. Consistent with the 2011 PA, final determinations of eligibility and assessments of effect on all architectural properties would be completed in conjunction with project-specific reviews.

#### **4.3 PIIA Reviews**

For the inventories of the PIIA, information collected from literature reviews was supplemented with pedestrian surveys of in-fill areas. As documented in the study plans, pedestrian surveys in these areas involved pedestrian survey transects spaced at 10-meter intervals. Site recordation included sketch maps and collection of one global positioning system point at the center of each site. The difference in

methodology between the PDIA and the PIIAs is consistent with the ACHP's guidance on reasonable level of effort (ACHP 2007), which is discussed above. No new eligibility determinations were made for the sites identified in the PIIAs. Therefore, GHPI data forms were not completed for sites identified in the PIIAs, nor were sites in the PIIAs subject to subsurface testing. Architectural properties within the PIIAs were described and photographed but were not evaluated for NRHP eligibility. Eligibility evaluations indicated in the summary tables in Sections 5 through 8 for previously recorded sites and architectural properties were derived from previous surveys. Architectural properties and archaeological sites in the PIIAs not previously evaluated or included in a Program Comment are listed as "unevaluated."

In some instances the boundaries of a historic property may lay within both the PDIA and PIIA. For these instances, properties may appear more than once in discussions regarding impacts.

#### **4.4 Common Characteristics of the LFTRC Alternatives**

For the LFTRC alternative selected in the ROD, the DON proposes to conduct geotechnical work in advance of construction to support project design efforts for future improvements and vertical construction projects. Geotechnical work will require vegetation clearance for the purpose of accessing specific study locations, placement of geotechnical borings (via auger), and mechanized excavations to facilitate sample collection. Generally, geotechnical work entails use of a truck-mounted drill rig using 8-inch diameter augers or pipe casings with water or air rotary drilling. Boring depths vary, but generally range from 5 feet to a maximum of 110 feet.

All LFTRC alternatives are located within areas designated as having a moderate likelihood of encountering Munitions and Explosives of Concern (MEC) and/or Material Potentially Presenting an Explosive Hazard (MPPEH). At munitions response sites, no site operations may begin unless Naval Ordnance Safety and Security Activity and the DoD Explosive Safety Board have reviewed and approved the Explosives Safety Submittal (ESS). Preparation of an ESS is required when conducting ground-disturbing or other intrusive activities in areas known or suspected to contain MEC and/or MPPEH. The ESS outlines specific measures to be taken to ensure the safety of workers and the public. ESS documentation has been prepared for activities proposed on Guam. Therefore, all intrusive activities, including archaeological testing, will follow procedures described in the Joint Region Marianas Explosives Safety Submittal (JRM ESS), Amendment 5, Correction 1, Section 6.1.5 Anomaly Avoidance Part 1. Anomaly avoidance techniques will be employed during all excavations.

Each LFTRC alternative would include an MPMG Range, Modified Record of Fire (MRF) Range, Known Distance (KD) Pistol Range, KD Rifle Range, Non-standard Small Arms Range, and a range maintenance building.

Additionally, all five LFTRC alternatives include a Hand Grenade (HG) Range, which would be located in the central part of Andersen South for each alternative. The HG Range would encompass a land area of 24 acres (10 ha), which includes the range, practice area, access road, parking area, and utility installation. An additional 1.0-acre (0.4-ha) training area would be developed adjacent to the HG Range. No adverse effects to NRHP-eligible or listed properties are anticipated from the projected construction or operation of the HG Range. The proposed HG Range is illustrated in Appendix A of this TRRA. Details about the HG Range are provided in FSEIS [2015], Section 2.2.3.

Each alternative would require utility improvement corridors to connect power, potable water, wastewater, and solid waste disposal lines to the range, as well as information technology and communications utility lines. Underground electrical lines would be in conduit buried up to

approximately 3.5-feet (1.0-m) deep in a dedicated trench, and water and wastewater lines would be buried at least 3.0-feet (0.9-m) deep and not more than approximately 5.0-feet (1.5-m) deep, with approximately 10.0 feet (3.0 m) of separation between their respective trenches. A maximum potential impact corridor of 50.0-feet (15.2-m) wide is assumed for the utility improvement trenches.

## 5 ALTERNATIVE 1: ROUTE 15

The Route 15 LFTRC Alternative 1 would consist of approximately 3,762 acres (1,522 ha) (not including the stand-alone HG Range at Andersen South) and would require federal land acquisition of an estimated 872 acres (353 ha) of Chamorro Land Trust Commission, Guam Ancestral Lands Commission, and GovGuam lands. Alternative 1 would be sited as a complex adjacent to Andersen South Air Force Compound, Yigo Municipality. Access to the range complex would be via Route 1 through the existing Andersen South entry control point. Appendix A of this TRRA provides a map of Alternative 1.

There are 10 known archaeological sites located within the Alternative 1 PDIA on Andersen South and the area south of Route 15 (FSEIS [2015], Table 5.1.10-1, and TRRA, Table 1). Three of these sites, all Pre-Contact/Latte Period ceramic scatters, are eligible for listing in the NRHP. The seven remaining sites are considered ineligible for listing in the NRHP.

Portions of the Alternative 1 PDIA, including the HG Range, are located in Andersen South, where architectural properties are present. Approximately half of the buildings at Andersen South have been assessed for NRHP eligibility (Mason 2004, SEARCH 2013, Welch 2010, Yoklavich *et al.* 1996). Most of the buildings at Andersen South are abandoned housing units that were built in either 1948 or 1978, none of which are eligible for listing in the NRHP. Other buildings include support facilities built in the 1940s, 1960s, and 1980s.

There are 53 architectural properties, constructed between 1945 and 1990, in the PDIA (FSEIS [2015], Table 5.1.10-4, and TRRA, Table 2). Forty-two of these buildings and structures are part of the Andersen South Housing Development built in 1948 and 1978; all of these buildings are considered not eligible for listing on the NRHP. Other architectural resources within the Alternative 1 PDIA include two gatehouses built in 1990 and nine water support facilities that are all considered not eligible for listing in the NRHP.

No TCPs have been identified in the PDIA for Alternative 1.

There are 7 known archaeological sites located within the Alternative 1 PDIA (FSEIS [2015], Table 5.1.10-5, and TRRA, Table 1). Of these, five are eligible for listing in the NRHP and include two ceramic scatters, two caves/rock alignments, and Pâgat Point, an agricultural complex and potential TCP (Griffin *et al.* 2010). Of the remaining two sites, one artifact scatter is ineligible for listing in the NRHP, and one cobble alignment has not been evaluated.

### 5.1 Summary of Effects in the PDIA for Alternative 1

Direct physical disturbance would potentially occur on approximately 383 acres (155 ha) of this site for the construction of the individual ranges, range support building, parking areas, range towers, range access roads, a perimeter fence, and the realignment location of Route 15. Construction of the ranges, support facilities, utilities, and relocation of Route 15 would primarily occur in the southeastern portion of Andersen South and the northeastern and central portion of the area south of Route 15 (FSEIS [2015], Figure 2.5-2, and in Appendix A of this TRRA). Approximately 3,379 acres (1,367 ha) of land within the SDZ would not be directly impacted by construction or operation of the LFTRC.

Excavation and soil removal associated with the construction of Alternative 1 could adversely affect NRHP-eligible sites, including Pre-Contact/Latte Period artifact scatters and sites containing *latte* components (FSEIS [2015], Table 5.1.10-1: Archaeological Sites within the Alternative 1 PDIA). Note that



two of these sites are fully contained in the PDIA, while one is situated within both the PIIA and PDIA. Construction associated with Alternative 1 would also require the demolition of 50 buildings and structures (FSEIS [2015], Table 5.1.10-6). None of the buildings and structures is eligible for listing in the NRHP. Construction activities associated with Alternative 1 would not affect the Pãgat Site (site 66-04-0022), which includes Pãgat Village and Pãgat Cave. Under this alternative, the range complex would be located on the limestone plateau, west and more than 300 feet (91 m) in altitude above the Pãgat Site, and would not be visible from the site.

## **5.2 Summary of Effects in the PIIA for Alternative 1**

Potential indirect adverse effects could occur to one NRHP-eligible site/potential traditional cultural property (TCP) within the PIIA. Indirect adverse effects could occur to one additional archaeological site/potential TCP (the Pãgat Site, GHPI Number 66-04-0022) due to an increase in recreational pedestrian traffic and visual intrusion from an observation tower. Consistent with the 2011 PA, access to Pãgat Cave, Pãgat Village, and the existing path to these sites would not be encumbered by the SDZ for the ranges, and ownership of these properties would remain with GovGuam. Operation of this alternative would not result in restricted access to the Pãgat Site (GHPI Number 66-04-0022), which includes Pãgat Village and Pãgat Cave. Auditory impacts associated with range operations would not adversely affect the integrity of the NRHP-eligible artifact scatters and rock alignment. Changes to the setting of the Pãgat Point site could be adverse, if the property is confirmed as a TCP. An indirect adverse effect to the Pãgat Site (GHPI Number 66-04-0022) from visual intrusions associated with Alternative 1 could result from construction of an observation tower near the cliff line on the plateau above this site. Final design characteristics of the tower, including height and location, would depend upon topography and other environmental conditions. The indirect effect to the setting of the Pãgat Point site could be adverse. Based on the current preliminary concept plan, the tower would be visible from the Pãgat Site. Range design is based on site specific conditions, including but not limited to topography, vegetation etc. If Alternative 1 is selected in the ROD, the DON would consult in more detail on designs and potential effects to historic properties, to include design considerations to avoid and minimize adverse effects, in developing an RMP for the selected alternative

Additional details about Alternative 1 are provided in the FSEIS [2015], Section 2.5.4.1, and in Appendix C of this TRRA.

**Table 1. Known Archaeological Sites within the PDIA and PIIA for Alternative 1**

<i>GHPI Number<sup>1</sup></i>	<i>Temporary Site Number/ Map Number*</i>	<i>Site Type</i>	<i>Period**</i>	<i>NRHP Eligible?</i>	<i>Criteria</i>	<i>Reference</i>	<i>Location/ Potential Effect Type</i>	<i>Potential Action</i>
66-04-0020	MaGY-8	Cave/Stone platforms, stone walls	Pre-Contact/Latte	Yes	D	Reinman 1977	PIIA/ Indirect	SDZs
66-04-0021	MaGY-9	Agricultural complex	Pre-Contact/Latte	Yes	A, D	Reinman 1977	PIIA/ Indirect	SDZs; Noise
66-04-1869	GRP 1	Ceramic scatter and rock alignment	Pre-Contact/Latte	No	NA	Moore 1987	PDIA/ Direct	Range construction
66-04-2104	PBI 1, PBI 4	Ceramic scatter	Pre-Contact/Latte	Yes	D	Moore <i>et al.</i> 2007	PDIA/ Direct; PIIA/ Indirect	Range construction; SDZs; Noise
66-04-2265	PBI 2	Rock alignment	Pre-Contact/Latte	Yes	D	Moore <i>et al.</i> 2007	PIIA/ Indirect	SDZs; Noise
66-04-2324	AS-T-2007-07	Ceramic scatter	Pre-Contact/Latte	Yes	D	Welch 2010	PDIA/ Direct	Range construction
	AS-2007-T-1/ 1066*	Concrete pads, roads, other remains	Post-WWII/Second American Territorial	No	NA	Welch 2010	PDIA/ Direct	Range construction
	AS-T-2008-01	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2011a	PDIA/ Direct	Range construction
	AS-T-2008-04	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2011a	PIIA/ Indirect	SDZs; Noise
	GRP 2	Artifact scatter	Pre-Contact/Latte	No	NA	Moore <i>et al.</i> 2002	PDIA/ Direct	Range construction
	GRP 3	Artifact scatter	Spanish Missionization/ Chamorro Spanish Wars	No	NA	Moore <i>et al.</i> 2002	PDIA/ Direct	Range construction
	GRP 4	Artifact scatter	Pre-Contact/Latte	No	NA	Moore <i>et al.</i> 2002	PDIA/ Direct; PIIA/ Indirect	Range construction; SDZs
	GRP 5	Artifact scatter	Pre-Contact/Latte	No	NA	Moore <i>et al.</i> 2002	PDIA/ Direct	Range construction
	PBI 3	Pottery scatter	Pre-Contact/Latte	No	NA	Moore <i>et al.</i> 2007	PDIA/ Direct	Range construction
66-04-2757	T-15-001	Cobble alignments	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs

*Legend:* GHPI = Guam Historic Properties Inventory; NRHP = National Register of Historic Places; NA=not applicable. NRHP criterion A = eligible because they are associated with events that have made a significant contribution to the broad pattern of history, criterion D = eligible for potential to yield information important in prehistory or history.

*Notes:* <sup>1</sup>Not all sites recorded within the project areas have received official GHPI numbers, although they have been documented as part of previous surveys and submitted to SHPO

\*Map number from Welch 2010.

\*\* Revised to match Guam GHPI forms dated May 28, 2014.

**Table 2. Known Architectural Properties within the PDIA and PIIA for Alternative 1**

<i>Building/ Structure Type</i>	<i>Location</i>	<i>Facility Number/Map Number*</i>	<i>Date of Construction</i>	<i>NRHP Eligible?</i>	<i>Location/ Potential Effect Type</i>	<i>Potential Action</i>
Former barracks buildings, abandoned Wilson Homes, and other military infrastructure	Andersen South	1052*	1947 to 1949	No	PDIA/ Direct	Range construction
Family Housing (Wilson Homes)	Andersen South	222, 223, 224, 225, 226, 227, 228, 229, 230, 232, 234, 236, 238, 242, 244, 246, 248, 250, 252, 290, 292	1948	No	PDIA/ Direct	Range construction
Family Housing Security Police Gatehouse	Andersen South	245	1990	No	PDIA/ Direct	Range construction
Family Housing Security Police Gatehouse	Andersen South	247	1990	No	PDIA/ Direct	Range construction
Family Housing	Andersen South	300, 301, 302, 303, 304, 305, 320, 322, 323, 324, 325, 326, 327, 328, 330, 331, 332, 333, 338, 340	1978	No	PDIA/ Direct	Range construction
Hydrologic Support Facilities	Andersen South	680, 681, 682, 683, 685, **690, 8153, shed (no facility number)	1945 to 1987	No	PDIA/ Direct	Range construction
Sewer Lift Station	Andersen South	1120	1949	No	PDIA/ Direct	Range construction

*Notes:* All facility numbers in the 200 series, with the exception of the two gatehouses (facility numbers 245 and 247) are Wilson Homes included within Map number 1052.

\*Map number from Welch 2010 (not a facility number).

\*\*Also within the potential indirect impact area.

## 6 ALTERNATIVE 2: NAVMAG (EAST/WEST)

The NAVMAG (East/West) LFTRC Alternative 2 would consist of approximately 3,815 acres (1,544 ha) (not including the HG Range at Andersen South), and would require acquisition of approximately 1,894 acres (766 ha) of privately owned and GovGuam land. Under Alternative 2, the LFTRC would be a range complex located primarily on non-federal land to the southeast of the NAVMAG. Access to the ranges would be via a new access road from Dandan Road that would be constructed as part of the LFTRC. Approximately 5 miles (8 km) of roads would also be constructed to provide access between the individual ranges. Appendix A of this TRRA provides a map of Alternative 2.

There are 10 known archaeological sites located within the Alternative 2 PDIA (FSEIS [2015], Table 5.2.10-1, and TRRA, Table 3). They include seven artifact scatters and two sites with *latte* components, all of which are eligible for listing in the NRHP, and one small artifact scatter that is not considered eligible for listing in the NRHP.

There are no known buildings or structures within the PDIA for Alternative 2.

No TCPs have been identified in the PDIA for Alternative 2.

There are 98 known archaeological sites within the Alternative 2 PIIA (FSEIS [2015], Table 5.1.10-2, and TRRA, Table 3). Seventy-one sites are eligible for listing in the NRHP, including Pre-Contact artifact scatters, *latte* sites, and rock shelters. Twenty-seven sites, consisting of Pre-Contact artifact scatters and *latte* sites, have not been evaluated for listing in the NRHP.

There are no known buildings or structures within the PIIA for the Alternative 2.

A portion of one high density *latte* environ (an area with a high density of archaeological sites containing *latte* stones) that has been identified as a potential TCP is located within the PIIA.

### 6.1 Summary of Effects in the PDIA for Alternative 2

Direct physical disturbance would potentially occur on approximately 275 acres (111 ha) of this site for the construction of the individual ranges, range support building, range access roads, and a perimeter fence. Construction of the ranges, support facilities, and utilities would primarily occur east of the NAVMAG (FSEIS [2015], Figure 2.5-3, and in Appendix A of this TRRA). The SDZs encompass approximately 3,433 acres (1,389 ha); these acres would not be directly impacted as a result of construction or operation of the LFTRC. Excavation and soil removal associated with the construction of Alternative 2 could adversely affect nine known NRHP-eligible archaeological properties, including Pre-Contact artifact scatters and sites containing *latte* components (FSEIS [2015], Table 5.2.10-1: Archaeological Sites within the Alternative 2 PDIA). There is also a potential for NRHP-eligible archaeological sites in the 109.5 acres (44.32 ha) of unsurveyed areas within the PDIA that could not be accessed during the in-fill surveys due to the presence of standing water. No NRHP-eligible or unevaluated buildings or structures would be adversely affected by construction.

### 6.2 Summary of Effects in the PIIA for Alternative 2

Potential indirect adverse effects could occur to one NRHP-eligible site with *latte* components and three unevaluated archaeological sites with *latte* components. One potential TCP could also be indirectly affected by reduced accessibility. Small arms live-fire noise would be audible near one NRHP-eligible archaeological site and 21 unevaluated sites that are located within the expanded noise contours.

Eighteen of the unevaluated sites are Pre-Contact artifact or ceramic scatters, while the NRHP-eligible site and the other three unevaluated sites contain *latte* components. Auditory impacts associated with range operations would not adversely affect the integrity of the 18 unevaluated artifact or ceramic scatters. Changes to the setting of the NRHP-eligible site with *latte* components could be adverse.

Additional details about Alternative 2 are provided in FSEIS [2015], Section 2.5.4.2 and in Appendix C of this TRRA.

**Table 3. Known Archaeological Sites within the PDIA and PIIA for Alternative 2**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-02-1819	767*	Rock shelter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1825	774*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1826	775*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1827	776*	Cluster of unmodified rocks	Pre-Contact (unspecified)	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1846	797*	Latte element clusters	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1847	798*	Latte complex	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1850	801*	Manufacturing station	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1852	804*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-06-1848	799*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-06-1849	800*	Rock shelter	Pre-Latte/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-08-2628***	T-TA-002	Latte set partial	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2629	T-TA-004	Latte sets and artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2630	T-TA-005	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2631***	T-TA-006	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/ Indirect	Range construction; SDZs; Noise
66-08-2632	T-TA-031	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2633***	T-TA-007	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2634***	T-TA-008	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs

**Table 3. Known Archaeological Sites within the PDIA and PIIA Alternative 2**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-08-2635***	T-TA-009	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/ Indirect	Range construction; SDZs
66-08-2636	T-TA-010	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-08-2637***	T-TA-011	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2638***	T-TA-013	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2639***	T-TA-014	Artifact scatter	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/ Indirect	Range construction; SDZs
66-08-2640	T-TA-015	<i>Latte</i> set partial	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-08-2641	T-TA-016	<i>Latte</i> set	Pre-Contact/Latte	Yes**	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-08-2689***	T-TA-046	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct	Range construction
66-09-1823	772*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1824	773*	Artifact scatter	Pre-Contact/ Latte; Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1828	777*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1829	778*	<i>Latte</i> complex	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1830	779*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1831	781*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1833	783*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1834	784*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs

**Table 3. Known Archaeological Sites within the PDIA and PIIA Alternative 2**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-09-1835	785*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1836	786*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1837	787*	Artifact scatter	First American Territorial	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1838	788*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1839	789*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1840	790*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1841	792*	Latte element cluster	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1842	793*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1843	794*	Latte set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1844	795*	Rock cluster	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1845	796*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-2660	T-TA-003	Latte sets and artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2662	T-TA-017	Artifact scatter	Pre-Contact/Latte; Spanish Missionization/ Chamorro Spanish Wars	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2663	T-TA-018	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2664	T-TA-019	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2665	T-TA-020	Artifact scatter	Pre-Latte/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise



**Table 3. Known Archaeological Sites within the PDIA and PIIA Alternative 2**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-09-2666	T-TA-021	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2667	T-TA-022	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2668	T-TA-023	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2669	T-TA-024	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2670	T-TA-025	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2671	T-TA-026	<i>Latte</i> sets	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2672	T-TA-027	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2673	T-TA-028	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2674	T-TA-029	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2675	T-TA-030	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2676	T-TA-032	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2677	T-TA-033	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2678	T-TA-034	<i>Latte</i> components and artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2679	T-TA-035	<i>Latte</i> components	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2680	T-TA-036	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2681	T-TA-037	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2682	T-TA-038	<i>Latte</i> sets	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs

**Table 3. Known Archaeological Sites within the PDIA and PIIA Alternative 2**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-09-2683	T-TA-039	<i>Latte</i> components and artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2684	T-TA-040	<i>Latte</i> sets and components	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2685	T-TA-041	<i>Latte</i> sets and components	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2686	T-TA-042	<i>Latte</i> sets and components	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2687	T-TA-043	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2688	T-TA-045	Artifact scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
	Site 49/83*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 50/84*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 61/91*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 62/92*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 64/94*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 65/95*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 66/96*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 67/97*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 68/98*	<i>Latte</i> set complex	Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 69/99*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 70/100*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 71/101*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

**Table 3. Known Archaeological Sites within the PDIA and PIIA Alternative 2**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 72/102*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 73/103*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 74/104*	<i>Latte</i> element cluster, artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 75/105*	Artifact scatter	<i>Latte</i> , Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 76/106*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 77/107*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 78/108*	<i>Latte</i> element cluster	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 79/109*	Chiseled steps	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 80/110*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 82/112*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 83/113*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 85/114*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 86/115*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 94/123*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 115/144*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 116/145*	<i>Latte</i> set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 117/146*	<i>Latte</i> set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

**Table 3. Known Archaeological Sites within the PDIA and PIIA Alternative 2**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-08-2759***	T-TA-047	Artifact scatter	Pre-Contact/Latte	No	NA	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	T-TA-001	Ceramic scatter	Pre-Contact/Latte	Not Evaluated	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise

**Legend:**

GHPI = Guam Historic Properties Inventory, NRHP = National Register of Historic Places; NRHP criterion D = eligible for potential to yield information important in prehistory or history.

**Notes:**

<sup>1</sup>Not all sites recorded within the project areas have received official GHPI numbers, although they have been documented as part of previous surveys.

\*Map numbers from Welch *et al.* 2009.

\*\* Revised to match Guam GHPI forms dated May 28, 2014.

\*\*\*The Guam SHPO concurs with this recommendation (Guam SHPO correspondence dated August 22, 2013 [RC2013-0853]).

## 7 ALTERNATIVE 3: NAVMAG (NORTH/SOUTH)

The NAVMAG (North/South) LFTRC Alternative 3 would encompass approximately 3,549 acres (1,436 ha) (not including the stand-alone HG Range at Andersen South) and would require acquisition of 252 acres (101.9 ha) of GovGuam and privately owned lands. Ranges would be configured so that they are adjacent and accessible by Marine Corps personnel via the existing main gate on Route 5. Access between the ranges would occur through a combination of existing NAVMAG roadways and approximately 3.0 miles (4.8 km) of new roads constructed as part of the LFTRC. Appendix A of this TRRA provides a map of Alternative 3.

There are 15 known archaeological sites located within the Alternative 3 PDIA (FSEIS [2015], Table 5.3.10-1, and TRRA, Table 4). Eleven of these, including sites with *latte* sets, rock shelters, WWII military sites, and artifact scatters, are eligible for listing in the NRHP. Two sites, a historic artifact scatter and a *latte* site, have not been evaluated for listing in the NRHP. Two historic WWII sites are not considered eligible for inclusion in the NRHP.

There are 15 known structures and buildings within the Alternative 3 PDIA (FSEIS [2015], Table 5.3.10-4, and TRRA, Table 5). All of these structures and buildings are covered under the 2006 *Program Comment for World War II and Cold War Era Ammunitions Storage Facilities* (ACHP 2006).

One potential TCP, Boña Springs, is located within the PDIA for Alternative 3.

There are 217 known archaeological sites located within the Alternative 3 PIIA (FSEIS [2015], Table 5.3.10-3, and TRRA, Table 4). Of these, 209 are NRHP-eligible artifact scatters, *latte* sites, rock shelters, and historic military features. Three sites have not been evaluated for listing in the NRHP. The remaining five sites are not eligible for listing in the NRHP.

There are 71 architectural properties, constructed between 1944 and 1997, located within the PIIA for Alternative 3 (FSEIS [2015], Table 5.3.10-4, and TRRA, Table 5). Fifty-seven of the structures are ammunition storage facilities covered under the *Program Comment for World War II and Cold War Era Ammunition Storage Facilities* (ACHP 2006). Eleven buildings and structures greater than 50 years in age have not been evaluated. Four structures are less than 50 years old and do not meet the exceptional significance threshold required under NRHP Criteria Consideration G.

Six potential TCPs have been identified in the PIIA for Alternative 3. They include Boña Springs (which is also within the PDIA), Almagosa Springs, Dobo Springs, Almagosa Mountain, Alifan peak, and a high-density area of *latte* sites (Griffin *et al.* 2010).

### 7.1 Summary of Effects in the PDIA for Alternative 3

Direct physical disturbance would potentially occur on approximately 370 acres (150 ha) of this site for the construction of the proposed range facilities. Construction of the ranges, support facilities, relocated magazine, and utilities would occur in the NAVMAG (FSEIS, [2015], Figure 2.5-4, and in Appendix A of this TRRA). The SDZs encompass approximately 3,179 acres (1,286 ha); these acres would not be directly impacted as a result of construction or operation of the LFTRC. Excavation and soil removal associated with the construction of Alternative 3 could adversely affect 11 known historic properties, including Pre-Contact artifact scatters, sites containing *latte* components, rock shelters, and WWII military sites (FSEIS [2015], Table 5.3.10-1: Archaeological Sites within the Alternative 3 PDIA). Construction could also affect

two unevaluated sites in the 48 acres (19.4 ha) that could not be accessed during the in-fill surveys due to the presence of standing water, and one potential TCP (Boña Springs). Based on an examination of previous investigations and predictive modeling, there is a low potential for NRHP-eligible sites in the unsurveyed areas of the PDIA.

Construction activities associated with Alternative 3 may also require the demolition of 24 architectural properties. All of the buildings and structures are covered under the *Program Comment for World War II and Cold War Era (1939-1974) Ammunition Storage Facilities* (ACHP 2006), which resolves NHPA Section 106 requirements for demolition of these buildings.

## **7.2 Summary of Effects in the PIA for Alternative 3**

Potential indirect adverse effects could occur to 25 NRHP-eligible archaeological sites with *latte* components. Five potential TCPs (Boña Springs, Almasoga Springs, Dobo Springs, Almasoga Mountain, and a high-density area of *latte* sites) could also be indirectly affected due to restricted public access. Small arms live-fire noise would be audible near 60 NRHP-eligible sites and two potential TCPs (Boña Springs and Alifan peak) that are located within the expanded noise contours. Thirty-five of the sites are Pre-Contact or historic artifact scatters, rock shelters/caves, historic military features, or other historic remains, while 25 sites contain *latte* components. Auditory impacts associated with range operations would not adversely affect the integrity of the NRHP-eligible artifact scatters, historic military features, or other historic remains. Changes to the setting of the 25 NRHP-eligible sites with *latte* components could be adverse. There may also be an effect on two potential TCPs (Boña Springs and Alifan Peak). No indirect adverse effects from visual intrusions associated with Alternative 3 are anticipated because the ranges are within an existing military operations area, and the action would not change the visual setting.

Additional details about Alternative 3 are provided in the FSEIS [2015], Section 2.5.4.3, and in Appendix C of this TRRA.

**Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-02-0145A	29*	Latte complex	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997	PDIA/ Direct	Range construction
66-02-0145B	30*	Latte complex	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997	PDIA/ Direct	Range construction
66-02-1049A	38*	Latte set complex, artifact scatter	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997	PIIA/ Indirect	SDZs
66-02-1049B	32*	Latte set complex	Pre-Contact/Latte	Yes	C, D	Welch 2010	PIIA/ Indirect	SDZs
66-02-0150	24*	Latte complex	Pre-Contact (Unspecified)	Yes	D	Craib and Yoklavich 1997	PIIA/ Indirect	SDZs
66-02-0151	33*	Feature complex, structure complex, quarry	Pre-Contact/Latte	Yes	C, D	Welch 2010	PIIA/ Indirect	SDZs
66-02-0152	26*	Latte complex	Pre-Contact/Latte	Yes	D	Craib and Nees 1998	PIIA/ Indirect	SDZs; Noise
66-02-1659	496*	Trenches and foxholes	Pre-WWII Japanese Military Occupation	Yes	D	Allen <i>et al.</i> 2002	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
66-02-1660	497*	Latte set and rock shelter complex	Pre-Contact/Latte	Yes	D	Allen <i>et al.</i> 2002	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
66-02-1661	498*	Latte set complex, artifact scatter	Pre-Contact/Latte	Yes	C, D	Allen <i>et al.</i> 2002	PIIA/ Indirect	SDZs
66-02-2327	47*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2328	49*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2329	51*	Latte set complex	Pre-Contact/Latte, Spanish Missionization /Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998	PIIA/ Indirect	SDZs; Noise
66-02-2330	54*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2331	55*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

**Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/Potential Effect Type</b>	<b>Potential Action</b>
66-02-2332	57*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2333	65*	Latte Set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2334	73*	Latte set, pit	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998	PIIA/ Indirect	SDZs
66-02-2335	Site 124/153*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998	PIIA/ Indirect	SDZs
66-02-2336	Site 125/154*	Latte set, rock shelter, and cave complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2337	Site 127/156*	Latte set complex	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2338	Site 130/159*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2339	Site 131/160*	Latte set and rock shelter complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
66-02-2340	Site 132/161*	Latte set complex	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2341	Site 133/162*	Latte set complex	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2342	Site 134/163*	Latte set complex	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars, WWII Japanese Military Occupation, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2343	Site 135/164*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2344	Site 137/166*	Latte set complex	Pre-Contact/Latte	Yes	C, D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2345	Site 138/167*	Latte element cluster, artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs



**Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-02-2346	552*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2347	554*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2348	566*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2349	567*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2350	569*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2351	570*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2352	574*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2353	577*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2354	578*	Latte element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2355	581*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2356	586*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2357	606*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2358	607*	Latte set, artifact scatter, culverts	Pre-Contact/Latte, WWII Japanese Military Occupation, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2359	610*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2360	611*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2361	613*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2362	615*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs

**Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-02-2363	623*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2364	640*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2365	641*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2367	1067*	Latte set	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2368	1068*	Latte set	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2369	1069*	Latte set	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2370	1070*	Latte set complex	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2371	1071*	Latte element cluster	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2372	1072*	Latte element cluster	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
	T-NMS-001	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
66-09-2626	T-NMS-002	Artifact scatter	Post-WWII/Second American Territorial, Organic Act/Home Rule/Economic Development	No	N/A	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	22*	Airplane wreckage	Post-WWII/Second American Territorial	No	N/A	Lauter-Reinman 1997, Welch 2010	PIIA/ Indirect	Noise
	23*	Defensive site	WWII Japanese Military Occupation	Yes	D	Craib and Yoklavich 1997	PIIA/ Indirect	SDZs
	Site 5/48*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 7/50*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

**Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 9/52*	Artifact scatter	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 10/53*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 13/56*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 15/58*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 16/59*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 17/60*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 18/61*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 19/62*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 20/63*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 21/64*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 23/66*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 24/67*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 25/68*	Rock shelter	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 26/69*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 27/70*	Rock shelter and cave complex	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 28/71*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs

**Table 4. Known Archaeological Sites Recorded within the PDIA and PIIA for Alternative 3**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 29/72*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 32/74*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 33/75*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	39/78*	<i>Latte</i> complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	42/79*	<i>Latte</i> complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	43/80*	<i>Latte</i> complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 44/81*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 48/82*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 49/83*	<i>Latte</i> set complex	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 50/84*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 51/85*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 52/86*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 55/87*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 56/88*	Rock shelter complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 58/89*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 60/90*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs
	Site 61/91*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/Indirect	SDZs

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<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 62/92*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 65/95*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 66/96*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 74/104*	Latte element cluster, artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 75/105*	Artifact scatter	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 76/106*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 77/107*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 81/111*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 87/116*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 88/117*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 89/118*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 90/119*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 91/120*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 92/121*	Artifact scatter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 93/122*	Overhang	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 95/124*	Artifact scatter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 96/125*	Rock shelter complex	Pre-Contact (unspecified), Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

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<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 98/127*	<i>Latte set</i>	Pre-Contact/Latte, Spanish Missionization/Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 99/128*	<i>Latte set complex</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 100/129*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 101/130*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 102/131*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 103/132*	Cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 104/133*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 105/134*	Crevice	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 106/135*	Rock shelter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 107/136*	Rock shelter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 108/137*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 109/138*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 110/139*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 111/140*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 112/141*	Cave	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 113/142*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 114/143*	Rock shelter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

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<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 115/144*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 116/145*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 117/146*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 118/147*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 119/148*	Rock shelter complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 120/149*	Rock shelter and cave complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 121/150*	Rock shelter	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 122/151*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 123/152*	Cave, pictograph panel	Pre-Contact/Latte	Yes	C, D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 126/155*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 128/157*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 129/158*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 136/165*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 139/168*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 1/527*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 3/528*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 9/534*	Enclosure	First American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 12/537*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise

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<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/Potential Effect Type</b>	<b>Potential Action</b>
	Site 13/538*	Cave	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 14/539*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 15/540*	Overhang	Pre-Contact/ <i>Latte</i> , WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 16/541*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 17/542*	Rock shelter complex	Pre-Contact/ <i>Latte</i> , WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 19/544*	Rock shelter and cave complex	Pre-Contact/ <i>Latte</i> , WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 20/545*	<i>Latte</i> Cluster	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs; Noise
	Site 21/546*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 23/548*	Cave	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs; Noise
	Site 24/549*	Rock shelter and cave complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 28/553*	Tunnel complex	WWII Japanese Military Occupation, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 31/555*	Foxhole, cave	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	Site 32/556*	Rock shelter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	Site 66/587*	<i>Latte</i> cluster	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct	Range construction
	Site 69/589*	<i>Latte</i> Set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct PIIA/Indirect	Range construction ; SDZs



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<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 78/598*	Artifact scatter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	Site 79/599*	Enclosure	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	Site 80/600*	Overhang	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	Site 114/633*	Artifact scatter	Post-WWII/Second American Territorial	Not Evaluated	NA	Henry <i>et al.</i> 1999, Welch 2009	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	OA-8/808*	Concrete slab	Post-WWII/Second American Territorial	No	N/A	Hunter-Anderson and Moore 2002	PDIA/ Direct; PIIA/Indirect	Range construction ; SDZs
	Site 36/560*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 37/561*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 39/563*	Rock shelter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 40/564*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 41/565*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 44/568*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 48/572*	<i>Latte</i> complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 52/575*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 53/576*	Concrete blocks	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise

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	Site 6 /582*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 63/584*	Crevice	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 65/585*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 67/587*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site70/590*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 71/591*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site72/592*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 73/593*	Cave and rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 74/594*	Concrete slab (foundations)	Post-WWII/Second American Territorial	No	NA	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 75/595*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 85/605*	Artifact scatter, buried fuel drums, water catchment box	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 89/608*	<i>Latte</i> element cluster	Pre-Contact/Latte, Post-WWII Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 90/609*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 93/612*	<i>Latte</i> element cluster, artifact scatter, culvert	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 95/614*	Artifact scatter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 97/616*	Artifact scatter, <i>latte</i> element cluster	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs

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	Site 98/617*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 102/621*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 103/622*	Artifact scatter	WWII Japanese Military Occupation	Not Evaluated	NA	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 106/625*	Latte element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 110/629*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 111/630*	Mortars	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 112/631*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 113/632*	Artifact scatter	Post-WWII/ Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 116/635*	Cave	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 126/645*	Overhang	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 127/646*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 128/647*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 129/648*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 130/649*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 131/650*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 132/651*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 133/652*	Rock shelter	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 134/653*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs

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	Site 135/654*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 136/655*	Artifact scatter, mortar	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 137/656*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 138/657*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 139/658*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 140/659*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 141/660*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 166/681*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 167/682*	Rock shelter complex	Pre-Contact/Latte, Post-WII/ Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 168/ 683*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 4/686*	Cave complex	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998b, Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	OA-8/808*	Concrete slab	Post-WWII/ Second American Territorial	No	NA	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs

**Legend:**

GHPI = Guam Historic Properties Inventory, NRHP = National Register of Historic Places; NRHP criterion D = eligible for potential to yield information important in prehistory or history.

**Notes:**

<sup>1</sup>Not all sites recorded within the project areas have received official GHPI numbers, although they have been documented as part of previous surveys.

\*Map numbers from Welch *et al.* 2009.

\*\* Revised to match Guam GHPI forms dated May 28, 2014.

**Table 5. Known Architectural Properties within the PDIA and PIIA for LFTRC Alternative 3**

<i>Building/ Structure Type</i>	<i>Location</i>	<i>Temporary Site Number/ Map Number*</i>	<i>Facility Number</i>	<i>Date of Construction</i>	<i>NRHP Eligible?</i>	<i>Location/ Potential Effect Type</i>	<i>Potential Action</i>
ARMCO Buildings	NAVMAG	21*	1, 10, 14, 15, 17, 23, 112, 113, 114, 120	1944-1945	Covered Under Program Comment	PDIA/Direct; PIIA/Indirect	Range construction; SDZs
Revetments	NAVMAG	Site 35/559*, Site 38/562*, Site 58/579*, 59/580*, Site 81/601*, Site 115/634*, Site 123/642*, Site 161/678*	NA	1944-1945	Covered Under Program Comment	PDIA/Direct	Range construction
ARMCO Buildings	NAVMAG	Site 158/675*, Site 160/677*	NA	1944-1945	Covered Under Program Comment	PDIA/Direct	Range construction
Quonset Hut Style Magazine	NAVMAG	Site OA-6/806*	NA	Post-1946	Covered Under Program Comment	PDIA/Direct	Range construction
Inert Storehouse	NAVMAG	†22-02-2627/37*	310NM	1949	Covered Under Program Comment	PDIA/Direct; PIIA/Indirect	Range construction; SDZs
Magazine Fuse Detonator	NAVMAG	NA	454NM	1952	Covered Under Program Comment	PDIA/Direct; PIIA/Indirect	Range construction; SDZs
Ammunition Rework/Overhaul	NAVMAG	NA	465NM	1955	Covered Under Program Comment	PDIA/Direct	Range construction
Explosive Truck Holding Yard	NAVMAG	34*	629-639	1944-1945	Not Evaluated	PIIA/Indirect	SDZs
Inert Storehouse	NAVMAG	37*	309NM	1949	Covered Under Program Comment	PIIA/Indirect	SDZs
Open storage areas, revetments	NAVMAG	43*	612, 614, 616, 617, 618, 619, 622, 621, 623, 624, 628	1944-1945	Covered Under Program Comment	PIIA/Indirect	SDZs
Revetments	NAVMAG	Site 18/543*, Site 22/547*, Site 105/624*, Site 115/634*, Site 117/636*, Site 120/639*, Site 149/667*, Site 151/668*, Site 152/669*, Site 153/670*, Site 154/671*, Site 155/672*, Site 156/673*, Site 157/674*, Site 159/676*, Site 169/684*, Site 170/685*	NA	1944-1945	Covered Under Program Comment	PIIA/Indirect	SDZs
Revetment	NAVMAG	Site 25/551*	NA	1944-1945	Covered Under Program Comment	PIIA/Indirect	Noise

**Table 5. Known Architectural Properties within the PDIA and PIIA for LFTRC Alternative 3**

<i>Building/ Structure Type</i>	<i>Location</i>	<i>Temporary Site Number/ Map Number*</i>	<i>Facility Number</i>	<i>Date of Construction</i>	<i>NRHP Eligible?</i>	<i>Location/ Potential Effect Type</i>	<i>Potential Action</i>
Revetment	NAVMAG	Site 162/679*,Site 107/626*	620, 626	1944-1945	Covered Under Program Comment	PIIA/Indirect	SDZs
ARMCO Building	NAVMAG	Site 148/666*	188	1944-1945	Covered Under Program Comment	PIIA/Indirect	SDZs
ARMCO Buildings	NAVMAG	Site 33/557*, Site34/558*, Site 50/573*, Site 83/603*, Site 158/675*, Site 165/680*	NA	1944-1945	Covered Under Program Comment	PIIA/Indirect	SDZs
ARMCO Buildings	NAVMAG	Site 82/602*, Site 84/604*	NA	1944-1945	Covered Under Program Comment	PIIA/Indirect	Noise
High Explosive Magazines	NAVMAG	1053*	434, 435, 436, 437	1952	Covered Under Program Comment	PIIA/Indirect	SDZs
Close Quarter Battle Breach Training	NAVMAG	NA	640NM	1997	No	PIIA/Indirect	SDZs
Ammunition Rework/Overhaul	NAVMAG	NA	779NM	1965	No	PIIA/Indirect	SDZs
Utility Building	NAVMAG	NA	840NM	1969	No	PIIA/Indirect	SDZs
EOD Crew Blast Shelter	NAVMAG	NA	862NM	1976	No	PIIA/Indirect	SDZs

Note: \*Map numbers from Welch 2010.

## 8 ALTERNATIVE 4: NAVMAG (L-SHAPED)

The NAVMAG (L-Shaped) LFTRC Alternative 4 would consist of approximately 4,895 acres (1,981 ha) (not including the HG Range at Andersen South) and would require the acquisition of approximately 914 acres (370 ha) of privately owned and GovGuam land. Alternative 4 would be divided between two locations: the MPMG Range and range maintenance facility would be located in the same locations identified in Alternative 3 (FSEIS [2015], Section 2.5.4.3: Naval Magazine (North/South) Live-Fire Training 2.5.4.3 Range Complex - Alternative 3) and the other ranges would be located on adjacent non-federal property to the southeast of the NAVMAG, near the area of Alternative 2 (FSEIS [2015], Section 2.5.4.2). Although these components of the LFTRC would not be contiguous, they would all be in proximity as required by the Marine Corps Guiding Principles. Access to the ranges located east of the NAVMAG would occur via a new access road from Route 4. Access between the ranges proposed in the southeastern portion of the LFTRC would be via approximately 3.0 miles (4.8 km) of new roads constructed as part of the LFTRC. Appendix A of this TRRA provides a map of Alternative 4.

Table 6 lists 13 known archaeological sites located within the Alternative 4 PDIA. Eleven sites, including sites with *latte* sets, rock shelters, WWII military sites, and artifact scatters, are eligible for listing in the NRHP. Two sites, consisting of a WWII-era American military concrete slab and a small Latte Period artifact scatter, are not considered eligible for listing in the NRHP.

There are 11 known structures and buildings located within the Alternative 4 PDIA (FSEIS [2015], Table 5.4.10-2, and TRRA, Table 7). All of these structures and buildings are covered under the 2006 *Program Comment for World War II and Cold War Era Ammunitions Storage Facilities* (ACHP 2006).

There are 248 known archaeological sites located within the Alternative 4 PIIA (FSEIS [2015], Table 5.4.10-3, and TRRA, Table 6). Of these, 219 are NRHP-eligible sites, including artifact scatters, *latte* sites, rock shelters, and historic military features. Twenty-seven sites have not been evaluated for listing in the NRHP, and two sites are considered not eligible for listing in the NRHP.

There are 53 architectural properties, constructed between 1944 and 2007, located within the PIIA for Alternative 4 (FSEIS [2015], Table 5.4.10-4, and TRRA, Table 7). Forty-one of the structures are ammunition storage facilities covered under the *Program Comment for World War II and Cold War Era Ammunition Storage Facilities* (ACHP 2006; see Chapter 3.10.3 for more information on the Program Comment). Eleven buildings and structures greater than 50 years in age have not been evaluated. Four structures are less than 50 years old and do not meet the exceptional significance threshold required under NRHP Criteria Consideration G.

Four potential TCPs have been identified in the PIIA for Alternative 4. They include Almagosa Springs, Dobo Springs, Almagosa Mountain, and a high density area of *latte* sites (Griffin *et al.* 2010).

### 8.1 Summary of Effects in the PDIA for Alternative 4

Direct physical ground disturbance would occur on approximately 477 acres (193 ha), which would include approximately 356 acres (144 ha) for the construction of the individual ranges, range support building, internal range access roads, munitions magazine relocation area, and a perimeter fence along the western and southern edges of the LFTRC, and approximately 121 acres (49 ha) to construct an external LFTRC access road from Route 4 to the east/west facing ranges. Construction of the ranges, support facilities, relocated magazine, and utilities would occur in NAVMAG and east of NAVMAG (FSEIS

[2015], Figure 2.5-5, and in Appendix A of this TRRA). The SDZs encompass approximately 4,418 acres (1,788 ha); these acres would not be directly affected by construction or operation of the LFTRC. Excavation and soil removal associated with the construction of Alternative 4 could adversely, directly affect 11 NRHP-eligible Pre-Contact artifact scatters, sites containing *latte* components, and WWII military sites (FSEIS [2015], Table 5.4.10.1: Archaeological Sites within the Alternative 4 PDIA). Construction could also impact culturally important natural resources. Based on an examination of previous investigations and predictive modeling, there is a low potential for NRHP-eligible sites in the 71.8 acres (29 ha) of unsurveyed areas within the PDIA. Construction activities associated with Alternative 4 may also require the demolition of historic architectural properties. All of the buildings and structures are covered under the *Program Comment for World War II and Cold War Era (1939-1974) Ammunition Storage Facilities* (ACHP 2006), which resolves NHPA Section 106 requirements for demolition of these buildings.

## **8.2 Summary of Effects in the PIIA for Alternative 4**

Potential indirect adverse effects could occur to 24 NRHP-eligible archaeological sites with *latte* components. Undetermined effects could occur to five unevaluated archaeological sites with *latte* components and two potential TCPs. Four potential TCPs (Almagosa Springs, Dobo Springs, Almagosa Mountain, and a high density area of *latte* sites) could also be indirectly impacted by reduced accessibility. Auditory impacts associated with range operations would not adversely affect the integrity of the NRHP-eligible artifact scatters, historic military features, or other historic remains. Changes to the setting of the 29 sites (24 eligible for listing in the NRHP and 5 unevaluated) with *latte* components could be adverse. No indirect adverse effects from visual intrusions associated with Alternative 4 are anticipated because the ranges are within an existing military operations area, and the action would not change the visual setting.

Additional details about Alternative 4 are provided in FSEIS [2015], Section 2.5.4.4 and in Appendix C of this TRRA.



**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-02-0145A	29*	Latte complex	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997	PDIA/ Direct	Range construction
66-02-0145B	30*	Latte complex	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997	PDIA/ Direct	Range construction
66-02-0149A	38*	Latte set complex, artifact scatter	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997, Craib and Nees 1998, Welch 2010	PIIA/ Indirect	SDZs
66-02-1049B	32*	Latte complex	Pre-Contact/Latte	Yes	C, D	Welch 2010	PIIA/ Indirect	SDZs
66-02-0150	24*	Latte complex	Pre-Contact/Latte	Yes	D	Craib and Yoklavich 1997	PIIA/ Indirect	SDZs
66-02-0151	33*	Feature complex, structure complex, quarry	Pre-Contact/Latte	Yes	C, D	Welch 2010	PIIA/ Indirect	SDZs
66-02-0152	26*	Latte complex	Pre-Contact/Latte	Yes	D	Craig and Nees 1998	PIIA/ Indirect	SDZs; Noise
66-02-1659	496*	Trenches and foxholes	WWII Japanese Military Occupation	Yes	D	Allen <i>et al.</i> 2002	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-02-1660	497*	Latte set and rock shelter complex	Pre-Contact/ Latte	Yes	D	Allen <i>et al.</i> 2002	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-02-1661	498*	Latte set complex, artifact scatter	Pre-Contact/Latte	Yes	C, D	Allen <i>et al.</i> 2002, Welch 2010	PIIA/ Indirect	SDZs
66-02-1819	767*	Rock shelter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1846	797*	Latte element clusters	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1847	798*	Latte complex	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1848	799*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1849	800*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-1850	801*	Manufacturing station	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-02-2327	47*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2328	49*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-02-2329	51*	<i>Latte set complex</i>	Latte, Spanish Administration	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2330	54*	<i>Latte set complex</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2331	55*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2332	Site 14/57*	<i>Latte set complex</i>	Pre-Contact/Latte	Yes	D	Welch <i>et al.</i> 2009	PIIA/ Indirect	SDZs
66-02-2333	65*	<i>Latte set</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2334	73*	<i>Latte set, pit</i>	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2335	Site 124/153*	<i>Latte set complex</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2336	Site 125/154*	<i>Latte set, rock shelter, and cave complex</i>	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2337	Site 127/156*	<i>Latte set complex</i>	Pre-Contact/Latte, Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2338	Site 130/159*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2339	Site 131/160*	<i>Latte set and rock shelter complex</i>	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2340	Site 132/161*	<i>Latte set complex</i>	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2341	Site 133/162*	<i>Latte set complex</i>	Pre-Contact/Latte, Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-02-2342	Site 134/163*	Latte set complex	Pre-Contact/Latte, Spanish Missionization/ Chamorro Spanish, WWII Japanese Military Occupation , Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2343	Site 135/164*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2344	Site 137/166*	Latte set complex	Pre-Contact/Latte	Yes	C, D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2345	Site 138/167*	Latte element cluster, artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2346	552*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2347	554*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2348	566*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2349	567*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2350	569*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2351	570*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2352	574*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2353	577*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2354	578*	Latte element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs; Noise
66-02-2355	581*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number/ Map Number*</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>NRHP Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-02-2356	586*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2357	606*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2358	607*	Latte set, artifact scatter, culverts	Pre-Contact/Latte, WWII Japanese Military Occupation, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2359	610*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2360	611*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2361	613*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2362	615*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2363	623*	Latte set	Pre-Contact/ Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2364	640*	Latte set complex	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2365	641*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
66-02-2367	1067*	Latte set	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2368	1068*	Latte set	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2369	1069*	Latte set	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2370	1070*	Latte set complex	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2371	1071*	Latte element cluster	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-02-2372	1072*	Latte element cluster	Pre-Contact/Latte	Yes	D	Welch 2010	PIIA/ Indirect	SDZs
66-08-2612		Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
66-08-2628	T-TA-002	Latte set Partial	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2629	T-TA-004	Latte set	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct	Range construction

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-08-2630	T-TA-005	Artifact scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2631	T-TA-006	Artifact scatter	Pre-Contact/ Latte, Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Dixon <i>et al.</i> 201b4	PIIA/ Indirect	SDZs; Noise
66-08-2632	T-TA-031	Artifact scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs; Noise
66-09-1821		<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	Noise
66-09-1830	779*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1831	781*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1834	784*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs; Noise
66-09-1835	785*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs; Noise
66-09-1836	786*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs; Noise
66-09-1839	789*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs; Noise
66-09-1840	790*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1841	792*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs; Noise
66-09-1842	793*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs; Noise
66-09-1843	794*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1844	795*	Rock cluster	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs
66-09-1845	796*	Artifact scatter	Pre-Contact/Latte	Yes	D	Hunter-Anderson and Moore 2002	PIIA/ Indirect	SDZs

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
66-09-2662	T-TA-017	Artifact scatter	Pre-Contact/ Latte, Spanish Missionization/ Chamorro Spanish Wars	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2663	T-TA-018	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2664	T-TA-019	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2665	T-TA-020	Artifact scatter	Pre-Contact/Latte/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2666	T-TA-021	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-09-2667	T-TA-022	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-09-2668	T-TA-023	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2669	T-TA-024	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2670	T-TA-025	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2671	T-TA-026	<i>Latte set</i>	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2672	T-TA-027	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2673	T-TA-028	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2674	T-TA-029	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2675	T-TA-030	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2676	T-TA-032	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-09-2677	T-TA-033	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<i><b>GHPI Number<sup>1</sup></b></i>	<i><b>Temporary Site Number/ Map Number*</b></i>	<i><b>Site Type</b></i>	<i><b>Period**</b></i>	<i><b>NRHP Eligible?</b></i>	<i><b>NRHP Criteria</b></i>	<i><b>Reference</b></i>	<i><b>Location/ Potential Effect Type</b></i>	<i><b>Potential Action</b></i>
66-09-2678	T-TA-034	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2679	T-TA-035	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2680	T-TA-036	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2681	T-TA-037	Artifact scatter	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2682	T-TA-038	Latte sets	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2683	T-TA-039	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs; Noise
66-09-2684	T-TA-040	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2685	T-TA-041	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-09-2686	T-TA-042	Latte set	Pre-Contact/Latte	Not Evaluated	N/A	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2759	T-TA-047	Artifact scatter	Pre-Contact/Latte	No	NA	Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	23*	Defensive site	WWII Japanese Military Occupation	Yes	D	Craib and Yoklavich 1997	PIIA/ Indirect	SDZs; Noise
	Site 5/48*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 7/50*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 9/52*	Artifact scatter	Pre-Contact/Latte, Spanish Missionization/ Chamorro Spanish Wars, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 10/53*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

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<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 13/56*	Rock shelter	Pre-Contact, (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 15/58*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 16/59*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 17/60*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 18/61*	<i>Latte</i> set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 19/62*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 20/63*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 21/64*	<i>Latte</i> set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 23/66*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 24/67*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 25/68*	Rock shelter	Pre-Contact (unspecified), WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 26/69*	Rock shelter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 27/70*	Rock shelter and cave complex	Pre-Contact/ <i>Latte</i> , Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 28/71*	<i>Latte</i> set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a, Welch 2010	PIIA/ Indirect	SDZs
	Site 29/72*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 32/74*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 33/75*	Rock shelter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 39/78*	<i>Latte</i> complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 42/79*	<i>Latte</i> complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 43/80	<i>Latte</i> complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 44/81*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs



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<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 48/82*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 49/83*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i> , Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 50/84*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 51/85*	Rock shelter and cave complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 52/86*	Rock shelter and cave complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 55/87*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 56/88*	Rock shelter complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 58/89*	Cave	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 60/90*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 61/91*	<i>Latte</i> element cluster	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 62/92*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 65/95*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 66/96*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 67/97*	<i>Latte</i> set	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 68/98*	<i>Latte</i> set complex	Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 69/99*	<i>Latte</i> set complex	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 70/100*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 71/101*	Artifact scatter	Pre-Contact/ <i>Latte</i>	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 72/102*	Artifact scatter	Pre-Contact, unspecified	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

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	Site 73/103*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 74/104*	Latte element cluster, artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 75/105*	Artifact scatter	Pre-Contact/Latte, Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 76/106*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 77/107*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 78/108*	Latte element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 79/109*	Chiseled steps	Pre-Contact, unspecified	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 80/110*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 81/111*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 85/114*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 86/115*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 87/116*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 88/117*	Artifact scatter	Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 89/118*	Artifact scatter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 90/119*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 91/120*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 92/121*	Artifact scatter, cultural deposit	Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 93/122*	Overhang	Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 94/123*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 95/124*	Artifact scatter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

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	Site 96/125*	Rock shelter complex	Pre-Contact (unspecified), Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 98/127*	<i>Latte</i> set	Pre-Contact/Latte, Spanish Missionization/ Chamorro Spanish Wars	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 100/129*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 101/130*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 102/131*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 103/132*	Cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 104/133*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 105/134*	Crevice	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 106/135*	Rock shelter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 107/136*	Rock shelter, cultural deposit	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 108/137*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 109/138*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 110/139*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 111/140*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 112/141*	Cave	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 113/142*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 114/143*	Rock shelter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 115/144*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 116/145*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs

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	Site 117/146*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 118/147*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 119/148*	Rock shelter complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 120/149*	Rock shelter and cave complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 121/150*	Rock shelter	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 122/151*	Rock shelter and cave complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 123/152*	Cave, pictograph panel	Pre-Contact/Latte	Yes	C, D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 126/155*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 128/157*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 129/158*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 136/165*	Rock shelter	Pre-Contact (unspecified)	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 139/168*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 14/539*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 21/546*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 28/553*	Tunnel complex	WWII Japanese Military Occupation , Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 31/555*	Foxhole, cave	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	Site 32/556*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	Site 36/560*	Artifact scatter	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise

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	Site 37/561*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation , Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 39/563*	Rock shelter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 40/564*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 41/565*	Rock shelter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 44/568*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 52/575*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 53/576*	Concrete blocks	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 6/582	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 63/584*	Crevice	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 65/585*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 66/587*	<i>Latte</i> cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PDIA/ Direct	Range construction
	Site 70/590*	<i>Latte</i> set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 71/591*	<i>Latte</i> set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 72/592*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	Noise
	Site 74/594*	Slab	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 85/605*	Artifact scatter, buried fuel drums, water catchment box	Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 89/608*	<i>Latte</i> element cluster	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 90/609*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/ Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/ Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 93/612*	Latte element cluster, artifact scatter, culvert	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 95/614*	Artifact scatter	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 97/616*	Artifact scatter, latte element cluster	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 98/617*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 99/128*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1998a	PIIA/ Indirect	SDZs
	Site 102/621*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 103/622*	Artifact scatter	WWII Japanese Military Occupation	Not Evaluated	N/A	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 106/625*	Latte element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 110/629*	Latte set	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 111/630*	Mortars	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 112/631*	Latte set complex	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 116/635*	Cave	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 132/651*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 133/652*	Rock shelter	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 134/653*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 135/654*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 136/655*	Artifact scatter, mortar	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 137/656*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 138/657*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 139/658*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 140/659*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs
	Site 141/660*	Artifact scatter	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise

**Table 6. Known Archaeological Sites within the PDIA and PIIA for Alternative 4**

<b><i>GHPI Number<sup>1</sup></i></b>	<b><i>Temporary Site Number/Map Number*</i></b>	<b><i>Site Type</i></b>	<b><i>Period**</i></b>	<b><i>NRHP Eligible?</i></b>	<b><i>NRHP Criteria</i></b>	<b><i>Reference</i></b>	<b><i>Location/Potential Effect Type</i></b>	<b><i>Potential Action</i></b>
	Site 166/681*	Rock shelter complex	Pre-Contact/Latte, WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 167/682*	Rock shelter complex	Pre-Contact/Latte, Post-WWII/Second American Territorial	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 168/683*	<i>Latte</i> element cluster	Pre-Contact/Latte	Yes	D	Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site 4/686*	Cave complex	WWII Japanese Military Occupation	Yes	D	Henry <i>et al.</i> 1998b, Henry <i>et al.</i> 1999	PIIA/ Indirect	SDZs; Noise
	Site OA-8/808*	Concrete slab	Post-WWII/Second American Territorial	No	NA	Hunter-Anderson and Moore 2002	PDIA/ Direct	Range construction

**Legend:**

GHPI = Guam Historic Properties Inventory; NRHP = National Register of Historic Places; NA=not applicable; NRHP criterion D = eligible for potential to yield information important in prehistory or history.

**Notes:**

<sup>1</sup>Not all sites recorded within the project areas have received official GHPI numbers, although they have been documented as part of previous surveys and submitted to the Guam SHPO.

\*Welch *et al.* 2009.

\*\* Revised to match Guam GHPI forms dated May 28, 2014.

\*\*\*The Guam SHPO concurs with this recommendation (Guam SHPO correspondence dated August 22, 2013 [RC2013-0853]).

**Table 7. Known Architectural Properties within the PDIA and PIIA for Alternative 4**

<i>Building/ Structure Type</i>	<i>Location</i>	<i>Temporary Site Number/ Map Number*</i>	<i>Facility Number</i>	<i>Date of Construction</i>	<i>NRHP Eligible?</i>	<i>Location/ Potential Effect Type</i>	<i>Potential Action</i>
Revetments	NAVMAG	Site 35/559*, Site 38/562*, Site 59/580*, Site 81/601*, Site 115/634*, Site 123/642*, Site 161/678*	NA	1944-1945	Covered Under Program Comment	PDIA/ Direct	Range construction
ARMCO Buildings	NAVMAG	Site158/675*, Site 160/677*	NA	1944-1945	Covered Under Program Comment	PDIA/ Direct	Range construction
Quonset Hut Style Magazine	NAVMAG	Site OA-6/806*	NA	Post- 1946	Covered Under Program Comment	PDIA/ Direct	Range construction
Magazine Fuse Detonator	NAVMAG	NA	454NM	1952	Covered Under Program Comment	PDIA/ Direct	Range construction
Explosive Truck Holding Yard	NAVMAG	34*	629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639	1944-1945	Not Evaluated	PIIA/ Indirect	SDZs
Open storage areas, revetments	NAVMAG	43*	612, 614, 616, 617, 618, 619, 620, 621,622, 623, 624	1944-1945	Covered Under Program Comment	PIIA/ Indirect	SDZs
Revetments		Site 18/543*, Site 105/624*, Site 115/634*, Site 117/636*, Site 120/639*, Site 149/667*, Site 151/668*, Site 152/669*, Site 153/670*, Site 154/671*, Site 155/672*, Site 156/673*, Site 157/674*, Site 159/676*, Site 162/679*, Site 169/684*, Site 170/685*	NA	1944-1945	Covered Under Program Comment	PIIA/ Indirect	SDZs
ARMCO Buildings		Site 50/573*, Site 83/603*, Site 158/675*	NA	1944-1945	Covered under Program Comment	PIIA/ Indirect	SDZs
Revetments		Site 107/626*, Site 162/679*	626, 620	1944-1945	Covered Under Program Comment	PIIA/ Indirect	SDZs
Revetment		Site 25/551*	NA	1944-1945	Covered Under Program Comment	PIIA/ Indirect	Noise
Revetments		Site 82/602*, Site 84/604*	NA	1944-1945	Covered under Program Comment	PIIA/ Indirect	Noise
ARMCO building	NAVMAG	Site 148/666*	188	1944-1945	Covered Under Program Comment	PIIA/ Indirect	SDZs
High Explosive Magazines	NAVMAG	1053*	435, 436, 437	1952	Covered Under Program Comment	PIIA/ Indirect	SDZs
Inert Storehouse	NAVMAG	37*	309NM	1949	Covered Under Program Comment	PIIA/ Indirect	SDZs
Inert Storehouse	NAVMAG	66-02-2627/37*	310NM	1949	Covered Under Program Comment	PIIA/ Indirect	SDZs



**Table 7. Known Architectural Properties within the PDIA and PIIA for Alternative 4**

<i>Building/ Structure Type</i>	<i>Location</i>	<i>Temporary Site Number/ Map Number*</i>	<i>Facility Number</i>	<i>Date of Construction</i>	<i>NRHP Eligible?</i>	<i>Location/ Potential Effect Type</i>	<i>Potential Action</i>
Close Quarter Battle Breach Training	NAVMAG	NA	640NM	1997	No	PIIA/ Indirect	SDZs
Ammunition Rework and Overhaul	NAVMAG	NA	779NM	1965	No	PIIA/ Indirect	SDZs
Utility Building	NAVMAG	NA	840NM	1969	No	PIIA/ Indirect	SDZs
EOD Crew Blast Shelter	NAVMAG	NA	862NM	1976	No	PIIA/ Indirect	SDZs

*Note: Information on type, number, and date of construction from the Internet Navy Facilities Asset Data Store.*

## 9 ALTERNATIVE 5: NORTHWEST FIELD

The NWF<sup>2</sup> LFTRC Alternative 5 would consist of approximately 4,016 acres (1,625 ha) (not including the HG Range at Andersen South) of federal land on Andersen Air Force Base (AAFB) and portions of the Ritidian Unit of the Guam National Wildlife Refuge (NWR). The Ritidian Unit of the Guam NWR is owned and managed by the United States Fish and Wildlife Service (USFWS). The DON would pursue an agreement with USFWS in accordance with the provisions of Section 2822 of the Fiscal Year 2015 National Defense Authorization Act, which would allow for the continued management of the Ritidian Unit consistent with the purposes for which it was established and the operation of the range SDZs associated with the LFTRC preferred alternative at NWF. The DON anticipates that access restrictions will be addressed in this agreement.

Proposed entry to the LFTRC would be through a new entry control point located to the northwest of the current NWF Gate off of Route 3A. The existing road and gate would be improved to support LFTRC traffic, and an entry control point would be constructed to control access during hours of operation. Secondary access would occur via existing access roads on the NWF complex. Specific design details associated with the proposed road and gate alignments are topics of ongoing discussions between the Marine Corps, Air Force, and Navy planners. Approximately 5 miles (8 km) of roads would be improved/constructed to provide access to and between the individual ranges, to the replacement NWR facilities from the main LFTRC access road, and to the beach located northwest of the replacement NWR facilities. Appendix A of this TRRA provides a map of Alternative 5.

The FSEIS [2015], Table 5.5.10-1, and TRRA, Table 8, list 35 known archaeological sites located within the Alternative 5 PDIA on AAFB and the Ritidian Unit of the Guam NWR. Twenty of these, including artifact and ceramic scatters, a rock alignment, a rock shelter, the Ritidian Site Complex, and NWF (a historic airfield), are eligible for listing in the NRHP. Fifteen sites, consisting of disturbed Pre-Contact ceramic scatters and historic WWII sites, are not eligible for listing in the NRHP.

There are no historic properties located in the PDIA for the proposed HG Range at Andersen South.

No TCPs have been identified in the PDIA for Alternative 5 (Welch and Prasad 2006, Griffin *et al.* 2010).

The FSEIS [2015], Table 5.5.10-1, and TRRA, Table 8, list 79 known archaeological sites located within the Alternative 5 PIIA. There are 60 known NRHP-eligible sites in this area, including the Ritidian Site Complexes (GHPI Numbers 66-08-0012 and 66-08-0013), a portion of the Jinapsan site (GHPI number 66-08-0014), artifact scatters, NWF, and rock shelters. One of the Ritidian Site Complexes is also within the PDIA. The remaining 19 sites, which include a WWII-era fuel tank farm and a historic site with concrete foundations and a cobble retaining wall, are not eligible for listing in the NRHP. Three structures used by the FWS are located within the PIIA. None of these structures is eligible for listing in the NRHP. No TCPs have been identified in the PIIA for Alternative 5. Natural resources of cultural importance may occur in this area.

There are no historic properties located in the PIIA for the proposed HG Range at Andersen South.

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<sup>2</sup> The Alternative 5 location is north of the actual NWF airfield on AAFB, between NWF and the cliff at an area with the Chamorro place name of Tailalo, but for the purpose of this TRRA, "Northwest Field" is used to describe this location.

## 9.1 Summary of Effects in the PDIA for Alternative 5

Direct physical disturbance would potentially occur on approximately 315 acres (128 ha) of land, including 256 acres (104 ha) for the construction of the individual ranges, range support building, range towers, internal range access roads, a perimeter fence (all within federally controlled land at NWF), and the replacement of facilities within the Guam NWR that would be encumbered by the range SDZs. The remaining 59 acres (24 ha) of disturbed area would be required for construction of an external access road between the LFTRC and the replacement NWR facilities. The SDZs would encompass approximately 267 acres (108 ha) of the Ritidian Unit of the Guam NWR and 3,434 acres (1,390 ha) of the submerged lands of the Philippine Sea (total of 3,701 acres [1,498 ha]). These lands and submerged lands would not be directly impacted as a result of construction or operation of the LFTRC. Excavation and soil removal associated with the construction of Alternative 5 could adversely affect 35 known archaeological sites, including Pre-Contact artifact scatters, sites containing *latte* components, rock shelters, and WWII military sites (FSEIS [2015], Table 5.5.10-1: Archaeological Sites within the NWF Alternative PDIA and PIIA, and Table 8 in this TRRA). In addition, culturally important natural resources could be directly impacted due to removal of limestone forest.

## 9.2 Summary of Effects in the PIIA for Alternative 5

Potential indirect adverse effects could occur to three NRHP-eligible archaeological sites, one of which is a potential TCP. One unevaluated site could be directly affected. Potential indirect adverse effects could also occur to two NRHP-eligible sites (GHPI Numbers 66-08-0012 and 66-08-0013), as a result of reduced access. Under Alternative 5, small arms live-fire noise would be audible near 46 NRHP-eligible sites located within the expanded noise contours. Changes in the setting would not indirectly adversely affect the integrity of 43 NRHP-eligible artifact scatters, rock shelters, or historic military sites. However, three potentially noise-sensitive NRHP-eligible sites with *latte* components and cave sites with pictographs could be indirectly adversely affected by substantial changes in the audible environment. Indirect adverse effects from visual intrusions associated with Alternative 5 would be minimal because the ranges are within an existing military operations area, and the action would not involve a change in visual setting.

Access to lands and submerged lands within the SDZs would be restricted during range operations. Cultural sites located on AAFB currently have limited access due to operations. Portions of the Ritidian Unit of the Guam NWR are currently open to the public. Portions of two NRHP-eligible archaeological sites, the Ritidian Site Complexes (66-08-0012 and 66-08-0013), are located within the SDZs that overlay portions of the Ritidian Unit. Portions of these sites are accessible to the public through tours and public education programs and are part of ongoing scientific research programs. Under Alternative 5, access to these sites would be restricted while the ranges are in use. Access to these sites during those periods when the ranges are not in use is a matter under the management authority of the USFWS. Restricted access associated with operation of Alternative 5 would be a significant impact.

There are no historic properties located in the PDIA or PIIA for the proposed HG Range at Andersen South. Therefore, no adverse effects to historic properties are anticipated for the HG Range.

Additional details about Alternative 5 are provided in FSEIS [2015], Section 2.5.4.5, and in Appendix C of this TRRA.

**Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-08-0012	T-RIT-100	Ritidian Site Complex	Pre-Contact/Latte, /Spanish Administration/ Chamorro Spanish Wars	Yes	A, D	Reinman 1977, Dixon <i>et al.</i> 2014a	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs; Noise
66-08-0013	T-RIT-001	Ritidian Site Complex	Pre-Contact/Latte	Yes	D	Reinman 1977, Dixon <i>et al.</i> 2014b	PIIA/Indirect	SDZ; Noise
66-08-0014		Jinapsan Complex	Pre-Contact/Latte; Post-WWII/Second American Territorial	Yes	D	Reinman 1977	PIIA/ Indirect	Noise
66-08-1065		Airfield	Post-WWII/Second American Territorial	Yes	D	Aaron <i>et al.</i> 2007, Dixon <i>et al.</i> 2011b	PDIA/ Direct; PIIA/Indirect	Range construction; Noise
66-08-2492	T-A3-1	Rock shelter with midden soil and marine shell	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2011b	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2493	T-NW-1	Artifact scatter	Organic Act/Home Rule/Economic Development	No	NA	Dixon and Walker 2011	PDIA/ Direct	Range construction
66-08-2494	T-NW-2	Artifact scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs; Noise
66-08-2495	T-NW-3	WWII-era fuel tank farm (tanks removed)	WWII (unspecified)	No	NA	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2496	T-NW-5	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2497	T-NW-6	Artifact scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
66-08-2498	T-NW-13	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
66-08-2499	T-NW-14	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
66-08-2500	T-NW-23	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
66-08-2501	T-NW-27	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise

**Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>Criteria</b>	<b>Reference</b>	<b>Location/Potential Effect Type</b>	<b>Potential Action</b>
66-08-2502	T-NW-28	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
66-08-2503	T-M-01	Concrete pad	Post-WWII/ Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PDIA/ Direct	Range construction
66-08-2504	T-M-02	Concrete slab, artifact scatter	Post-WWII/ Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs
66-08-2505	T-M-03	Dump	Post-WWII/ Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2506	T-M-04	Concrete pad and foundation	Post-WWII/ Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2507	T-M-05	Concrete pad, wooden power poles	Post-WWII/ Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2508	T-M-06	Cobble walls	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2509	T-M-07	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2510	T-M-08	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2511	T-M-09	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2512	T-M-10	Military refuse/dump	Post-WWII/Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs
66-08-2513	T-M-11	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	Noise
66-08-2514	T-M-12	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2515	T-M-13	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2516	T-M-14	Cobble wall	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2517	T-M-15	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise

**Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-08-2518	T-M-16	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2519	T-M-17	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2520	T-M-18	Military refuse/dump	Post-WWII/ Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs
66-08-2521	T-M-19	Road bed/tank trail	WWII (unspecified)	No	NA	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs
66-08-2522	T-RP-01	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2523	T-RP-02	Concrete foundations and cobble retaining wall (remains of navigation facility)	WWII Japanese Military Occupation, WWII American Military, Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PDIA/Direct; PIIA/Indirect	Range construction; SDZs
66-08-2524	T-RP-03	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2525	T-RP-04	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2530	T-PP-01	Artifact scatter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
66-08-2531	T-PP-02	Gas masks	Post-WWII/Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PIIA/ Indirect	Noise
66-08-2532	T-PP-03	Bottles and canteens	Post-WWII/Second American Territorial	No	NA	Dixon <i>et al.</i> 2012	PIIA/ Indirect	Noise
66-08-2533	T-J-01	Rock shelter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2534	T-J-02	Rock shelter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2535	T-J-03	Rock shelter	Pre-Contact/Latte	Yes	D	Dixon <i>et al.</i> 2012	PIIA/ Indirect	SDZs; Noise
66-08-2536	T-J-04	Cave	Latte, WWII Japanese Military Occupation	Yes	D	Dixon <i>et al.</i> 2012	PIIA/Indirect	SDZs; Noise
66-08-2731	2	Concrete slab and fuel tanks	Post-WWII/Second American Territorial	Yes	D	DeFant 2014	PDIA/Direct	Range construction

**Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>Criteria</b>	<b>Reference</b>	<b>Location/Potential Effect Type</b>	<b>Potential Action</b>
66-08-2733	4	Ceramic scatter	Latte	Yes	D	DeFant 2014	PIIA/Indirect	Noise
66-08-2735	6	Ceramic scatter	Latte	Yes	D	DeFant 2014	PIIA/Indirect	Noise
	FTX3-1	Artifact scatter	Pre-Contact/Latte	Yes	D	Church <i>et al.</i> 2009	PIIA/Indirect	Noise
	FTX3-2	Artifact scatter	Pre-Contact/Latte	Yes	D	Church <i>et al.</i> 2009	PDIA/ Direct	Range construction
	T-NW-4	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct	Range construction
	T-NW-7	Ceramic scatter	Pre-Contact	Yes	D	Dixon and Walker 2011	PIIA/Indirect	Noise
	T-NW-8	Ceramic scatter, Concrete pad with 1945 inscription, artifact scatter	Pre-Contact/Latte, Post-WWII/ Second American Territorial	No	NA	Dixon and Walker 2011	PIIA/Indirect	Noise
	T-NW-9	Artifact scatters	Pre-Contact/Latte, Post-WWII, Second American Territorial	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; Noise
	T-NW-10	Artifact scatter (possible helicopter components)	Organic Act/Home Rule/Economic Development	No	NA	Dixon and Walker 2011	PDIA/ Direct	Range construction
	T-NW-11	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/Indirect	SDZs; Noise
	T-NW-12	Ceramic scatter	Pre-Contact	Yes	D	Dixon and Walker 2011	PIIA/Indirect	Noise
	T-NW-15	Ceramic scatter; Artifact scatter	Pre-Contact; Latte, Post-WWII/Second American Territorial;	Yes	D	Dixon and Walker 2011	PIIA/Indirect	Noise
	T-NW-16	Artifact scatter	Post-WWII/Second American Territorial	No	NA	Dixon and Walker 2011	PDIA/ Direct	Range construction
	T-NW-18	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct	Range construction
	T-NW-19	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct	Range construction
	T-NW-20	Artifact scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs

**Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>Criteria</b>	<b>Reference</b>	<b>Location/Potential Effect Type</b>	<b>Potential Action</b>
	T-NW-21	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	T-NW-22	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
	T-NW-24	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct	Range construction
	T-NW-25	Artifact scatter	Post-WWII/Second American Territorial	No	NA	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	T-NW-26	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	T-NW-29	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
	T-NW-32	Firing range embankment	WWII (unspecified)	No	NA	Dixon and Walker 2011	PIIA/ Indirect	SDZs
	T-NW-34	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	Noise
	T-NW-36	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	SDZs; Noise
	T-NW-37	Artifact scatter	Post-WWII/Second American Territorial	No	NA	Dixon and Walker 2011	PIIA/ Indirect	SDZs
	T-NW-38	Artifact scatter	WWII (unspecified)	No	NA	Dixon and Walker 2011	PIIA/ Indirect	SDZs
	T-NW-39	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct; PIIA/Indirect	Range construction; SDZs
	T-NW-40	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PDIA/ Direct PIIA/Indirect	Range construction; SDZs
66-08-2736	T-NWF-001a	Road bed	Post-WWII/Second American Territorial	No	NA	Dixon <i>et al.</i> 2014a	PDIA/ Direct	Range construction
66-08-2737	T-NWF-001b	Bottle dumps	Post-WWII/Second American Territorial	No***	NA	Dixon <i>et al.</i> 2014a	PDIA/Direct	Range construction



**Table 8. Known Archaeological Sites within the PDIA and PIIA for Alternative 5**

<b>GHPI Number<sup>1</sup></b>	<b>Temporary Site Number</b>	<b>Site Type</b>	<b>Period**</b>	<b>NRHP Eligible?</b>	<b>Criteria</b>	<b>Reference</b>	<b>Location/ Potential Effect Type</b>	<b>Potential Action</b>
66-08-2738	T-NWF-002	Artifact scatter	Pre-Contact/Latte	No	NA	Dixon <i>et al.</i> 2014a	PDIA/ Direct	Range construction
66-08-2742	T-NWF-006	Artifact scatter	Post-WWII/Second American Territorial	Yes <sup>^</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-08-2657	T-RIT-002	Antenna base	Post-WWII/ Second American Territorial	No <sup>***</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2744	T-RIT-105	Ceramic scatter	Pre-Contact/Latte	No	NA	Dixon <i>et al.</i> 2014a	PDIA/ Direct	Range construction
66-08-2745	T-RIT-108	Ceramic scatter	Pre-Contact/Latte	Yes <sup>^</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2746	T-RIT-109	Ceramic scatter	Pre-Contact/Latte	Yes <sup>^</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2747	T-RIT-110	Rock shelter	Pre-Contact/Latte	Yes <sup>***</sup>	D	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-08-2748	T-RIT-111	Rock shelter	Pre-Contact/Latte	Yes <sup>^</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2749	T-RIT-112	Rock shelter	Pre-Contact/Latte	Yes <sup>^</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2750	T-RIT-113	Ceramic scatter	Pre-Contact/Latte	Yes <sup>^</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	SDZs
66-08-2751	T-RIT-114	Ceramic scatter	Pre-Contact/Latte	No <sup>***</sup>	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-08-2752	T-RIT-115	Ceramic scatter	Pre-Contact/Latte	No	NA	Dixon <i>et al.</i> 2014b	PIIA/ Indirect	Noise
66-08-2753	T-RIT-120	Ceramic scatter	Pre-Contact/Latte	No	NA	Dixon <i>et al.</i> 2014a	PDIA/ Direct	Range construction
	T-SP-1	Japanese defensive position	WWII Japanese Military Occupation	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	Noise
	T-SP-2	Japanese defensive position	WWII Japanese Military Occupation	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	Noise
	T-SP-3	Japanese defensive position	WWII Japanese Military Occupation	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	Noise
	T-SP-4	Ceramic scatter	Pre-Contact/Latte	Yes	D	Dixon and Walker 2011	PIIA/ Indirect	Noise

*Legend:*

GHPI = Guam Historic Properties Inventory; NRHP = National Register of Historic Places; NA=not applicable. NRHP criterion D = eligible for potential to yield information important in prehistory or history.

*Notes:*

<sup>1</sup>Not all sites recorded within the project areas have received official GHPI numbers, although they have been documented as part of previous surveys.

\*\* Revised to match Guam GHPI forms dated May 28, 2014.

\*\*\* The Guam SHPO concurs with this recommendation (Guam SHPO correspondence dated August 12, 2014 [RC2013-0904]).

^For Section 106 purposes this site is considered NRHP-eligible.

## **10 SUMMARY OF THE PREFERRED LFTRC ALTERNATIVE (ALTERNATIVE 5, NWF)**

### **10.1 Construction**

Construction of the ranges, support facilities, utilities, and road construction would primarily occur in the NWF area of AAFB. However, the construction of an access road and a vehicle access gate would occur on the Ritidian Unit of the Guam NWR and could adversely affect site 66-08-0012. Given the substantial development anticipated in the PDIA, it is assumed for purposes of this analysis that 100% of the area would be disturbed. Nevertheless, design alternatives to avoid and minimize adverse effects would be considered in the RMP should this alternative be selected in the ROD. No construction is proposed in the PIIA. Excavation and soil removal associated with the construction of Alternative 5 could adversely affect 20 known historic properties, including Pre-Contact artifact scatters and sites containing *latte* components.

Under Alternative 5, the Guam NWR administrative offices would be relocated to the southwest. The existing Guam NWR buildings, which are not considered eligible for listing in the NRHP, would be left in place.

Construction activities associated with Alternative 5 have the potential to directly impact culturally important natural resources. The project would require the removal of limestone forest where culturally important natural resources, including traditional plants, may be present. The 2011 PA contains measures for coordinating with the SHPO and concurring parties to contact traditional natural healers, herbal practitioners, and traditional artisans regarding identification and disposition of these important resources prior to construction (FEIS [2010], Volume 2: 2-10; Volume 9, Appendix G, Chapter 4).

No impacts on historic properties or culturally important natural resources are anticipated in conjunction with utility upgrades that would be associated with Alternative 5. The modification or replacement of existing overhead electrical lines under Alternative 5 would not affect any historic properties. Water and wastewater utilities would be placed along Perimeter Road and on a new access road. There are no known NRHP-eligible sites or structures located in the areas planned for water or wastewater utility upgrades. No adverse effects to historic properties are anticipated in conjunction with these utility upgrades.

### **10.2 Operation**

The potential for direct effects within the SDZs would be limited to the risk of strikes from stray rounds during Alternative 5 operations. The risk of such effects occurring is extremely low. Each range would be designed to contain live fire inside the range boundary to minimize the probability of rounds landing in the SDZs. The natural terrain would also serve to prevent direct effects in the SDZs, because the culturally sensitive areas within the Alternative 5 SDZs are substantially lower in elevation than the site of the range. Additionally, if a stray round were to escape the ranges, the chance of it hitting a historic property is remote, given the size of the SDZs and dispersal of historic properties. For these reasons, the potential for direct adverse effects as a result of range operations is minimal.

Indirect adverse effects to NRHP-eligible archaeological sites or TCPs from the operation of Alternative 5 could result from changes affecting site integrity. For many types of archaeological sites (e.g., ceramic scatters, rock alignments), auditory impacts associated with live-fire operations would not affect characteristics that qualify them for listing in the NRHP. An increase in noise associated with live-fire

operations may affect historic properties for which solitude, quiet, or contemplation contributes to or define their significance, such as TCPs.

Areas near the ranges are currently subject to intermittent noise from aircraft up to 60 dB A-weighted day-night sound level (ADNL), although most areas currently have average noise levels of less than 60 dB DNL (FSEIS [2015], Section 5.5.4, Noise). Under Alternative 5, small arms live-fire noise would be audible near 45 NRHP-eligible sites and one unevaluated site that are located within the expanded noise contours (FSEIS [2015], Table 5.5.10-3). Average noise levels during range operations are projected to increase from current levels of less than 60 dB to between 65 dB and 85 dB ADNL due to the introduction of small arms live-fire noise. At the Ritidian Unit of the Guam NWR, noise levels are projected to increase from current levels of less than 60 dB to more than 80 dB ADNL in some areas, although some attenuation below the cliff line is expected due to topography. Forty-two of the 45 sites are NRHP-eligible, and one is unevaluated; these include Pre-Contact artifact scatters, rock shelters, historic military sites, and a portion of NWF (66-08-1065). Three NRHP-eligible sites have multiple *latte* components, and one NRHP-eligible site is a cave site. Based on the analysis, changes in the setting would not indirectly adversely affect the integrity of 43 NRHP-eligible artifact scatters, rock shelters, or historic military sites. However, three potentially noise-sensitive NRHP-eligible sites with *latte* components and cave sites with pictographs could be indirectly adversely affected by substantial changes in the audible environment. Final determinations of effect would follow the procedures in the 2011 PA.

As indicated in FSEIS [2015], Section 5.5.11, indirect adverse effects from visual intrusions associated with Alternative 5 would be minimal because the ranges are within an existing military operations area, and the action would not involve a change in visual setting.

Access to historic properties within the SDZs would be restricted during range operations. Historic properties located on AAFB currently have limited access due to operations. Portions of the Ritidian Unit of the Guam NWR are currently open to the public. Portions of two NRHP-eligible archaeological sites, the Ritidian Site Complexes (66-08-0012 and 66-08-0013), are located within the SDZs that overlay portions of the Ritidian Unit. Portions of these sites are accessible to the public through tours and public education programs and are part of ongoing scientific research programs. Under Alternative 5, access to these sites would be restricted while the ranges are in use. Access to these sites during those periods when the ranges are not in use is a matter under the management authority of the USFWS. Restricted access associated with operation of Alternative 5 would be a significant impact.

Throughout the design process, to the degree possible, additional consideration will be made to avoid and minimize adverse effects to historic properties and impacts to natural resources of cultural significance in the direct impact area. The RMP will stipulate additional measures to avoid and minimize such impacts, as well as measures to mitigate adverse effects. Consistent with the commitment in the 2011 PA to consider treatment measures, the RMP will include a design review process to allow consideration of feedback from the consulting parties. The RMP will also provide provisions for data recovery of archaeological sites that cannot be avoided.

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