

Revised Draft

ENVIRONMENTAL IMPACT STATEMENT

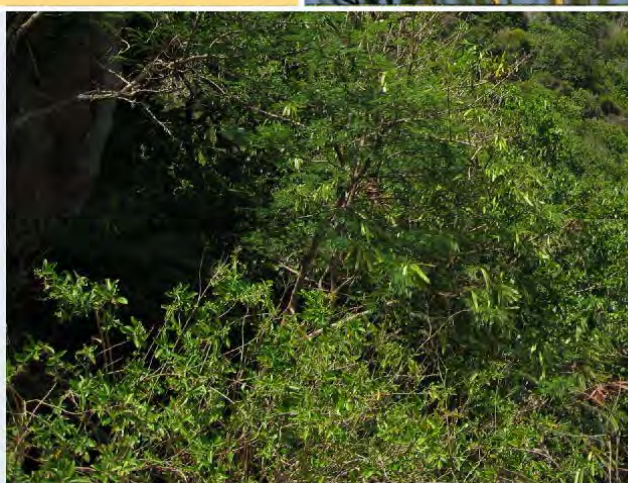
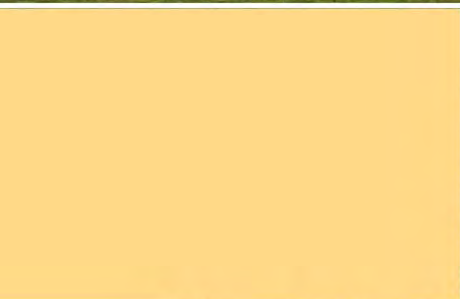
FOR DIVERT ACTIVITIES AND EXERCISES,

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

VOLUME II: APPENDICES



**Headquarters, Pacific Air Forces
Joint Base Pearl Harbor-Hickam, Hawai'i**



OCTOBER 2015

**REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT
DIVERT ACTIVITIES AND EXERCISES
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (CNMI)**

VOLUME II: APPENDICES

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APPENDIX A

Cooperating Agency Requests and Acceptance Letters



**Cooperating Agency Request Letter to the Department of the Navy and U.S. Marine Corps
September 20, 2011**



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

20 SEP 2011

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE NAVY
(ENVIRONMENT)

FROM: SAF/IEE

SUBJECT: Cooperating Agency (CA) Request for the Proposed U.S. Air Force Environmental
Impact Statement (EIS) for Divert Activities and Exercises, Commonwealth of the
Northern Mariana Islands

The Air Force requests Navy and Marine Corps formal participation in preparation of its
Divert Activities and Exercises, Commonwealth of the Northern Mariana Islands EIS as prescribed
in the President's Council on Environmental Quality (CEQ) National Environmental Policy Act
(NEPA) Regulations, 40 CFR §1501.6, Cooperating agencies.

As a cooperating agency, the Air Force requests that you participate in various portions of the
EIS development as may be required. Specifically, the Air Force requests your support as a
Cooperating Agency by:

- (a) Participating in scoping, review, and hearing processes;
- (b) Making staff support available to enhance interdisciplinary analysis and review;
- (c) Assuming responsibility, upon request, for developing information and preparing analyses
on topics for which the Navy and/or Marine Corps has special expertise; and,
- (d) Responding, in writing, to this request.

Air Force staff will contact Navy and Marine Corps staffs to address specific details of this
cooperating agency relationship. To avoid unnecessary delays in the NEPA process, the Air Force
must have timely support from cooperating agencies. In turn, the Air Force will ensure it provides
the necessary information and related materials in a timely fashion to enable your agency to complete
its review and respond promptly. Should you or your staff have questions regarding this memo, our
points of contact are Mr. Jack Bush, Bases and Units (AF/A7C1), (703) 614-0237, email
jack.bush@pentagon.af.mil; and Mr. Les Reed, Office of the Deputy General Counsel (Environment
& Installations), (703) 614-8071, email les.reed@pentagon.af.mil.

A handwritten signature in cursive script, reading "Timothy K. Bridges", is positioned above the printed name.

TIMOTHY K. BRIDGES
Deputy Assistant Secretary
(Environment, Safety & Occupational Health)

cc:
SAF/IEI/GCN
HQ AF/A4/7/8
HQMC I&L & DC/A
HQ PACAF/A5/A7

**Cooperating Agency Request Letter to Department of Interior, Office of Insular Affairs
October 21, 2011**



**DEPARTMENT OF THE AIR FORCE
WASHINGTON DC**

OFFICE OF THE ASSISTANT SECRETARY

SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

21 OCT 2011

Mr. Anthony Babauta
Assistant Secretary
U.S. Department of the Interior, Office of Insular Affairs
1849 C Street, NW
Washington, DC 20240

Dear Mr. Babauta:

The Air Force requests your formal participation in the preparation of an Environmental Impact Statement (EIS) for the Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands as prescribed in the President's Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations, 40 CFR § 1501.6 *Cooperating Agencies*.

As a cooperating agency, the Air Force requests your office participate in various portions of the EIS development as may be required. Specifically the Air Force asks for your support as a Cooperating Agency by:

- a. Responding, in writing, to this request;
- b. Participating in the scoping process;
- c. Assuming responsibility, upon request by the Air Force, for developing information and preparing analyses on issues for which you have special expertise; and,
- d. Making staff available for interdisciplinary reviews.

To avoid unnecessary delays in the NEPA process, the Air Force must have timely support from cooperating agencies. In turn, the Air Force will ensure it provides the necessary information and related materials in a timely fashion to enable your agency to complete its review and respond promptly. Should you or your staff have any questions regarding this letter, our point of contact is Mr. Mark Petersen, (808) 449-1078, Mark.Petersen@hickam.af.mil.

Sincerely,

A handwritten signature in black ink, reading "Timothy K. Bridges", is written over a horizontal line.

TIMOTHY K. BRIDGES
Deputy Assistant Secretary of the Air Force
(Environment, Safety, & Occupational Health)

cc:
SAF/IEI
SAF/GCN
HQ USAF/A7C
HQ USAF/A3O
HQ PACAF/A7PI
ALCOM/J42

**Cooperating Agency Request Letter to Department of Interior, U.S. Fish and Wildlife Service
October 21, 2011**



**DEPARTMENT OF THE AIR FORCE
WASHINGTON DC**

OFFICE OF THE ASSISTANT SECRETARY

21 OCT 2011

SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

Mr. Daniel M. Ashe
Director
U.S. Department of the Interior, U.S. Fish and Wildlife Service
1849 C Street, NW
Washington, DC 20240

Dear Mr. Ashe:

The Air Force requests your formal participation in the preparation of an Environmental Impact Statement (EIS) for the Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands as prescribed in the President's Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations, 40 CFR § 1501.6 *Cooperating Agencies*.

As a cooperating agency, the Air Force requests your office participate in various portions of the EIS development as may be required. Specifically, the Air Force asks for your support as a Cooperating Agency by:

- a. Responding, in writing, to this request;
- b. Participating in the scoping process;
- c. Assuming responsibility, upon request by the Air Force, for developing information and preparing analyses on issues for which you have special expertise; and,
- d. Making staff available for interdisciplinary reviews.

To avoid unnecessary delays in the NEPA process, the Air Force must have timely support from cooperating agencies. In turn, the Air Force will ensure it provides the necessary information and related materials in a timely fashion to enable your agency to complete its review and respond promptly. Should you or your staff have any questions regarding this letter, our point of contact is Mr. Mark Petersen, (808) 449-1078, Mark.Petersen@hickam.af.mil.

Sincerely,

A handwritten signature in black ink, reading "Timothy K. Bridges", is positioned above the typed name.

TIMOTHY K. BRIDGES
Deputy Assistant Secretary of the Air Force
(Environment, Safety, & Occupational Health)

cc:
SAF/IEI
SAF/GCN
HQ USAF/A7C
HQ USAF/A3O
HQ PACAF/A7PI
ALCOM/J42

**Cooperating Agency Request Letter to Federal Aviation Administration
October 21, 2011**



**DEPARTMENT OF THE AIR FORCE
WASHINGTON DC**

OFFICE OF THE ASSISTANT SECRETARY

SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

21 OCT 2011

Ms. Elizabeth L. Ray
Director, Airspace Services
Mission Support Services
Federal Aviation Administration
800 Independence Ave., SW, Suite 400 East
Washington, DC 20591

Dear Ms. Ray:

The Air Force requests your formal participation in the preparation of an Environmental Impact Statement (EIS) for the Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands as prescribed in the President's Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations, 40 CFR § 1501.6 *Cooperating Agencies*.

As a cooperating agency, the Air Force requests your office participate in various portions of the EIS development as may be required. Specifically, the Air Force asks for your support as a Cooperating Agency by:

- a. Responding, in writing, to this request;
- b. Participating in the scoping process;
- c. Assuming responsibility, upon request by the Air Force, for developing information and preparing analyses on issues for which you have special expertise; and,
- d. Making staff available for interdisciplinary reviews;

To avoid unnecessary delays in the NEPA process, the Air Force must have timely support from cooperating agencies. In turn, the Air Force will ensure it provides the necessary information and related materials in a timely fashion to enable your agency to complete its review and respond promptly. Should you or your staff have any questions regarding this letter, our point of contact is Mr. Mark Petersen (808) 449-1078, Mark.Petersen@hickam.af.mil.

Sincerely,

A handwritten signature in black ink, reading "Timothy K. Bridges", is written over the typed name.

TIMOTHY K. BRIDGES
Deputy Assistant Secretary of the Air Force
(Environment, Safety, & Occupational Health)

cc:
SAF/IEI
SAF/GCN
HQ USAF/A7C
HQ USAF/A3O
HQ PACAF/A7PI
ALCOM/J42

**Cooperating Agency Response Letter from the Department of the Navy
November 4, 2011**



DEPARTMENT OF THE NAVY

OFFICE OF THE ASSISTANT SECRETARY
(ENERGY, INSTALLATIONS & ENVIRONMENT)
1000 NAVY PENTAGON
WASHINGTON DC 20350-1000

NOV - 4 2011

**MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(ENVIRONMENT, SAFETY AND OCCUPATIONAL
HEALTH)**

SUBJECT: Cooperating Agency Request for the Proposed U.S. Air Force Environmental Impact Statement for Divert Activities and Exercises, Commonwealth of the Northern Mariana Islands

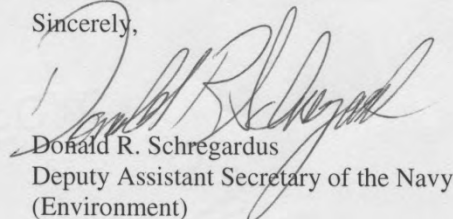
The Department of the Navy agrees to participate as a Cooperating Agency in the preparation of the U.S. Air Force Divert Activities and Exercises, Commonwealth of the Northern Mariana Islands Environmental Impact Statement (EIS). As a Cooperating Agency the Department of the Navy agrees to:

- Participate in scoping, review and hearing processes;
- Make staff support available to enhance interdisciplinary analysis and reviews;
- Upon request, develop information and prepare analyses on topics for which the Navy and/or Marine Corps has special expertise.

The Navy and Marine Corps points of contact to support this cooperating agency relationship are: Ms. Sue Goodfellow, Ph.D., Head, Planning and Conservation Section, Headquarters, U.S. Marine Corps (GF/MCI-COM), (571) 256-2781, email: sue.goodfellow@usmc.mil and Mr. Neil Sheehan, Environmental Planning Program Manager, Commander Pacific Fleet, (808) 474-7836, email: neil.a.sheehan@navy.mil.

The Department of the Navy appreciates being afforded this opportunity to participate as a cooperating agency and looks forward to working closely with the Air Force on this important environmental planning effort.

Sincerely,


Donald R. Schregardus
Deputy Assistant Secretary of the Navy
(Environment)

Copy to:
OPNAV N45
ADC I&L/GF

**Cooperating Agency Response Letter from the Federal Aviation Administration
November 15, 2011**



U.S. Department
of Transportation
**Federal Aviation
Administration**

NOV 15 2011

Timothy K. Bridges
Deputy Assistant Secretary of the Air Force
(Environment, Safety, & Occupational Health)
US Department of the Air Force
SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

Dear Mr. Bridges:

Thank you for your letter requesting the Federal Aviation Administration participate as a cooperating agency in the environmental impact statement (EIS) for the Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands.

The FAA is pleased to participate in the EIS process in accordance with the National Environmental Policy Act of 1969 as amended, and its implementing regulations. Since the proposal involves special use airspace (SUA), the FAA will cooperate following the guidelines described in the Memorandum of Understanding (MOU) between the FAA and the Department of Defense Concerning SUA Environmental Actions, dated October 4, 2005.

Modification of the SUA resides under the jurisdiction of the Western Service Center, Operations Support Group, Renton, WA. The Western Service Center will be the primary focal point for matters related to both airspace and environmental matters. Mr. John Warner is the Manager of the Operations Support Group. FAA Order 7400.2, Chapter 32 indicates the airspace and environmental processes should be conducted in tandem as much as possible; however, they are separate processes. Approval of either the aeronautical process or the environmental process does not automatically indicate approval of the entire proposal. I have enclosed Appendix 2, 3, and 4 of FAA Order 7400.2 for additional details.

A copy of the incoming correspondence and this response is being forwarded to Mr. Warner of the Western Service Center, Operations Support Group. Mr. Warner can be contacted at (425) 203-4500 for further processing of your proposal.

Sincerely,

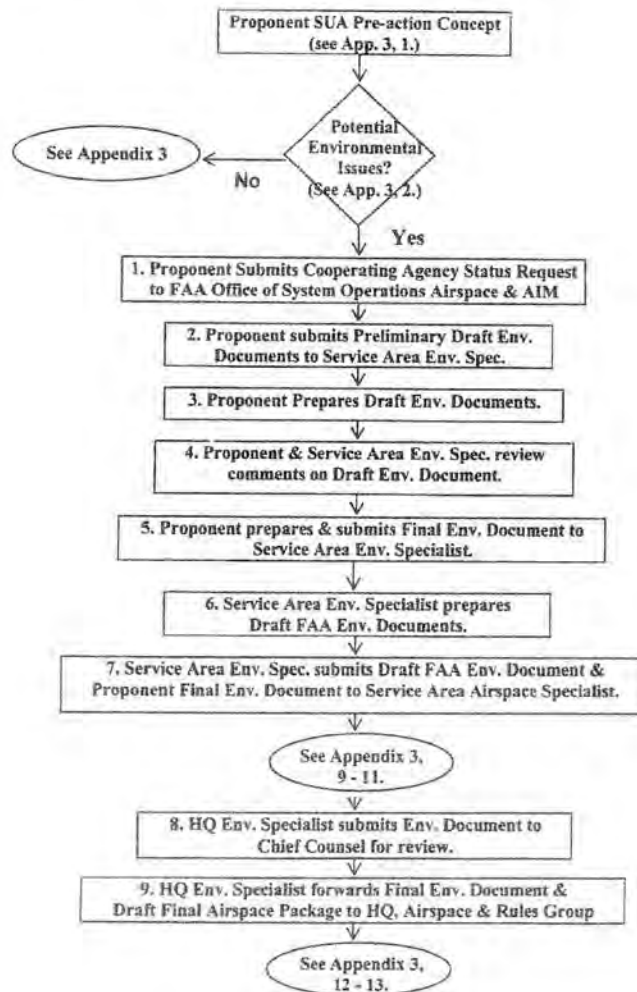
A handwritten signature in dark ink, appearing to read "Dennis E. Roberts".

Dennis E. Roberts
Director, Airspace Services
Air Traffic Organization

3 Enclosures

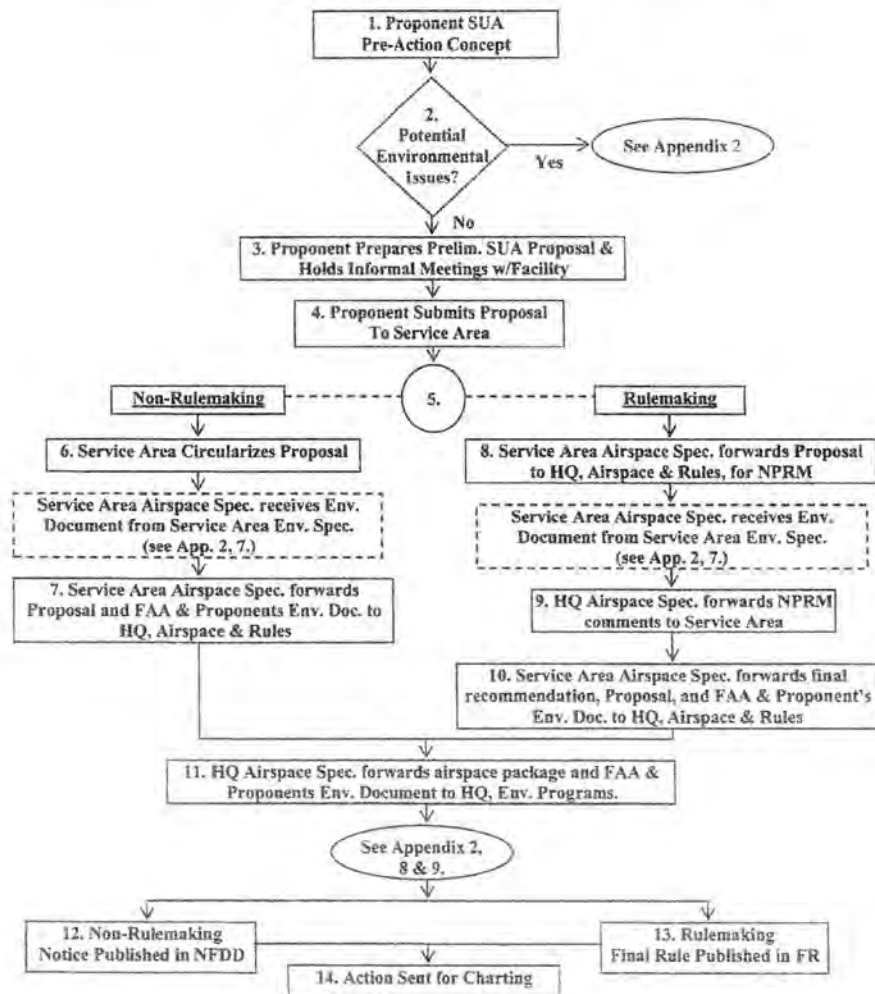
Appendix 2. Procedures For Processing SUA Actions Environmental Process Flow Chart

(This Chart is for use with Appendix 4 and the numbers correlate to the numbers in the Environmental column of that table.)



Appendix 3. Procedures For Processing SUA Actions Aeronautical Process Flow Chart

(This Appendix is for use with Appendix 4 and the numbers correlate to the numbers in the Aeronautical column of that table.)



Appendix 4. FAA Procedures for Processing SUA Actions Aeronautical and Environmental Summary Table

(The aeronautical and environmental processes may not always occur in parallel.)

(This Appendix is for use with Appendix 2 and Appendix 3, and the numbers correlate to numbers on those charts.)

(See note below.)

AERONAUTICAL	ENVIRONMENTAL
1. Proponent shall present to the Facility a Pre-draft concept (i.e., new/ revisions to SUA needed or required).	1. Proponent shall discuss with the Service Area, at the earliest time, the potential for environmental impacts associated with the proposal.
	2. If there is the potential for environmental impacts, Proponent shall make a request to the FAA for a Cooperating Agency (CA) status when Proponent decides to initiate the environmental process. Proponent shall forward the request to the Director of the System Operations Airspace and AIM. The Director will transmit the request to the Environmental Programs Group who prepares and forwards the response to Proponent. The Environmental Programs Group will send a courtesy copy of the response to the responsible Service Area. The Service Area environmental specialist works as the FAA point of contact throughout the process in development of any required environmental documentation.
	3. Proponent submits a Preliminary Draft EA or EIS to the Service Area environmental specialist. The Service Area environmental specialist shall provide comments, in consultation with the airspace specialist and the Environmental Programs Group, back to Proponent.

2. Proponent forwards the aeronautical proposal to the FAA Service Area for review and processing by the airspace specialist.	4. Proponent prepares a Draft EA or EIS with a 45-day public comment period. As the FAA CA point of contact, the Service Area environmental specialist reviews the associated draft environmental documentation to ensure that the Proponent addressed adequately all environmental concerns submitted on the Preliminary Draft. If required, the Service Area environmental specialist forwards the draft environmental documentation to the Environmental Programs Group for review and comment by the headquarters environmental specialist and the Office of Chief Counsel.
3. The Service Area airspace specialist, in accordance with this order, determines the type of airspace action(s) necessary, either Non-Rulemaking or Rulemaking. FAA Service Area and Proponent determine if informal Airspace Meetings are required.	
For Non-Rulemaking:	
4. The Service Area airspace specialist sends out a circularization with a 45-day public comment period. The Service Area airspace specialist reviews and prepares, in consultation with the Proponent, responses to the aeronautical comments from the study and circularization in accordance with Chapter 21 of this order.	5. The Proponent reviews comments received on their Draft EA/FONSI or EIS and prepares their responses to the comments, in consultation with the FAA and other cooperating agencies, if necessary, and in accordance with Chapter 32 of this order.
	6. Proponent prepares and submits their Final EA/FONSI or EIS/ROD to the Service Area environmental specialist.
	7. The Service Area environmental specialist prepares a Draft FAA FONSI/ROD or Draft FAA Adoption Document/ROD.
	8. The Service Area environmental specialist submits the Draft FAA FONSI/ROD or Draft FAA Adoption Document/ROD and the Proponent's Final EA/FONSI or EIS/ROD to the Service Area airspace specialist for inclusion with the airspace proposal package.
5. The Service Area airspace specialist then sends the completed package containing the aeronautical proposal, response to comments, Proponent's Final EA/FONSI, and the Draft FAA FONSI/ROD to the Headquarters Airspace and Rules Group with their recommendation.	

For Rulemaking:	
6. The Service Area airspace specialist sends the proposal to the Airspace and Rules Group who prepares a Notice of Proposed Rulemaking (NPRM). The Headquarters Airspace and Rules Group submits the NPRM for publication in the Federal Register with a 45-day comment period in accordance with Chapter 2 of this order.	
7. The Headquarters airspace specialist sends comments received on the NPRM to the Service Area airspace specialist for resolution.	
8. The Service Area airspace specialist then sends the completed package containing the response to comments, final service area recommendation, the proposal, Proponent's Final EA/FONSI or EIS/ROD, and the Draft FAA FONSI/ROD or Draft FAA Adoption Document/ROD to the Headquarters Airspace and Rules Group for preparation of the Final Rule.	
9. The Headquarters airspace specialist forwards the draft final rule package or draft non-rulemaking case summary (NRCS) with all supporting documentation to the Headquarters Environmental Programs Group for review (after all aeronautical comments have been resolved).	9. The Headquarters environmental specialist reviews the package for environmental technical accuracy; then submits the environmental documentation to the Office of the Chief Counsel, Airports and Environmental Law Division, for legal sufficiency review (having collaborated throughout the process).
	10. The Chief Counsel's environmental attorney's comments are incorporated into the final FAA environmental decision and signed by Headquarters Environmental Programs Group Manager. The package is then returned to the Headquarters Airspace and Rules Group.
10. For Non-rulemaking: The non-rulemaking action is published in the National Flight Data Digest.	
11. For Rulemaking: The Final Rule is published in the Federal Register. The Final Rule will contain a reference to the decision rendered and location of documentation for the associated environmental process.	

Consult the following documents throughout the process for further information:

- Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act (NEPA), 40 CFR Parts 1500-1508
- FAA Order 1050.1E, "Environmental Impacts: Policies and Procedures"
- FAA Order 7400.2, "Procedures for Handling Airspace Matters," Part 5
- FAA Order 7400.2, Chapter 32, "Environmental Matters" and the associated appendixes (for specific SUA environmental direction)

NOTE: The time periods below are for a non-controversial aeronautical proposal and its associated environmental process. The time periods are for FAA review/processing only. Times for proponent and/or environmental contract support processing must be added.

ENVIRONMENTAL: The estimated time of completion for EA processing is 12 to 18 months or, for EIS processing, 18 to 36 months.

AERONAUTICAL (Non-Rulemaking): A minimum 4 months is required from submission of the Formal Airspace Proposal by the Proponent to the Service Area through completion of the circularization process. Additionally, a minimum of 6 months is required from submission of the Formal Airspace Proposal by the Service Area to Headquarters through completion of the charting process.

AERONAUTICAL (Rulemaking): A minimum 6 weeks for Service Area processing, and a minimum of 9 months to complete rulemaking once the formal package is received at Headquarters.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
2012-TA-0018

MAR 23 2012

Mr. Mark Petersen
HQ-PACAF, D-306/A7PI
25 E Street
JB Pearl Harbor-Hickam, HI 96853-5412

Subject: Request for the U.S. Fish and Wildlife Service (Service) to be a Cooperating Agency for the Divert Activities and Exercises, Guam and the Commonwealth of the Mariana Islands, Environmental Impact Statement (EIS).

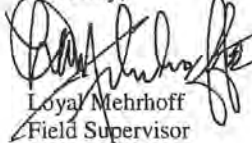
Dear Mr. Peterson:

This is in response to the letter dated 21 October, 2011, from Mr. Timothy Bridges requesting the Service to be a cooperating agency on the preparation of the subject EIS. Current staffing and workload constraints preclude our ability to accept this request, thus, we respectfully decline cooperating agency status.

The Service recognizes the importance of our collaboration in the development of the EIS, and in the section 7 consultation required under the Endangered Species (ESA) of 1973 (16 U.S.C. 1531 *et seq.*), as amended. The Service will continue to provide technical assistance with regard to biological surveys and impact assessment aspects of draft EIS documents, and to respond to Air Force requests for information. The Service will continue to work collaboratively with the Air Force and assist you with ensuring that the best available scientific information is used in the EIS, and that impacts to ESA-listed species and other natural resources are avoided and minimized.

If you have any questions or concerns regarding this consultation, please contact Rachel Rounds, Fish and Wildlife Biologist (phone: 808-792-9400, email: rachel_rounds@fws.gov).

Sincerely,


Loyal Mehrhoff
Field Supervisor



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APPENDIX B

ESA Section 7 Consultation Supporting Documentation



Section 7 Consultation History

In addition to the letters and documents found in this appendix, interactions between the USAF and USFWS related to Section 7 consultation for actions on Saipan for this project took place over several dates between July 14, 2011 and July 1, 2013. The USAF submitted the Final Biological Assessment to the USFWS on September 10, 2012. The USAF received the Final Biological Opinion from the USFWS on July 1, 2013. On August 20, 2013, the USAF received a memo from the USFWS with three minor corrections to the Biological Opinion after signing.

Interactions between the USAF and USFWS related to Section 7 consultation for actions on Tinian for this project are ongoing. The USAF submitted a memo to the USFWS on July 8, 2015 requesting concurrence with the may affect, not likely to adversely affect determination for nesting green and hawksbill sea turtles on Tinian. The USAF is awaiting concurrence from USFWS with this determination.

Interactions between the USAF and NMFS related to Section 7 consultation for actions on Saipan and Tinian this project took place between October 3, 2012 and October 30, 2012. The USAF sent a letter to NMFS requesting formal concurrence with the not likely to adversely to affect determination for threatened and endangered marine species on October 3, 2012. The USAF received a letter from NMFS stating concurrence with the not likely to adversely affect determination for threatened and endangered marine species on October 30, 2012.

**Request for Section 7 Early Consultation/Meeting
July 7, 2011**

"Ingoglia, Mark Civ USAF PACAF A7AN/A7AN" <Mark.Ingoglia@hickam.af.mil>

07/07/2011 07:00 AM To
<Earl_Campbell@fws.gov>

cc

"Leong, Robert Civ USAF PACAF A7PI/A7PI" <Robert.Leong@hickam.af.mil>, "Duffy, Christopher G LtCol USAF PACAF A7/A7P" <christopher.duffy@hickam.af.mil>, "Grannis, William E Civ USAF PACAF A7/A7AV" <William.Grannis@hickam.af.mil>, "Hong, Julie Y CTR USAF PACAF A7PI/A7PI" <Julie.Hong@hickam.af.mil>

Subject

RE: FA8903-08-D-8771-0135: EIS for Divert Activities and Exercises USFW early consultation/meeting request

Aloha Earl,

The Air Force is preparing an EIS for the Pacific Air Force Divert Activities and Exercises in Guam and Commonwealth of the Northern Mariana Islands (CNMI) (hereinafter referred to as the "Divert EIS"). The purpose of the Divert EIS is to identify and assess the potential impacts associated with the proposed development and expansion of existing airfields in the Mariana Islands on U.S. territory in proximity of the Philippine Sea. As always, early and open discussions with your agency is the best way to accomplish this task in a timely manner.

The proposed airfield improvements would be designed to increase joint military exercises, humanitarian assistance, and disaster relief capability for northeast Asia. The USAF intends to meet its mission needs through expansion of an existing FAA-regulated airport which should minimize any potential effects on species of concern in the Marianas. The initial planning for this document is underway and I was hoping to meet with you and/or other members of the USFW staff to pre-brief you on this EIS. We anticipate pre-NOI notification of the Congressional delegations and the Governors of Guam and CNMI in mid-August and public scoping to be held on Guam and the three main CNMI islands in October 2011.

To assure we have touched base with your agency early (as always, it's an "aggressive schedule"), we are suggesting an initial meeting with the Air Force on or about 14 or 15 July 2011. I know you have been designated as the deputy for your office so I'm not sure you are the appropriate point of contact. Please confirm that you are appropriate contact for USFWS and let me know if your office can accommodate that schedule, or if an alternative date is preferred as travel arrangements will have to be made for whatever date is selected.

Thanks in advance,

mi

J. Mark Ingoglia, Chief
PACAF Environmental Branch
DSN 449-1077
808 449-1077

**Response to Request for Section 7 Early Consultation/Meeting
July 8, 2011**

-----Original Message-----

From: Earl_Campbell@fws.gov [mailto:Earl_Campbell@fws.gov]

Sent: Friday, July 08, 2011 1:45 PM

To: Ingoglia, Mark Civ USAF PACAF A7AN/A7AN

Cc: Duffy, Christopher G LtCol USAF PACAF A7/A7P; Hong, Julie Y CTR USAF PACAF A7PI/A7PI; Leong, Robert Civ USAF PACAF A7PI/A7PI; Grannis, William E Civ USAF PACAF A7/A7AV; Loyal_Mehrhoff@fws.gov

Subject: MTG 1 PM July 15 ? : EIS for Divert Activities and Exercises USFW early consultation/meeting request

Mark:

Could we meet on Friday, July 15th at 1 PM at the Pacific Islands Fish and Wildlife Office? I can get a conference room and a PowerPoint projector. Loyal Mehrhoff, my Field Supervisor, will try to attend the meetings. I'll be attending the meeting as well as several biologists who would be working on future regulatory review.

aloha,

earl w. campbell, ph.d.

assistant field supervisor, invasive species & marianas terrestrial issues

interagency brown treesnake working group coordinator

usfws - pacific islands fish and wildlife office

300 ala moana blvd., room 3 - 122

p.o. box 50088,

honolulu, hawaii 96817

808.792.9414 office phone

808.226.6076 cell phone

earl.campbell@fws.gov e-mail

**USAF letter to NMFS Requesting Concurrence with Not Likely to
Adversely to Affect Determination,
October 3, 2012**



**DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE PEARL HARBOR – HICKAM, HAWAII**

03 OCT 2012

MEMORANDUM FOR NATIONAL MARINE FISHERIES SERVICE
MS. ALECIA VAN ATTA
ASSISTANT REGIONAL ADMINISTRATOR FOR PROTECTED
RESOURCES
NATIONAL MARINE FISHERIES SERVICE
PACIFIC ISLAND REGIONAL OFFICE
1601 KAPIOLANI BLVD, SUITE 1110
HONOLULU, HI 96814

FROM: AFCEC/Pacific Division/Environmental and Real Property Branch
25 E Street, Suite B-309
Joint Base Pearl Harbor-Hickam HI 96853-5420

SUBJECT: Request for Concurrence with Not Likely to Adversely Affect Threatened and
Endangered Marine Species Determination for Divert Activities and Exercises at the Saipan and
Tinian International Airports, Commonwealth of Northern Mariana Islands (CNMI)

1. The U.S. Air Force (USAF) respectfully requests your concurrence on the determination that developing facilities and implementing divert activities and exercises at the Saipan and Tinian International Airports, CNMI may affect, but are not likely to adversely affect the following marine species: green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricate*), leatherback sea turtle (*Dermochelys coricea*), olive ridley sea turtle (*Lepidochelys olivacea*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), sei whale (*Balaenoptera borealis*), and sperm whale (*Physeter macrocephalus*).

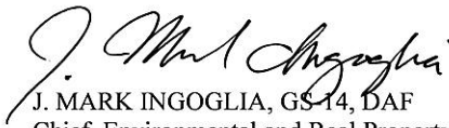
2. For this consultation, the USAF has integrated the requirements of the National Environmental Policy Act and Endangered Species Act so that all procedures run concurrently. As such, in accordance with 50 CFR Section 402.06(a), the USAF intends to have the Draft Environmental Impact Statement for Divert Activities and Exercises Guam and Commonwealth of the Northern Mariana Islands (referred to as "the EIS") stand as the Biological Assessment for threatened and endangered marine species that could be affected by the project. That document is available at: <http://pacafdivertmarianaseis.com/>.

The action area is considered all areas where threatened and endangered species could be directly and indirectly affected by the project, the potential effects of which include sedimentation and noise. For this project the action area is the nearshore waters of Saipan and Tinian and all areas that could be affected by noise (Attachment 1). Information on the proposed facilities to be developed and the actions proposed in Saipan and/or Tinian are in Section 2.3 of the EIS. Because of the scope of the project, it is not possible to conduct an onsite inspection of all areas affected. It is assumed that all ESA-listed species that could potentially occur in the action area would be seasonally present in the appropriate habitat, as described by the literature review. Sections 3.7.2 of the EIS provide a literature review of the status of the threatened and endangered species in the action area. Sections 4.7 and 5.3.7 of the EIS provide a detailed

analysis of the potential effects (including cumulative effects) of the project on threatened and endangered species. The justification for the determination that the project may affect, but is not likely to adversely affect marine threatened and endangered species is provided at Attachment 2.

Note that we have addressed comments on the Draft EIS provided by the National Marine Fisheries Service, Pacific Islands Regional Office, Habitat Conservation Division and Protected Resources Division on 17 and 18 July 2012, respectively, and incorporated changes into the EIS as appropriate. You can review USAF responses to all comments on the EIS in the comment-response matrix in Appendix G of the Final EIS when it is available later this year.

3. Should you have any questions or require additional information, please contact Mr. William Grannis (808)449-4049, or, william.grannis@us.af.mil.



J. MARK INGOGLIA, GS-14, DAF
Chief, Environmental and Real Property
Branch, Pacific Division
Facilities Engineering Center of Excellence
Air Force Civil Engineer Center

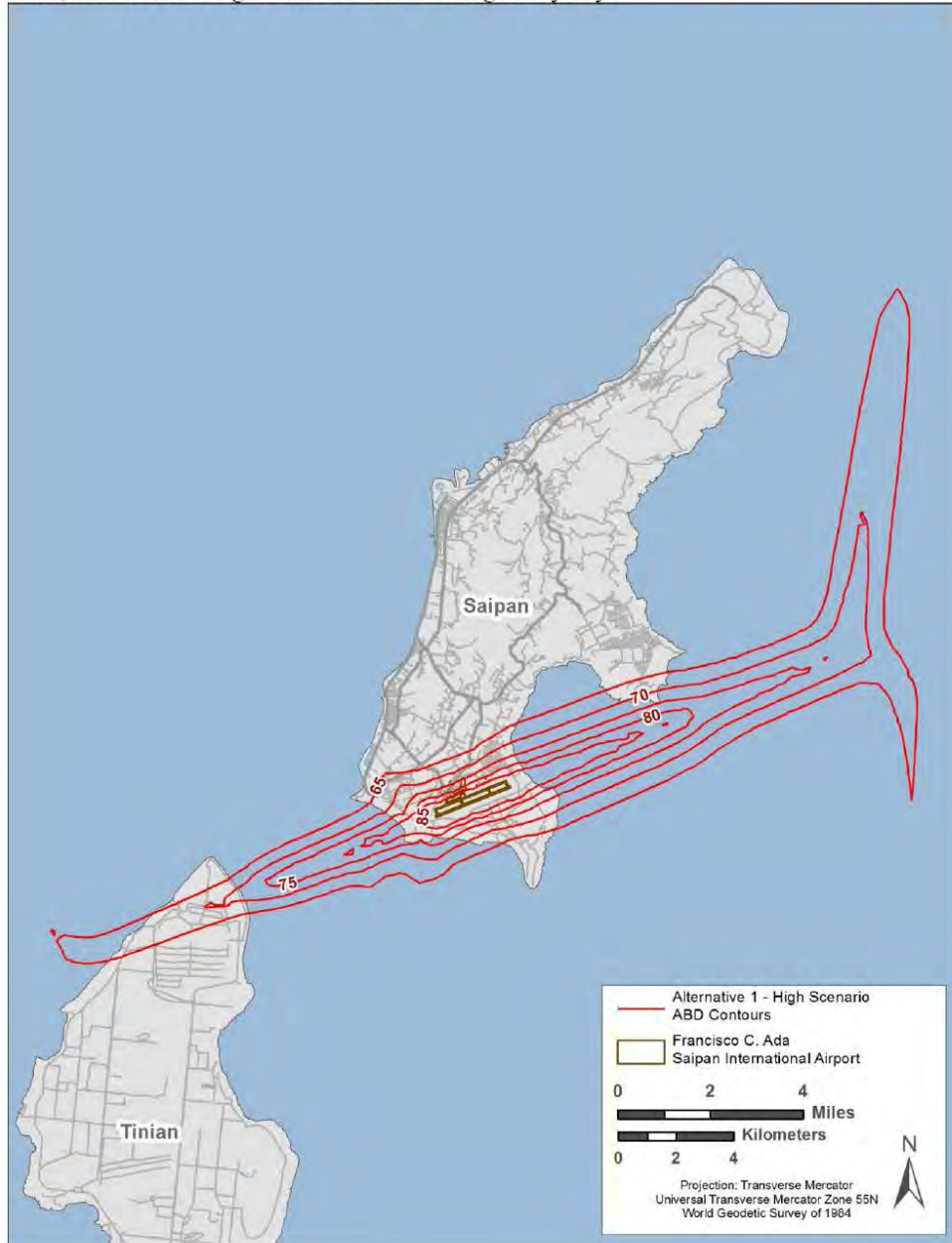
2 Attachments:

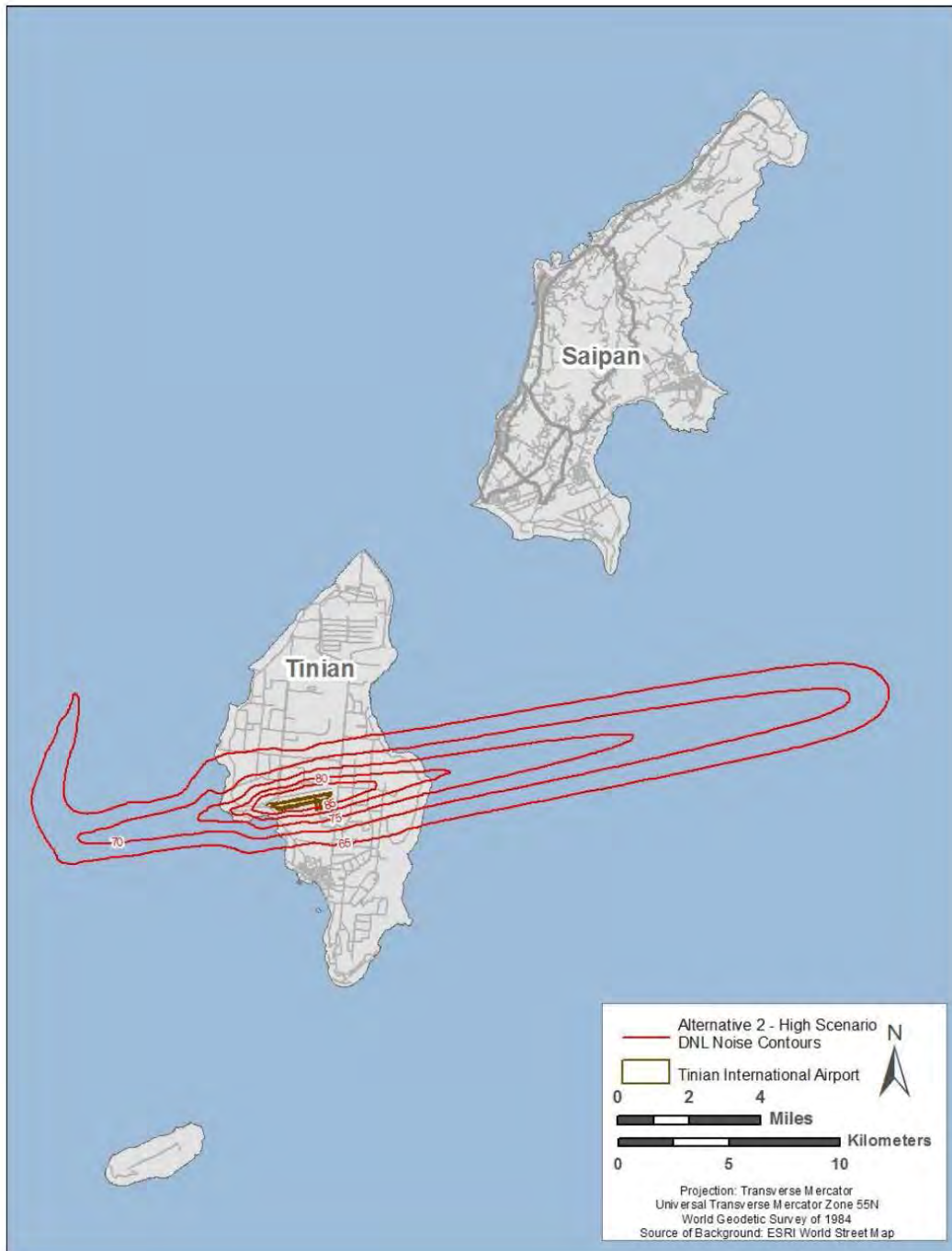
1. Figures Showing Action Areas on Saipan and Tinian
2. Effects of the Divert Activities and Exercises at the Saipan and Tinian International Airports, Commonwealth of Northern Mariana Islands (CNMI) on Marine Threatened and Endangered Species

cc:
HQ PACAF/A7P
AFCEE/TDX

Attachment 1: Action Area

The action area is the nearshore waters of Saipan and Tinian and all areas that could be affected by noise, based on the high estimate for an average busy day.





Attachment 2: Effects of the Divert Activities and Exercises at the Saipan and Tinian International Airports, Commonwealth of Northern Mariana Islands (CNMI) on Marine Threatened and Endangered Species

While threatened and endangered species of sea turtles and marine mammals occur in the project area, impacts of the project are expected to be insignificant. No construction will occur in the marine waters surrounding Saipan or Tinian and no other direct impacts from construction are expected. An erosion and sediment control plan (ESCP) will be developed per the Northern Mariana Islands Earthmoving and Erosion Control Regulations, and a non-commercial earthmoving permit will be obtained from the CNMI Department of Environmental Quality (DEQ). The ESCP will describe the best management practices (BMPs) to be implemented to prevent loss of soil during construction by storm water runoff or wind erosion and to prevent sedimentation of storm sewer or receiving water bodies. BMPs could include installing silt fencing and sediment traps, applying water to disturbed soil, and revegetating disturbed areas as soon as possible after the disturbance, as appropriate. Construction BMPs will be developed and implemented following Department of Defense policy for implementing guidelines provided in Federal and CNMI permitting processes and regulations (e.g., U.S. Environmental Protection Agency Construction General Permit, CNMI DEQ Earthmoving and Erosion Control Regulations and permit), Energy Independence and Security Act Section 438, the CNMI DEQ Stormwater Management Manual). In addition, storm water management and infiltration features will be designed in accordance with the CNMI DEQ Stormwater Management Manual. The implementation of erosion and sediment control measures during and after construction will minimize indirect effects of sedimentation on nearshore habitat and sea turtle nesting habitat, resulting in insignificant indirect effects on marine mammals and sea turtles.

The project is expected to result in elevated noise levels during take off and landings. The exposure of sea turtles and marine mammals to elevated noise levels would be brief (seconds) and would only occur over a period of no more than, at total, 8 weeks of the year. Most sound from aircraft is reflected off the surface of the water and only penetrates a small area of aircraft path over the water. The majority of the flights would occur during the day, while sea turtle nesting occurs at night. In addition to take-offs and landings during military exercises, military aircraft would also conduct training over the ocean within the MIRC. However, these training activities are covered under the Programmatic Biological Opinion on military readiness activities issued by the National Marine Fisheries Service in August 2011 to the U.S. Navy for training activities to be conducted in the Mariana Islands Range Complex. The training exercises are also covered under the NMFS 2010 Final Rule for *Taking and Importing Marine Mammals: Military Training Activities and Research, Development, Testing, and Evaluation Conducted Within the Mariana Islands Range Complex* (75 FR 45527-45556) and the Letter of Authorization, *Taking and Importing Marine Mammals: Taking Marine Mammals Incidental to Navy Training Exercises in the Mariana Islands Range Complex* (77 FR 46733-46739), which is effective until 3 August 2015.

Shipping is not expected to increase as a result of the project. A small but currently unknown number of marine shipments of materials will be required to support construction of facilities at one or both of the airports. The cumulative number of shipments for this project and all other activities in the CNMI during the construction period will be similar to or less than that experienced in the region over the last 10 years. Additionally, the Saipan and Tinian harbors currently receive fuel and it is likely that the same or similar tankers that currently supply those islands with fuel would do so for military exercises. Those tankers currently have excess capacity when delivering fuel to the islands; thus, few or no additional shipments will be required for this project. As such, shipping would not increase in the Saipan or Tinian harbors and surrounding region and an increased potential for sea turtle and marine mammal-vessel interactions or a fuel spill is not expected. In addition, the Saipan and Tinian harbors are capable of accepting the material

and fuel shipments required for this project and no in-water improvements to those harbors will be required.

The Project is not expected to result in an increase in lights viewed from the nearshore waters or beaches of Saipan or Tinian. While lighting would be expanded near existing facilities and parking lots at one or both of the airports, no new light would be placed between the airfields and the closest shorelines, which are at least 0.25 miles from the end of the runways. The approach lighting, which is closest to the shoreline, would be angled away from the beach and no forested vegetation would be removed from the ends of the runways. Additionally, both airports are on mesas above the beaches. Any additional lighting required at the fuel tanks to be installed adjacent to the port facilities would be located in developed areas with substantial existing lighting. As such, a cumulative increase in light pollution, which can disrupt sea turtle nesting, is not expected.

Because the components of the project would not have more than an insignificant impact threatened and endangered sea turtles and marine mammals, the USAF has determined that the Project may affect, but is not likely to adversely affect the following species.

- green sea turtle
- hawksbill sea turtle
- leatherback sea turtle
- olive ridley sea turtle
- blue whale
- fin whale
- humpback whale
- sei whale
- sperm whale

**NMFS Response Letter to USAF Stating Concurrence with the Not Likely to
Adversely to Affect Determination,
October 30, 2012**



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax: (808) 973-2941

OCT 30 2012

Mr. J. Mark Ingolia
Chief, Environmental and Real Property Branch
Department of the Air Force
Air Force Civil Engineer Center
25 E Street, Suite B-309
Joint Base Pearl Harbor-Hickam HI 96853-5420

Dear Mr. Ingolia:

This letter responds to your October 3, 2012 letter regarding the proposal by the US Air Force (USAF) to implement Divert Activities and Exercises at the Saipan and Tinian International Airports, in the Commonwealth of the Northern Mariana Islands (CNMI). The letter stated the USAF determination that the proposed project is not likely to adversely affect marine species under National Marine Fisheries Service (NMFS) jurisdiction, and requested our concurrence under section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §1531 *et seq.*), with that determination.

Proposed Action/Action Area: The action is described in your letter and in the June 2012 Draft Environmental Impact Statement (DEIS) for the proposed project (USAF 2012). In summary, the USAF proposes to improve the existing airports and associated infrastructure at Saipan and Tinian in order to support modern cargo, tanker, and fighter aircraft that may be diverted from their primary airfields or that may be operated from those fields to support periodic exercises, and humanitarian assistance and disaster relief operations. There would be no in-water work, and no expected increase in shipping to support construction or implementation of the proposed action. During the construction phase, upland construction and repair work would be completed to ensure that both airports can support expected operations. Runways and parking aprons would be extended and strengthened as needed, hangars and storage facilities for fuel and munitions would be improved or constructed. During the implementation phase, increased aircraft operations are expected to occur at these airports over a maximum cumulative total of 8 weeks annually. The action area for this project is estimated to be the in-water area in line with and directly beneath the approach and departure paths of the aircraft operating out of these fields, up to about 1 mile from the shore line.

Listed Species/Critical Habitat: The USAF has determined that following ESA-listed species under NMFS jurisdiction, may be affected by the proposed action: green sea turtles (*Chelonia mydas*), hawksbill sea turtles (*Eretmochelys imbricata*), leatherback sea turtles (*Dermochelys*



coriacea), olive ridley sea turtles (*Lepidochelys olivacea*), blue whales (*Balaenoptera musculus*), fin whales (*Balaenoptera physalus*), humpback whales (*Megaptera novaeangliae*), sei whales (*Balaenoptera borealis*), and sperm whales (*Physeter macrocephalus*). Detailed information about the biology, habitat, and conservation status of sea turtles and marine mammals can be found in their recovery plans and other sources at <http://www.nmfs.noaa.gov/pr/species/turtles/> and <http://www.nmfs.noaa.gov/pr/species/mammals/>.

Critical Habitat: There is no designated critical habitat for any listed marine species within or adjacent to the action area. Therefore, this project will have no effect on designated critical habitat.

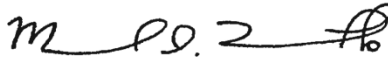
Analysis of Effects: In order to determine that a proposed action is not likely to adversely affect listed species, NMFS must find that the effects of the proposed action are expected to be insignificant, discountable, or beneficial as defined in the joint USFWS-NMFS Endangered Species Consultation Handbook: (1) insignificant effects relate to the size of the impact and should never reach the scale where take occurs; (2) discountable effects are those that are extremely unlikely to occur; and (3) beneficial effects are positive effects without any adverse effects (USFWS & NMFS 1998). This standard, as well as consideration of the probable duration, frequency, and severity of potential interactions, was applied during the analysis of effects of the proposed action on ESA-listed marine species, as is described in the USAF consultation request letter. In the letter, the USAF determined that related construction shipping would have no impact, and that exposure to elevated noise and increased lighting would result in insignificant effects on ESA-listed marine mammals and sea turtles. Based on the description of the proposed action and on the best information available to describe the behaviors and biological needs of the species considered here, NMFS agrees with the USAF that the proposed action would have insignificant impacts, or the likelihood of impacts would be discountable, for the marine species considered in this consultation.

Conclusion: NMFS concurs with your determination that implementation of Divert Activities and Exercises at the Saipan and Tinian International Airports, in the Commonwealth of the Northern Mariana Islands is not likely to adversely affect ESA-listed marine species or their designated critical habitat. Our concurrence is based on the finding that the effects of the proposed action are expected to be insignificant, discountable, or beneficial as defined in the joint USFWS-NMFS Endangered Species Consultation Handbook and summarized at the beginning of the Analysis of Effects section above. This concludes your consultation responsibilities under the ESA for species under NMFS's jurisdiction. However, this consultation focused solely on compliance with the ESA. Additional compliance review that may be required of NMFS for this action (such as assessing impacts on Essential Fish Habitat) would be completed by NMFS Habitat Conservation Division in separate communication, if applicable.

ESA Consultation must be reinitiated if: 1) a take occurs; 2) new information reveals effects of the action that may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the identified action is subsequently modified in a manner causing effects to listed species or designated critical habitat not previously considered; or 4) a new species is listed or critical habitat designated that may be affected by the identified action.

If you have further questions please contact Donald Hubner on my staff at (808) 944-2233. Thank you for working with NMFS to protect our nation's living marine resources.

Sincerely,

A handwritten signature in black ink, appearing to read "M. D. Tosatto", with a stylized flourish at the end.

Michael D. Tosatto
Regional Administrator

Cc: Patrice Ashfield, ESA Section 7 Program Coordinator, USFWS, Honolulu
Tony Montgomery, Coastal Conservation, USFWS, Honolulu

PIRO Reference No.: I-PI-12-1035-LVA

Literature Cited

Department of the Air Force (USAF). 2012. Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands. June 2012.

U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Consultation Handbook. Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act.
http://www.nmfs.noaa.gov/pr/pdfs/laws/esa_section7_handbook.pdf

**USAF Letter to USFWS Requesting Concurrence with the Not Likely to
Adversely to Affect Determination for Nesting Green and Hawksbill Sea Turtles,
July 8, 2015**



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

July 8, 2015

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE

Pacific Islands Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, HI 96850
ATTN: Ms. Kristi Young

FROM: AFCEC/CFPE
25 E ST, STE C-200
JBPH-H, HI 96853-5420

SUBJECT: Request for Concurrence that Developing Divert Capabilities and Conducting Divert Activities and Exercises on Tinian May Affect, but is Not Likely to Adversely Affect Nesting Green and Hawksbill Sea Turtles

1. The U.S. Air Force (USAF) is proposing to develop divert capabilities and conduct activities and exercises at one or more commercial airports in the Commonwealth of the Northern Mariana Islands (CNMI). In June 2013, the USAF and U.S. Fish and Wildlife Service (USFWS) completed formal consultation on a proposal to develop facilities and conduct divert activities and exercises at Saipan International Airport. The USAF is now considering modifying those plans to develop divert capabilities on Tinian, CNMI, and conduct some or all activities and exercises on that island.
2. To comply with Section 7(a)(2) of the Endangered Species Act, the USAF has analyzed the potential effects of the proposed action on species classified or proposed for listing as threatened or endangered. The attached memo summarizes the conclusions of that analysis that planned activities on Tinian, including at Tinian International Airport, may affect, but are not likely to adversely affect, nesting green and hawksbill sea turtles, and would not affect any other species classified as endangered, threatened, or proposed under the Endangered Species Act. There is no designated or proposed critical habitat on Tinian.
3. In accordance with 50 CFR 402.13, the USAF requests concurrence from the USFWS that developing divert capabilities and implementing divert activities and exercises on Tinian may affect, but is not likely to adversely affect, nesting green and hawksbill sea turtles.

4. If you have any questions or require additional information, please contact me at (808) 449-4049 or william.grannis@us.af.mil.



WILLIAM GRANNIS, GS-13, DAF
Environmental Program Manager
Facilities Engineering Center of Excellence
Air Force Civil Engineer Center

Attachment:

Assessment of Potential Effects to Threatened, Endangered, and Proposed Species from
Developing Divert Capabilities and Conducting Activities and Exercises on Tinian, 08 July,
2015

**Assessment of Potential Effects to Threatened, Endangered, and
Proposed Species from Developing Divert Capabilities and Conducting
Activities and Exercises on Tinian**

The U.S. Air Force (USAF) is proposing to improve the existing commercial airports at Saipan International Airport (GSN) and Tinian International Airport (TNI) and conduct from those airports periodic divert landings, joint military exercises, and humanitarian assistance and disaster relief efforts. A *Draft Environmental Impact Statement (EIS) for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands* (USAF 2012) has been prepared, and consultation as required by Section 7 of the Endangered Species Act (ESA) was completed for proposed activities on Saipan (USFWS 2013).

Since completion of the Draft EIS and Section 7 consultation for activities on Saipan, the USAF has evaluated public, agency, and stakeholder comments as part of the National Environmental Policy Act process and revised their proposed plans, resulting in modified versions of the alternatives presented in the Draft EIS. The USAF is now considering developing infrastructure to support parking of up to nine KC-135 or similar large-bodied aircraft at GSN; or up to 12 KC-135 or similar aircraft at TNI; or a combination of up to 12 KC-135 or similar aircraft between both airports (e.g., 7 to 10 aircraft at TNI and 2 to 5 aircraft at GSN). The USAF would typically exercise two to four of those KC-135 or similar aircraft, but not fighter aircraft, from one or both airfields for up to eight weeks per year.

This assessment summarizes the USAF conclusions about the potential effects that developing divert capabilities on TNI and conducting activities there would have on species that occur on Tinian that are classified under the ESA as endangered, threatened, or proposed.

Proposed Activities on Tinian

The USAF proposes to construct some or all of the following facilities and improvements at TNI: a parking apron; taxiways; cargo pad; maintenance facility; and a fuel storage, hydrant, and delivery system. As shown in **Figure 1**, these facilities would be developed on either the north or south side of the TNI runway, but not both. A bulk fuel storage facility also might be developed at the Tinian Seaport, and fuel would be transported by truck to the airport. If deemed feasible in the future after appropriate analysis is conducted and suitable agreements are developed with CNMI authorities, PACAF might develop a fuel pipeline from the seaport to the airport.

Areas at and surrounding TNI and the Tinian Seaport, where facilities would be developed and divert activities and exercises would occur, contain no original native vegetation and consist of developed land, mowed fields, and areas vegetated with mixed herbaceous scrub and second-growth introduced forests dominated by *Leucaena leucocephala* and *Casuarina equisetifolia* (Amidon 2009; USAF 2012, Section 4.6.2; NAVFAC 2015 b, Section 3.9.4.1). Native limestone forests on Tinian are restricted to areas along and below cliffs, and those forests do not occur within or near TNI or the seaport.

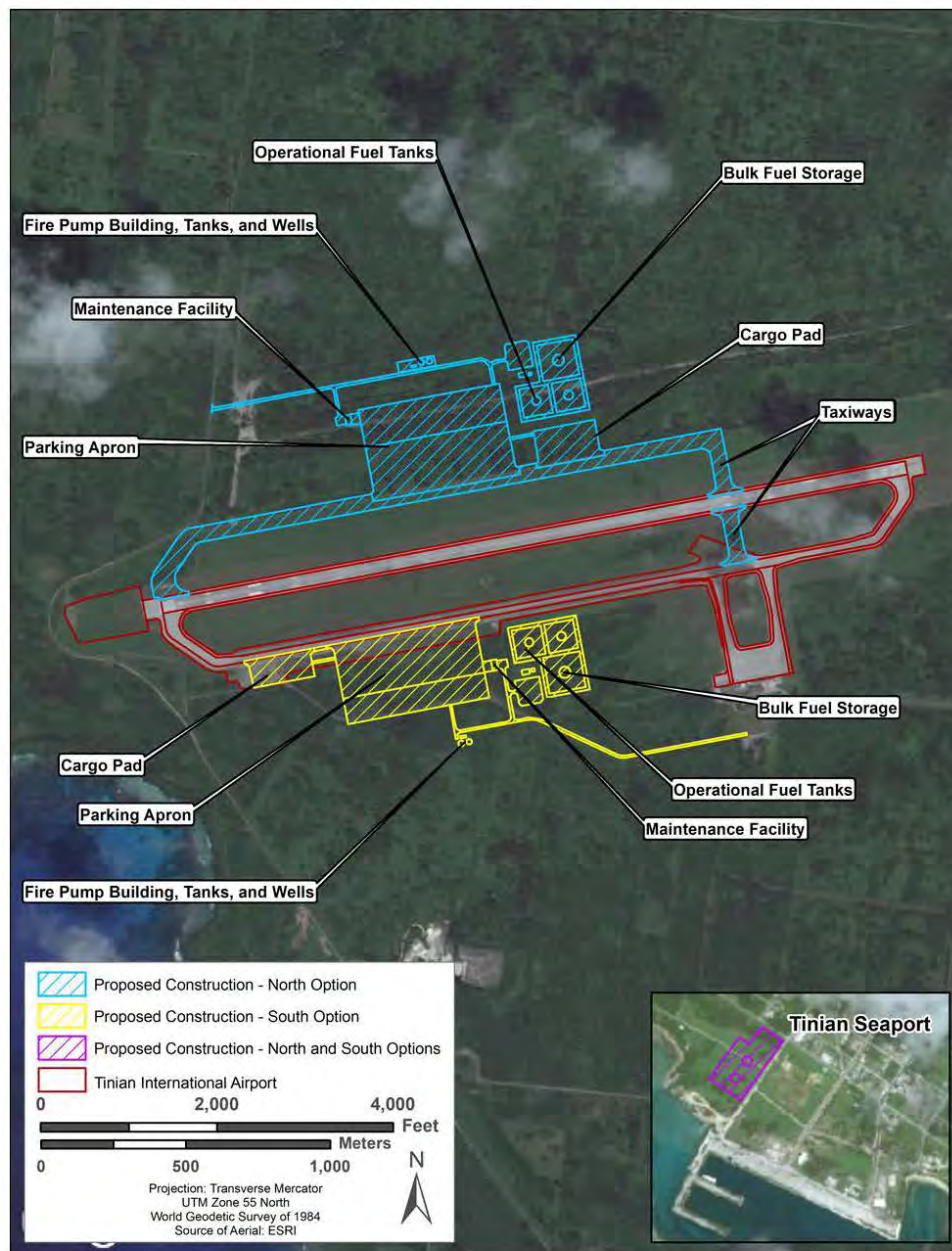


Figure 1. Location of Proposed Facilities at TNI.

The capacity for military aircraft at TNI would be up to 12 KC-135 tankers or similar wide-bodied aircraft. Typical exercises at that airfield would include two to four wide-bodied aircraft for up to eight weeks per year. Those aircraft would take off and land between 2 and 4 times per day (for a total of four to eight operations per day) and usually would fly five days per week for up to eight weeks per year. Aircraft would operate out of Saipan or Tinian, or a combination of both airfields. If both airfields were developed and used, about two-thirds of the aircraft operations would occur on Tinian. Temporary billeting would be required on both Saipan and Tinian for up to 265 personnel supporting aircraft operations and would be procured on the local economy.

The Draft EIS (USAF 2012) presents predicted sound levels from the operation of military aircraft on Saipan and Tinian during an “average busy day” for three proposed levels of operation. For the Tinian low operations scenario, the calculation was based on operation of 12 KC-135s from TNI for a total of 1,920 operations over eight weeks per year (five days per week), or about 48 KC-135 operations per average busy day, plus the predicted future level of commercial and private aircraft operations at that airport. For that scenario, the contour for 65 A-weighted decibels (dBA) is predicted to extend west past the end of the TNI runway to the coast (**Figure 2**).

Since publication of the Draft EIS, the USAF has adjusted the level of proposed activities and now plans to conduct about 720 or fewer KC-135 operations from TNI over eight weeks per year, or about 18 KC-135 operations on an average busy day. This is about one-third of the number of operations used to predict the sound levels on TNI in **Figure 2**. Thus, average sound levels would be substantially lower than those shown in **Figure 2**.

The methods and procedures that the USAF would implement to interdict and control brown tree snakes and other invasive species while conducting this project are the same as described in the *Biological Opinion for the U.S. Air Force’s Divert Activities and Exercises at GSN* (USFWS 2013, pp. 10-14). Implementation of that biosecurity program will prevent adverse effects to listed species, and other native wildlife, from introduction of non-native species.

Potential Effects to Threatened and Endangered Species

The U.S. Fish and Wildlife Service (2015) Environmental Conservation Online System lists six threatened or endangered species that occur or could occur on Tinian. Of these, the Mariana swiftlet (*Aerodramus bartschi*) and nightingale reed-warbler (*Acrocephalus luscini*) are no longer found on the island (USFWS 1998b, Cruz et al. 2008, USFWS 2010a). In addition, at least one nest of a hawksbill sea turtle (*Eretmochelys imbricata*) has been found on Tinian. The species analyzed here thus include the Mariana fruit bat (*Pteropus mariannus mariannus*), Mariana common moorhen (*Gallinula chloropus guami*), Micronesian megapode (*Megapodius laperouse*), and green (*Chelonia mydas*) and hawksbill turtles (**Table 1**). There is no designated or proposed critical habitat on Tinian.

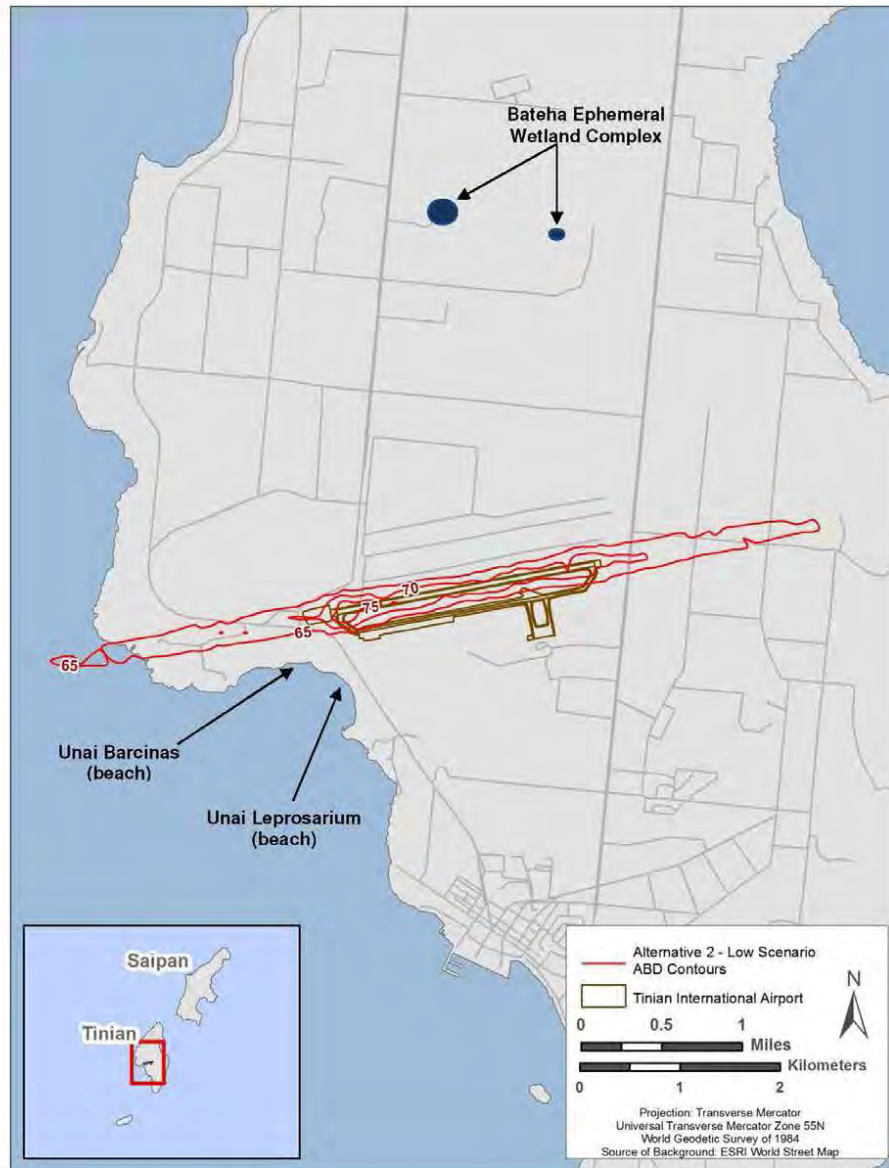


Figure 2. Noise Contours (dBA day-night level) during an average busy day at TNI for 48 KC-135 operations per day

Table 1. Threatened and Endangered Species in the Commonwealth of the Northern Marianas

Species	Scientific Name	Status	Occurrence on Tinian
Mariana fruit bat	<i>Pteropus mariannus mariannus</i>	T	Extirpated (USFWS 2014)
Mariana common moorhen	<i>Gallinula chloropus guami</i>	E	Occurs on Lake Hagoi and seasonal wetlands (Takano and Haig 2004)
Micronesian megapode	<i>Megapodius laperouse</i>	E	Rare or absent from Tinian (USFWS 1998a, 2010b)
Green sea turtle	<i>Chelonia mydas</i>	T	Nests on Tinian (Pultz et al. 1999; Kolinski et al. 2001)
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	E	At least one nesting effort documented on Tinian (NAVFAC 2015b)

Source: USFWS 2015; T = Threatened, E = Endangered

Mariana Fruit Bat. Mariana fruit bats have rarely been seen on Tinian within the past 30 years (Brooke 2009, USFWS 2009) and now appear to be extirpated from that island (USFWS 2014) or occur there only incidentally. Surveys in 1994 and 1995 did not observe Mariana fruit bats; however, two incidental sightings were reported from other locations on Tinian (Brooke 2009). No fruit bats were sighted on Tinian during surveys in 2000 (Cruz et al. 2000). In June 2005, approximately five Mariana fruit bats were seen in the cliff-line forest during a routine forest bird survey of the Maga bird transect (Brooke 2009). During February through August 2008, eight separate station counts were conducted at seven locations on Tinian; no fruit bats were observed during station counts or opportunistically (Brooke 2009). Although suitable fruit bat habitat does occur on Tinian, the continued observations of very few fruit bats, and the likelihood that individuals observed on Tinian are not residents, indicate that the Mariana fruit bat currently occurs only incidentally on Tinian. Mariana fruit bats, therefore, would not be affected by proposed activities on Tinian.

Micronesian megapode. Micronesian megapodes have been seen very infrequently on Tinian in recent years (USFWS 1998a, Kessler and Amidon 2009). None were detected during an extensive survey of potential habitat in 2008 (Kessler and Amidon 2009) and 2013 (NAVFAC 2014a), and they either have been extirpated from that island (USFWS 2010b) or occur there only incidentally. In the past, megapodes have been found on Tinian primarily within and near limestone forests in the Maga and Mt. Laso areas (USFWS 1998a, Kessler and Amidon 2009, NAVFAC 2013a). No construction or other project activities would occur in or near any potential habitat for this species, and sound levels in that potential habitat would not increase due to project construction or aircraft operations. Thus, Micronesian megapodes would not be affected by proposed activities on Tinian.

Mariana Common Moorhen. There are no wetlands within or near areas that would be disturbed for construction of facilities at TNI and no wetlands occur within one mile of the flight path to that airport (NAVFAC 2015a). The closest wetlands to TNI that are used by Mariana common moorhens are the Bateha (Figure 2) and Mahalang wetland complexes (NAVFAC

2014a), located about 1.5 to 3 miles north of TNI (**Figure 2**). Moorhens also occur on perennial Lake Hagoi, located about 4 miles north of TNI (Takano and Haig 2004, NAVFAC 2014a).

Average daily sound levels at wetlands on Tinian used by moorhens would not increase due to project construction or aircraft operations. **Figure 2** shows noise contours for an “average busy day”, based on the operation of 12 KC-135 aircraft taking off and landing twice per day, plus the cumulative effects of predicted commercial and private operations at TNI. The USAF now plans to operate 2 to 4 such aircraft from Tinian during most or all exercises, and average sound levels would be lower than shown in **Figure 2**. Peak noise levels at those wetlands also would not be high, as those aircraft will not fly over or near the wetlands during takeoffs and landings. Thus, Mariana common moorhens would not be affected by proposed activities on Tinian.

Green and Hawksbill Sea Turtles. Green and hawksbill turtles forage offshore of Tinian (Pultz et al. 1999; Kolinski et al. 2001; Maison et al. 2010) and there is a small population of green sea turtles that nest on most or all beaches on Tinian (Pultz et al. 1999, NAVFAC 2014b). One hawksbill nest was documented on the northeastern shore of Tinian (more than 2 miles from TNI) during monthly surveys of beaches conducted during 1999-2012 (NAVFAC 2015b, Table 3.9-3), and nesting by this species on Tinian is uncommon (Pultz et al. 1999; NAVFAC 2014b, 2015b).

No construction would occur on or near nesting beaches or marine habitat of these species. Department of Defense policies, compliant with Federal and CNMI regulations, will be followed to minimize erosion and sedimentation during construction and to manage storm water runoff after construction. By implementing those policies, adverse impacts of sedimentation and runoff would be negligible. Thus, sea turtle nesting and foraging habitat would not be adversely affected by development of facilities at TNI or the Tinian port or by implementation of divert activities or exercises, and the project would have no effect on sea turtles in the marine environment.

Average sound levels on the western coast of Tinian might be slightly higher directly under the flight path of TNI during divert operations and exercises (**Figure 2**). That section of the coast is steep and rocky and has no or very little beach habitat for nesting. The nearest beaches that are commonly used by green sea turtles for nesting are Unai Barcinas and Unai Leprosarium (DON 2010, Section 3.8.2.2.1), located 0.3 to 0.8 miles south to southwest of the TNI runway (**Figure 2**). Those beaches are outside of the 65 dBA DNL noise contours for an average busy day for operation of 12 KC-135 aircraft, and noise contours would be smaller for planned operation of 2 to 4 aircraft per day at TNI. However, during takeoffs and landings of military aircraft, sea turtles nesting on those beaches, and hatchling turtles moving from nests to the ocean, could be temporarily exposed to noise from military aircraft taking off and landing at TNI. Although aircraft with sound emissions similar to a KC-135 occasionally fly into and out of TNI, that level of sound would occur more frequently during exercises and operations than currently experienced. Exposure to elevated noise levels would be brief (seconds) and, with the exception of emergency divert landings and associated take-offs, usually would occur over a period of no more than about eight weeks of the year. Thus, any avoidance response or other change in behavior would be short-term and would not permanently displace sea turtles. Noise from take-offs and landing would not result in chronic stress because military aircraft operations would occur infrequently, sea turtles nest infrequently, and thus those turtles would not be

repeatedly exposed to low-altitude overflights. **Because effects would be insignificant and would not be sufficient to harm or harass sea turtles, developing divert capabilities and conducting divert activities and exercises at TNI may affect, but is not likely to adversely affect, green or hawksbill sea turtles in terrestrial environments.**

Potential Effects to Proposed Species

In October 2014, the USFWS proposed to list 23 plant and animal species from the Mariana Islands as threatened or endangered (79 FR 59364–59413). In response to a request from the USAF, the USFWS identified three of those species that could occur near TNI: a tree (*Heritiera longipetiolata*), an orchid (*Dendrobium guamense*), and the humped tree snail (*Partula gihba*) (letter from R. Rounds, USFWS, to W. Grannis, AFCEC, 22 January 2015).

***Heritiera longipetiolata*.** This tree is endemic to the Mariana Islands and historically was found in forests on Guam, Rota, Saipan, and Tinian. *H. longipetiolata* occurs in moist forests on limestone cliffs and in coastal sites with windy conditions (NAVFAC 2015b, Appendix L1: 79 FR 59378). On Tinian it has been found near Unai Masalok on the eastern coast, along the Lamanibot Bay escarpment on the northwestern coast, and along the southeastern coast between Puntan Barangka and Puntan Kastiyu. There were fewer than 10 individuals known on Tinian during or before 2013 (79 FR 59378). No stands of native forest where this species could occur would be disturbed. Development of divert capabilities at TNI therefore will not affect *H. longipetiolata*.

***Dendrobium guamense*.** This orchid is known from forests of Guam, Rota, Saipan, and Tinian. There is only one reported occurrence on Tinian (79 FR 59378), over 1.8 miles from TNI (NAVFAC 2014a). No stands of native forest where this species could occur will be disturbed. Development of divert capabilities at TNI therefore will not affect *D. guamense*.

Humped Tree Snail. The humped tree snail is endemic to the Mariana Islands and is found in cool, shaded forests. Live humped tree snails were found in native limestone forest adjacent to Lamanibot Bay on the northwestern coast of Tinian during extensive surveys of potential habitat on the island in 2013 (NAVFAC 2014a). That site is about 2.8 miles from TNI. Old shells, but no live snails, were found in other stands of native limestone forest, the closest of which was near the eastern shore of Tinian about 1.8 miles from TNI. No stands of native forest where this species could occur will be disturbed. Therefore, development of divert capabilities at TNI will not affect the humped tree snail.

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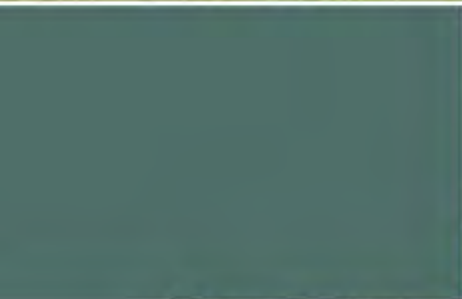
BIOLOGICAL ASSESSMENT

FOR

HEADQUARTERS PACIFIC AIR FORCES DIVERT ACTIVITIES AND EXERCISES IN SAIPAN



HEADQUARTERS, PACIFIC AIR FORCES
JOINT BASE PEARL HARBOR-HICKAM, HAWAII



ABBREVIATIONS AND ACRONYMS

ac	acre
AFB	Air Force Base
BA	Biological Assessment
BEAR	Basic Expeditionary Airfield Resources
cm	centimeter
CNMI	Commonwealth of the Northern Mariana Islands
dBA	A-weighted decibel
DNL	Day-Night Average Sound Level
DOD	Department of Defense
EIS	Environmental Impact Statement
ESA	Endangered Species Act
F.R.	Federal Register
GSN	Saipan International Airport (Federal Aviation Authority international airport code)
ha	hectare
lb	pound
kg	kilogram
km	kilometers
mi	miles
m	meters
PACAF	Pacific Air Forces
SUMB	Saipan Upland Mitigation Bank
USAF	U.S. Air Force
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service

**BIOLOGICAL ASSESSMENT
FOR
HEADQUARTERS PACIFIC AIR FORCES
DIVERT ACTIVITIES AND EXERCISES IN SAIPAN**

**HEADQUARTERS PACIFIC AIR FORCES (PACAF)
JOINT BASE PEARL HARBOR-HICKAM, HAWAI‘I 96853-5233**

AUGUST 2012

**BIOLOGICAL ASSESSMENT
FOR
PACIFIC AIR FORCE DIVERT ACTIVITIES AND EXERCISES
IN SAIPAN**

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1. Introduction

The U.S. Air Force (USAF) proposes to improve the Saipan International Airport (hereafter referred to by the airport code GSN) and associated infrastructure to support expanding mission requirements in the western Pacific. After completing an analysis as required by the National Environmental Policy Act, the USAF would consider developing and constructing facilities and infrastructure at GSN to support a combination of USAF and joint cargo, fighter, and tanker aircraft and associated support personnel for divert landings, periodic exercises, and humanitarian assistance and disaster relief.

The purpose of the proposed project is to establish divert activity capabilities to support and conduct current, emerging, and future exercises, while ensuring the capability to meet mission requirements in the event that access to Andersen Air Force Base (AFB) on Guam or other western Pacific locations is limited or denied. For example, the need for humanitarian assistance can arise suddenly and without warning, such as disaster response in Japan during the 2011 earthquake and tsunami. If this were to occur during scheduled training exercises at Andersen AFB, training or response efforts might be delayed or impeded. Furthermore, natural or man-made disasters could impact Andersen AFB's missions, requiring reliance on designed and designated divert airfield capabilities. Because of the proximity to forward-deployed forces in the western Pacific, the Marianas provides the best alternative for forward-deployed U.S. forces to train on U.S.-owned lands and to develop the proposed additional divert capabilities.

The USAF and other services must achieve the missions mandated by Title 10 United States Code (U.S.C.) in the event of a disruption of operational capabilities at Andersen AFB or other western Pacific locations. To more assuredly achieve this mission, an additional location within the Marianas Archipelago must have the capabilities to sustain USAF missions on a temporary basis. Facilities and activities at GSN would not replace the capabilities at Andersen AFB, but would be an additional location on U.S. territory in the western Pacific that can help ensure continued military readiness should access to Andersen AFB or other western Pacific locations be limited or denied, such as during a training event, humanitarian assistance efforts, or natural or man-made disasters. The need for this project is derived from the following related operational requirements that are necessary to successfully support the mission of the Pacific Air Forces (PACAF):

- Ensure airfield accessibility if access to Andersen AFB or other western Pacific airfields is limited or denied
- Provide for contingency operations to include humanitarian assistance and disaster relief efforts
- Accommodate future increases in operational tempo and associated training
- Achieve and sustain readiness.

This project would develop critical enhancements at GSN to increase operational and divert capabilities needed by the USAF, especially in humanitarian assistance and disaster relief and joint exercises. These enhancements are required for the USAF to maintain a state of military readiness commensurate with the national defense and humanitarian assistance and disaster relief missions. This project focuses on the development and improvement of existing divert or contingency airfield capabilities and does not include the permanent deployment or "beddown" of forces in the Marianas. Hence, construction activities for the project are focused on improvements needed at GSN to increase USAF capabilities to respond to emergent needs, to ensure forces that are diverted from Andersen AFB or other western Pacific locations can continue to operate, and to train to these capabilities.

In summary, the proposed project is needed because there is not an existing divert or contingency airfield on U.S. territory in the western Pacific that is *designed and designated* to provide strategic operational and exercise capabilities for U.S. forces when needed and humanitarian assistance and disaster relief in times of natural or man-made disasters. Implementation of the project would support the PACAF mission to provide ready air and space power to promote U.S. interests in the Asia-Pacific region during peacetime, through crisis, and in war. For additional information on the purpose and need of the project, see the *Environmental Impact Statement (EIS) for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands* (USAF 2012).

1.1 Scope of Document and Project

The purpose of this Biological Assessment (BA) is to assess the potential effects of establishing divert capabilities and associated operations at GSN on terrestrial species listed as endangered or threatened under the Endangered Species Act (ESA) and their designated critical habitat. This BA addresses the potential impacts of improving facilities at GSN. It also addresses implementation of divert activities and exercises at the airport, including ground movements and immediate approaches and departures of aircraft at the airport during unit-level training and exercises. It does not, however, address actual air warfare and air logistics training (i.e., above 3,050 meters [m] (10,000 feet)) that would occur in the Mariana Islands Range Complex or elsewhere by aircraft temporarily operating from GSN. Those air warfare and training activities are described in the *Mariana Islands Range Complex Environmental Impact Statement/ Overseas Environmental Impact Statement, May 2010* (DON 2010), and impacts on ESA-listed species from those activities have been addressed in Biological Opinions developed by the U.S. Fish and Wildlife Service (USFWS) (USFWS 2010a) and National Marine Fisheries Service (NMFS 2011).

The USAF has requested that this project be appended to the *Programmatic Biological Opinion Regarding the Reestablishment, Management, and Use of the Saipan Upland Mitigation Bank* (SUMB), Saipan (USFWS 2008a). This BA therefore considers and addresses the impact analyses methodologies and mitigation measures described in the SUMB Biological Opinion.

1.2 Protected Species Addressed

There are 16 species listed as threatened or endangered that occur or have occurred in the Mariana Islands archipelago (USFWS 2011a). Based on conversations with USFWS staff during informal consultation (see **Section 1.3**), the USAF has determined that six of those species could occur in terrestrial environments on Saipan: threatened Mariana fruit bat (*Pteropus mariannus mariannus*), endangered nightingale reed-warbler (*Acrocephalus luscini*), endangered Mariana swiftlet (*Aerodramus bartschi*), endangered Mariana common moorhen (*Gallinula chloropus guami*), endangered Micronesian megapode (*Megapodius laperouse*), and threatened green sea turtle (*Chelonia mydas*).

The Mariana fruit bat and Micronesian megapode are restricted to forested habitats, primarily on the northern part of the island (USFWS 1998a, 2009a). Land at and surrounding GSN where facilities would be developed and divert activities and exercises would occur has been cleared of native vegetation or is vegetated with second-growth forests dominated by tangantangan (*Leucaena leucocephala*). Due to lack of suitable habitat within the action area, and based on discussions with the USFWS in January 2012, systematic surveys for these species were not conducted for this project. However, during surveys of the action area conducted in 2012 for other rare species and to characterize avian populations (MES 2012), observers were vigilant for megapodes and flying and roosting fruit bats. Even though observation times of those surveys were favorable for detection of these species, no fruit bats or megapodes were observed or heard during any of the surveys. In addition, no optimal habitat was found in the areas surveyed of sufficient quality or quantity to support these species. Because these species are rare or do not occur on

the southern part of Saipan and there is no habitat for them within the action area, the USAF concludes that developing divert capabilities and conducting divert activities and exercises at GSN will have no affect on the Mariana fruit bat and Micronesian megapode, and those species are not discussed further in this BA.

In addition to the threatened green sea turtle, the endangered hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), and olive Ridley turtle (*Lepidochelys olivacea*) can occur in the ocean surrounding Saipan. The USAF will consult with the National Oceanic and Atmospheric Administration Fisheries Service as required by the ESA to address impacts of their proposed project on those species in the marine environment, and those species are not addressed in this BA.

Six species classified as candidates for listing under the ESA occur in the Commonwealth of the Northern Mariana Islands (CNMI) (76 Federal Register [FR] 66370). Two of those species, the Mariana eight-spot butterfly (*Hypolimnas octocula mariannensis*) and humped tree snail (*Partula gibba*) might occur on Saipan. Although host plants used by the Mariana eight-spot butterfly (*Procris pedunculata* and *Elatostema calcareum*) occur on Saipan, this butterfly has not been detected there in recent years and it could be extirpated from the island (USFWS 2011b). The humped tree snail is known to occur on Saipan, but its preferred habitat of cool, shaded forests or other areas with high humidity (USFWS 2011c) does not occur within the upland areas that might be developed for the USAF's proposed project (MES 2012). Although a few scattered individuals of host plant species (e.g., papaya [*Carica papaya*], coconut palm [*Cocos nucifera*], hodda [*Ficus tinctoria*], and sumac [*Aidia cochichinensis*]) were found within the project survey areas during surveys conducted on and around GSN in 2012, Mariana eight-spot butterflies and humped tree snails were not detected and the host plants do not appear to be of sufficient abundance or have the characteristics necessary to support a population of either candidate species. It is therefore unlikely that the proposed project would have any adverse effect on these candidate species and they are not further discussed in this BA.

1.3 Consultation History

The following interactions between the USAF and USFWS related to this project have occurred.

- **July 14, 2011** – USAF and USFWS staff met in the USFWS office in Honolulu, Hawaii, to introduce the project, obtain a list of protected species that might occur in the project area, and discuss the consultation process.
- **July 15, 2011** – Staff from HDR, a contractor working for PACAF, requested of the USFWS information about the nightingale reed-warbler survey protocol and about the SUMB. The requested information was sent by USFWS staff on July 18.
- **September 7, 2011** – Staff from HDR requested copies of Biological Opinions for the SUMB and for activities at and near GSN. Those Biological Opinions were sent by USFWS staff on September 23.
- **January 5, 2012** – USAF and USFWS staff met in the USFWS office in Honolulu, Hawaii, to discuss plans for nightingale reed-warbler surveys and potential impacts on that and other species.
- **May 31, 2012** – USAF and USFWS staff met in the USFWS office in Honolulu, Hawaii, to discuss the results of surveys conducted for threatened and endangered species and the process for completing the consultation.
- **July 6, 2012** – USAF and USFWS staff met in the USFWS office in Honolulu, Hawaii, to discuss USFWS comments on the Draft EIS for this project.

- 1 • **July 19, 2012** – USAF submitted a draft of this BA to the USFWS for review.
- 2 • **July 27, 2012** – USAF and USFWS staff had a phone conversation to discuss USFWS comments
- 3 on the draft BA.
- 4 • **August 8, 2012** – USFWS provided by email additional comments on the draft BA.

2. Project Description and Action Area

This section describes the USAF plan to develop airfield operational capabilities at GSN, exercise divert and humanitarian assistance and disaster relief airlift staging capabilities, conduct joint military exercises, implement fueling and fuel storage, and develop billeting and other personnel requirements. This section also identifies the action area that could be directly or indirectly affected by developing divert capabilities and conducting divert activities and exercises on Saipan, and the measures that the USAF would take to avoid and minimize impacts on threatened and endangered species. Additional details about this proposed project are in the associated EIS (USAF 2012).

The USAF proposes to improve facilities and infrastructure at GSN to support a combination of USAF and joint cargo, fighter, and tanker aircraft and associated support personnel for divert landings, periodic exercises, and humanitarian assistance and disaster relief. Divert landings and humanitarian assistance and disaster relief would occur at the airport as required. The expanded facilities would be used on an as-needed basis and would not be used as a permanent full-time beddown or installation location.

GSN would be improved to an airfield design that can accommodate up to 12 KC-135 or similar aircraft. This airfield design would also accommodate other military cargo and tactical aircraft. Because the space required to accommodate large heavy lift cargo aircraft is approximately twice as large as what is required to support fighter and tactical aircraft, it is assumed that up to 24 fighter or tactical aircraft could be diverted to or exercised from GSN simultaneously, or a mix of fighter, tactical, and heavy lift cargo aircraft (e.g., 10 large cargo aircraft and 4 fighters) aircraft could be diverted to or exercised from GSN simultaneously as long as the mix does not exceed airfield design capabilities. The number of temporary support personnel accompanying the aircraft would not exceed 700, regardless of what mix of aircraft is diverted to or exercised from GSN.

2.1 Construction

To reduce strain on existing airport and commercial facilities and infrastructure, the USAF would construct and expand new facilities, rather than fully utilize existing facilities during the construction and implementation phases. These new facilities could include an expanded runway; associated pavement markings and lighting; parking aprons; temporary munitions storage area; hazardous cargo pad; an arm/disarm pad; aircraft hangar; maintenance facility; jet fuel receiving, storage, and distribution system; and navigational aids. Temporary billeting facilities could also be developed at the airport. The total size of these facilities, if they are all constructed, would be about 26 hectares (ha) (63 acres [ac]); 24 ha (59 ac) would be at GSN and 2 ha (4 ac) would be at the Port of Saipan (see **Table 2-1**).

The projected timeline for the completion of most or all construction is 24 to 36 months. However, the timing of construction would depend on the completion of a Safety Management Plan and agreement by the Federal Aviation Administration, Commonwealth Ports Authority, and commercial carriers.

Facilities at GSN and the Port of Saipan would be constructed in phases. The USAF currently plans to construct the bulk fuels tank, maintenance facility, and hazardous cargo pad in the first phase of construction, one or both parking aprons and the remainder of the airport fuel system in the second phase, and the fuel storage tanks at the Port of Saipan in a third phase. Depending on mission needs and Congressional authorization and appropriations, some project elements might not be completed on Saipan, or a smaller facility than listed in **Table 2-1** could be developed. For example, the USAF might decide not to extend one or both ends of the GSN runway, or might decide not to construct the entire parking apron. This BA addresses all project elements listed in **Table 2-1**; however, as described further in **Section 2.4**, the USAF would mitigate impacts separately for each project phase as projects are authorized and appropriated by Congress.

Table 2-1. Project Elements that Might be Constructed on Saipan

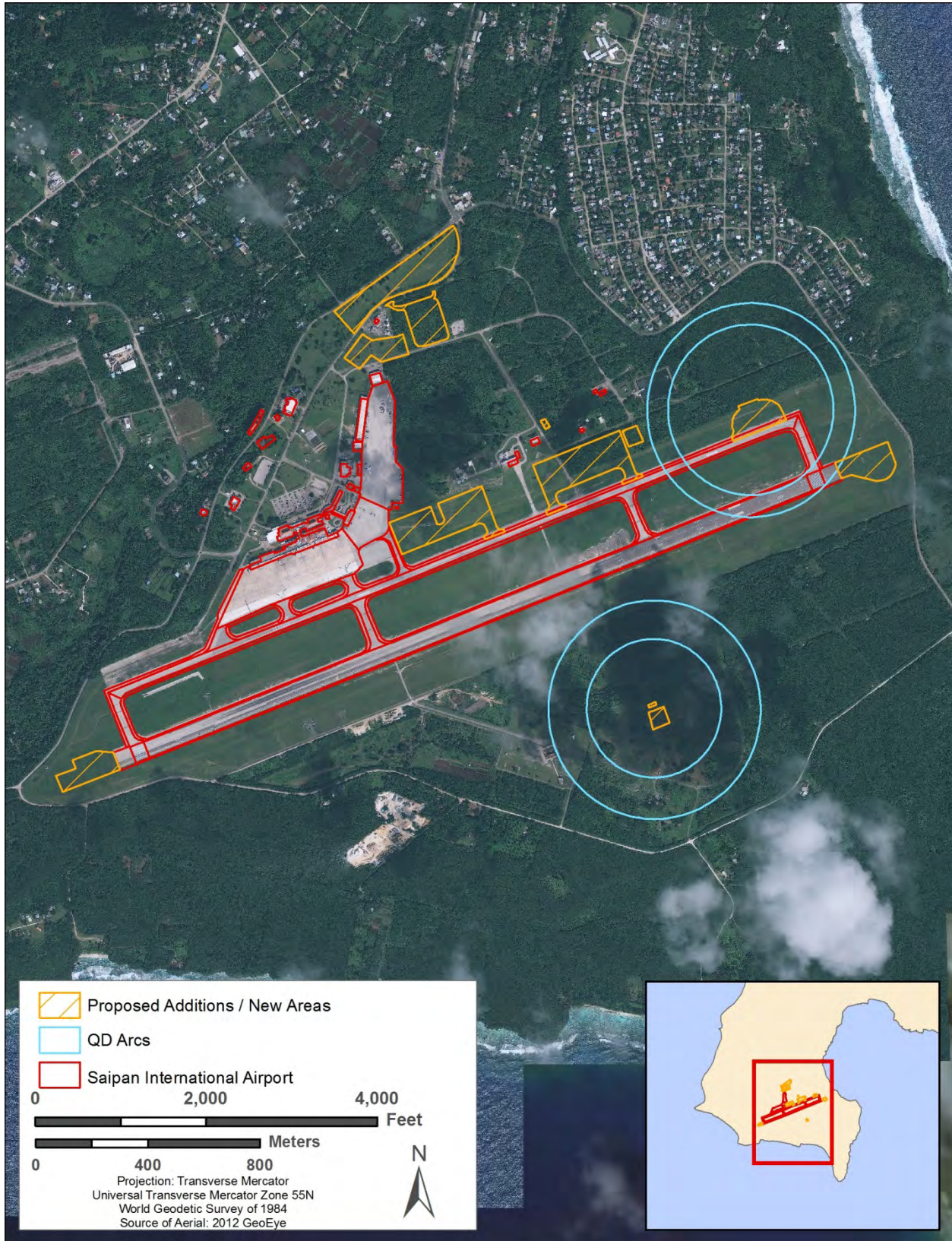
Project Element	Approximate Size hectares (acres)
Maximum Runway Extension	3.6 (8.9)
Parking Apron	8.9 (22.1)
Temporary Munitions Storage Area	0.4 (1.0)
Hazardous Cargo Pad and Arm/Disarm Pad	1.8 (4.5)
Aircraft Hangar	0.3 (0.8)
Maintenance Facility	0.04 (0.1)
Fuel Storage and Fueling Infrastructure - GSN	3.6 (8.9)
Fuel Receipt and Storage – Port of Saipan	1.8 (4.4)
Billeting	5.0 (12.3)
Total	25.5 (63.0)

Runway. The runway at GSN is 2,650 m (8,700 feet) long by 45 m (150 feet) wide and has two 8-m- (25-foot-) wide paved shoulders. To support operational requirements of the KC-135 and other cargo aircraft, the USAF could extend the runway to a total length of 2,850 or 3,070 m (9,350 or 10,075 feet). If the runway were to be extended to the maximum length, it would be lengthened by 220 m (725 feet) to the west and 200 m (650 feet) to the east. If extended to 2,850 m (9,350 feet), the eastern end of the runway would be lengthened by 200 m (650 feet); the western end would not be altered. For both options, the width of the runway would remain 45 m (150 feet) with 8-m- (25-foot-) wide paved shoulders, and would also include turnarounds. **Figure 2-1** shows a schematic site plan of the proposed airport additions, including the possible eastern and western runway extensions. The runway extensions would only be used for emergency take-offs and landings and would be striped (and marked) as “unusable” by all commercial (on a daily basis) and military aircraft (during exercises).

The runway extension(s) would have a 31-centimeter (cm) (12-inch) base and 36 cm (14 inches) of concrete. A substantial amount of structural fill would be required to extend the runway; that fill would be obtained from existing quarries or borrow pits on the island located approximately 6 kilometers (km) (4 miles [mi]) from the airfield. If existing quarries cannot provide all material necessary to expand the runway and construct other planned facilities, the quarry operator or USAF, as appropriate, would consult separately on the potential impacts on threatened or endangered species of expanding a quarry or opening and operating a new quarry.

Concrete needed to construct the runway and other elements would be mixed at existing locally contracted commercial facilities that operate concrete batch plants. Dry cement would be barged to Saipan using the supplier’s existing supply chain, and then trucked from the Port of Saipan to the commercial concrete facility where the concrete would be mixed. Mixed concrete would be trucked from the commercial concrete batch facility to GSN.

Pavement Markings, Lighting, and Navigational Aids. To accommodate a runway extension, the existing medium-intensity approach lighting system with runway alignment indicator lights would be replaced with a 730 m (2,400-foot) approach lighting system with sequenced flashing lights on the west end of the runway. The distance-remaining markers, runway end identifier lights, and precision approach



path indicator systems also could be replaced and the middle marker and nondirectional beacon could need to be relocated. In addition, the glideslope and localizer would be relocated if the threshold locations are changed. The existing runway edge lights would be extended along the length of the proposed runway addition. All proposed lighting system improvements are in accordance with Unified Facilities Criteria 3-535-01, *Visual Air Navigation Facilities*.

Parking Aprons. To meet operational requirements, new ramp areas and parking aprons would be constructed adjacent to the GSN taxiway to accommodate up to 12 KC-135 aircraft. To avoid existing cultural resources, two separate parking aprons would be constructed adjacent to each other on the northern side of the existing taxiway (see **Figures 2-1** and **2-2**), with up to six KC-135 parking spots on each apron. The design strength would require a 31-cm (12-inch) base with 36 cm (14 inches) of concrete for the entire ramp expansion. Lights would be installed on the northeastern boundary to provide adequate security and operational lighting for night operations. Airfield lighting systems would include only the lighting facilities required to support the aircraft operational areas. Controls and equipment vault facilities would be included on the parking aprons as necessary to provide a complete and usable system.

Temporary Munitions Storage Area. A standard 7-Bar earth-covered magazine would be constructed to store munitions removed from diverted aircraft temporarily until the aircraft can return to its place of origin or planned destination. That magazine would be located approximately 535 m (1,750 feet) south of the centerline of the runway and 355 m (1,160 feet) east of the GSN Aircraft Rescue Training Area (see **Figure 2-3**). To adhere to minimum safety criteria and standoff distances in compliance with Department of Defense (DOD) Manual 6055.09-M, *Ammunition and Explosives Safety Standards*, and based on the 534-m (1,750-foot) distance between the magazine location and the nearest inhabited building (considered to be the runway centerline), the maximum quantity of munitions that could be stored in the magazine would be approximately 37,650 kilograms (kg) (83,000 pounds [lbs]) net explosive weight.

A multi-cube magazine also would be constructed as part of the temporary munitions storage area. The earth-covered magazine would be approximately 29 m (95 feet) by 11 m (35 feet) and the multi-cube magazine would be adjacent to the earth-covered magazine with a size of approximately 63 m (205 feet) by 63 m (207 feet). The existing road infrastructure that connects the aircraft rescue training area to the runway would be used as the primary munitions hauling route.

Hazardous Cargo and Arm/Disarm Pad. A hazardous cargo aircraft parking pad would be constructed and used to handle munitions and other hazardous cargo from diverted aircraft safely, and would also be used as an arm/disarm pad. To meet operational requirements and to adhere to minimum safety criteria and standoff distances in compliance with DOD Manual 6055.09-M, *DOD Ammunition and Explosives Safety Standards*, that pad would be located at the eastern end of the taxiway (see **Figure 2-4**) and the maximum net explosive weight stored there would not exceed 4,990 kilograms (11,000 pounds). The pad would be approximately 205 m (670 feet) by 113 m (370 feet) and would have a flow-through horseshoe design to allow aircraft to taxi directly onto and off of the hazardous cargo pad from the taxiway.

Aircraft Hangar. An aircraft hangar would be constructed adjacent to the parking ramp aprons (see **Figure 2-2**). This closed structure would be approximately 55 m (180 feet) by 60 m (195 feet), and would be located adjacent to the parking ramp and apron.

Maintenance Facility. A 1,830-square-m (6,000-square-foot) maintenance facility would be constructed north of the apron near an existing, pre-engineered building last used for commercial skydiving (see **Figure 2-2**). That facility would be used to support maintenance of aircraft and aircraft spares management. The facility would also be used to store pre-positioned equipment and materials needed for maintenance of aircraft used in exercises and humanitarian assistance and disaster relief efforts, including aerospace ground equipment and vehicles.

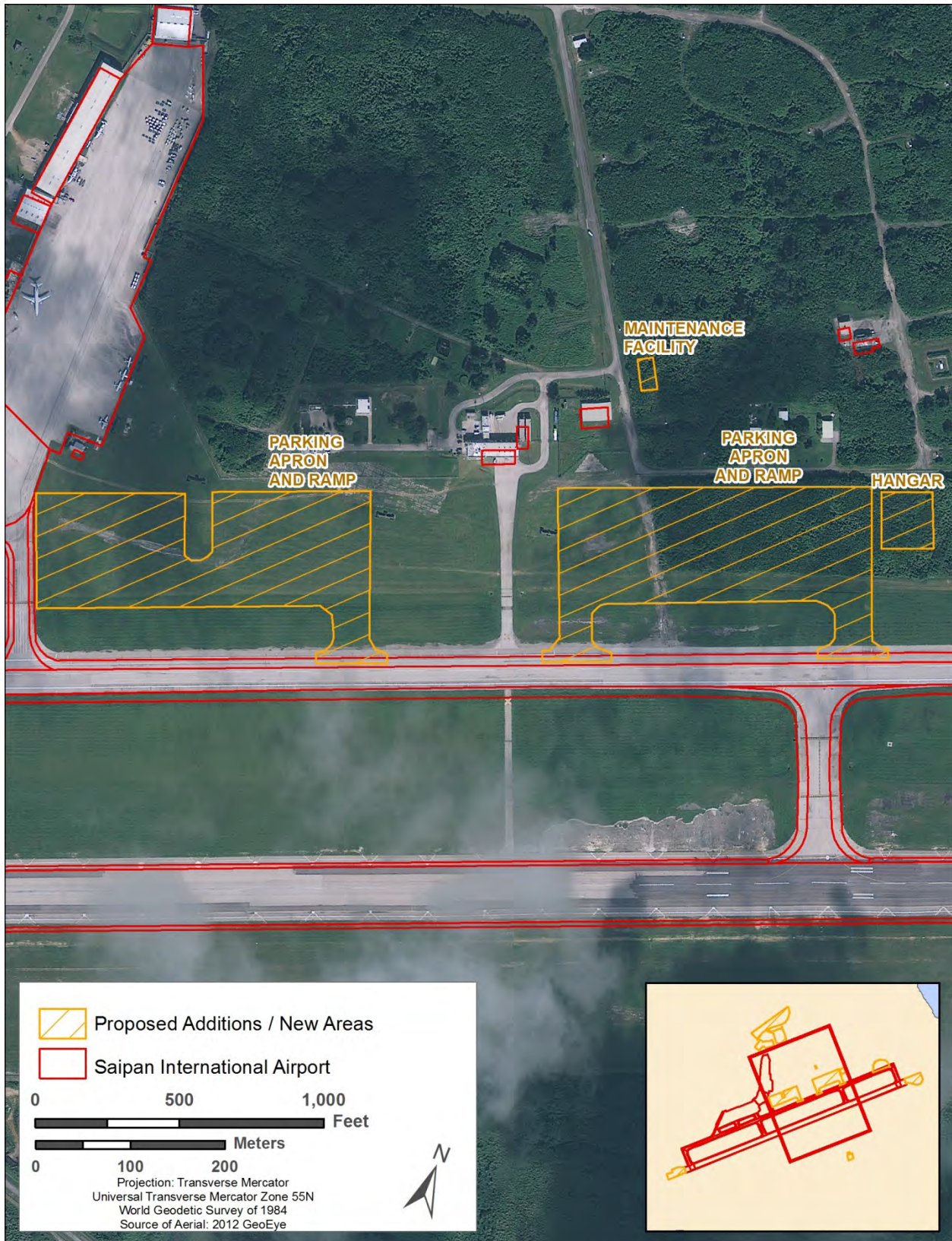


Figure 2-2. Proposed Parking Apron, Hangar, and Maintenance Facility

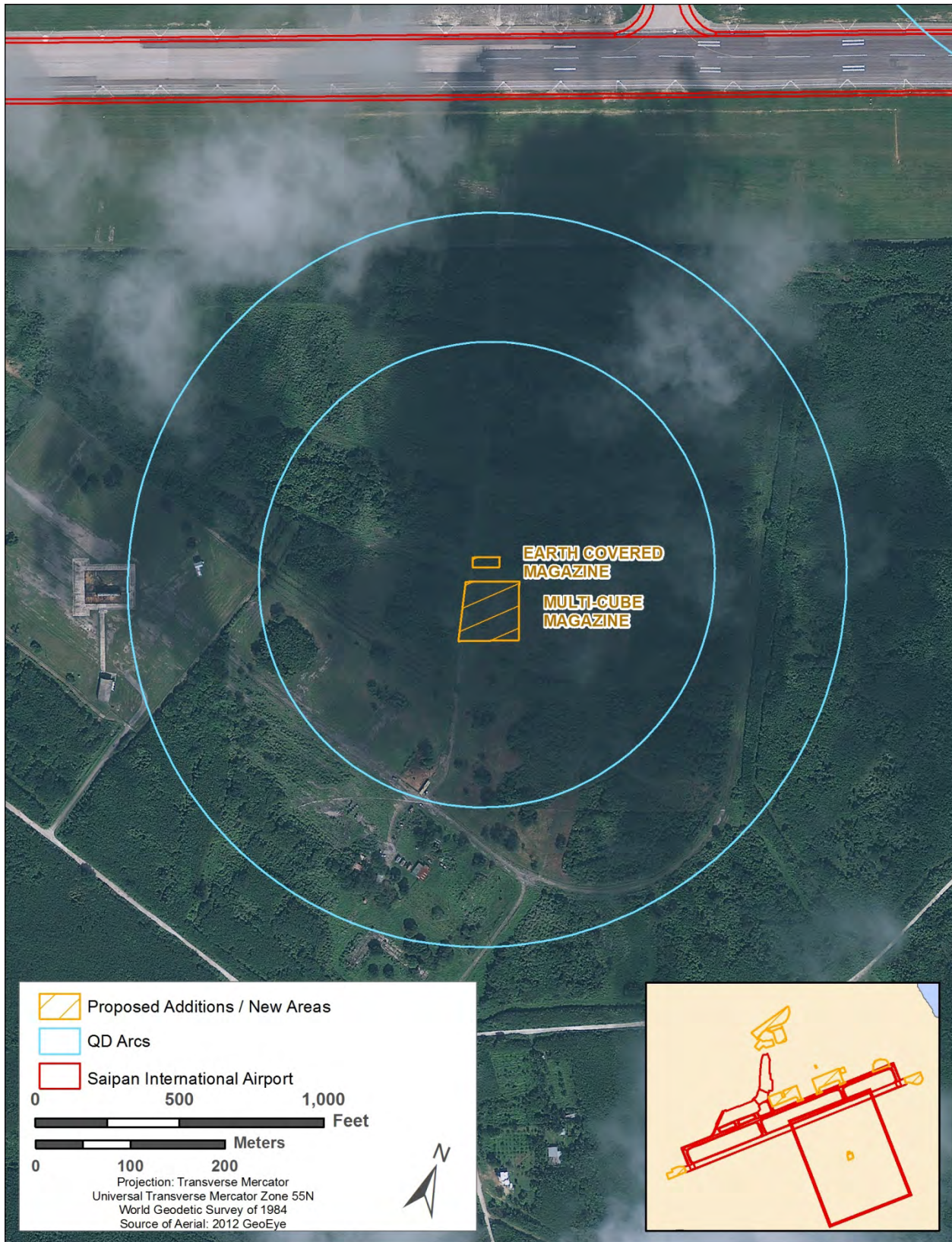


Figure 2-3. Proposed Temporary Munitions Storage Area

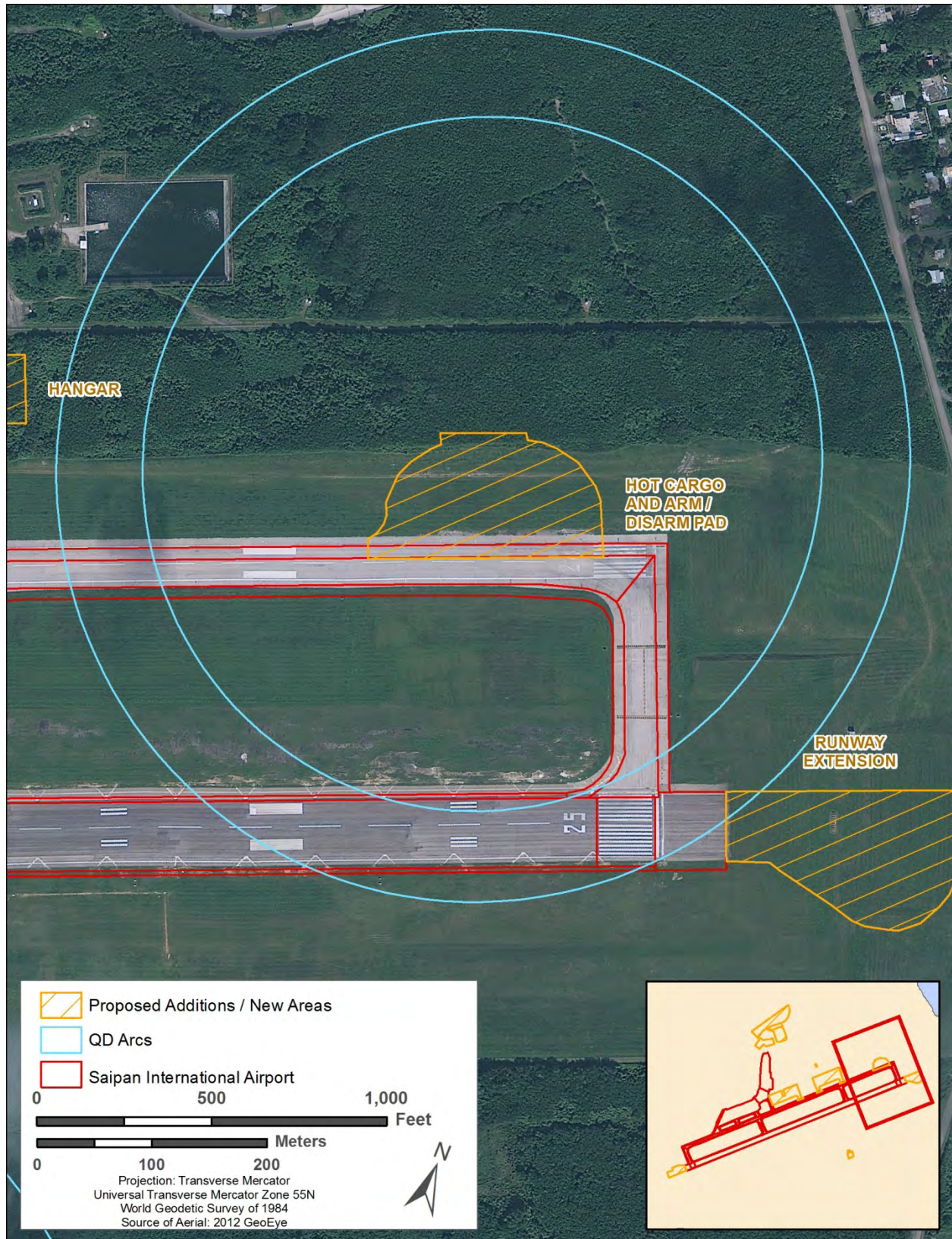


Figure 2-4. Proposed Hazardous Cargo Pad and Arm/Disarm Pad

Jet Fuel Receiving, Storage, and Distribution. The USAF plans to maintain a 30-day supply of jet fuel on Saipan. To maintain and deliver that amount of fuel, one DOD Standard Design 4.2-million-gallon, cut-and-cover or aboveground bulk storage tank and associated pumps, valves, filtration systems, emergency generator, and concrete work would be constructed to the north of existing airport facilities, and two 0.42-million-gallon, cut-and-cover or aboveground operating tanks also would be constructed near the bulk storage tank (see **Figure 2-5**). A transfer pumphouse, pumps, piping, filtration, valves, and a pantograph/hydrant servicing vehicle test station also would be installed near the storage tanks to support fuel storage and delivery.

Refueling capability for military aircraft would be provided at GSN using a combination of current capability and installing a standard DOD-designed 9,085 liters (2,400 gallons) per minute Type III hydrant refueling system adjacent to the new ramp. This refueling system would also tie into the existing commercial airport fuel supply line (with minimum disruption to commercial aircraft operations during construction periods) and the proposed parking apron expansion. One refueling hydrant would be installed at each of the planned KC-135 parking spots on the apron.

To support delivery of jet fuel on Saipan, two aboveground 2.1-million-gallon tanks with pump, filter, issue fill stand with two positions, and associated piping would be constructed near the seaport on federally leased land. The location is adjacent to the U.S. Army Reserve Center between Beach Road and Middle Road, inland from the existing commercial fuel storage area (see **Figure 2-6**). Existing infrastructure at the port would be used to offload fuel from vessels.

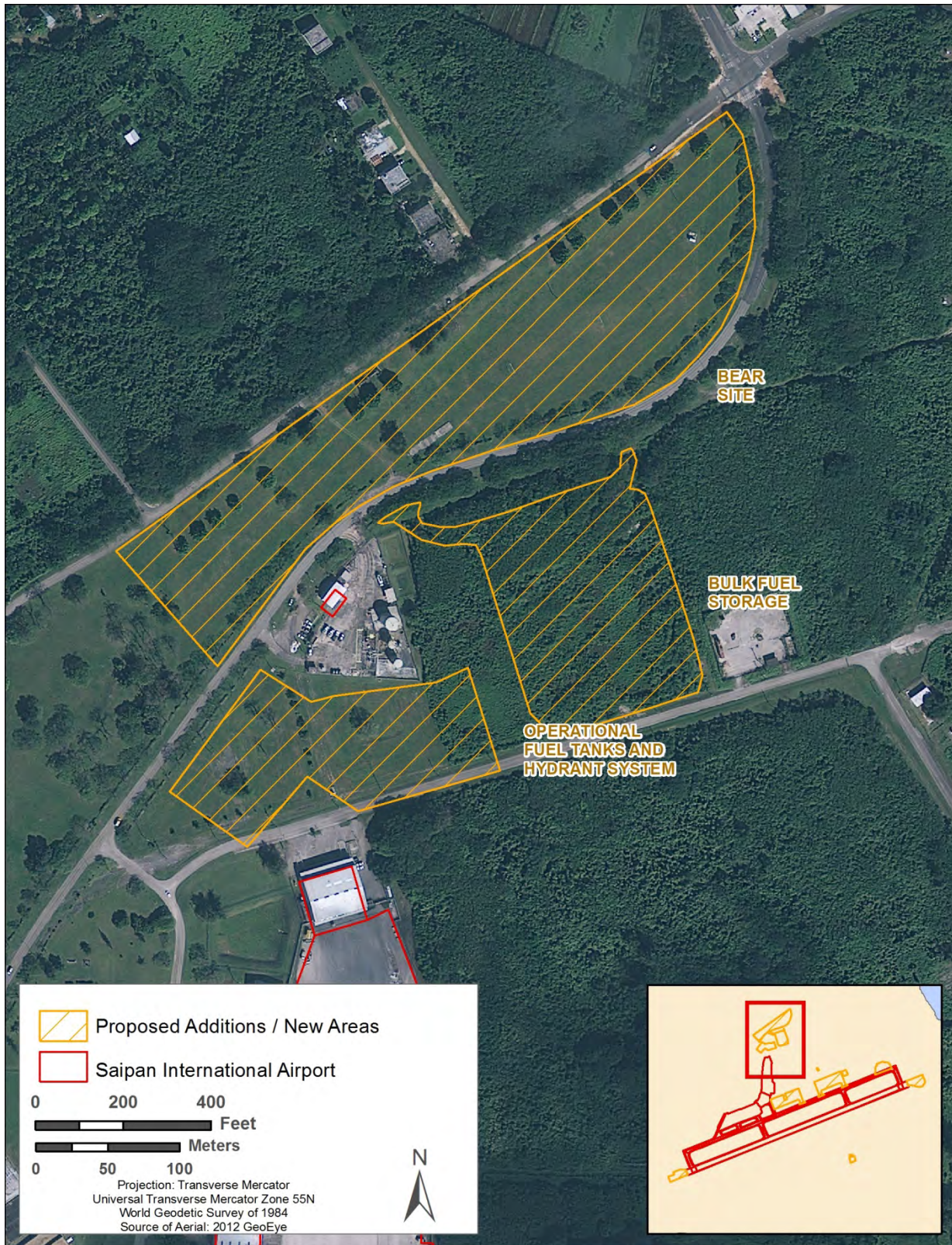
Billeting. Temporary billeting, including medical, transportation, and dining services, would be required for up to 700 personnel supporting aircraft operations during a divert landing, humanitarian assistance and disaster relief airlift, or joint military exercise event. The USAF plans to accommodate support personnel either by using commercial lodging on Saipan or temporarily installing a Basic Expeditionary Airfield Resources (BEAR) 550 Initial Housekeeping Kit.

If the USAF were to use commercial lodging, no additional construction or improvements would be needed at GSN. If the USAF were to use a BEAR kit for billeting, the kit would be established at GSN in accordance with Air Force Handbook 10-222 Volume 2 *Guide to Bare Base Assets*. The proposed area for the BEAR kit is approximately 5.0 ha (12.3 ac) and would require minimal vegetation clearing as it is located in a previously cleared and disturbed field (see **Figure 2-6**).

2.2 Implementation

After completion of construction, the USAF would use GSN periodically and temporarily for ground and air activities, aircraft support activities, and other airfield ground activities. A mix of joint cargo, tanker, fighter, and other aircraft could be diverted to or exercised from the airfield. Activities conducted there might include, but are not limited to, divert landings and take-offs, joint military exercises, jet fueling and storage, humanitarian assistance and disaster relief airlift staging including non-combatant evacuation operations, and billeting.

Divert Landings. Unscheduled aircraft landings, also known as “divert” landings would occur at GSN when other locations in the western Pacific, for example Andersen AFB, are unavailable for landing, such as during emergencies or natural disasters. Two types of unscheduled landings could occur there: divers resulting from malfunctioning aircraft or similar emergency situations in the air, and divers caused by natural or man-made disasters or activities at the airfield on the ground. Emergency divert landings, in accordance with the 36th Wing Instruction 13-204, would occur on an as-needed basis when an aircraft has malfunctioned or needs to land immediately due to an emergency. Other unscheduled divers would



**Figure 2-5. Proposed Fuel Tanks and Site of the Basic Expeditionary Airfield Resources
 550 Initial Housekeeping Set Kit**



Figure 2-6. Proposed Site Plan for Two Fuel Tanks at the Port of Saipan

occur when the scheduled or planned location for landing is no longer accessible or operational, such as during typhoons, earthquakes, or other natural or man-made disasters. During a divert event when the scheduled or planned location for landing is no longer accessible or operational, the aircraft could continue to operate from the divert airport for up to 30 days until a more permanent home base is established. Aircraft conducting divert landings at the airfield could require refueling, maintenance, temporary munitions download and storage, and billeting support.

Humanitarian Airlift Staging. Humanitarian airlift staging, including non-combatant evacuation operations, would occur at GSN in the event of an emergency or disaster. Examples of this type of operation include Operation Tomodachi, the DOD relief effort implemented following the 2011 earthquake and tsunami in Japan and Operation Fiery Vigil following the 1991 eruption of Mount Pinatubo in the Philippines resulting in the evacuation of 20,000 people. For Operation Tomodachi, DOD officials reported that at least 20 U.S. naval ships, 140 aircraft, and approximately 20,000 military personnel were involved in humanitarian assistance and disaster relief efforts in and around Japan. At least 227 tons of relief supplies and humanitarian supplies were delivered to Japan. For Operation Fiery Vigil, Clark AFB was evacuated, and more than 20 U.S. Naval ships and their personnel sortied from Subic Bay Naval Base to evacuate more than 20,000 personnel to Andersen AFB for further transport to safe havens. This operation included around-the-clock arrivals from the Philippines, processing through U.S. Immigration screening, and around-the-clock departures to cities of safe haven.

Emergency responses to natural disasters of this nature would require pre-planning and exercising for the potential contingency. The joint military exercises required to prepare for and execute humanitarian airlift and disaster relief missions in real world situations are described in the following sections.

Joint Military Exercises. A limited number of scheduled joint, combined, and unit-level military training activities and exercises, as described and analyzed in the Mariana Islands Range Complex EIS (DON 2010) and associated Biological Opinions (USFWS 2010a; NMFS 2011), would occur at GSN. Those exercises would focus on real-world proficiency in sustaining joint forces and detecting, tracking, and engaging units at sea, in the air, and on land in response to a wide range of missions.

Joint military exercises are an important opportunity to bring together multi-service and multi-national platforms that do not always have the opportunity to train or exercise collectively. The U.S. Navy, USAF, U.S. Marine Corp, and military from other countries operate a variety of combat and combat-support aircraft designed to meet joint and multi-national training objectives for many exercises. These joint and multinational exercises are commonly referred to as joint-combined exercises. The United States routinely deploys forces to train in the western Pacific. Joint and combined exercises and training maintain a stabilizing presence in the region, while allowing U.S. forces and other nations to practice joint-combined skills in peacetime to prepare for success during a contingency.

Examples of typical combined exercises include Valiant Shield and Cope North. Valiant Shield occurs biannually and usually takes place in September. This exercise involves land and maritime forces from U.S. Navy, USAF, and U.S. Marine Corp, combined with multi-national forces, including observers from the Pacific Rim nations. Cope North occurs annually and typically takes place in mid-February and also might include multi-national forces. Aircraft and personnel participating in these combined exercises would be temporarily located at and operate from GSN for a combined total of about 60 days per year. No more than 700 personnel would participate in exercises at GSN at any given time, with a typical exercise population being a 12-ship fighter package of 145 to 170 personnel. In addition, unit-level training would also occur at GSN to exercise the capability to conduct divert landings and humanitarian airlift staging.

Jet Fuel Receiving, Storage, and Distribution. Receipt of jet fuel at the Port of Saipan would be through the existing port commercial facilities. The ability to store fuel and transfer fuel from the receiving port

to the airfield would be developed. Once these elements are constructed, as discussed in **Section 2.1.1.5**, they would be operated in support of divert landings, military exercises, and humanitarian assistance and disaster relief efforts.

Jet fuel would be offloaded at the existing fuel offloading facility at the Saipan seaport from vessels that are capable of navigating the harbor. Fuel would be offloaded into the two 2.1-million-gallon bulk storage tanks to be constructed adjacent to the seaport (see **Figure 2-6**). Standard fuel transfer tank trucks would be used to transfer fuel over existing paved roads from the port to the 4.2-million-gallon bulk storage tank at the airport. It would take six tank trucks (37,855 liters [10,000 gallons] each) 14 days working approximately 10 hours per day to fill the bulk storage tank at the airport. During scheduled joint military exercises, bulk jet fuel at the airport bulk tank would be transferred to one of two operating tanks, and the fuel would then be transferred to fuel tanker aircraft or other aircraft taking part in the exercises.

Billeting. Temporary billeting would be required for up to 700 personnel that would support aircraft operations at GSN during a divert landing, humanitarian airlift, or military exercise event. The USAF plans to accommodate support personnel either by using commercial lodging on Saipan or a BEAR kit. If the USAF were to use commercial lodging, the USAF and PACAF would enter into agreements with local hotels to accommodate personnel in commercial lodging during planned activities such as exercises, and local facilities and modular trailers would be used to conduct airfield support activities, such as administrative functions.

If the USAF were to use a BEAR kit for billeting, it would include about 45 billet tents, showers, latrines, 12 administrative shelters, 2 Power Pro shelters, an alert shelter, and a mortuary. A 920-kilowatt generator set and fuel bladders for the generators would also be installed.

The BEAR kit would be installed away from the existing taxiway and the future ramp, reducing the noise level at the BEAR base, but close enough to service and support the operation. The planned area is approximately 5.0 ha (12.3 ac) (see **Figure 2-6**). Access to the BEAR base would be through the service road used to monitor and maintain the water wells in the area. A perimeter fence with two vehicular gates and a pedestrian gate would surround the cantonment. An existing water source at the intersection of Flame Tree Road and Airport Access Road would be used. At a minimum, a 5-cm (2-inch) waterline would be installed to support the BEAR base from this location. A 21-cm (8-inch) sewer line with manholes spaced 107 m (350 feet) apart would be installed from the BEAR base to the sewer main line at the intersection of Flame Tree Road and Airport Access Road.

To operate the BEAR base on commercial power, a 1,200-kilovolt-ampere, 13.8-kilovolt to 4.16/2.4-kilovolt, pad-mounted transformer would be installed. Primary service to the transformer would require 3-phase, 15-kilovolt cable from the nearest overhead utility to the pad-mounted transformer.

2.3 Action Area

As described further in **Section 5.1**, loss and degradation of nightingale reed-warbler habitat and temporary disruption of breeding and other behaviors could occur at and adjacent to GSN during construction of facilities and during implementation of divert activities and exercises. Noise from military aircraft participating in divert activities and exercises could also temporarily disrupt the behavior of nightingale reed-warblers under the flight paths at GSN. Mitigation for adverse impacts include financial support provided by the USAF to conserve and manage nightingale reed-warbler habitat at the Saipan Upland Mitigation Bank, located in the Marpi region on the northeastern portion of Saipan. Because adverse impacts and mitigation could occur on the northern and southern portions of Saipan, the action area is defined as the entire Island of Saipan.

2.4 Impact Minimization and Conservation Measures

Construction Impacts. The USAF will implement all measures to minimize impacts to nightingale reed-warbler that are required by the *Programmatic Biological Opinion Regarding the Reestablishment, Management, and Use of the Saipan Upland Mitigation Bank, Saipan* (USFWS 2008a). Those impact minimization measures, as presented in the SUMB Biological Opinion and modified as described by USFWS personnel during a meeting in July 2012, are presented in **Table 2-2**. In addition, the USAF will not locate laydown yards or other temporary construction facilities in nightingale reed-warbler habitat or within the 50-m [160-foot] buffer zone around territories described in **Section 4.3**.

**Table 2-2. Impact Minimization Measures Required
by the Saipan Upland Mitigation Bank Biological Opinion.**

No.	Mitigation Measure
1	Prior to vegetation clearing, a biologist experienced in locating nightingale reed-warbler nests will search the area for active nests. If any active nests are located, they will be avoided using a 50-m (164-foot) buffer until the nest is abandoned or has actively fledged.
2	When possible, the use of very noisy (greater than 60 decibels A-weighted) heavy machinery should be limited to the non-active or non-peak breeding seasons or temporary noise barriers or buffer zones should be installed to protect nightingale reed-warblers using buffer zones or areas of connectivity.
3	When actions occur during the breeding season, a biologist experienced in documenting changes in bird behaviors should observe occupied nests during the use of heavy equipment. The biologist should record behavior before, during, and after noisy equipment use and document noise levels with a decibel meter. At the end of equipment use, the biologist should provide a behavioral observation report to the USFWS.
4	Adequate plastic construction fencing or brightly colored flagging will be placed and maintained around any avoided habitat (including buffer areas or adjacent parcels) to prevent impacts from construction equipment and personnel.
5	All on-site construction personnel will receive instruction regarding the presence of listed species and the importance of avoiding impacts on these species and their habitat.
6	All on-site personnel will receive instruction regarding the brown treesnake (<i>Boiga irregularis</i>) and what to do immediately in case of a sighting.
7	A Hazard Analysis and Critical Control Point Plan or similar approach that results in an implementation plan will be developed. The plan will incorporate measures to ensure that invasive species, including the brown treesnake, are not transported to Saipan via project materials or equipment. This plan will be reviewed by the USFWS to ensure the actions to eliminate or reduce risks are sufficient.
8	A qualified biologist will inspect all construction-related activities to ensure that no take of nightingale reed-warbler or destruction of their habitat occurs that is not authorized by the Biological Opinion. The biologist will have the authority to stop all activities that could result in such take or destruction until appropriate corrective measures have been completed. The biologist also will report immediately any unauthorized impacts to the USFWS and CNMI Division of Fish and Wildlife.
9	A brief summary report will be provided to the USFWS within 30 days of project implementation to document implementation of any fencing, buffer zones, and minimization measures.

Source: USFWS 2008a

Habitat Loss. The USAF will purchase one credit from the SUMB for each nightingale reed-warbler territory that is cleared of vegetation during project construction. As required by the SUMB Biological Opinion, if more than 29 percent of a territory is cleared or otherwise destroyed, the USAF will purchase one credit to compensate for the loss of that territory. If less than 29 percent of a territory is directly affected, the USAF will purchase a partial credit equal to the proportion of the territory cleared of vegetation or otherwise disturbed.

As described in **Section 2**, the USAF plans to construct facilities at GSN in stages and, depending on mission needs and Congressional authorization and appropriations, some project elements might not be completed on Saipan. The USAF, therefore, cannot state with certainty at this time whether or how many territories would be directly or indirectly affected by construction of facilities at GSN. Prior to the construction start each fiscal year or phase of construction, the USAF will present a construction plan to the USFWS and CNMI Division of Fish and Wildlife and will purchase the number of credits required to mitigate for the direct impacts of construction activities planned for that year or phase.

To mitigate for the indirect impacts on nightingale reed-warblers during the implementation phase of this project (see **Section 5.1.2**), the USAF will purchase credits or otherwise fund conservation activities at the SUMB conservation area as required in the SUMB Biological Opinion. That mitigation will be implemented prior to initiation of the first training exercise at GSN that results in the level of indirect impacts to be mitigated, as determined during the formal consultation.

Invasive Species. To reduce or eliminate the spread of brown treesnakes and other nonnative species during development, maintenance, and operation of facilities at GSN, the USAF will develop, submit to the USFWS for review, and implement Hazard Analysis and Critical Control Point Plans (or equivalent) as required by the SUMB Biological Opinion, including plans for receipt of materials and equipment shipped to Saipan for construction and implementation of the project. Those Plans, and all associated implementing instructions developed by the USAF, Joint Region Marianas, and other involved military organizations, will be compliant with the invasive species interdiction and control requirements in the Duncan Hunter National Defense Authorization Act, Public Law 110-417, Section 316 (2009), and DOD Defense Transportation Regulations, Chapter 505 protocols. At a minimum, those plans and implementing instructions will address the following as appropriate, based on the specifics of each activity.

- One-hundred percent inspection of all outgoing aircraft and materials from Andersen Air Force Base and Naval Base Guam, as currently required by Joint Region Marianas Instruction 5090.4, using trained quarantine officers and dog detection teams, and redundant inspections conducted on Saipan during project development and training activities.
- Protocols and procedures for inspection of commercial materials and equipment being shipped from elsewhere on Guam, and from other locations, to GSN.
- Use existing or new, temporary or permanent, snake-free quarantine areas on Saipan for inspection of cargo traveling from Guam to Saipan when applicable. Those areas will be subject to (1) multiple day and night searches with appropriately trained interdiction canine teams that meet performance standards, (2) snake trapping, and (3) visual inspections for snakes.
- Support of rapid response actions to brown treesnake sightings at GSN or the fuel facility at the Port of Saipan.
- Invasive species awareness training for all military and contractor personnel.

As stated in **Section 1.2**, this biological assessment does not address air warfare and air logistics training that would occur in the Mariana Islands Range Complex or elsewhere by aircraft temporarily operating

from GSN. Impacts on ESA-listed species from those activities, and the requirements for the control and interdiction of invasive species, have been addressed in Biological Opinions developed by the U.S. Fish and Wildlife Service (USFWS 2010a) and National Oceanic and Atmospheric Administration Fisheries Service (formerly National Marine Fisheries Service) (NMFS 2011). Section 7 consultations also have been completed, and requirements for invasive species control and interdiction have been developed, for other ongoing for military training and operations in the Mariana Islands (e.g., USFWS 2006a, 2008b). Those control and interdiction requirements include the following.

- Direct routing of personnel and cargo to GSN to avoid Guam seaports and airfields when possible
- Inspections of all outgoing aircraft and equipment from Guam and redundant inspections on Saipan
- Establishment and operation of snake-free quarantine areas when applicable
- Environmental education of personnel
- Self inspection of equipment by service members
- Pathway analyses for all activities or groups of activities
- Involvement of the USFWS, Department of Agriculture, and other agencies in the development and implementation of protocols and practices
- Participation in the development and implementation of the Regional Biosecurity Plan.

The above requirements for control and interdiction of invasive species are incorporated into implementing instructions developed by Joint Region Marianas and other involved military organizations, and those instructions will be followed for all military training activities and exercises on and from GSN. The instructions are updated as necessary to incorporate changes resulting from new policies and practices and to include revised or additional requirements resulting from applicable Section 7 consultations.

The USAF acknowledges that there is a limited availability of inspectors, trained dogs, and quarantine facilities and equipment on Guam and in the CNMI. Planning for training exercises generally begins months prior to implementation of an exercise, and planning for complex training that would require a substantial number of inspectors, quarantine areas, or other personnel or equipment for control and interdiction of invasive species generally would begin more than a year in advance of the exercise. During that planning period, the U.S. Department of Agriculture and CNMI Department of Land and Natural Resources (the agencies responsible for conducting searches for and interdiction of brown treesnakes on Guam and the CNMI, respectively), USFWS, USAF, Joint Region Marianas staff responsible for managing their brown treesnake program, CNMI Department of Lands and Natural Resources staff, and other participants will cooperatively identify the inspection and interdiction requirements for the exercise, including the number of trained quarantine officers and dog detection teams. The USAF and those other agencies will also develop plans to ensure that inspection personnel are available and that all requirements can be met, and will identify the support that the USAF will need to provide for the inspections.

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3. Status of Threatened and Endangered Species on Saipan

This section summarizes information on the status and ecology of four threatened or endangered species that occur on Saipan. It does not discuss the Mariana fruit bat and Micronesian megapode, because, as described in **Section 1**, the USAF has determined that developing divert capabilities and conducting divert activities and exercises at GSN will have no effect on those species.

3.1 Nightingale Reed-Warbler

The following description of the nightingale reed-warbler comes primarily from the following sources, which are incorporated by reference.

- Recovery Plan for the Nightingale Reed-Warbler (USFWS 1998b)
- Programmatic Biological Opinion Regarding the Reestablishment, Management and Use of the Saipan Upland Mitigation Bank, Saipan (USFWS 2008a)
- Nightingale Reed-Warbler 5-Year Review Summary and Evaluation (USFWS 2010b).

Section 4.3 describes the results of surveys conducted around GSN to determine the abundance of nightingale reed-warblers in areas that could be directly and indirectly affected by the project.

Legal Status. The nightingale reed-warbler was listed under the ESA as endangered in 1970 (35 FR 18319). No critical habitat has been designated for this species. The current recovery plan for the nightingale reed-warbler was published in 1998 (USFWS 1998b).

Description and Taxonomy. The nightingale reed-warbler is approximately 16 to 21 cm (6 to 8 inches) long, grey to olive brown above, pale yellow below, and has a relatively long bill. Males are slightly larger than females. This species is in the marsh warbler family Acrocephalidae (USFWS 2008a).

Distribution and Abundance. There are three recognized subspecies of nightingale reed-warbler: *A. l. luscini* on Guam, Saipan, and Alamagan; *A. l. nijoi* on Aguiguan; and *A. l. yamashinae* on Pagan. There is prehistoric evidence that this species also occurred on Tinian, but it does not occur there now. Cibois et al. (2011) suggested that the nightingale reed-warbler on these islands might be separate species.

A volcanic eruption on Pagan in 1981 destroyed the only known habitat on that island and *A. l. yamashinae* is believed to be extinct. *A. l. nijoi* on Aguiguan are rare and might also be extinct. *A. l. luscini* have been extirpated from Guam and now occur only on Saipan and Alamagan (USFWS 2008a, 2010b). Less than 500 individuals are believed to occur on Alamagan (USFWS 2010a, p. 40).

Camp et al. (2009) summarized the results of islandwide forest bird surveys on Saipan over the previous three decades and reported that the number of nightingale reed-warbler detections had decreased from 287 in 1982, to 190 in 1987, to 118 in 2007. Density estimates per square kilometer of suitable habitat subsequently declined as a result of decreased detections in the respective survey years (58 birds, 1982; 40 birds, 1987; 23 birds, 2007). Based on the 2007 islandwide forest bird survey, the population estimate for nightingale reed-warblers on Saipan is 2,742 (Camp et al. 2009).

Habitat. Nightingale reed-warblers are found on Saipan in a variety of vegetation associations and are most abundant in areas of dense understory, including open, secondary, and tangantangan forests; elephant grass (*Pennisetum purpureum*) meadows; marshes; and wetland and forest edges. The species is uncommon or absent from residential areas, golf courses, limestone forests, beach strand, and swordgrass

(*Miscanthus floridulus*) savannah (Craig 1992, Mosher and Fancy 2002, USFWS 2008a, Camp et al. 2009).

Diet. The nightingale reed-warbler feeds primarily on insects and their larvae. Their diet also includes geckos, lizards, spiders, and snails. Nestlings are fed a variety of food items, including small caterpillars, large spiders, grasshoppers, skinks, geckos, ants, beetles, millipedes, moths, and praying mantids (USFWS 1998b).

Threats. Habitat loss and degradation is a primary threat to the nightingale reed-warbler on Saipan. Intensive agriculture on that island during the first half of the 20th century caused the loss of a substantial amount of wetland and upland habitat for this species. Much of that land has since reverted to second-growth forest that is used by reed-warblers. However, many second-growth forests have been and are being converted to urban development to support the large increase in the human population on Saipan. The human population increased by 429 percent from 1980 to 2000 (Camp et al. 2009, USFWS 2010b).

The establishment of the brown treesnake on Saipan would have serious impacts on this species. USFWS (2010b) stated that the spread of the brown treesnake to Saipan would likely cause the extirpation of nightingale reed-warblers from that island. The brown treesnake was the primary cause of the extirpation of forest tree birds, including the nightingale reed-warbler, from Guam.

Predation by introduced species such as feral cats (*Felis catus*) and rats (*Rattus* spp.) could be reducing the reproductive success of nightingale reed-warblers. Seventy-five percent of 28 active nests that failed were preyed upon by those or other species (USFWS 1998b, 2010b).

Other threats to this species include environmental contaminants in wetland habitat, fire in upland habitat, and the possible spread of the west Nile virus to Saipan (USFWS 1998, 2010b).

3.2 Mariana Common Moorhen

The following description comes primarily from the following sources, which are incorporated by reference.

- Mariana Common Moorhen Recovery Plan (USFWS 1992)
- Distribution and Abundance of the Mariana Subspecies of the Common Moorhen (Takano and Haig 2004)
- Mariana Common Moorhen 5-Year Review Summary and Evaluation (USFWS 2009b).

Legal Status. The Mariana common moorhen was listed under the ESA as endangered in 1984 (49 FR 33881). No critical habitat has been designated for this species. The current recovery plan for the common moorhen was published in 1992 (USFWS 1992).

Description and Taxonomy. The Mariana common moorhen is a slate-black member of the Rallidae family, and is about 36 cm (14 inches) in length. The distinguishing physical characteristics of adult birds include a red bill and frontal shield, white undertail coverts, a white line along the flank, and long olive-green legs with large unwebbed feet. Males and females are nearly identical in appearance and are difficult to distinguish from each other (USFWS 1992).

Distribution and Abundance. This species occurs on Guam, Tinian, Saipan, and rarely on Rota. The USFWS (1992) identified two primary wetlands on Saipan that are used by common moorhens: Lake

Susupe and Puntan Muchot/Garapan. Takano and Haig (2004) counted 154 moorhen at 18 locations on Saipan in 2001.

Habitat. The moorhen inhabits emergent vegetation of natural and man-made freshwater lakes, marshes and swamps. The key characteristics of moorhen habitat appear to be a combination of deep (greater than 60 cm [24 inches]) marshes with robust emergent vegetation and equal areas of cover and open water. This species is known to be wary and closely associated with cover provided by edge vegetation (USFWS 1992, Takano and Haig 2004).

Diet. Moorhens feed on plant and animal matter in or near water. Observers have noted grass, adult insects, and insect larvae in moorhen stomachs. Moorhen are probably opportunistic feeders, so their diet varies among areas (USFWS 1992).

Threats. The loss of wetlands is the most important factor in the decline of common moorhens. Many wetlands in the Mariana Islands have been filled or dredged for commercial or residential development. Additionally, there has been a decline of traditional wetland agricultural practices such as taro and rice cultivation, which has diminished the amount of wetlands available to the moorhen. Some wetlands have experienced accelerated sedimentation due to land clearing, road building, grassland fires, and other human activities. Predation by nonnative species such as rats and monitor lizards (*Varanus indicus*) could also be adversely affecting this species (USFWS 1992, 2009b).

3.3 Mariana Swiftlet

The following description of the Mariana swiftlet comes primarily from the following sources, which are incorporated by reference.

- Recovery Plan for the Mariana Islands Population of the Vanikoro Swiftlet (USFWS 1991)
- Relative Abundance and Distribution of Mariana Swiftlets in the Northern Mariana Islands (Cruz et al. 2008)
- Mariana Swiftlet or Chachaguak 5-Year Review Summary and Evaluation (USFWS 2010c).

Legal Status. The Mariana swiftlet was listed under the ESA as endangered in 1984 (49 FR 33881). No critical habitat has been designated for this species. The current recovery plan for the Mariana swiftlet was published in 1991 (USFWS 1991).

Description and Taxonomy. The Mariana swiftlet has sooty black upper parts with a slightly paler rump. The underparts are dark gray but with a brownish tinge. Some white is present at the base of the feathers in the loreal region. The plumage of both sexes is alike. The average weight of adult swiftlets is 7.4 grams (0.3 ounces). The swiftlet is in the Apodidae family (USFWS 1991).

Distribution and Abundance. Swiftlets currently are known to occur on Guam, Aguiguan, and Saipan (Cruz et al. 2008). The population in 2010 was estimated to be more than 5,000, with most located on Saipan. This species currently nests in at least 10 caves on Saipan (MES 2012).

Habitat. On Saipan, swiftlets nest and roost in caves and their preferred foraging habitats include areas over forests, clifflines, grassy hills, and grassy ravines (USFWS 1991, 2010c).

Diet. Swiftlets mostly eat insects that they catch while in flight (USFWS 1991). On Aguiguan, swiftlets consumed primarily hymenopterans and hemipterns (Valdez et al. 2011).

Threats. Human disturbance at nesting colonies is an important threat to this species. Other threats include predation by brown treesnakes (on Guam) and other nonnative predators, and the presence of cockroaches and wasps in nest caves (USFWS 1991, 2010c).

3.4 Green Sea Turtle

The following description of the green sea turtle comes primarily from the following sources, which are incorporated by reference.

- Recovery Plan for U.S. Pacific Populations of the East Pacific Green Turtle (NMFS 1998)
- An Assessment of the Sea Turtles and Their Marine and Terrestrial Habitats at Saipan, Commonwealth of the Northern Mariana Islands (Kolinski et al. 2001)
- Green Turtle Nesting Sites and Sea Turtle Legislation Throughout Oceania (Maison et al. 2010).

Legal Status. The green sea turtle was classified as threatened under the ESA in 1978. The breeding populations in Florida and the Pacific coast of Mexico are classified as endangered; elsewhere the species is listed as threatened (43 FR 32800). No critical habitat has been designated for this species in the Pacific Ocean. The current recovery plan for the Pacific population of the green turtle was published in 1998 (NMFS 1998).

Description and Taxonomy. Green sea turtles have a smooth top shell with shades of black, gray, green, brown, and yellow; their bottom shell is yellowish white. Adults can weigh 136 to 158 kg (300 to 350 lbs) and hatchlings weigh about 0.02 kg (0.05 lbs). Adults can reach 1 m (3 feet) in length and hatchlings are about 5 cm (2 inches) long. Green sea turtles are in the Cheloniidae family.

Distribution and Abundance. The green turtle is globally distributed and generally found in tropical and subtropical waters along continental coasts and islands between 30° north and 30° south latitude. This species generally nests on Saipan from March through August with some year-round nesting documented. It is estimated that possibly fewer than 10 individual turtles nest annually on Saipan, Tinian, and Rota. In 1999, turtle activity was documented at eight beaches, with six nests found on a total of three beaches (Kolinski et al. 2001). Monitoring of nesting activity on Saipan since 1999 has documented 4 to 18 nests per year. At least five beaches on Saipan have been monitored somewhat consistently over the past 5 years: Bird Island, Wing, Tank, Lao Lao Bay, and Obyan beaches (Maison et al. 2010).

Habitat. Green turtles primarily use three types of habitat: beaches for nesting, open ocean convergence zones, and coastal areas for feeding.

Threats. The principal cause of the historical, worldwide decline of the green turtle is long-term harvest of eggs and adults on nesting beaches and harvest of juveniles and adults on feeding grounds. These harvests continue in some areas of the world and compromise efforts to recover this species. Incidental capture in fishing gear, primarily in gillnets, but also in trawls, traps and pots, longlines, and dredges is a serious ongoing source of mortality. Green turtles are also threatened in some areas of the world by the disease fibropapillomatosis.

4. Environmental Baseline

This section describes the current environment in the action area as influenced by past and present impacts of human activities. The current environment, impacts of human activities on Saipan, and current status of the nightingale reed-warbler on the island, have been described in detail in the following reports, which are incorporated here by reference.

- Recovery Plan for the Nightingale Reed-Warbler (USFWS 1998b)
- Final Biological Opinion for the Proposed Rehabilitation of Runway 07/25 and Relocation of Water Catchment Reservoir, Saipan International Airport (USFWS 2006b)
- Programmatic Biological Opinion Regarding the Reestablishment, Management and Use of the Saipan Upland Mitigation Bank, Saipan (USFWS 2008a)
- Nightingale Reed-Warbler 5-Year Review Summary and Evaluation (USFWS 2010b)
- Biological Report: Saipan International Airport Project Site, Saipan, CNMI (MES 2012)
- Draft EIS for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (USAF 2012).

To support delivery of jet fuel on Saipan, two aboveground 2.1-million-gallon tanks and associated infrastructure would be installed on previously cleared and developed land at the Port of Saipan (see **Figure 2-6**). A portion of that flat site has a deteriorating asphalt surface, and fine limestone gravel has been spread across most of the remainder of the site. There is a thin stand of dense, weedy vegetation around the perimeter of the site; vegetation in the remainder of the area is sparse. This developed site does not contain suitable habitat for nightingale reed-warblers or other ESA-listed species, and is not described further in this section.

The remainder of this section describes in detail the environment on and around GSN, and the results of surveys conducted to determine the presence of ESA-listed species and other biological resources in that area. GSN is situated on approximately 285 ha (700 ac) in the southern portion of the Saipan (see **Figure 2-1**). It is owned and operated by the Commonwealth Ports Authority under the Commonwealth Ports Authority Act (Public Law 2-48), which was enacted in October 1981. The 2002 Saipan International Airport Master Plan outlines the development strategy for the airport (Commonwealth Ports Authority 2002). GSN facilities currently include a 2,650-m- (8,700-foot-) long runway and adjacent taxiway and parking ramps and a terminal, cargo-handling facility, parking lots, drainage detention basin, and other operational facilities to the north of the runway. GSN property to the south of the runway is undeveloped and leased for cattle grazing. The land surrounding the airport is used primarily for agricultural, recreation, and conservation.

Large portions of areas to the north and south of the current airport, including areas where the USAF would construct facilities and implement divert activities and exercises, were developed before and during World War II as aircraft parking areas, taxiways, and other airfield-related structures. Degraded aircraft parking surfaces and other structures are still visible in some areas, although much of that area is now covered with tangantangan.

The most recent development at GSN that affected listed species, and required consultation under Section 7 of the ESA occurred after 2006. That consultation covered rehabilitation of the GSN runway and relocation of a water catchment reservoir from between the runway and taxiway to its current position to the north of the runway. The USFWS estimated that disturbance of about 10 ha (25 ac) for those activities would directly affect nightingale reed-warblers in two territories and indirectly affect

reed-warblers in three other territories (USFWS 2006b). No other listed threatened or endangered species were adversely affected by the project.

4.1 Vegetation

Vegetation communities at and around GSN were mapped and characterized during field surveys conducted during October 2011. Vegetation community types observed at and surrounding the sites where construction and improvements would occur include tangantangan forest, mowed fields, park areas, and lands used for agriculture and grazing (see **Figure 4-1**), and are described in the following paragraphs.

Tangantangan Forest. Canopy vegetation in tangantangan forest is characterized by a near monoculture of nonnative tangantangan. The following forest tree species were most commonly observed within those forests: ahgao (*Premna obtusifolia*), hodda, pago (*Hibiscus tiliaceus*), sumak, lada (*Morinda citrifolia*), and papaya; and nonnative trongkon-kalaskas (*Albizia lebbbeck*) and atbut or flame tree (*Delonix regia*). The understory of tangantangan forest consists largely of nonnative herbaceous weeds. Common species include coral berry (*Rivina humilis*), rosary pea (*Abrus precatorius*), Chinese violet (*Asystasia gangetica*), and achyranthes (*Achyranthes canescens*). Gaps in the tangantangan forest and some areas of canopy are blanketed by a layer of vines. These vines include the native akankang tasi (*Canavalia rosea*); and the nonnative bittervine (*Mikania micrantha*), abubo (*Stictocardia tilifolia*), coral vine (*Antigonon leptopus*), and ivy gourd (*Coccinia grandis*). Vines present in the area are stimulated by the opening up of the canopy after storm disturbances and can form oppressive vine mats that retard the growth of, or kill, native vegetation.

Mowed Fields. Mowed field habitat consists mainly of introduced grasses and herbaceous ground cover. These fields occur between and around the airfield runways, taxiways, parking ramps, and associated disturbed sites. They are characterized by grasses, including Bermuda grass (*Cynodon dactylon*), crowfoot grass (*Dactyloctenium aegyptium*), broadleaf carpetgrass (*Axonopus compressus*), golden beardgrass (*Chrysopogon aciculatus*), (*Chloris* sp.), and herbaceous weeds including the sensitive plant, shameplant (*Mimosa pudica*), tropical lucerne (*Stylosanthes guianensis*), and white moneywort (*Alysicarpus vaginalis*).

Park Areas. Parks at and near GSN are characterized by areas with grass that is mowed close to ground level and that have narrow strips of ornamental trees and shrubs that have been planted primarily along road edges. Grasses in park areas are characterized by Bermuda grass and golden beardgrass. Ornamental trees that have been planted along road edges are characterized by atbut or flame tree and several species of plumeria (*Plumeria* spp.). Hodda also occurs at several locations in the park areas. Shrub species planted along road edges are characterized by bougainvillea (*Bougainvillea* sp.), lantana (*Lantana camara*), and several species of hibiscus (*Hibiscus* spp.).

Agriculture/Grazing. Areas used for agriculture and grazing are located south of GSN within and near the area where the munitions storage area would be located. That location is characterized by scrub habitat with sparse trees. Adjacent areas include stands of tangantangan, grazed land, scrub habitat, and agricultural plots that are fallow or planted with local crops. Grazed areas are characterized by a sparse occurrence of trees including atbut or flame tree and mango (*Mangifera indica*) with a minor occurrence of Ahgoa. Scrub habitat has a mix of shrub and herbaceous species dominated by lantana, Jack-in-the-bush (*Chromolaena odorata*), nettleleaf velvetberry (*Stachytarpheta urticifolia*), and romerillo (*Bidens alba*). Tangantangan occurs as short saplings scattered through the scrub habitat.

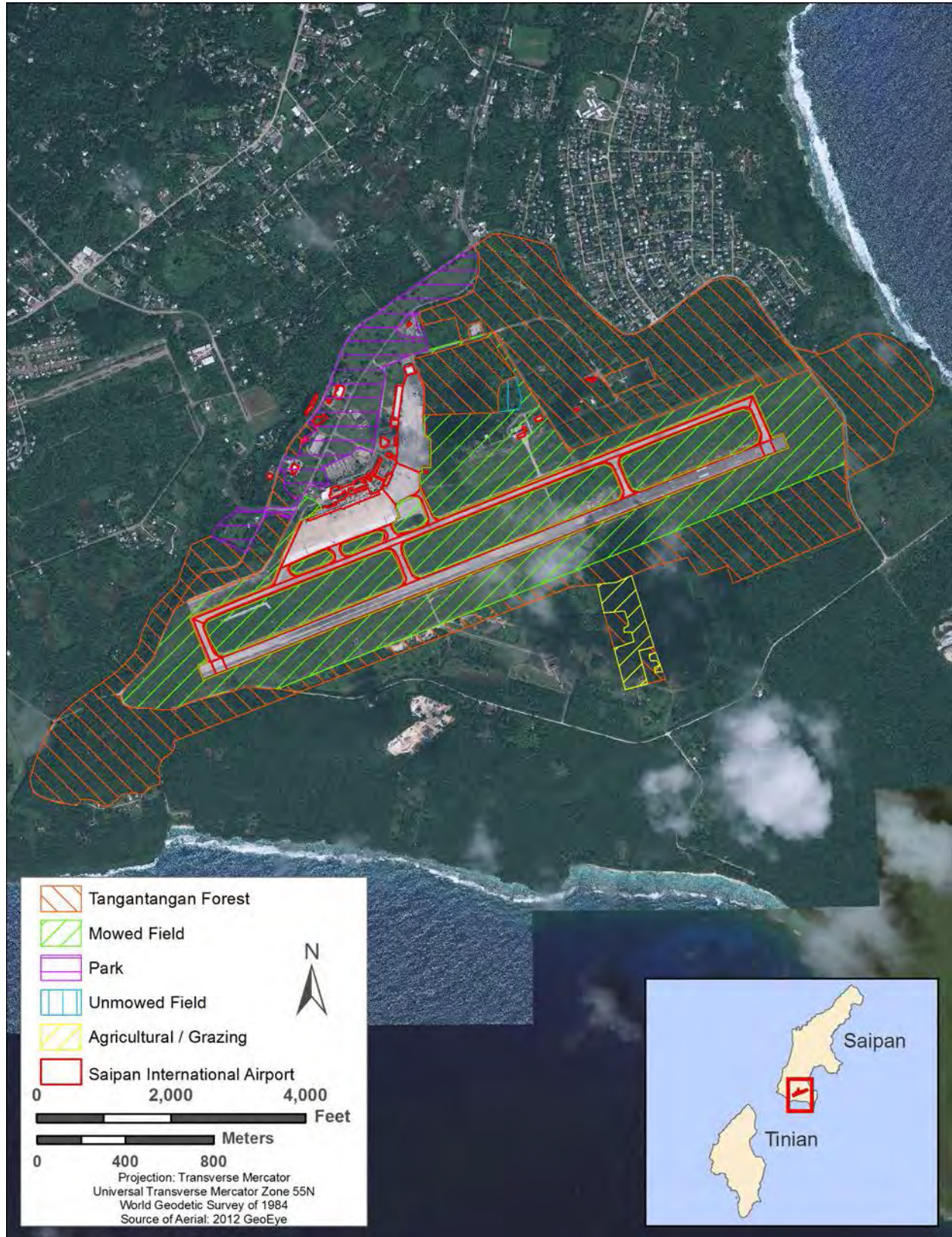


Figure 4-1. Vegetation Communities at GSN

4.2 Wildlife

Characterization of fauna occurring in and around GSN was based on incidental observation of species during vegetation mapping conducted in October 2011 (USAF 2012) and during surveys for nightingale reed-warblers and other avian species conducted from late January through early April 2012 (MES 2012). **Figure 4-2** shows the areas surveyed at and surrounding GSN in 2012.

Birds. During March 2012, 18 point-count surveys for birds were conducted in areas surrounding the airfield (MES 2012). Those surveys were conducted between 0600 and 1000 hours. A total of 762 detections of birds of 14 species were recorded. The most commonly detected bird species was the bridled white-eye (*Zosterops conspicillatus*), which accounted for 28 percent of avian observations. Other species detected, in descending order of abundance, include the black noddy (*Anous minutus*), white tern (*Gygis alba*), rufous fantail (*Rhipidura rufifrons*), island collared dove (*Streptopelia bitorquata*), Micronesian starling (*Aplonis opaca*), orange-cheeked waxbill (*Estrilda melpoda*), Micronesian myzomela (*Myzomela rubratra*), golden white-eye (*Cleptornis marchei*), white-throated ground dove (*Gallicollumba xanthonura*), collared kingfisher (*Todiramphus chloris*), Mariana fruit dove (*Ptilinopus roseicapilla*), nightingale reed-warbler, and yellow bittern (*Ixobrychus sinensis*). During those surveys, observers actively searched for Mariana swiftlets and Micronesian megapodes; no individuals of those species were detected.

Transect surveys were also conducted in 2012 at the water catchment basin located on GSN property north of the runway and taxiway and at two artificial ponds at the Coral Ocean Point golf course located west of the airport (MES 2012). The following six bird species were observed at the water catchment basin: Eurasian wigeon (*Anas penelope*), northern shoveler (*Anas clypeata*), green-winged teal (*Anas carolinensis*), wood sandpiper (*Tringa glareola*), little egret (*Egretta garzetta*), and peregrine falcon (*Falco peregrinus*). Nine bird species were documented at the Coral Ocean Point golf course east pond: wood sandpiper, black-winged stilt (*Himantopus himantopus*), tattler sp. (*Tringa* sp.), black-tailed godwit (*Limosa limosa*), Mariana common moorhen, common greenshank (*Tringa nebularia*), common sandpiper (*Actitis hypoleucos*), yellow bittern, and marsh sandpiper (*Tringa stagnatilis*). Six species were documented at the golf course west pond: Pacific golden plover (*Pluvialis dominica*), wood sandpiper, both white and dark morphs of the Pacific reef heron (*Egretta sacra*), yellow bittern, tattler sp., and common sandpiper.

During the 2012 surveys, biologists located a black noddy rookery near GSN. The rookery was approximately 205 m (675 feet) south of the proposed bulk fuel storage area, 195 m (640 feet) south of the proposed operational fuel tanks and hydrant system, 440 m (1,115 feet) northwest of the proposed maintenance facility, and 305 m (1,000 feet) north of the proposed west parking apron. There were more than 60 noddy nests located mostly in a large *Casuarina* tree with some in an adjacent flame tree. Most of the nests were active at the time of the surveys. There were also numerous white terns flying around the rookery. It was not determined whether the terns were nesting in the area.

In November 2005, a biologist from the U.S. Department of Agriculture, Wildlife Services, conducted an initial onsite assessment of wildlife hazards at GSN. Wildlife Services personnel determined the primary threats to aviation safety at GSN included cattle egrets, intermediate egrets, Pacific golden plovers, whimbrel (*Numenius phaeopus*), ruddy turnstones (*Arenaria interpres*), island collared doves, white terns, black noddy, and brown noddy (*Anous stolidus*). Other birds present that could pose a slightly lower risk to aviation safety included feral pigeons (*Columbia livia*), yellow bitterns, black-winged stilts, collared kingfishers, Micronesian starlings, and Eurasian tree sparrows (*Passer montanus*) (USDA 2008).

Mammals. The only mammals incidentally observed during the 2011 vegetation mapping and 2012 avian survey were rats (*Rattus* sp.), house shrews (*Suncus murinus*), and feral cats. No Mariana fruit bats or optimal roosting or foraging habitat for that species were found during those surveys.



Figure 4-2. Areas surveyed at GSN in 2012

Reptiles and Amphibians. Green anoles (*Anolis carolinensis*), Pacific blue-tailed skinks (*Eumeces caeruleocauda*), green tree skinks (*Lamprolipsis smaragdina*), and curious skinks (*Carlia fusca*) were incidentally observed during the 2011 vegetation mapping and 2012 avian surveys. Only one amphibian, the marine toad (*Rhinella marina*), was observed in the area. [Note: *Rhinella* is a subgenus of the genus *Bufo*. *Rhinella marina* and *Bufo marina* are both currently used synonymously.] Focused reptile surveys were not conducted and it is likely that additional native and nonnative gecko and skink species are present in the area.

Invertebrates. The following species of butterfly were noted during surveys. Eggflies (*Hypolimnas* sp.), including blue moon and guardian, were frequently observed flying within and along the edge of tangantangan forest. The blue-banded king crow (*Euploea eunice*), common grass blue (*Zizina hylax*), large grass yellow (*Eurema blanda*), lemon migrant (*Catopsilia pomona*), cycad blue butterfly (*Chilades pandava*), and common mormon (*Papilio polytes*) were also observed on mowed edges of the tangantangan forest.

4.3 Surveys for Nightingale Reed-Warblers

Surveys were conducted for the nightingale reed-warbler to the north and south of the GSN runway following the protocol developed by the USFWS (USFWS 2009c). As specified by that protocol, one or two experienced observers walked designated line transects actively listening and watching for nightingale reed-warblers (MES 2012). All reed-warbler detections were plotted onto project site maps that were carried in the field. Playback recordings were not used to elicit responses. All surveys were conducted between 0600 and 1000 hours and 1630 hours to sunset. Survey results were used to determine the number of territories found on the project site. For this report, territories were defined as areas where singing male reed-warbler detections were concentrated and then further delineated with detections of males singing simultaneously.

Ten protocol surveys for nightingale reed-warblers were conducted between 21 January and 29 March 2012 in areas to the north of the GSN runway where the USAF proposes to develop facilities, and to the south of the runway in the area of the proposed munitions storage facility (see **Figure 4-2**). Eight nightingale reed-warbler territories were detected within the area surveyed north of the GSN runway (see **Figure 4-3**). No reed-warblers were detected to the south of the runway.

4.4 Surveys for Common Moorhens

The only ponds or other potentially suitable habitat for the Mariana common moorhen within or near GSN are the water catchment basin located north of the GSN runway and two artificial ponds west and northwest of the runway on the Coral Ocean Point golf course (see **Figure 4-2**). Nine line transect surveys were conducted around the entire perimeter of the water catchment basin and golf course ponds between 28 January and 24 March 2012 to detect moorhens and other avian species (MES 2012). Playback recordings were not used during those surveys to elicit responses from moorhens.

No moorhens were detected at the GSN water catchment basin or the golf course pond to the northwest of GSN (labeled west pond on **Figure 4-2**). A single adult moorhen was seen at the east golf course pond on 25 February and 4, 10, and 17 March. That pond has an impervious lining that inhibits the growth of shoreline emergent vegetation. The moorhen was seen along the southeastern, southwestern, and northeastern shorelines, and was observed roosting in and taking cover under a *Bougainvillea spectabilis* plant along the northeastern shoreline.

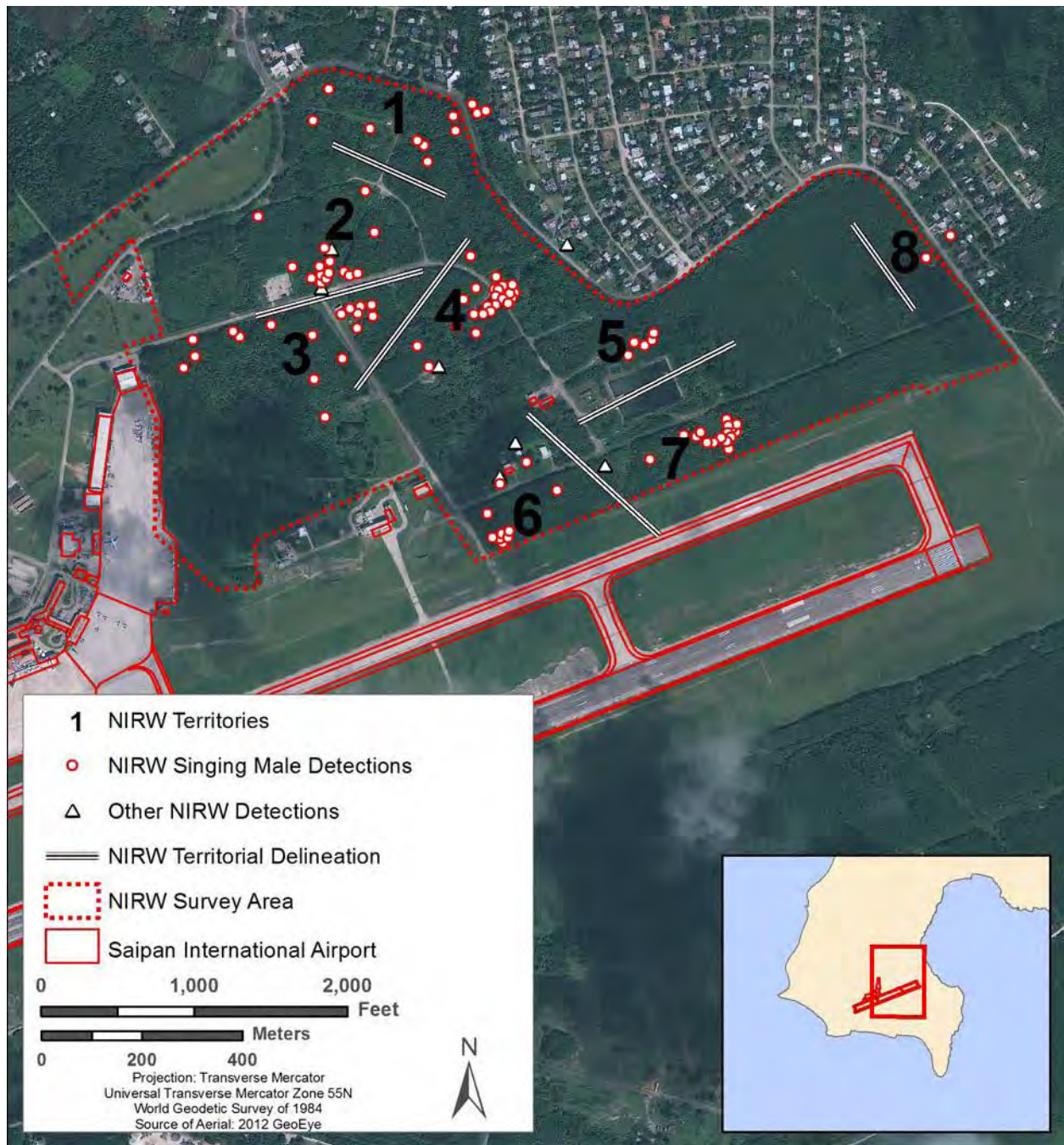


Figure 4-3. Nightingale Reed-Warbler Territories Detected within Surveyed Areas at GSN, January–April 2012

- 1 Two reconnaissance-level surveys also were conducted in the tangantangan forests east and west of the
2 GSN runways (see **Figure 4-2**). More extensive protocol surveys were not conducted in those areas
3 because the USAF does not plan to develop facilities within, or otherwise directly disturb, those forested
4 areas. One singing male was detected west of the runway during one of those surveys.
- 5 Moorhens have been detected at the east golf course pond since about 2001 during surveys conducted by
6 or for the CNMI Division of Fish and Wildlife (Paul Radley, CNMI Division of Fish and Wildlife,
7 personal communication, March 26, 2012).

5. Effects of the Action

As described in **Section 1.2**, the USAF has determined that plans to establish divert capabilities at GSN and conduct divert activities and exercises on Saipan would have no affect on the Mariana fruit bat and Micronesian megapode. These decisions were based on the lack of suitable habitat for those threatened and endangered species near GSN, and effects on those species are not further discussed here.

5.1 Nightingale Reed-Warbler

Development and construction of facilities and infrastructure at GSN to support divert landings, periodic exercises, and humanitarian assistance and disaster relief would result in the loss and degradation of habitat for nightingale reed-warblers, and noise from those construction activities could temporarily disrupt the behavior of reed-warblers living adjacent to construction areas. Noise, human activity, and other disturbances during implementation of ground and air activities, aircraft support activities, and other airfield ground activities could also temporarily disrupt the behavior of nightingale reed-warblers in areas surrounding GSN. Transportation of equipment and personnel from Guam and other locations could result in the introduction of invasive species into Saipan, including the brown treesnake; the USAF would continue to implement practices to prevent the transport and release of brown treesnakes and other invasive species.

5.1.1 Impacts During Construction

Development of all proposed facilities would require the disturbance of up to about 24 ha (59 ac) at GSN and 2 ha (4 ac) at the Port of Saipan. In part to minimize impacts on nightingale reed-warblers, the USAF plans to locate most of their facilities in existing developed areas or areas that are currently mowed or otherwise periodically disturbed (see **Table 5-1**). However, because of the requirements to site some facilities in specific locations (such as parking ramps next to the taxiway), and because of the lack of cleared areas north of the existing GSN facilities, about 4.5 ha (11.0 ac) of tangantangan forest would be disturbed to develop and construct all proposed facilities (see **Table 5-1**).

The following evaluation of potential impacts on nightingale reed-warbler territories is based on the assumption that all proposed facilities will be developed. It is important to note that the USAF might not develop all facilities, and the impacts on nightingale reed-warbler, and associated required mitigation, could be less than that described. The following criteria in the SUMB Programmatic Biological Opinion (USFWS 2008a) was used to determine whether nightingale reed-warbler territories would be directly or indirectly affected.

- “Direct effects include clearing of vegetation or otherwise destroying a territory. If 29 percent or more of a territory is cleared or otherwise destroyed, then the entire territory will be considered destroyed. If less than 29 percent of a territory is cleared or otherwise destroyed, then only that portion of the territory will be considered directly affected and the remaining portion will be considered indirectly affected.”
- “Habitat will be considered indirectly affected when the remaining portion of a territory where less than 29 percent is cleared of vegetation; or any portion of an adjacent nightingale reed-warbler territory would be subject to increased risk from nonnative invasive plant or animal access to habitat, feral ungulate access to habitat, predators..., human intrusion, erosion, or fire risk due to implementation of the proposed project.”

**Table 5-1. Amount of Vegetation Communities to be Removed
for Construction of All Proposed Facilities at GSN (hectares [acres])**

Facility	Tangantangan Forest	Mowed Field	Park	Agriculture/ Grazing	Disturbed/ Unmowed
Runway extension (west)	–	1.7 (4.3)	–	–	–
Runway extension (east)	–	1.9 (4.6)	–	–	–
Parking apron and ramp (west)	–	4.4 (10.8)	–	–	–
Parking apron and ramp (east)	2.6 (6.5)	2.0 (4.9)	–	–	–
Hangar	0.3 (0.8)	–	–	–	–
Temporary Munitions Storage Area	–	–	–	0.4 (1.0)	–
Hazardous cargo pad and arm/disarm Pad	0.4 (1.0)	1.2 (2.9)	–	–	0.2 (0.6)
Maintenance facility	0.04 (0.1)	–	–	–	–
Billeting (BEAR) site	–	–	5.0 (12.3)	–	–
Operational fuel tanks and hydrant system	–	–	1.3 (3.2)	–	0.3 (0.7)
Bulk fuel storage	1.1 (2.6)	–	0.04 (0.1)	–	0.9 (2.3)
Port of Saipan fuel receipt and storage	–	–	–	–	1.8 (4.4)
Total (acres)	4.5 (11.0)	11.1 (27.5)	6.3 (15.6)	0.4 (1.0)	3.2 (8.0)

- “Where indirect effects can be minimized on-site, a buffer zone or fences will be used, as appropriate. ... An on-site buffer zone should be a minimum depth of 50 m [160 feet] from the edge of the construction to the nearest nest otherwise that nest and territory will be considered directly impacted.”

Eight nightingale reed-warbler territories were detected during 10 surveys conducted from 22 January to 27 March 2012 (see **Figure 5-1** and **Table 5-2**). Reed-warblers were detected in most territories throughout the survey period; however, they were detected in territory 5 from 11 February to 10 March and in Territory 8 from 22 to 24 March (MES 2012). The area used by reed-warblers within those territories during the surveys was calculated by measuring the minimum-sized convex polygon encompassing all observations. Some of the areas used by reed-warblers during the survey period were small compared to average territory size of about 4 hectares (10 acres) or larger reported by Mosher (2006; USFWS 2010b). Only two detections occurred within territory 8; thus, the area used within that territory was not calculated.

Construction of the east parking ramp would require the clearing of about 2.6 ha (6.5 ac) of tangantangan forest, including 53 percent of the area used in territory 6 (see **Figure 5-1**). The breeding birds in that territory would be displaced, and those birds likely would not survive or would have reduced reproductive success.



Figure 5-1. Proposed Project Facilities and Nightingale Reed-Warbler Territories

Table 5-2. Nightingale Reed-Warbler Territories at GSN, 2012

Territory	Size – Hectares (acres)	Distance to Nearest Proposed Facility – Meters	Nearest Proposed Facility	% Disturbed
1	2.5 (6.1)	70	Billeting	0
2	2.8 (7.0)	37	Bulk fuel tanks	0
3	3.8 (9.3)	12	Bulk fuel tanks	0
4	1.9 (4.6)	168	Maintenance building	0
5	0.2 (0.6)	213	Hanger	0
6	1.5 (3.8)	0	East parking apron	53
7	0.8 (2.1)	70	Hanger	0
8	n/a	335	Hot cargo pad	0

Construction of the east parking ramp would require the clearing of about 2.6 ha (6.5 ac) of tangantangan forest, including 53 percent of the area used in territory 6 (see **Figure 5-1**). The breeding birds in that territory would be displaced, and those birds likely would not survive or would have reduced reproductive success.

The bulk fuel storage tanks would be installed adjacent to the areas used within territories 2 and 3 (see **Figure 5-1**). Over half of the 2.1-ha (5.0-ac) site where the fuel tanks would be installed, including the southern portion closest to habitat used by reed-warblers in those territories, was cleared and used as a materials storage area temporarily during excavation of the GSN detention basin. Because a portion of that site has been cleared, and the remaining vegetated area does not appear to be used, or is used infrequently, by nightingale reed-warblers, there would be no direct effects on those territories. However, as suggested by the USFWS (2006b) for other construction activities at GSN, noise, human activities, lights, and other disturbances associated with the construction and operation of the fuel storage system could indirectly adversely affect nightingale reed-warblers in those territories by disrupting or modifying their behavior, further degrading nearby nesting or foraging habitat, causing an increase in predation, or otherwise causing a decrease in reproductive output. Because there would be no loss of habitat within those territories, and because a portion of the bulk fuel storage area already has been cleared, it is likely that the territories would persist. As evidence of this likelihood, two territories that were predicted to be directly affected by construction of the GSN detention basin (USFWS 2006b) persisted during construction of that facility, and nightingale reed-warblers were detected in those areas as territories 5 and 7 in 2012 (see **Figure 5-1**).

The other five territories would be separated from facilities by a buffer of tangantangan forest of more than 50 m (164 feet) (see **Table 5-2**), and thus would not be directly or indirectly affected, or would be minimally affected, by construction. The nearest observations in two of those territories (1 and 7) were about 70 m (230 feet) from the edge of a facility, but the majority of the detections in those territories were more than 150 m (500 feet) from areas that would be disturbed. The other three territories would be separated from proposed facility locations by a buffer of 150 to more than 300 m (550 to more than 1,000 feet). As shown in **Figure 5-1**, nightingale reed-warblers occur at GSN in close proximity to disturbed areas with ongoing human presence; therefore, territories located at such large distances from the facilities would not be affected by facility construction.

5.1.2 Impacts During Implementation

As further described in **Section 2.2**, after completion of construction, the USAF would use GSN periodically and temporarily for divert landings and takeoffs, joint military exercises, airlift staging for humanitarian assistance and disaster relief, and other activities. All activities would be conducted within existing disturbed and developed areas and would not result in any additional habitat loss.

During implementation of the project, nightingale reed-warblers living at and near GSN, including those occurring in the tangantangan forests to the east and west of the runway, could be adversely affected by an increase in noise, lighting at night, and human activities during divert activities and exercises. To ensure that nightingale reed-warblers are not disturbed during activities and exercises, personnel would be restricted to the developed facilities at GSN and would be briefed on that and other requirements for the protection of nightingale reed-warblers and other listed species. In addition, if personnel are to be billeted at GSN, the location of the BEAR facility would be temporarily fenced in part to keep personnel away from nightingale reed-warbler habitat.

The increase in takeoffs and landings of large aircraft at GSN could cause more birds at GSN to be struck and killed by aircraft. However, nightingale reed-warblers nest and forage in dense vegetation (Craig 1992, USFWS 1998b) and therefore are unlikely to be struck by military or other aircraft taking off from, or landing at GSN.

The periodic increase in frequency and intensity of noise from military operating during military exercises at GSN has the potential to adversely affect nightingale reed-warblers living adjacent to or near GSN. On average, about 13 large aircraft (e.g., 747-200 and 767-300 commercial aircraft), and 126 smaller aircraft currently arrive or depart daily at GSN (USAF 2012, Section 3.1.2.1), and nightingale reed-warblers and other animals living below the flight paths at GSN are exposed to noise from those takeoffs and landings year round. During military exercises, which might occur at GSN as many as 8 weeks per year, up to about 72 additional takeoffs and landings by large aircraft such as the KC-135 and smaller jet aircraft such as the F-18 or F-22 could occur on a very busy day.

To compare the sound levels generated by those aircraft, sound energy level per aircraft type was estimated at 1,000 feet from the end of the runway during takeoff. Sound energy level is calculated as the sum of sound energy over the duration of a noise event (such as a flyover) and represents an equivalent noise event with a one-second duration. Because the energy level is normalized to one second, it is higher than the maximum sound level for that event. The actual sound level will vary depending on power setting, accent and decent angle, weather, and other factors. Sound levels are reported here in units of A-weighted decibel (dBA), which is weighted by the ability of humans to hear various sound frequencies, and is used to characterize sound levels that can be sensed by the human ear. The auditory sensitivity of birds to sound frequencies differ from those of humans; however, because there is no standard or commonly used measure that characterizes sound levels sensed by birds, results are reported in dBA, which is measured on a logarithmic scale.

The estimated sound energy level of a B-747 commercial aircraft during takeoff at 1,000 feet is 106.3 dBA. The sound energy level of a KC-135 (103.9 dBA) and F-16 (109.1 dBA) is similar, and the sound energy level of an F-22 is higher (122.6 dBA).

To evaluate the potential cumulative increase in noise levels that would occur during planned joint military exercises or other unit-level exercises, the USAF modeled and reported in the Draft EIS

(USAF 2012, Section 4.1.1.2) day-night average sound levels (DNL) for three noise-level scenarios, with the following type and mix of aircraft (cargo versus fighter) for each scenario.

- Low scenario—12 KC-135
- Medium scenario—6 KC-135, 8 F-16, and 4 F-22
- High scenario—12 F-16 and 12 F-22.

To model an average busy day for each scenario, it was estimated that all aircraft would complete 4 operations per day (2 arrivals and 2 departures) during military exercises. See the Draft EIS (USAF 2012, Section 4.1.1.2) for other assumptions used in the calculations.

Figures 5-2 through 5-4 show predicted DNL contours for the low, medium, and high scenarios, respectively (USAF 2012, Section 4.1.1.2), and **Figure 5-5** shows a closer view of the predicted noise surrounding GSN for the medium scenario. As shown in the figures, there would be an increase in sound levels in the areas surrounding GSN on days when exercises are held there. For example, at Coral Ocean Point Golf Course the predicted sound levels on a busy day are 69, 78, and 83 dBA DNL for the low, medium, and high scenarios, respectively, compared to a current estimated annual average sound level of 63 dBA DNL at that location. Note that the USAF is discussing with its cooperating agencies and the Commonwealth Port Authority potential mitigation measures to reduce the effects of noise on the surrounding area, and would present those measures in the Final EIS. Based upon operational restrictions agreed upon and implemented by the USAF, it is anticipated that noise levels on Saipan would be reduced during training exercises; hence, the noise levels reported here and in the Draft EIS are considered a “worst case” scenario and the USAF anticipates that the noise levels to be reported in the Final EIS would be less than reported here.

Reviews of the effects of sound on animals are available (see Dufour 1980, Mancini et al. 1988, Larkin et al. 1996, Efroymson et al. 2000, Kaesloo and Tyson 2004), and studies referenced in those reviews have documented that chronic exposure to continuous high sound levels (e.g., traffic, construction) and exposure to high sound energy impulses (e.g., sonic booms, aircraft overflight) can cause physical damage and hearing impairment; physiological effects; and changes in behavior, habitat use, and possibly reproduction. Efroymson et al. (2000) describe a framework for conducting ecological risk assessments of low-altitude overflights of military aircraft on wildlife, but concluded that there is insufficient information available to apply the risk assessment methodologies to songbirds.

Exposure to high sound levels can cause physical damage to the ear, which can result in temporary or permanent hearing loss (Dufour 1980). Studies of sound levels that can cause hearing impairment have been conducted on laboratory and domestic animals, primarily mammals, but few studies of impacts on birds, especially song birds, have been conducted. Larkin et al. (1996) described laboratory studies documenting that long-term exposure of canaries (*Serinus canaria domesticus*) to sound at 95 to 100 dB, and exposure of budgerigars (*Melopsittacus undulatus*) to impulse sound with a peak energy level of 169 dB, caused an increase in hearing threshold (i.e., the minimum level at which sound can be detected). However, these results might be of limited value for understanding whether the hearing of nightingale reed-warblers would be adversely affected by military jets, as there are substantial differences in the auditory sensitivity to intensity and frequency of sound among species (Dufour 1980, Larkin et al. 1996). Nightingale reed-warblers currently are exposed to sound from commercial jets that are similar in intensity to most military aircraft proposed to be used at GSN, but some aircraft, such as the F-22, are substantially louder, and the frequency of exposure to loud aircraft would be greater during military exercises. Male nightingale reed-warblers use calls to defend territories (Craig 1992) and probably to attract mates; therefore, temporary or permanent hearing loss could cause a decrease in reproductive fitness. Hearing impairment could also result in other adverse effects, such as an increase in mortality if reed-warblers could not hear approaching predators.

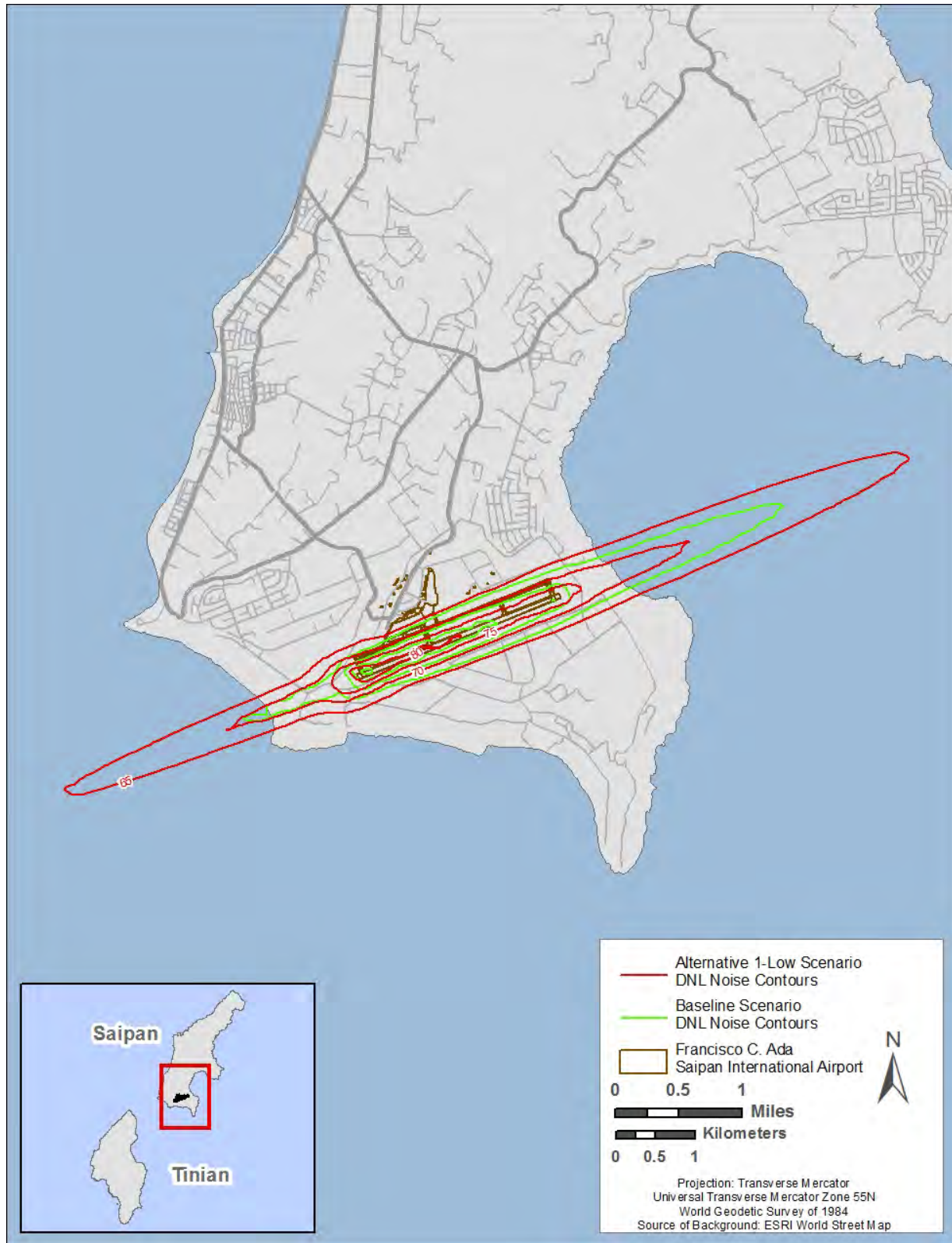


Figure 5-2. Low Scenario Predicted DNL Noise Contours (dBA) During a Military Exercise at GSN (USAF 2012)

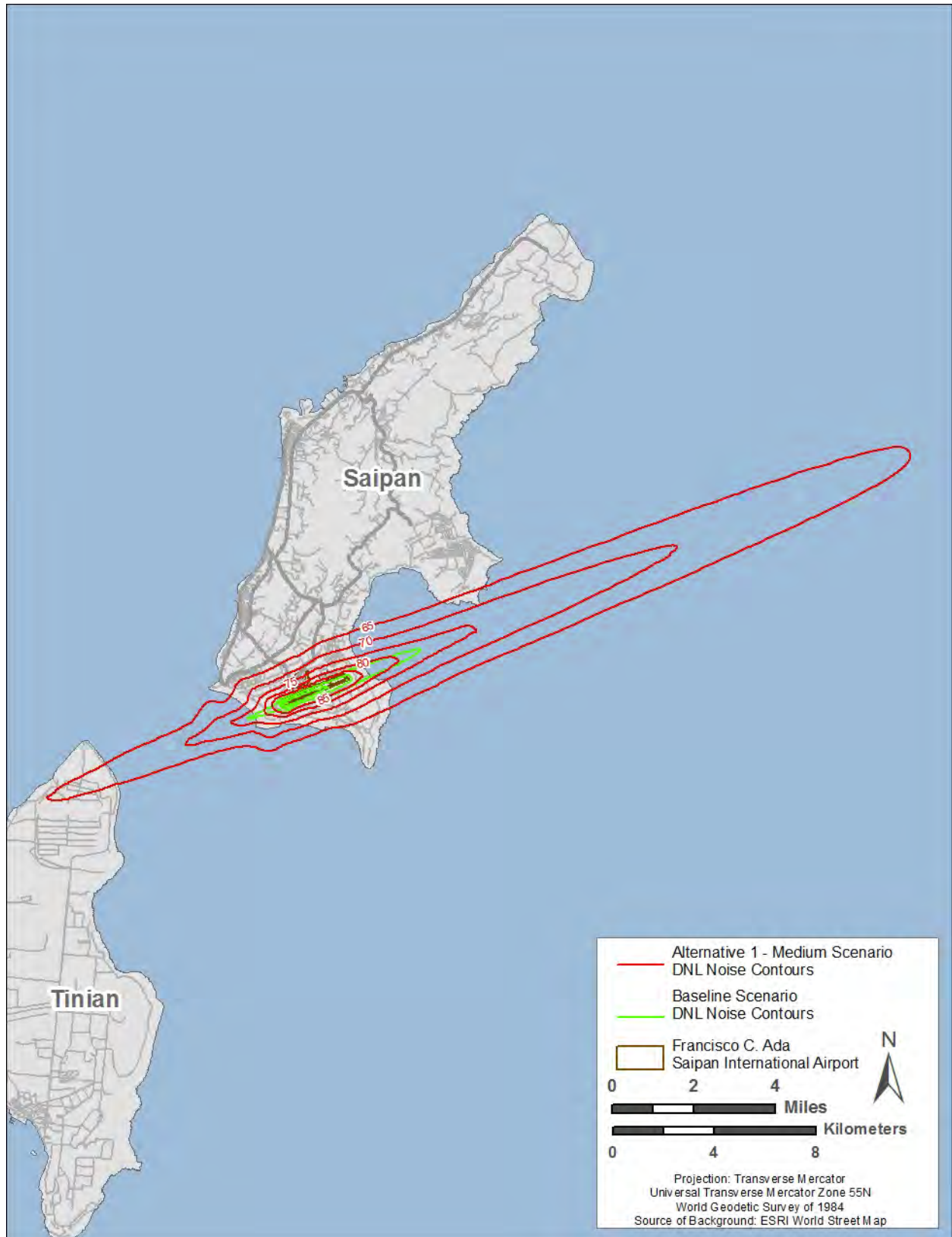


Figure 5-3. Medium Scenario Predicted DNL Noise Contours (dBA) During a Military Exercise at GSN (USAF 2012)

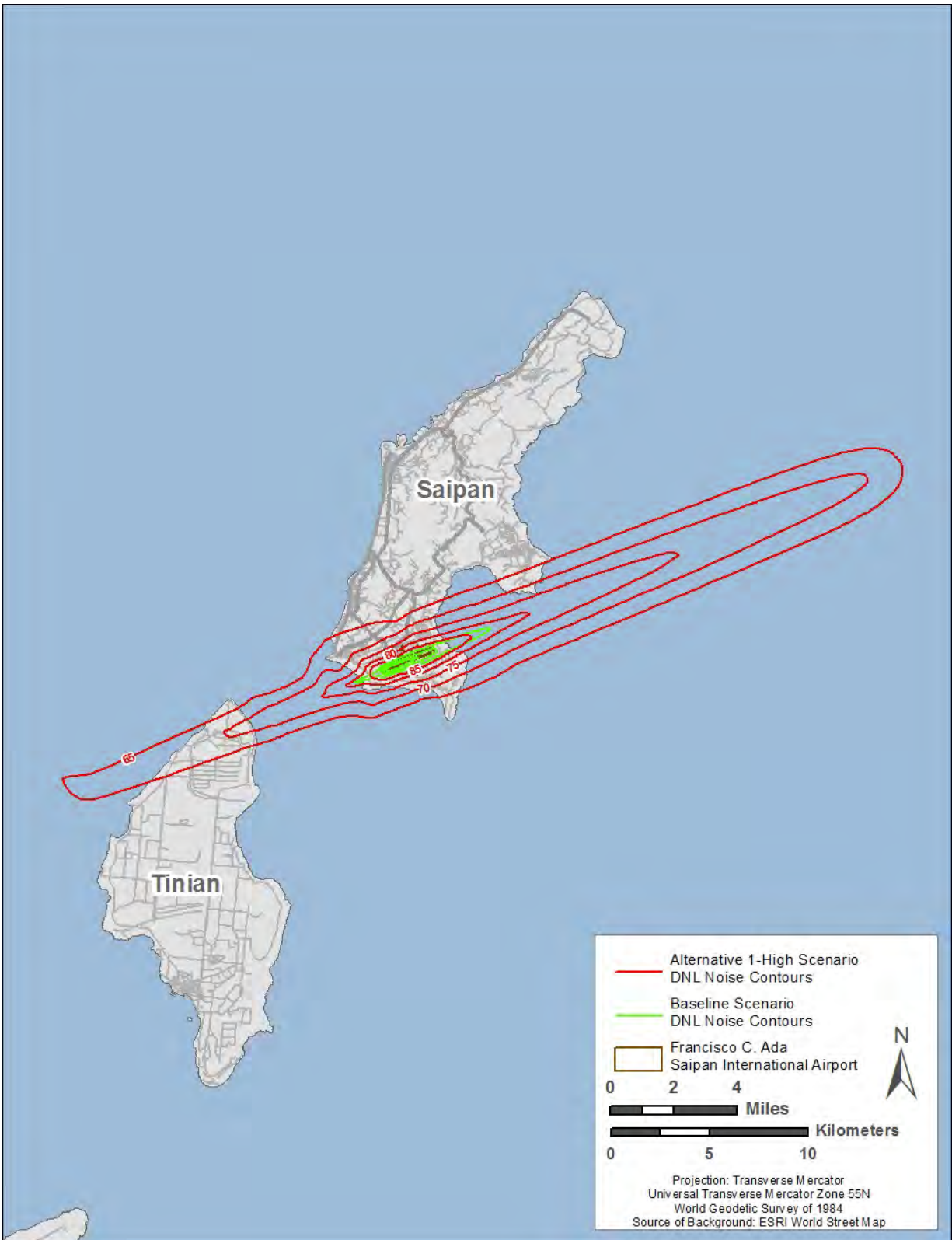


Figure 5-4. High Scenario Predicted DNL Noise Contours (dBA) During a Military Exercise at GSN (USAF 2012)

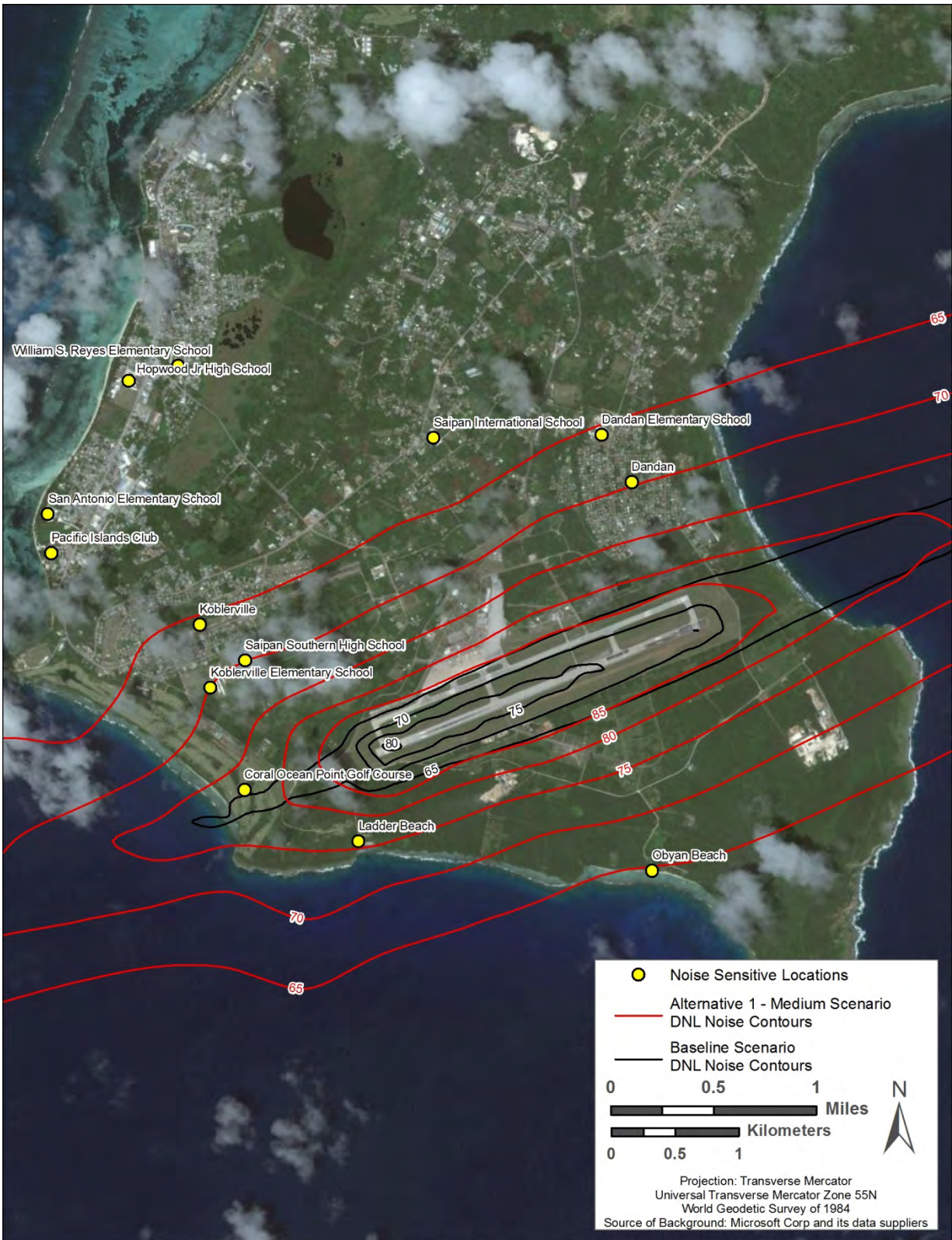


Figure 5-5. Predicted DNL Noise Contours (dBA) During a Military Exercise at GSN (medium scenario in USAF 2012)

Exposure to loud noises can also cause physiological changes in animals, such as an increase in blood pressure and heart rate, changes in blood chemistry, and changes in digestive and respiratory functions. Numerous studies of the physiological response of mammals to noise have been conducted (see reviews by Dufour 1980, Mancini et al. 1988, Larkin et al. 1996), but no studies have been done to measure the physiological response of wild songbirds to noise, or to evaluate the long-term consequences of those physiological changes on the survival or reproductive fitness of wild animals.

The most likely, detectable response of nightingale reed-warblers to an increase in takeoffs and landings of loud aircraft, and to other noises at GSN, might be a temporary or permanent change in behavior. Birds have been documented to abandon nests temporarily or permanently, avoid areas, and otherwise modify their behavior in response to noise. Efroymson et al. (2000) summarize more than 40 studies or observations of the response of raptors and waterbirds to overflights. Responses varied substantially, with some birds flushing or otherwise reacting in response to aircraft passing more than 1 km (0.6 miles) away, but many birds not reacting, even in response to overflights closer than 100 m (330 feet). The response to overflights can vary with season or timing of nesting, and probably also in response to numerous other factors. For example, Mexican spotted owls (*Strix occidentalis lucida*) were less likely to flush in response to noise early during nesting than later during the nesting season, but flush response did not differ between the nesting and non-nesting season (Delany et al. 1999). Awbrey and Hunsaker (1997) and Hunsaker et al (2007) documented a weak correlation between noise levels and number of nesting attempts by coastal California gnatcatchers at Naval Air Station Miramar, but concluded that noise from fixed-wing military aircraft and helicopters had no measurable effect on reproductive success. Flushing from nests or other changes in behavior could have an effect on reproduction or survival. For example, a sooty tern (*Onychoprion fuscatus*) colony had 99 percent nest failure in a year when low-flying, supersonic aircraft frequently flew over the colony; nest failure might have been, in part, due to damage to eggs as females rapidly left their nests (Mancini et al. 1988).

Birds and other wildlife have been documented to become habituated to aircraft overflights and other noises after continuous or frequent exposure. For example, red-tailed hawks (*Buteo jamaicensis*) that were previously exposed to helicopters exhibited less response than hawks that had not been previously exposed (Andersen et al. 1989). Habituation also has been frequently noted when using noise-making devices to scare birds away from crops or airfields (Larkin et al. 1999, Efroymson et al. 2000). Nightingale reed-warblers living near GSN are exposed to numerous takeoffs and landings of commercial jets daily and those birds, therefore, might not react in as strenuous a manner as unhabituated birds to the infrequent and temporary increase in noise from divert activities and exercises.

Loud noises can also mask other sounds that are important to birds, such as territorial calls or the sounds of approaching predators (Larkin et al 1996, Kaesloo and Tyson 2004). Because the noise from military aircraft at GSN would be of short duration, most takeoffs and landings should not adversely affect nightingale reed-warblers in this manner. However, if numerous aircraft take off and land over a short period, nightingale reed-warblers might not be able to hear territorial calls or other sounds for an extended period.

In summary, nightingale reed-warbler would be exposed to high sound levels when military aircraft take off and land during exercises at GSN, which would occur up to 8 weeks per year. Those birds currently are exposed to noise from commercial jets that are of similar or lower intensity than that of the military aircraft that would operate at GSN. Similar disturbances and noise levels have caused other birds to flush or leave their nests, and resulted in other adverse consequences. However, there is insufficient information available to determine how nightingale reed-warblers at GSN would react to the increase in frequency of loud overflights, and the increase in sound intensity during some of those overflights. In addition, other than to generalize that nightingale reed-warblers with territories near GSN and directly

under the flight paths are more likely to be affected than birds living farther away, it is not possible to specify where or how many territories might be affected by an increase in operations of loud aircraft.

To mitigate for the impacts of noise and indirect impacts on nightingale reed-warblers that will occur during the implementation phase of this project, the USAF will purchase credits or otherwise fund conservation activities at the SUMB conservation area as required in the SUMB Biological Opinion.

5.1.3 Invasive Species

The USFWS lists predation by introduced species as one of the two main threats to the recovery of nightingale reed-warblers, and states that establishment of the brown treesnake on Saipan would result in the extirpation of that bird, as occurred on Guam (USFWS 2010b).

Brown treesnakes and other invasive species could be released into Saipan when personnel and equipment are transported from Guam and other locations for construction of facilities and during divert events and exercises. To prevent this from happening, the USAF would continue their ongoing program of interdicting the transport of invasive species in the Mariana Islands. As further described in **Section 2.4**, this would include the following:

- Developing and implementing a Hazard Analysis and Critical Control Point Plan during construction and maintenance and operation of facilities at GSN and the Port of Saipan
- Inspecting outgoing aircraft, equipment, and materials from Guam with trained quarantine officers and dog detection teams
- Use existing or new, temporary or permanent, snake-free quarantine areas on Saipan for inspection of cargo traveling from Guam to Saipan when applicable. Those areas will be subject to (1) multiple day and night searches with appropriately trained interdiction canine teams that meet performance standards, (2) snake trapping, and (3) visual inspections for snakes.
- Implementing other interdiction and control requirements in the applicable Biological Opinions (e.g., USFWS 2006a, 2010a) and associated implementing instructions for training exercises in the Mariana Islands including but not limited to the procedures in JTREGMARIANAS Instruction 5090.4 for inspection of equipment and gear.

5.1.4 Cumulative Effects

Reasonably foreseeable future activities that might occur on Saipan are described in Section 5.1 of the *EIS for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands* (USAF 2012). Future Commonwealth or private activities that are reasonably certain to occur within the action area include road development and widening; geothermal, solar, and other energy production; improvement and expansion of water, wastewater, power, and other public works systems; and development of commercial, residential, medical, and other facilities. Those activities, along with the USAF proposal to clear 4.5 ha (11.0 ac) of tangantangan forest to develop infrastructure at GSN, would contribute to the cumulative loss of habitat for the nightingale reed-warbler on Saipan. Those activities would also cause an increase in noise during construction, habitat degradation, other indirect impacts that would cumulatively adversely affect nightingale reed-warblers and possibly other ESA protected species on Saipan.

5.2 Mariana Common Moorhen

A single Mariana common moorhen was observed during four of nine surveys of the east golf course pond, which is about 0.9 km (0.6 mi) southwest of GSN. That pond has an impervious liner that prevents the establishment of shoreline emergent vegetation and the surrounding vegetation is mowed or maintained for operation of the golf course. Moorhens nest in wetlands with emergent vegetation USFWS (1992), and it is, therefore, unlikely that moorhens nest at that pond. No moorhens were seen at the two other surface waters surveyed near GSN (see **Section 4.4**).

During planned joint military exercises or other unit-level exercises, any moorhens located at the golf course pond would be exposed to more frequent takeoffs or landing of aircraft. Sound levels from those aircraft would be similar to or louder than the commercial jets at GSN. Noise from the take-off and landing of those aircraft might cause Mariana common moorhens using that or other surface waters near GSN to temporarily disrupt their behavior. However, because any bird using those ponds would be habituated to frequent noise from current operations at GSN, and because the increase in noise from divert activities and exercises would be infrequent, it is very unlikely that Mariana common moorhen would avoid the use of those ponds.

Because (1) the surface waters near GSN are marginal habitat that are used temporarily by moorhens, (2) birds there likely are habituated to noise from current operations at GSN, (3) any increase in noise from divert activities and exercises would be temporary and infrequent, and (4) the ongoing program for interdicting the transport of brown treesnakes and other invasive species in the Mariana Islands would be implemented for this project (see **Section 2.4**), the USAF concludes that any adverse impacts would be temporary and insignificant, and that developing divert capabilities and conducting divert activities and exercises at GSN may affect, but are unlikely to adversely affect, Mariana common moorhens.

5.3 Mariana Swiftlet

Mariana swiftlets nest in caves located in central Saipan (Cruz et al. 2008) and favor ridge crests and open, grassy areas for foraging (USFWS 1991). No swiftlets were detected during bird surveys conducted at GSN during 2012, and the nearest cave used by these birds for roosting and nesting is more than 3 km (2 mi) north of GSN (MES 2012).

The clearing of up to 4.5 ha (11.0 ac) of second-growth forest for this project would have an insignificant adverse effect on the availability of foraging habitat for this species because tangantangan forest is common in the area and is not preferred foraging habitat. In addition, any adverse effect would be offset by the benefit of long-term protection of forest habitat in the SUMB that would be funded by the Air Force to compensate for the loss of nightingale reed-warbler habitat. The possibility of a swiftlet being harmed by aircraft during divert activities and exercises is discountable because the area is distant from nesting caves, the second-growth forests at the end of the runways are not preferred foraging habitat, and swiftlets likely avoid the busy airspace around GSN. For these reasons, the USAF concludes that developing divert capabilities and conducting divert activities and exercises at GSN may affect, but are not likely to adversely affect, Mariana swiftlets.

5.4 Green Sea Turtles

Up to 18 green sea turtles nests have been found annually on Saipan since 1999 (Kolinski et al. 2001, Maison et al. 2010). Nesting habitat for this species would not be directly affected by this project. However, green sea turtles nesting on beaches of southern Saipan, and hatchling turtles moving from nests to the ocean, could be temporarily exposed to noise from military aircraft participating in divert

1 activities or exercises (DON 2010). Exposure to elevated noise levels would be brief (seconds) and, with
2 the exception of emergency divert landings and associated take-offs, would occur over a period of no
3 more than 8 weeks of the year. Any behavioral avoidance reaction would be short-term and would not
4 permanently displace sea turtles or result in physical harm. Noise from take-offs and landing would not
5 result in chronic stress because it is unlikely that individual sea turtles would be repeatedly exposed to
6 low-altitude overflights. Therefore, any effects would be insignificant and would not be sufficient to
7 harm or harass sea turtles, and the USAF concludes that developing divert capabilities and conducting
8 divert activities and exercises at GSN may affect, but are not likely to adversely affect, green sea turtles in
9 terrestrial environments.

6. Conclusions

Based on the description of the project in **Section 2** of this BA and further described in the associated EIS (USAF 2012), the status of species and environmental baseline described in **Sections 3** and **4**, and the analysis of impacts in **Section 5**, the USAF concludes the following about the potential impacts on threatened and endangered species from developing divert capabilities and conducting divert activities and exercises at GSN.

- The proposed project will have no affect on Mariana fruit bat and Micronesian megapodes
- The proposed project may affect, but is unlikely to adversely affect, the Mariana common moorhen, Mariana swiftlet, and nesting green sea turtle
- The proposed project may affect, and is likely to adversely affect, the nightingale reed-warbler.

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In Reply Refer To:
2012-F-0445

JUN 27 2013

Mr. Marc M. Aoyama, P.E.
Chief, Programs Division
Directorate of Installations and Mission Support
Department of the Air Force
Pacific Air Forces
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Subject: Formal Consultation for Divert Activities and Exercises at the Saipan
International Airport, Commonwealth of the Northern Mariana Islands

Dear Mr. Aoyama:

This document represents the U.S. Fish and Wildlife Service's (Service) Biological Opinion on the U.S. Air Force's (USAF) proposed Divert Activities and Exercises (Divert) at the Saipan International Airport (GSN) in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531 et seq.). This Biological Opinion addresses the potential impacts of Divert on the endangered nightingale reed-warbler (*Acrocephalus luscini*a). Your request for formal consultation was received on September 10, 2012. An informal consultation addressing potential impacts to the endangered Mariana moorhen (*Gallinula chloropsis guami*), Mariana swiftlet (*Aerodramus bartschi*), and threatened green sea turtle (*Chelonia mydas*), is found in Appendix 1.

Overall island-wide effects to the nightingale reed-warbler are addressed through the October 23, 2008, *Programmatic Biological Opinion Regarding the Reestablishment, Management, and Use of the Saipan Upland Mitigation Bank, Saipan* (2008-F-0033) (Programmatic Biological Opinion). The Programmatic Biological Opinion addressed the creation of the Saipan Upland Mitigation Bank (SUMB) to protect and manage 419 hectares of land on Saipan in perpetuity for the nightingale reed-warbler. The findings and recommendations in this consultation are based on: (1) the USAF Biological Assessment for Divert received on September 10, 2012; (2) phone calls, meetings, and emails between Rachel Rounds (Service) and the USAF and its contractors; (3) the SUMB Programmatic Biological Opinion and; (4) other information available to us. A complete administrative record is on file in our office.

CONSULTATION HISTORY

June 17, 2013. The USAF and the Service agree upon final language for the invasive species conservation measures.

May 9, 2013. The Service provided the USAF with proposed edits to the invasive species section of conservation measures.

April 10, 2013. The USAF provided the Service with a re-written rapid response conservation measure which is acceptable to both agencies.

March 13, 2013. The USAF and Service had a phone call to further discuss the rapid response conservation measure in the draft Biological Opinion.

February 27, 2013. The Service provided USAF with revised invasive species conservation measures for their review.

February 26, 2013. The Service (Rachel Rounds and Domingo Cravalho) had a phone call with USAF and U.S. Navy staff and contractors (William Grannis, Kurt Rautenstrauch, Steve Pyle, Carol Gaudette, Lieutenant Colonel Alves, Steve Mosher, Lance Laughmiller, Mark Cruz, Edward Lynch, Mark Petersen) to discuss invasive species conservation measures.

February 14, 2013. The USAF provided the Service with comments on the draft Biological Opinion.

February 1, 2013. The Service provided the USAF with a draft Biological Opinion for review.

January 25, 2013. William Grannis (USAF) provided Rachel Rounds (Service) with an updated project description.

January 14, 2013. William Grannis (USAF) called Rachel Rounds (Service) to notify the Service that the USAF would like to purchase 17 credits in the SUMB to offset impacts to the nightingale reed-warbler.

December 12, 2012. The Service (Rachel Rounds, Earl Campbell, Brand Phillips, and Domingo Cravalho) had a phone call with USAF staff and contractors (William Grannis, Kurt Rautenstrauch, Shannon Cauley, Steve Pyle, Carol Gaudette, Mark Ingoglia, and Lieutenant Colonel Alves) had a conference call to discuss invasive species conservation measures.

November 16, 2012. William Grannis (USAF) sent Rachel Rounds (Service) a revised project description.

October 18, 2012. Kurt Rautenstrauch (HDR) provided Rachel Rounds (Service) with maximum noise estimates for four aircraft types and 10 locations around GSN.

October 11, 2012. Rachel Rounds (Service) and USAF staff and contractors (William Grannis, Daniel Robinson, Dale Clark, Steve Pyle, Julie Hong, Major Toves, Kurt Rautenstrauch, Tanya Perry) had a phone call to discuss the timeline for re-initiation of the Biological Opinion, the noise disturbance analysis, and joint military training exercises.

October 1, 2012. Rachel Rounds and Domingo Cravalho (Service) and USAF staff and contractors (William Grannis, Major Toves, Kurt Rautenstrauch, Shannon Cauley, Steve Pyle, and Edward Lynch) had a phone call to discuss SUMB credit purchases, Biological Opinion timeline, and brown treesnake conservation measures.

September 20, 2012. Rachel Rounds (Service) and USAF staff and contractors (William Grannis, Julie Hong, Major Toves, Bernie Marcos, Shannon Cauley, and Kurt Rautenstrauch) had a phone call to discuss conservation measures, SUMB credit purchases, monitoring projects, and the Divert training schedule.

September 18, 2012. Rachel Rounds (Service) sent William Grannis (USAF) a list of questions on the Divert Biological Assessment.

September 10, 2012. The Service received the Final Biological Assessment from the USAF.

July 26, 2012. Rachel Rounds (Service) and USAF staff and contractors (William Grannis, Edward Lynch, Stephen Pyle, Shannon Cauley) had a phone conversation to discuss Service comments on the draft Biological Assessment.

July 19, 2012. The USAF submitted a draft Biological Assessment to the Service for review.

May 31, 2012. The USAF and its contractors (Kurt Rautenstrauch, William Grannis, Mark Ingoglia, Edward Lynch, Mark Petersen, Shannon Cauley, and Major Pete Toves) and Service staff (Rachel Rounds and Earl Campbell) met to discuss the results of threatened and endangered species surveys at the Saipan International Airport and the section 7 consultation process.

July 15, 2011. USAF and its contractors (Edward Lynch, Carol Gaudette, William Grannis, Shannon Cauley, Julie Hong, and Mark Ingoglia) presented to the Service (Loyal Mehrhoff, Earl Campbell, Annie Marshall, Steve Miller, Fred Amidon, Domingo Cravalho, and Rachel Rounds) initial information regarding the Divert Project, discussed threatened and endangered species in the potential project areas, and discussed the section 7 consultation process.

ACTION AREA

The action area for the proposed project is the airport and surrounding areas (Figure 1), the seaport (Figure 2), and the Saipan Upland Mitigation Bank Conservation Area, which will be used for mitigation actions.

Figure 1. Proposed Facilities at Saipan International Airport

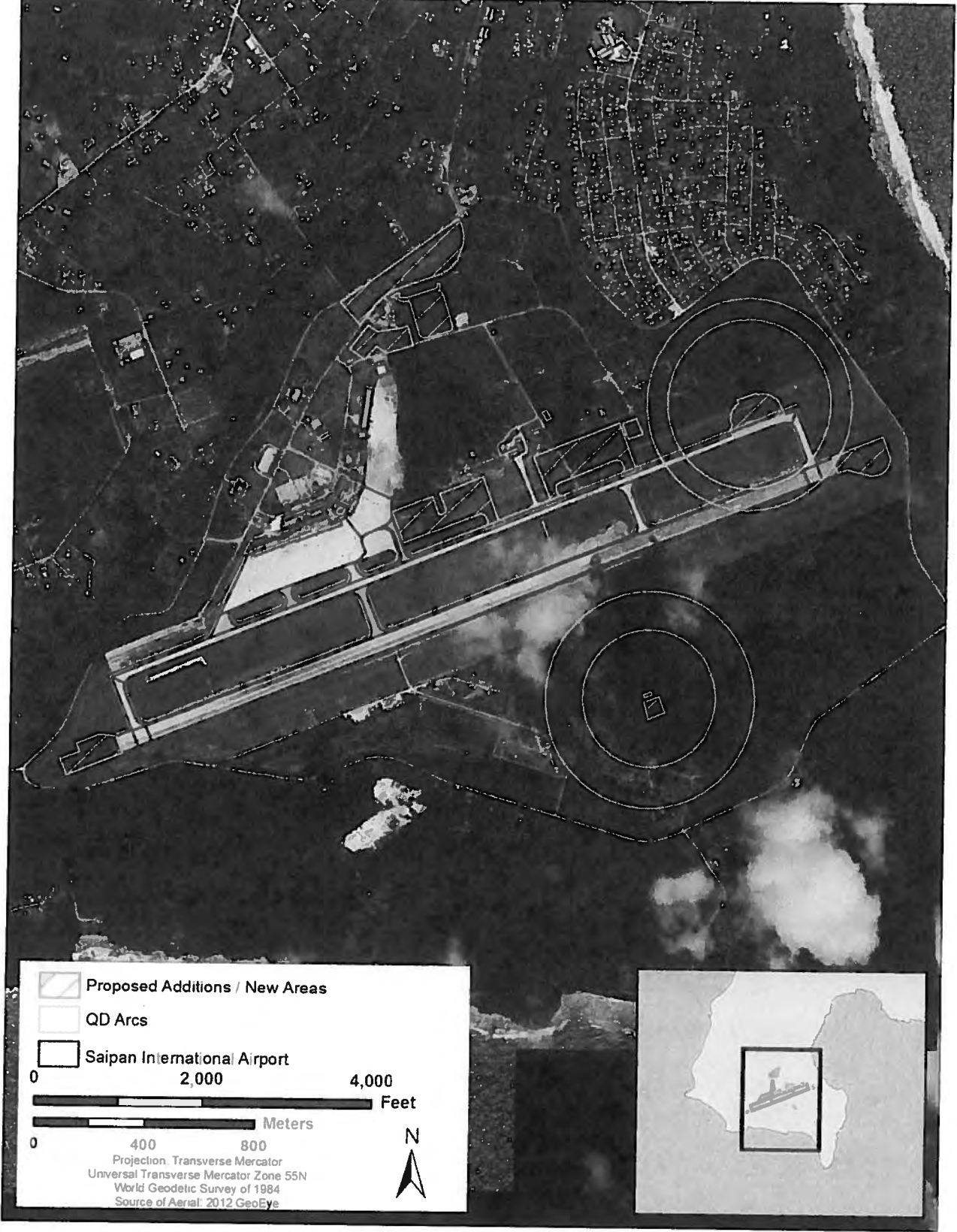
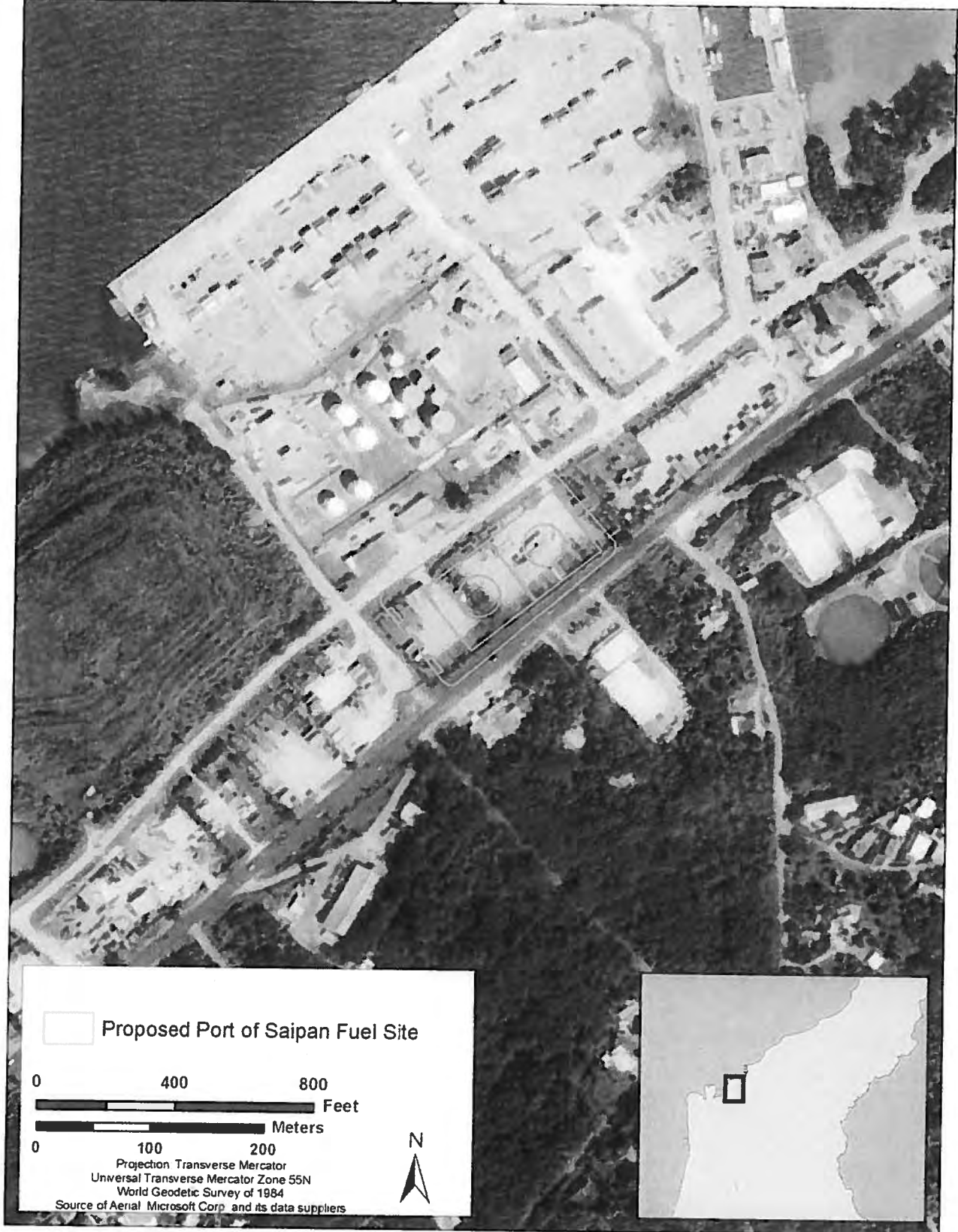


Figure 2. Proposed Facilities at Seaport of Saipan

DESCRIPTION OF THE PROPOSED ACTION

The Biological Assessment for Headquarters Pacific Air Forces Divert Activities and Exercises in Saipan fully describes the proposed construction and implementation of the Divert Project and is incorporated by reference herein. A brief description of the proposed action is provided below. This Biological Opinion will include effects from construction, training, joint military exercises, and humanitarian exercises for the lifetime of the Divert action. The purpose of the Divert project is to establish divert activity capabilities to support and conduct current, emerging, and future exercises, while ensuring the capability to meet mission requirements in the event that access to Andersen Air Force Base on Guam, or other western Pacific locations, is limited or denied. The need for humanitarian assistance can arise suddenly and without warning, such as disaster response in Japan during the 2011 earthquake and tsunami. Because of the proximity to forward-deployed forces in the western Pacific, the Marianas provides the best alternative for forward-deployed U.S. forces to train on U.S.-owned lands and to develop the proposed additional divert capabilities.

Construction

Saipan International Airport

The USAF proposes to construct and expand facilities at GSN. New facilities could include an expanded runway; associated pavement markings and lighting; parking aprons; a temporary munitions storage area; a hazardous cargo aircraft parking pad; an arm/disarm pad; an aircraft hangar; a maintenance facility; a jet fuel receiving, storage and distribution system; and navigational aids. Temporary billeting facilities for up to 700 personnel may also be developed adjacent to the airport. The total size of the facilities, if they are all constructed, would be about 24 hectares (59 acres).

Seaport of Saipan

Two hectares (approximately five acres) would be developed at the Port of Saipan for construction of fuel storage tanks. Two aboveground 2.1-million gallon tanks and associated piping would be constructed near the seaport on federally leased land. The site is located adjacent to the U.S. Army Reserve Center between Beach Road and Middle Road. Existing infrastructure at the port would be used to offload fuel from vessels. The site is in an industrial area that has been previously developed.

The timeline of Phase 1 construction is expected to be 24 to 36 months with geotechnical surveys beginning in 2013. The construction schedule for Phase 2 construction is not yet established.

Implementation

After completion of facility construction, the USAF would use GSN periodically and temporarily for ground and air activities, aircraft support activities, and other airfield ground support activities. A mix of joint cargo, tanker, fighter, and other aircraft could be diverted to or fly from the airfield. Implementation activities conducted might include, but are not limited to, divert landings and take-offs, joint military exercises, jet fueling and storage, humanitarian assistance and disaster relief airlift staging including non-combatant evacuation operations, and billeting. Implementation activities are expected to begin in 2016 or 2017.

Joint military exercises at GSN may include scheduled joint, combined, and unit-level military training activities and exercises, as described and analyzed in the Mariana Island Range Complex Environmental Impact Statement (EIS) (U.S. Navy 2010) and Biological Opinion (USFWS 2010). Aircraft and personnel participating in these combined exercises would be temporarily located at and operate from GSN for a combined total of about 60 days (eight weeks) per year. An exercise could last approximately two weeks. No more than 700 personnel would participate in exercises at GSN at any given time. Humanitarian and divert exercises would be short-term events.

A mix of joint fighter, cargo, and tanker aircraft, not to exceed the airport parking capacity could be diverted to or exercised from GSN. A maximum of six tankers or 12 fighters, or a mix of those aircraft, could operate from GSN if one parking apron is constructed. If the second parking apron is constructed, a total of 12 tankers, or 24 fighters, or a mix of those aircraft, could operate from GSN. The exact mixture of aircraft used during implementation will vary depending on mission requirements. Aircraft that would be used for joint military exercises include cargo, air mobility, and refueling aircraft such as the KC-135, and tactical or fighter aircraft such as the F-16, and F-22. The maximum capacity of aircraft anticipated to be used at GSN at any one exercise or Divert event is 24 fighters or 12 tankers, based on the construction of two parking aprons. Military exercises are anticipated to occur no more than eight weeks per year, such as in four, two-week exercises; however, longer exercises of up to four weeks could occur. The ongoing joint military exercises, including joint multi-carrier strike group and joint combined exercises, could constitute four of the eight weeks of training under Divert. To model worst-case noise for an average busy day during a military exercise event, the USAF estimated that each aircraft would complete four operations per day (two arrivals and two departures). The USAF assumed that 90 percent of aircraft operations would occur during the day (7 a.m. to 10 p.m.) and 10 percent at night (10 p.m. to 7 a.m.).

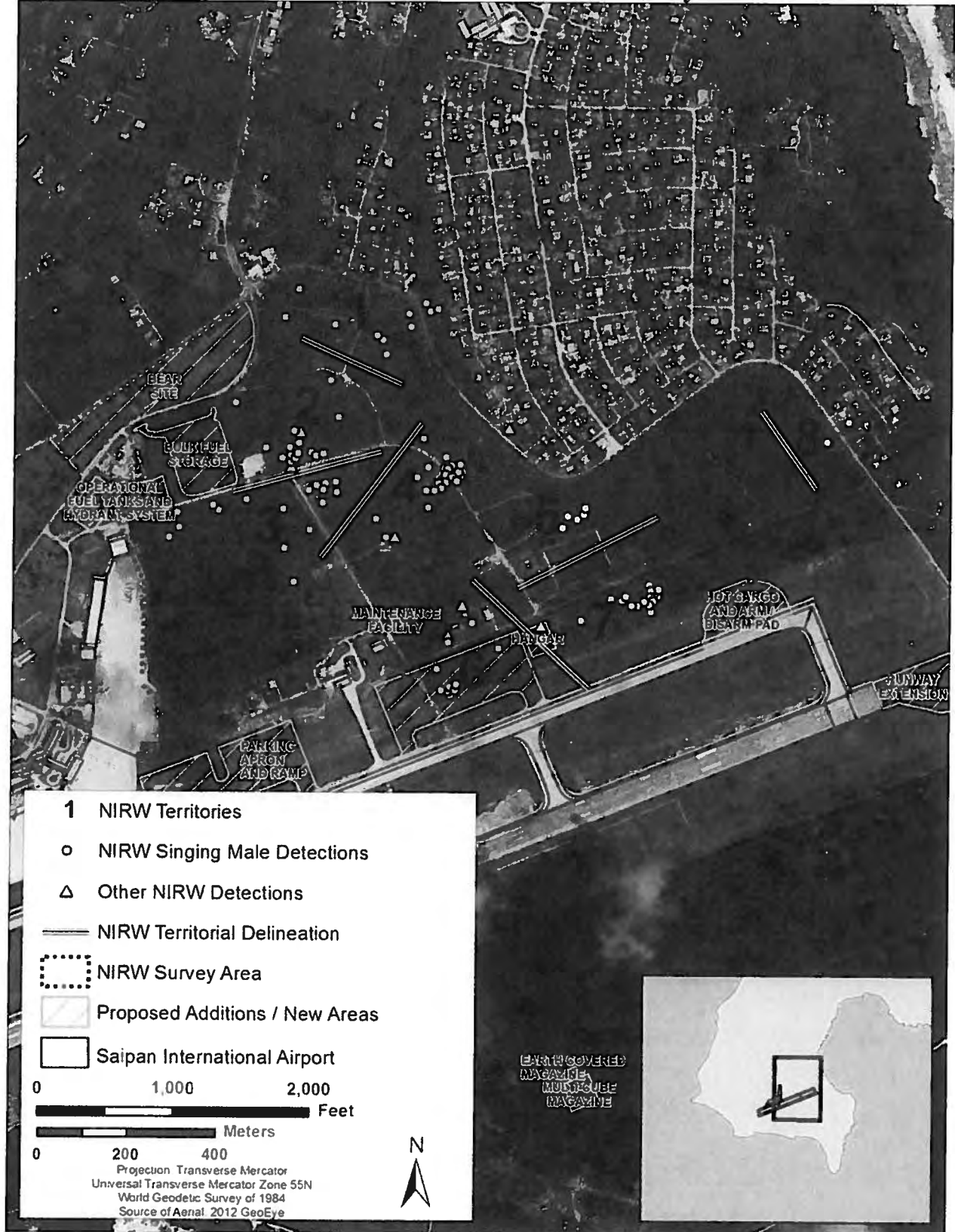
In the Divert Draft EIS (USAF 2012), the USAF modeled baseline, low, medium, and high scenarios for military exercises. The USAF anticipates that the Divert military exercises covered by this Biological Opinion will fall in the range of the low and medium scenarios presented in the Draft EIS. In the baseline scenario (current conditions) approximately 140 flights operate out of GSN on a daily basis. The mix and type of aircraft assumed for each modeled scenario is based on construction of two parking aprons and could result in 12 KC-135 under the low scenario, 6 KC-135, 8 F-16, and 4 F-22 under the medium scenario, and 12 F-16 and 12 F-22 under the high scenario. Under the low scenario the number of tanker/cargo aircraft flights (a flight is a take-off and landing) per day would increase to 152 (an increase of 12 flights). Under the medium scenario the number of flights per day would increase to 164 (an increase of 24 flights). Under the high scenario the number of flights per day would increase to 202 (an increase of 62 flights).

Conservation Measures

The following conservation measures, developed in coordination with the Service, will avoid or minimize effects to the nightingale reed-warbler. They are considered part of the project description. Any changes to, modifications of, or failure to implement these conservation measures may result in a need to reinitiate this consultation.

Construction

1. The USAF will purchase one credit in the Saipan Upland Mitigation Bank prior to any construction of the east parking apron (Figure 3). If a credit for Territory Six (see Figure 3) has already been purchased for implementation actions (fighter jet flights) then a credit for Territory Six will not need to be purchased a second time. In accordance with the Nightingale Reed-Warbler Programmatic Consultation and Saipan Upland Mitigation Bank Agreement and Addendum, the agreed-upon credit purchase will be as follows:
 - a. Prior to the start of any vegetation clearing or earth-moving activities at the East Parking Apron, the USAF shall purchase one credit at the Saipan Upland Mitigation Bank, which is intended to provide 1.75 nightingale reed warbler territories within the Bank boundary.
 - b. Upon written notification that the credit has been purchased (i.e., the CNMI government has received and deposited the funds required to purchase the credit, specified under 1.a. above, within the Commonwealth Mitigation Bank Revolving Fund authorized under CNMI P.L. 10-84 and a receipt is sent to the Service documenting the deposit), the Service will provide a letter to the USAF indicating that the credit purchase obligation has been fulfilled and on-site project activities may begin as outlined within the project description above and the remainder of the conservation measures listed below.
2. Clearing of vegetation at the east parking apron will only occur between October through December or April through June, when nightingale reed-warbler nesting activity is not at its peak.
3. The USAF will not locate a laydown yard or other temporary construction facilities in nightingale reed-warbler habitat or within a 50-meter buffer zone around reed-warbler territories.
4. When possible, the use of very noisy (greater than 60 decibels A-weighted (dBA)) heavy machinery should be limited to the non-active or non-peak breeding seasons or temporary noise barriers or buffer zones should be installed to protect nightingale reed-warblers using buffer zones or areas of connectivity.
5. Adequate plastic construction fencing will be placed and maintained around any habitat that is to be avoided (including buffer areas and adjacent parcels) to prevent impacts to habitat from construction equipment and personnel.
6. All on-site construction personnel will receive instructions regarding the presence of listed species and the importance of avoiding and minimizing impacts to these species and their habitat.
7. All on-site personnel will receive instruction regarding the brown treesnake (*Boiga irregularis*) and what to do immediately in case of a sighting.
8. The USAF will ensure that no unauthorized take of nightingale reed-warbler or destruction of their habitat occurs. The USAF will have the authority to stop all activities that may

Figure 3. Nightingale reed-warbler territories in northeast survey area.

result in such take or destruction until appropriate corrective measures have been completed. The USAF will report immediately any unauthorized impacts to the Service and CNMI DFW.

9. A litter-control program will be implemented during construction. All tools, gear, and construction scrap will be removed upon completion of work in order to prevent the attraction of non-native pests (e.g., rats). All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers. The trash containers shall be removed from the project area and disposed of off-site at an approved landfill at the end of each working day.
10. A brief summary report will be provided to the Service within 30 days of construction implementation to document implementation of any fencing, buffer zones, and minimization measures.

Implementation

To offset impacts from noise disturbance and habitat degradation resulting from implementation of joint military exercises as proposed in the Divert EIS, the USAF will purchase seventeen credits in the SUMB. These credits will be purchased prior to initiation of any proposed Divert exercises out of GSN that use fighter-type jet aircraft. It is expected that proposed Divert exercises will begin in 2016 or 2017. If a credit for Territory Six, which will be cleared for the east parking apron, has already been purchased then a credit for Territory Six will not need to be purchased a second time. In accordance with the Nightingale Reed-Warbler Programmatic Consultation and Saipan Upland Mitigation Bank Agreement and Addendum, the agreed-upon credit purchase will be as follows:

- a. Prior to the start of proposed Divert exercises out of GSN that use fighter-type jet aircraft, the USAF shall purchase seventeen credits at the Saipan Upland Mitigation Bank, which is intended to provide 29.75 nightingale reed warbler territories within the Bank boundary.
- b. Upon written notification that the credit has been purchased (i.e., the CNMI government has received and deposited the funds required to purchase the credit, specified under 1.a. above, within the Commonwealth Mitigation Bank Revolving Fund authorized under CNMI P.L. 10-84 and a receipt is sent to the Service documenting the deposit), the Service will notify the USAF indicating that the credit purchase obligation has been fulfilled and on-site project activities may begin as outlined within the project description above and the remainder of the conservation measures listed below.

Invasive Species Interdiction and Control

The USAF will be responsible for oversight of avoidance, minimization, and mitigation implementation by the construction contractors for projects associated with the proposed Divert activities. In addition, the USAF will be responsible for oversight of training, review, and guidance on Hazard Analysis and Critical Control Point (HACCP) plan development, implementation and revision during the construction phase of the project. The HACCP plans will incorporate measures to ensure invasive species, including the brown treesnake, are not transported to the CNMI from Guam via project vehicles, materials and equipment. The USAF

will be responsible for assuring that any HACCP plans are implemented by construction contractors to prevent the inadvertent movement of non-native, invasive species from other locations to the project site. The USAF will coordinate development of HACCP plans with the Service, including, but not limited to, annual meetings and reports to ensure the actions to eliminate or reduce risk are sufficient and on-going during construction activities.

Brown Treesnake Interdiction and Control

- I. Per Public Law 110-417, [Division A], title III, Section 316, October 14, 2008, 122 Statute 4410 and per DoD Defense Transportation Regulations, Chapter 505 protocols, the USAF, with support from Joint Region Marianas (JRM), commits to implementing 100 percent inspection of all outgoing cargo and aircraft that are leaving from Guam associated with the Divert project. Inspections will be performed with trained quarantine officers and dog detection teams, which could be supplemented by other pest control expertise (with appropriate U.S. Department of Agriculture-Wildlife Services (USDA-WS) brown treesnake detection training and oversight) to meet 100 percent inspection goals for training activities, as required by Joint Region Marianas Instruction 5090.4. As a stakeholder, the Service will have input on the USAF protocols for implementing brown treesnake interdiction and control strategies. The USAF will work cooperatively with JRM, the Service, and USDA-WS to seek information in development of protocols for implementation of interdiction and control methods aimed at controlling brown treesnake as related to Divert training activities. On an as needed basis, the Service, USDA-WS, and USAF may request meetings to discuss interdiction and control method protocols as related to Divert military exercises.
 - a. In the event military units, vehicles, and equipment accidentally leave Guam without inspection, as soon as possible, the USAF will notify: (1) USDA-WS and (2) the point of destination port or airport authorities and work with the destination port to resolve the issue. Urgency of notification is a priority so that rapid response or other actions can be implemented to reduce risk.
 - b. In addition, the USAF will route inbound personnel and cargo for tactical approach exercises or humanitarian operations (that require an uninterrupted flow of events) directly to CNMI training locations to avoid Guam seaports and airfields. If Guam cannot be avoided, the USAF, in cooperation with USDA-WS and the Service, shall identify, and USAF will implement appropriate interdiction methods that may include redundant inspections (see 1c) or other interdiction methods as agreed to by the Service, USDA-WS, USAF and JRM. Additionally, tactical approach exercises will involve only cargo equipment that has not originated from areas containing a brown treesnake population or will be 100 percent inspected by certified brown treesnake canine programs. If the USDA-WS develops performance standards for this activity, the USAF will adopt those standards, provided they are compatible with military mission.
 - c. The USAF is committed to implementing 100% redundant inspections after discussions with appropriate stakeholders. Redundant inspections include inspections on Guam and at the receiving jurisdiction for administrative and logistical movements that do not require a tactical approach to complete the training requirements. It is anticipated that

redundant inspections to the extent possible would utilize existing quarantine and inspection protocols at receiving ports, but in the event that there is inadequate inspection coverage the USAF will coordinate with the USDA-WS to provide additional canine inspection teams that will augment quarantine and inspection protocols at the receiving ports. Appropriate stakeholders include, but are not limited to: the Service to ensure the inspections are adequate to reduce risks to trust resources, USDA-WS, receiving jurisdictions and their supporting agencies with expertise in invasive species control, and other inspection authorities as needed to ensure inspection methods are current and revised as new techniques, technology, or data become available.

2. The USAF will also establish snake-free quarantine areas (barriers) for cargo traveling from Guam to CNMI and other brown treesnake-free areas. These barriers will be subject to: (1) multiple day and night searches with appropriately trained interdiction canine teams that meet performance standards under 1b; (2) snake trapping; and (3) visual inspection for snakes. In lieu of permanent barriers, temporary barriers may be preferable to permanent enclosures because of the variable sizes needed to handle different cargo amounts for the various training activities. The USAF will produce standard operating procedures for temporary barrier construction and use within two years of the issuance of this Biological Opinion. Standard operating procedures will ensure that temporary barriers will be constructed and maintained in a manner that assures the efficacy of the barrier and that staff maintaining and constructing the temporary barriers will receive training related to this activity prior to construction. The construction and maintenance of temporary barriers utilized for cargo traveling from Guam to CNMI and other brown treesnake-free areas must be approved by the Service prior to use. During the construction phase of this project, the existing permanent snake-free quarantine area at the Saipan seaport should be utilized for surface cargo following relevant CNMI and DoD regulations. Standard operating procedures will be developed in cooperation with the Service, U.S. Geological Survey, Fort Collins Science Center, Invasive Species Science Branch, and the USDA-WS to ensure risk to trust resources is adequately minimized. If risks are not adequately minimized, additional recommendations will be provided for incorporation into the protocols until the USAF and Service mutually agree the risk has been minimized. The Service, USAF, and other appropriate parties will meet, if necessary, to resolve concerns such that the protocols ensure risk is adequately minimized.
3. The USAF, in conjunction with the Service and JRM, will develop procedures and protocols specific to Divert training events that will support a rapid response action in the event of a brown treesnake sighting resulting from Divert activities. Divert activities and exercises will be varied in the number of aircraft and personnel, and each event will have differing logistics support capabilities depending on the nature of the event. The type and amount of logistic support will be agreed to prior to each major event. Logistic support will include consideration of both in-kind assistance through air transport, shared billeting, security detail, food, materials, and ground transportation, and financial compensation for agreed-to response actions that could not be supported by in-kind assistance, including compensation for performance of services to support the deployment and execution of rapid response search teams.

4. The USAF, working in collaboration with the Service, and USDA-WS, will decide how best to implement the Brown Treesnake Control Plan (BTS TWG 2009, 37 pp.) relevant to Divert activities. The USAF and Service must mutually agree on the Brown Treesnake Control Plan implementation.
5. The USAF will provide invasive species awareness training for all military and contractor personnel prior to all training activities. This would include a mandatory viewing of a brown treesnake educational video, distribution of pocket guides with brown treesnake information and personal inspection guidelines to be carried at all times, and assurance that brown treesnake awareness extends from the chain of command to the individual military service member
6. Due to limited availability of inspectors, trained dogs, and quarantine facilities and equipment on Guam and the CNMI, the USAF will coordinate closely with the Service, U.S. Department of Agriculture, CNMI Department of Land and Natural Resources, and Joint Region Marianas staff responsible for managing their brown treesnake program, on planning for training activities on Saipan. The USAF, along with cooperating agencies, will identify the inspection and interdiction requirements for the Divert training, including the number of trained quarantine officers and dog detection teams required. The USAF will coordinate and consult with the Service on the inspection and interdiction requirements identified by the USAF, and the Service must concur with these requirements prior to the implementation of the exercise or training activity. The USAF, along with the cooperating agencies, will develop plans to ensure that inspection personnel are available and that all requirements can be met, and will identify the support that the USAF will need to provide for the inspections. Planning for training exercises generally begins months prior to implementation of an exercise, and planning for complex training that would require a substantial number of inspectors, quarantine areas, or other personnel or equipment for control and interdiction generally begins more than a year in advance. If adequate resources, such as trained inspectors and dog teams, are not available during training activities, training will not occur until resources are available.

Prevention of Invasive Species Introductions and Spread

1. All personnel involved in Divert training will adhere to DoD Instruction 5090.10A and the 2005 Brown Treesnake Control and Interdiction Plan, which calls for individual troops to conduct self-inspections to avoid potential transport of brown treesnakes. Troops will inspect all personal gear and clothing (e.g., boots, bags, weapons, pants), hand-carried equipment and supplies and tent canvas. The intent of this measure is to minimize the potential risks and subsequent effects associated with transport of troops and personnel from Guam to the CNMI and other areas that do not have brown treesnakes.
2. In addition to self-inspections, each training action will undergo a pathway risk analysis as a tool to improve programmatic efficiency while preventing the spread and introduction of invasive species. Actions at risk of transporting invasive species will have prevention tasks identified and implemented to reduce risk. Methods employed such as HACCP planning

development and implementation by the USAF may be utilized to conduct pathway analysis. Pathway risk analysis must be completed prior to each training action being implemented.

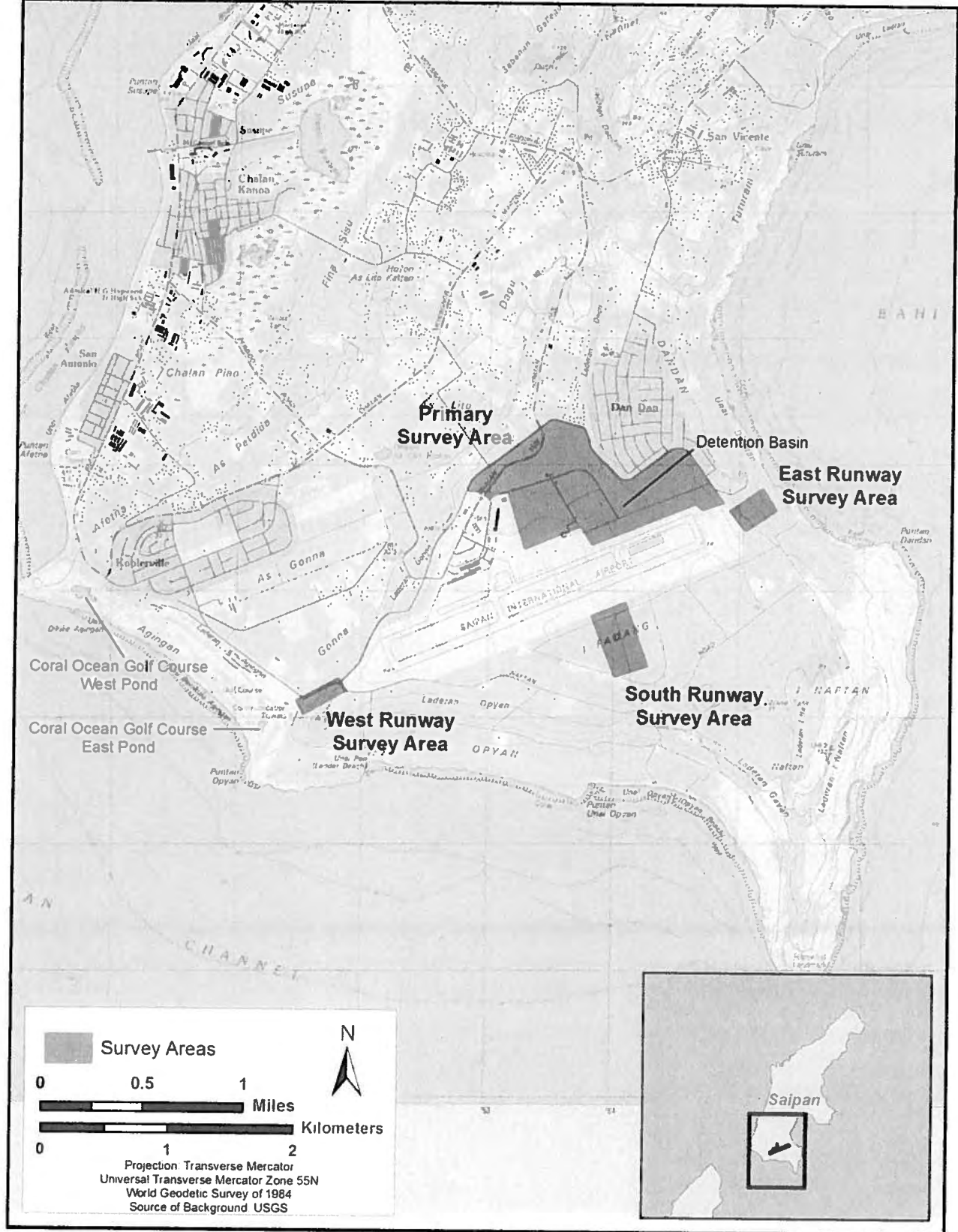
3. The USAF is a participating agency in the development of the Micronesia Biosecurity Plan. The Micronesia Biosecurity Plan is intended to coordinate and integrate inter-agency invasive species management efforts such as control, interdiction, eradication, and research. Once completed, any portions of the Micronesia Biosecurity Plan determined to be applicable to Divert construction and training activities, will be implemented when such procedures do not unduly interfere with military training. The USAF will continue to work cooperatively with the Service and U.S. Department of Agriculture in development of protocols for implementation of interdiction and control methods in accordance with recommendations contained in the Micronesia Biosecurity Plan identified as being tied to USAF actions.

STATUS AND ENVIRONMENTAL BASELINE OF THE SPECIES

A complete Status of the Species for the nightingale reed-warbler can be found in the October 23, 2008, *Programmatic Biological Opinion Regarding the Reestablishment, Management, and Use of the Saipan Upland Mitigation Bank, Saipan* (2008-F-0033). The nightingale reed-warbler was federally listed as an endangered species in 1970 (Service 1970, p. 18321). No critical habitat has been designated for this species. The main threats currently facing the nightingale reed-warbler are: (1) habitat loss and degradation (*e.g.*, wetland destruction, upland forest conversion, habitat destruction by feral ungulates, and habitat degradation by non-native invasive plant species); (2) potential for the establishment of the brown treesnake on Saipan; and, (3) predation by introduced animals such as rats (*Rattus spp.*), cats (*Felis catus*), and possibly monitor lizards (*Varanus indicus*). Island-wide surveys for the nightingale reed-warbler were completed on Saipan in 1982, 1997, and 2007 (Engbring et al. 1986, USFWS 1998a, Camp et al. 2009). These data indicate nightingale reed-warbler populations on Saipan declined by approximately 61 percent from 1982 to 2007. While we do not have updated population information for the last 5 years, we assume that the population has continued to decline as threats to the species have not changed. Habitat loss through development has continued and predator control has not been implemented. However, most habitat loss has been permitted through use of the Saipan Upland Mitigation Bank which will have a long-term benefit to the species. The population of nightingale reed-warblers in the Saipan Upland Mitigation Bank Conservation Area has not been surveyed since 2008. From 1999 to 2008 the population fluctuated yearly but tended to remain stable over the 10-year period (CNMI DFW, unpublished data, 2013).

Environmental Baseline

Micronesian Environmental Surveyors, a contractor for the USAF, conducted avian surveys around GSN in February and March of 2012. Surveys were conducted on the northeast side of the airport where most facilities would be constructed and an area south of the runway slated for the munitions storage facility (Figure 4). Eight nightingale reed-warbler territories were defined in the northeast survey area (see Figure 3). No nightingale reed-warblers were detected south of the runway.

Figure 4. Nightingale reed-warbler survey areas

Additional nightingale reed-warbler territories are likely present in areas surrounding the airport that were not surveyed as part of the proposed project. These territories would not be subjected to construction disturbance, but are within areas that will have increased noise due to additional overflights. There is potential nightingale reed-warbler habitat in As Gonno to the northwest of the airport, east and west of the runway, and south of the runway near Obyan. Comprehensive nightingale reed-warbler surveys were not conducted in these areas, but roadside point-counts were conducted three times at east and west ends of the runway. A nightingale reed-warbler was heard at the west end of the runway, and potential habitat was observed at both ends. In addition, surveys conducted in 2007 by the Service and CNMI DFW detected two nightingale reed-warblers near the west end of the runway, confirming that there are reed-warblers in the area. It is assumed, therefore, that nightingale reed-warbler territories are present at both ends of the runway.

Using vegetation mapping, existing CNMI DFW and USFWS unpublished survey data, and information from Camp et al. (2009), we have estimated the potential number of nightingale reed-warbler territories in the non-surveyed areas around the airport. The two areas that will have the loudest noise from Divert training are the east and west ends of the runways (see Figure 4).

We estimate there are potentially four nightingale reed-warbler territories at the east and west ends of the runway. Nightingale reed-warblers are also present in habitats to the north and south of the airport. We estimate that there are potentially thirteen nightingale reed-warbler territories within approximately 500 meters north and south of the runways that may experience noise disturbance from Divert training activities.

The most recent data indicates there are approximately 229 nightingale reed-warblers in the Saipan Upland Mitigation Bank Conservation Area (CNMI DFW unpublished data 2008). There are no nightingale reed-warblers located at or adjacent to the seaport site (see Figure 2).

EFFECTS OF THE ACTION

Construction

Evaluation under the SUMB Programmatic Biological Opinion

The proposed project will clear 2.6 hectares of nightingale reed-warbler habitat for construction of the east parking apron. Project activities will include clearing vegetation and use of heavy equipment. Project impacts are assessed by determining the number of territories directly and indirectly affected by the action. Due to vegetation clearing for construction of the east apron, one nightingale reed-warbler territory will be subject to direct impacts including habitat loss, fragmentation and degradation. Indirect impacts to this territory and potential adjacent territories include increased noise during clearing and increased risk of non-native invasive species. Under the SUMB Programmatic Biological Opinion, project impacts are assessed by determining the number of territories directly and indirectly affected by the action. For habitat clearing for the east apron, impacts to nightingale reed-warblers will be minimized by purchasing one credit in the Saipan Upland Mitigation Bank commensurate with the direct and indirect impacts associated with the project, and by implementing conservation measures.

Implementation

The implementation of Divert will cause an increase in noise levels around GSN and in surrounding nightingale reed-warbler habitats. The effects analysis for implementation of Divert will therefore focus on potential noise impacts to nightingale reed-warblers from the increase in flights at GSN. This section will first review existing knowledge and literature regarding the impacts of noise on avian species, with an emphasis on military noise and its impacts on songbirds. The noise review is followed by an overview of potential impacts to nightingale reed-warblers from Divert, and then an assessment of the level of take that is expected from Divert.

Noise review

Studies on the impacts of aircraft overflights to wildlife have been primarily limited to work on ungulates (e.g., Krausman et al. 1998; Maier et al. 1998; Frid 2003; Landon et al. 2003; Krausman et al. 2004; Lawler et al. 2005), birds of prey (e.g., Andersen et al. 1989; Watson 1993; Trimper et al. 1998; Delaney et al. 1999; Palmer et al. 2003), and waterbirds (e.g. Ward et al. 1999; Conomy et al. 1998 a,b; Komenda-Zehnder et al. 2003). These studies report a wide range of reactions to overflights depending on the biology of the species, its previous exposure to overflights, whether the species is breeding, the type of aircraft, the altitude of the aircraft, and the lateral distance between aircraft and the species. The variability in these reactions and their specific circumstances make it difficult to be certain how a particular species, such as the nightingale reed-warbler, will react to aircraft overflights.

Avian behavioral responses to noise may range from flushing and body shifting to physiological responses such as an increase in heart rate or hormone balance (Brown 2000, p. 11; Barber et al. 2010, p. 181). Specific reactions will vary by species and by an individual's previous exposure to noise disturbance (Manci 1998, p. 15). Individuals with previous exposure to aircraft overflights may display less reaction to overflights than individuals without previous exposure (Andersen et al. 1989, Conomy et al. 1998b). This reduced reaction is believed to be a sign of habituation; however, the habituation may be individual or species specific. For example, Conomy et al. (1998b) found that black ducks (*Anas rubripes*) did not become habituated to noise. Larkin (1996, p. 1) in a review of noise impacts on wildlife, reported that decreased responsiveness from wildlife after repeated noise is frequently observed and attributed to habituation. However, the degree of disturbance to which a species can habituate may be limited (National Park Service 1994, p. 5.17). Francis et al. (2011a, pp. 6-7) state that overall most species, even urban-adapted species, respond negatively to noise.

Whether a bird moves away from a site of disturbance or stays on site will be dependent on the quality of the current site, the distance to other suitable sites, the relative risk of predation or density of competitors at different sites, and the investment an individual has made to a site (i.e. establishing a territory) (Gill et al. 2001, p. 266). A bird with suitable habitat nearby may avoid disturbance because it has alternative sites to go to, but a bird with no suitable habitat nearby will be forced to remain onsite despite the disturbance, regardless of whether or not this will affect survival or reproductive success (Gill et al. 2001, p. 266). The cost of moving to a new site for a territorial species could be high (Gill et al. 2001, p. 266).

Habitat Degradation

There are multiple ways for anthropogenic noise to cause habitat degradation including noise pollution, masking of avian acoustic signals, changes in predation risk, and reduction in reproductive success. Noise pollution is defined as undesirable human noise, and has increased in most environments over the last century (Ortega 2012, p. 7). Noise pollution can affect birds in numerous ways including physical damage to ears; stress, fright and avoidance responses; changes in reproductive success and in vocal communication; and interference with ability to hear predators and other sounds (Ortega 2012, p. 8). Anthropogenic noise could be a factor driving bird species out of urban areas, even when other habitat requirements are still sufficient (Slabbekoorn and Ripmeester 2007, p. 73).

Most studies on habitat degradation from noise have focused on highway and gas drilling compressor pads, and these studies demonstrate that habitat near a noise source is less suitable than habitat farther away. Francis et al. 2011b (p. 1269 and 1278) found that compressor noise at gas wells caused a five percent lower occupancy of avian species near the pads. Bayne et al. 2008 (p. 1190) found that passerine density was significantly influenced by chronic anthropogenic noise from gas compressors, and that noise levels from compressor stations affected birds up to 700 meters into the surrounding forest. Ovenbirds (*Seiurus aurocapilla*) were found to have lower pairing success near compressor pad sites compared with noiseless well pads (Habib et al. 2007, p. 176). Foppen and Deuzeman (2007; reported in Slabbekoorn and Ripmeester 2007, p. 9) found that great reed warblers (*Acrocephalus arundinaceus*) had higher densities of territories in a wetland near a busy road during two years when the road was closed, compared to years both before and after the road closure. Kuitunen et al. 1998 (p. 297) found that land bird density was lower closer to highways, but this was not the case for the only *Acrocephalus* species in the study area, *Acrocephalus schoenobaenus* (p. 299). The willow warbler (*Phylloscopus trochilus*) had a much lower density of territorial males within 0-200 meters from a highway compared to habitat farther away, yearling males were found 50 percent more often in the road zone, and the study indicated that the road zone probably serves as a sink for young males due to reduced habitat quality from noise (Foppen and Reijnen 1994, p. 99). These studies generally show that noise pollution can cause habitat degradation.

Masking

Anthropogenic noise that drowns out vocal communication between birds is called masking. Masking can have serious consequences because birds communicate vocally to attract mates and defend territories (Ortega 2012, p. 10; Slabbekoorn and Ripmeester 2007, p. 1; Barber et al. 2010, p. 180). Masking of communication necessary for territory defense and mate attraction may have a negative impact on reproductive success and exclude birds from otherwise suitable habitat (Halfwerk et al. 2011, p. 210). Halfwerk et al. (2011, pp. 217-218) suggest four mechanisms related to masking that could reduce avian reproductive success: (1) female birds interpret male songs masked by high noise as of lower quality and put less energy into the breeding cycle; (2) a noisy territory may be perceived of as being a lower quality and avoided, reducing the number of available territories for breeding; (3) increased noise levels cause physiological stress due to reduced foraging opportunities if prey are less easy to detect or because the bird has to spend more time scanning for predators; and, (4) noise could have a negative impact on parent-offspring communication.

Anthropogenic noise is typically loud and low in pitch (Slabbekoorn and Ripmeester 2007, p. 1). Birds with low-frequency signals are more likely to abandon noisy areas (Francis et al. 2011a, p. 7), including noisy roads (Slabbekoorn and Ripmeester 2007, p. 1), and birds inhabiting noisy areas may sing at a higher frequency to reduce masking by noise (Francis et al. 2011a, p. 6; Barber et al. 2010, pp. 185-186; Slabbekoorn and Ripmeester 2007, p. 3). How well a species can survive in urban and other noisy environments may depend on how well they can adjust the frequency of their vocal communication (Slabbekoorn and Ripmeester 2007, p. 3). *Luscinia megarhynchos*, an urban nightingale in Berlin, was found to sing at higher sound levels in noisy locations and raised their song volumes in response to traffic noise by singing louder on weekday mornings than weekends (Brumm 2004, pp. 434-435). Slabbekoorn and Peet (2003, p. 267) found that urban great tits (*Parus major*) at noisy locations sang with a higher frequency. Males singing at higher vocal amplitudes may be at a disadvantage due to increased energetic costs of singing loudly (Brumm 2004, p. 439). Noise pollution can also inhibit a bird's ability to detect predators (Habib et al. 2007, p. 181; Ortega 2012, pp. 13-14) or drown out alarm calls warning of approaching predators (Barber et al. 2010, p. 182 and 184).

The Service does not have data on the frequency of the nightingale reed-warbler song (Marshall 2012, pers. com.). Few songbird species rely just on low frequencies but one species that does is the great reed-warbler, and other nightingale species are known to use a wide range of frequencies, including very low ones (Slabbekoorn and Ripmeester 2007, p. 9).

Breeding

Anthropogenic noise can have negative effects on avian breeding (Halfwerk et al. 2011, p. 210; Slabbekoorn and Ripmeester 2007, p. 2; Ortega 2012, p. 10). Noise may affect egg production, incubation, brooding and nest abandonment (Ortega 2012, p. 10). Halfwerk et al. (2011, p. 210) found that females laid smaller clutches in noisier areas, and that noise recorded in April had a negative effect on the number of great tit fledglings independent of clutch size, compared to noise in March. High noise levels could lead females to breed later, allocate less energy to care of eggs and chicks, and cause communication difficulties between parents and offspring (Halfwerk et al. 2011, pp. 217-218).

Habib et al. (2007, p. 176) found that ovenbird pairing success was reduced, and more inexperienced birds were breeding for the first time, near noisy compressor sites compared to noiseless sites. This reduction in ovenbird pairing success near compressor sites was likely caused by noise interfering with a male's song, thereby inhibiting communication with females and reducing pair success (Habib et al. 2007, p. 176). Foppen and Reijnen (1994, p. 95) found that the zones nearest to a highway served as a sink for male willow warblers, and that the proportion of successful yearling males was 50 percent lower in the road zones compared to zones farther away from the highway.

There may be differences between the effects of chronic noise and intermittent loud noise in the responses of breeding birds. Birds that select nest sites with chronic noise may "accept" the noisy conditions and not abandon nests in response to the noise. However, birds that select nest sites during quiet times, and then become disturbed by noisy conditions later, may abandon nests (Ortega 2012, p. 10).

In a study of the effects of helicopter noise from the Marine Corps Air Station Miramar (MCAS) on California gnatcatcher (*Polioptila californica californica*) reproduction, Hunsaker and Rice (2006, p. 101) found that noise levels at MCAS did not affect reproductive success. California gnatcatchers found and inhabited suitable nesting sites in spite of the noise environment, and the factors affecting nest success were habitat, topography, and rainfall. Awbrey and Hunsaker (1997, p. 3177) found that fixed-wing aircraft noise at Naval Air Station Miramar was correlated with fewer California gnatcatcher nest attempts and eggs laid, but that once a nest was established with eggs in it, military aircraft noise had no detectable influence on reproductive success. In Hawaii, Vanderwerf (2000, p. 9) studied the response of Oahu elepaio (*Chasiempis sandwichensis ibidis*) at eight nests to military noise (artillery blasts ranging from 89-116 dB). No elepaio flushed from a nest in response to artillery noise. A mild response was only observed twice by the same incubating male who raised his head and scanned the area after an artillery blast then resumed preening after 1-2 seconds (Vanderwerf 2000, p. 38). Delaney et al. (2002, p. 54) found that the nesting success of red-cockaded woodpeckers (*Picoides borealis*) near Fort Stewart, Georgia, was not significantly affected by experimental and passive military training noise. However, red-cockaded woodpeckers did flush from their nests repeatedly due to nearby (less than 100 meters) artillery and blank fire events, but returned to their nests quickly and without impact to nesting success (Delaney et al. 2002, p. 59). The effects of aircraft noise on Oahu elepaio or red-cockaded woodpeckers were not tested in either study.

Birds may also suffer physical damage to their ears from loud noise (Barber et al. 2010, p. 181). Damage can occur from single blasts (>140 dBA), multiple blasts (>125 dBA) or continuous exposure to noise at greater than 110 dBA (Ortega 2012, p. 9; Dooling and Popper 2007, p. 23). Birds are able to regenerate the sensory cells of the inner ear providing a way for them to recover from physical damage to the ear from loud noise, and so do not suffer permanent hearing loss like mammals (Dooling and Popper 2007, p. 5 and p. 25). However, in their review, Dooling and Popper (2007, p. 27) state that the effects of short, intermittent, and high intensity sounds on avian hearing are much less known than that from highway noise.

Effects of Aircraft Overflight Noise on Nightingale Reed-Warblers

Upon implementation of Divert, military training flights would occur up to eight weeks a year at GSN. Exact training exercises are not defined at this time. Humanitarian operations occurring outside the eight week training time may also occur but are not expected to significantly disturb nightingale reed-warblers above current baseline conditions at the airport. The focus of this section will be the effects of increased noise from aircraft overflights on nightingale reed-warblers from eight weeks of joint military exercises at GSN.

The noise disturbance from the training will be short-term, high-intensity, repeated single pulse, and intermittent. In the areas closest to the runway the average daily noise (DNL), as presented in the medium scenario in the DEIS (USAF 2012), would increase approximately 20 to 25 dBA over baseline conditions, with average daily sound levels not rising above 83 dBA. However, the maximum noise from each individual aircraft overflight will increase from baseline conditions between 10 to 29 dBA for F-22 (or similar fighter jet) training flights, depending on proximity to the airport runways (Table 1, Figure 5). The loudest noise would occur at the east and west ends of the runway where noise from F-22 training flights could reach 118 dBA for each take-off or landing. The maximum number of F-22 flights per day would be 48, and the

noise event would last less than 60 seconds, with the maximum sound level occurring only briefly. Flights from KC-135, and similar aircraft, will also occur; however noise from these flights does not rise above current conditions and therefore no adverse effect is expected from operation of these planes.



Table 1. Noise levels (in dBA) from current aircraft operations and proposed military operations for ten points surrounding GSN in occupied or potential nightingale reed-warbler (NIRW) habitat.

	Current	Proposed Military		
Location	767	KC-135	F-16	F-22
East end of runway	89.4	95.2	115.9	118.1
West end of runway; east golf course pond	92.6	97.3	115.8	117.7
Occupied NIRW territory north of runways	85.4	79.1	105.7	108.7
As Gonno farm area; occupied NIRW territories	84.1	81.2	99.1	108.7
Obyan area south of runways	85.2	76.5	103.5	106.4
Obyan area south of runways	83.8	78.0	104.8	106.5
Occupied NIRW territory north of runways	76.5	64.7	85.7	94.5
Koblerville; occupied NIRW territories	73.3	60.0	83.3	93.0
Occupied NIRW territory north of runways	76.4	55.7	78.8	86.3
Koblerville; occupied NIRW territories	68.3	45.4	73.1	82.2

The nightingale reed-warblers that have territories surrounding GSN may be habituated to current airport noise levels, along with noise from vehicular traffic and rural residential areas. The most frequent aircraft flying currently out of GSN is the Piper Cherokee (a single-engine aircraft) with 113 daily flights, followed by the Cessna 441 (13 daily flights), the 747-200 (6 flights), and the 767-300 (6 flights) (USAF 2012, p. 3-4). The 767 is the loudest aircraft currently operating out of GSN, and is similar in noise level to the 747. Noise from 767 and 747 takeoffs and landings range from approximately 75 dBA to 93 dBA 12 times a day in areas surrounding GSN (see Table 1).

Male nightingale reed-warblers have high site-fidelity to their established territories, remaining in the same location for multiple years (Craig 1992; Mosher 2006; Johnson 2003). It is not known what levels of disturbance or habitat degradation would cause a male reed-warbler to abandon an established territory. However, as described above, some birds may be forced to stay in habitat made unsuitable by noise disturbance because suitable habitat is limited elsewhere. The nightingale reed-warbler is a strongly territorial species (Mosher 2006, USFWS 1998b) and could appear habituated to airport noise but actually be maintaining territories in the area due to habitat limitations not habituation, and may suffer fitness costs due to this. Habitat loss is considered one of the primary threats to the nightingale reed-warbler (USFWS 1998b), and this, combined with territoriality, may mean that some pairs are forced into lower-quality habitat. There are no studies comparing reproductive success of reed-warblers in undisturbed versus disturbed habitats, so it is unknown if the birds near GSN suffer fitness costs because of the noise disturbance in the area.

Nightingale reed-warblers have been observed to be tolerant of noise disturbance (Rounds pers. com. 2012). They have been observed in urban areas of Garapan, on the edges of residences, farms, and industrial areas where use of heavy equipment and construction occurs, and successfully nested with heavy equipment operating 75 meters away at a quarry site (Rounds pers. com. 2012; Gourley and Johnson 2002). While there have been no comprehensive studies of reed-warbler response to noise, it does appear that the species is tolerant to some levels of noise disturbance.

For eight weeks a year, both the noise level and frequency of aircraft flights will increase under Divert. During the non-breeding season, nightingale reed-warblers could be disturbed by military training flights while foraging or roosting. In these cases responses may include startle, fight-or-flight responses, and/or flushing. Since the noise is of short-duration, it is not expected that these responses would significantly disrupt foraging or roosting and most likely the birds will quickly return to what they were doing. Nightingale reed-warbler communication may be disrupted in the short-term if aircraft noise exceeds reed-warbler song frequency.

Eight weeks of military training during the nightingale reed-warbler breeding season could have adverse effects on breeding success for pairs with territories near the airport. The adverse effects are most likely to occur during the territory formation, nest building, egg-laying, and early incubation stages (see Awbrey and Hunsaker 1997). If military training occurred during these early stages it is possible that a pair could abandon a territory or a nest due to the new noise disturbance (Ortega 2012, p. 10). What seemed high-quality suitable habitat without the noise disturbance may degrade to unsuitable habitat after military training begins.

Incubating or brooding birds may flush off nests as with red-cockaded woodpeckers (Delaney et al. 2002, p. 55) or may stay on the nest similar to the Oahu elepaio (Vanderwerf 2000, p. 38). Because no studies have monitored reed-warbler nests during disturbance events, it is unknown how incubating or brooding nightingale reed-warblers will react to F-22s or other fighter jets flying overhead. Once a nest is established it is less likely that the pair will abandon the nest or the territory and the noise disturbance at this point is less likely to reduce reproductive success. Begging calls from nestlings or juveniles could be temporarily masked by the loud noise but because the noise is of short-duration it is unlikely to affect provisioning rates.

The noise pollution from the military training could lead to overall habitat degradation around the airport. It is possible that during training events birds could abandon territories and look for new less-disturbed habitats for breeding. Once the training session is over the habitat will become quiet again, and the same pairs, or new ones, could move back in. In a worst-case scenario a cycle could be repeated of birds abandoning and reestablishing territories and the area could become a sink for nightingale reed-warbler breeding (see Halfwerk et al. 2011, Ortega 2012, Habib et al. 2007).

Predation is a primary cause of nightingale reed-warbler nest failure (Mosher 2006; USFWS 1998b). Feral cats or rats stalking a nightingale reed-warbler are likely to prey on the birds regardless of noise. Predation from Micronesian starlings (*Aplonis opaca*) or collared kingfishers (*Todiramphus chloris*) on nightingale reed-warbler nests is possible, though not documented in the literature (Mosher 2006, p. 60). If noise disturbance causes a nightingale reed-warbler to flush from incubating or brooding at a nest it is possible an avian predator more tolerant of noise could take advantage of the absence and prey upon the nest, but again, a cat or rat is likely to predate regardless of the noise. Overall, it is not expected that noise from Divert training will cause an increase in nightingale reed-warbler predation because the noise disturbance will be intermittent and short in duration.

As described above, hearing damage from single, repeated loud noises typically occurs at noise levels greater than 125 dBA. Noise from the Divert training is not expected to rise above 120

dBA in nightingale reed-warbler habitat. Therefore, we do not expect hearing damage from the proposed training activities.

Take assessment

Guidance on potential effects of noise on endangered wildlife and when disturbance rises to the level of take was taken from USFWS (2006), Pater et al. (2009), and Dooling and Popper (2007). While nightingale reed-warblers may be disturbed by many human activities, we anticipate that such disturbance rises to the level of harassment under a limited range of conditions. For the Divert project, we are assuming that harassment may occur when nightingale reed-warblers demonstrate behavior suggesting that the safety or survival of the individual is at significant risk, or that a reproductive effort is potentially lost or compromised. Examples of this behavior include, but are not limited to:

- An adult is repeatedly flushed from a nest during the incubation, brooding, or fledging period, that potentially results in egg failure or reduced juvenile survival.
- An adult is repeatedly flushed from a nest resulting in increased energetic costs.
- An adult or juvenile abandons a territory.

The amount of incidental take of the nightingale reed-warbler that will occur is difficult to quantify because the effects of noise on nightingale reed-warblers is not well studied, and it is unknown how frequently joint military exercises will occur during the nightingale reed-warbler breeding season. For this Biological Opinion, we quantified take using the best available data on effects of noise on songbirds (described above), our knowledge of nightingale reed-warbler behavior, and best estimates of joint military exercises training schedules provided by the USAF.

We estimate that there are potentially four nightingale reed-warbler territories at the west and east ends of the runway where the loudest noise will occur. These territories will be subject to noise levels up to 118 dBA from F-22, or similar fighter jets, overflights. The maximum number of F-22 (or similar fighter jet) flights per day would be 48 and the best estimate of a training event is two weeks. This level of training and noise disturbance could cause nightingale reed-warblers to abandon territories or nests, especially if the training occurred immediately prior to or at the beginning of a nesting attempt. Birds may also have startle responses and/or flush from nests. Nightingale reed-warblers may suffer increased energetic costs due to repeated loud noises and flushing. The increased energetic costs could adversely affect reed-warblers by decreasing the energy available to them for foraging and reproduction. The noise levels in these areas could cause these four territories to become unsuitable habitat for reed-warblers, though they may still occupy the area, and breed successfully, during quiet times.

Adults displaced by habitat degradation will attempt to establish new territories in areas that may already be occupied by other nightingale reed-warblers. Since the nightingale reed-warbler is territorial, neighboring pairs are likely to aggressively confront the displaced adults. A frequently observed pattern of intra-specific passerine bird territorial behavior is that the bird defending its territory is more aggressive than an intruder and is usually successful at driving the intruder away (Van Tyne and Berger 1976). The confrontation could disrupt the neighboring pairs' normal nesting behavior patterns by taking adults away from nests during the breeding season to defend their territories. However, this disruption is unlikely to rise to the level of take.

Nightingale reed-warblers are also present in habitats to the north and south of the airport runways in areas that will experience periodic noise up to 110 dBA from military training events. These areas, within approximately 500 meters of the runways, may support up to 13 nightingale reed-warbler pairs (based on survey data for Divert and habitat estimations). In our opinion it is less likely that birds will abandon territories in these areas, but birds could flush from nests if they are startled, especially during early training events before they are habituated to the noise. The noise disturbance will increase to over 20 dBA greater than ambient nesting conditions in these areas, and that has been used by the Service as a threshold for disturbance reaching the level of take (USFWS 2006). However, the birds in these areas currently experience daily noise, from take-offs and landings of commercial aircraft, that reaches up to 90 dBA. We feel that the noise disturbance may cause increased energetic costs for nightingale reed-warblers flushed from nests due to joint military exercise; however, we do not expect this disturbance to result in reduced reproductive success. Therefore, we expect a low level of take of nightingale reed-warblers, in the form of harassment and increased energetic costs from flushing, in the 13 territories that will experience increased noise (but below 110 dBA) from joint military exercises.

Evaluation under SUMB Programmatic Biological Opinion

Due to noise disturbance from implementation of Divert military exercises, four nightingale reed warbler territories will be subject to direct impacts including habitat loss and degradation and thirteen nightingale reed-warbler territories will be subject to direct impacts of habitat degradation. Under the SUMB Programmatic Biological Opinion project impacts are assessed by determining the number of territories directly and indirectly affected by the action. For noise disturbance, ESA responsibilities will be addressed by the purchase of 17 credits and by implementing associated conservation measures.

Biosecurity

To reduce the risk of introduction and spread of non-native, invasive species via Divert activities, the USAF has proposed to implement a variety of conservation measures throughout the action area. Effective interdiction of brown treesnakes on Guam and the CNMI is critical to preventing the spread of this species. The USAF has committed to snake inspection (100% as a goal), construction of snake barriers and brown treesnake rapid response to support military training. In addition, the USAF has committed to the establishment of a biosecurity program during construction and implementation of the proposed project. Successful implementation of the biosecurity program will prevent adverse effects to listed species, and other native wildlife, from introduction of non-native species.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future non-Federal actions that are reasonably certain to occur within the area of action subject to consultation. Future Federal actions will be subject to the consultation requirements established in section 7 of the ESA and, therefore, are not considered cumulative for the proposed action. Sustenance farming, clearing, and burning are ongoing and are likely to continue to be implemented on the island of Saipan. However, use of the SUMB to off-set impacts from authorized habitat clearing will limit adverse effects to nightingale reed-warblers from habitat loss. Unauthorized clearings are also likely to continue on Saipan, further reducing the amount and quality of nightingale reed-warbler habitat. Natural disasters, such as typhoons, also occur regularly on Saipan further damaging habitat. Persecution of nightingale reed-warblers by people resentful of ESA restrictions has also been reported, and may continue in the future.

CONCLUSION

The Service anticipates that the direct and indirect effects of the proposed action will result in take of the nightingale reed-warbler in the form of harassment from noise disturbance and harm from habitat clearing. Adverse effects of the proposed actions on nightingale reed-warblers will be minimized by avoidance and minimization measures. For the nightingale reed-warbler, the Service has determined that the proposed action conforms with the SUMB Programmatic Biological Opinion based upon the nature of the action and the incorporation of avoidance, minimization, and offsetting measures as described in that document. Additionally, the status, baseline, and potential project impacts are current and consistent with those evaluated within the SUMB Programmatic Biological Opinion. After reviewing the current status, the environmental baseline, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that implementation of the proposed action discussed herein is not likely to jeopardize the continued existence of the nightingale reed-warbler.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations promulgated pursuant to section 4(d) of the ESA prohibit the take of endangered or threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2) of the ESA, taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the USAF so that they become binding conditions of any grant, permit, or permissions issued by the USAF, as appropriate, for the exemption in section 7(o)(2) to apply. The USAF has a continuing duty to regulate the activity covered by this incidental take statement. If the USAF (1) fails to assume and implement the terms and conditions or (2) fails to require the adherence to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, grant document, or other permissions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the USAF must report the progress of the action and its impact on the species as specified in the Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

Based on the proposed project description and the analysis of the effects of the proposed action provided above, the Service anticipates that construction and implementation of Divert on Saipan may cause take of the nightingale reed-warbler. The Service is tracking the loss of the nightingale reed-warbler and its habitat permitted under the SUMB Programmatic Biological Opinion, and we evaluate each project to ensure that continued implementation will not result in unacceptable effects to the listed species. The conservation measures appropriate to avoid, minimize and offset project impacts as identified in the SUMB Programmatic Biological Opinion have been included within the project description above. We estimate the following forms of incidental take will occur from construction and implementation of Divert training:

1. One nightingale reed-warbler territory will be cleared for construction of the east parking apron resulting in harm of up to two adults and up to four juveniles.
2. Four nightingale reed-warbler territories could be abandoned due to habitat degradation from repeated and loud noise from fighter jet training resulting in harassment of up to eight adults and up to sixteen eggs, chicks, or juveniles.
3. Thirteen nightingale reed-warbler territories will suffer habitat degradation from noise disturbance from fighter jet training resulting in periodic, but rare, harassment of up to twenty-six adults.

Effect of the Take

The level of Incidental Take anticipated from this project is consistent with the SUMB Programmatic Biological Opinion and will not jeopardize the survival or recovery of the nightingale reed-warbler.

Reasonable and Prudent Measures

The reasonable and prudent measures given below, with their implementing terms and conditions, are designed to minimize the impacts of incidental take that might otherwise result from the proposed actions. If, during the course of the action, the level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. In addition, the action that caused the taking must cease; the action agency must immediately provide an explanation of the causes of the taking; and must review with the Service the need for possible modification of the

reasonable and prudent measures. The following reasonable and prudent measures are necessary and appropriate to minimize the effect of take on the nightingale reed-warbler. The measures described below are non-discretionary and must be implemented.

- I. The USAF shall minimize the potential for harassment, harm, or mortality of nightingale reed-warblers.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the USAF must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

The following terms and conditions implement reasonable and prudent measure number one.

- I(a) To the extent practicable, consistent with national security and contingency requirements, and military safety and security requirements, the USAF will notify the Service on an annual basis of upcoming Divert training events at GSN including timing and description of the joint military exercises.
- I(b) The USAF will submit annual reports to the Service on the first of December of each year beginning in 2014. The purpose of the annual report is to discuss successes and failure of all avoidance, minimization, and conservation measures, and terms and conditions listed in this biological opinion in relation to the anticipated and observed impacts and incidental take. The report will include details regarding invasive species control and interdiction including which cargo/flights were inspected or non-inspected, potential level of risk associated with each cargo/flight type, and where the cargo/flights originated from for training related actions only. The reports should include explanations if specific inspections were missed and document all snake detections or other high risk incidents and the method used for the detection for training related actions only. The report will also include the number of brown treesnake kills during training actions.

The annual report will also include a description of all actions that occurred at GSN related to Divert (including humanitarian operations, flight diversions, and joint military exercises).

- I(c) The USAF will convene an annual coordination meeting or conference call prior to 28 February of each year, starting in 2015, to discuss findings within the compliance report and adapt avoidance, minimization, and conservation measures to further reduce incidental take.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as suggestions

from the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibilities for these species.

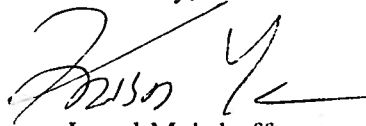
1. The USAF should implement a monitoring project, using qualified avian biologists, when joint military exercises begin operating out of GSN (anticipated in 2016 or 2017). The monitoring project could occur in habitats experiencing noise above 100 dBA from take-off and landings of fighter jets (see Figure 3). The monitoring project could be used to:
 - Determine noise levels in nightingale reed-warbler territories surrounding the airport when fighter jets take-off and land at GSN.
 - Determine if take-off and landing of fighter jets from GSN cause a behavioral response (i.e. startle, alert, flushing, stress, etc.) in nightingale reed-warblers.
 - Determine the effect of take-off and landing of fighter jets from GSN on nightingale reed-warbler breeding success in areas surrounding the airport.
 - Determine population trends and territory fidelity of nightingale reed-warblers surrounding the airport.
2. The USAF should implement rat and/or cat control at nightingale reed-warbler territories, and monitor nightingale reed-warbler nest success, to determine how predator control affects breeding success.

REINITIATION-CLOSING STATEMENT

This concludes formal consultation on this action. As required in 50 CFR § 402.16, reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operation causing such take must cease pending reinitiation.

As stated in the Conclusion (above), the Service's finding of non-jeopardy is based in large part on the conservation measures. Should there be a failure to carry out any or all of the described measures, or if the measures are not effective, or if these measures are modified in any way without Service coordination, reinitiation of consultation will be required. If you have any questions regarding this Biological Opinion, please contact Rachel Rounds at (808) 792-9400.

Sincerely,


for Loyal Mehrhoff
Field Supervisor

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Appendix 1. Not Likely to Adversely Affect Determination for the Mariana Common Moorhen, Mariana Swiftlet, and Green Sea Turtle

This Appendix is in response to your request for our concurrence with your determination that the Divert Project, as described above, will not adversely affect the endangered Mariana common moorhen, Mariana swiftlet, or green sea turtle. The findings and recommendations in this consultation are based on: (1) your Biological Assessment dated August, 2012; and (2) other information available to us. A complete administrative record is on file in our office. This response is in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*).

Mariana common moorhen

Listing Status

The Mariana common moorhen was federally listed as an endangered species in 1984 (USFWS 1984). The recovery plan for the Mariana common moorhen was finalized in 1991 (USFWS 1991a, 55 pp.). A five-year status review completed in 2009 determined that the Mariana common moorhen still meets the definition of endangered (USFWS 2009, p. 9).

Historic and Current Distribution

The Mariana common moorhen is currently found on Saipan, Tinian, Rota, and Guam. The Mariana common moorhen is believed to be extirpated from Pagan due to the volcanic eruption in May, 1981, and destruction of vegetation by feral ungulates (Stinson et al. 1991, pp. 41–42). In 2004, it was estimated that there were approximately 90 Mariana common moorhen on Guam, 154 on Saipan, 41 on Tinian, and only two individuals on Rota (Takano and Haig 2004, p. 247 (Table 9)). On Guam, the number of Mariana common moorhens has recently decreased at the Fena Valley Reservoir potentially due to the loss of *Hydrilla verticillata*, a wetland plant used as a nesting substrate, as a result of eutrophication of the lake after a typhoon (Brooke and Grimm 2008, p. 2). While it is possible that the Fena Reservoir birds moved to other wetlands and the Guam population has not declined overall, comprehensive surveys on Guam would be needed to determine the impact of the loss of habitat at Fena Lake to the overall population. Moorhen surveys are conducted by the CNMI Division of Fish and Wildlife at 22 wetland sites on Saipan. Data from these surveys shows that population numbers were stable on Saipan from 2007-2010 (CNMI DFW 2010).

Ecology and Life History

The Mariana common moorhen prefers wetlands with diverse, non-persistent, emergent vegetation containing deep and shallow water areas with equal areas of vegetation cover and open water (Ritter and Savidge 1999, p. 286; Stinson et al. 1991, p. 39). Primary habitats (as defined in the recovery plan) include: Agana marsh, Fena Valley reservoir, and the Naval Station Marsh, Guam; Lake Hagoi on Tinian; and Lake Susupe, Puntan Muchot, and Garapan wetlands on Saipan (USFWS 1991a, pp. 4–16). Several secondary wetland habitats were identified on Guam and Saipan; only one secondary wetland (Magpo) on Tinian was considered important for the recovery of the species (USFWS 1991a, pp. 4–16).

Mariana common moorhens feed on plant and animal matter in or near wetlands (USFWS 1991a). Seale (1901, p. 31) found grass, insects, and larvae in the stomachs of the Mariana

common moorhen on Guam. Pratt et al. (1987, p. 128) reported that Mariana common moorhen eat mollusks and plants. Little is known about the reproduction of the Mariana common moorhen (USFWS 1991a, p. 17). Nests have been constructed in *Scirpus littoralis*, *Panicum muticum*, and *Cyperus* spp. (Ritter 1994, p. 128; USFWS 1996, p. 7). Birds often nest multiple times in a year and juveniles from early broods are known to stay on their natal territory and help rear siblings from later broods (Ritter 1994, p. 130; Takano 2003, pp. 4–5).

Threats

Currently, the main two threats to the Mariana common moorhen are: (1) loss and degradation of wetland habitat, including filling, alteration of hydrology, invasion of habitat by non-native plants, and unrestricted grazing of domestic and feral ungulates; and 2) predation by introduced species (USFWS 1991a, p. 19; USFWS 1996, pp. 11–12).

Conservation Needs

Only interim recovery objectives were identified in the recovery plan due to a lack of data necessary to fully understand the needs of viable populations of this species (USFWS 1991a, p. 21). The primary task is to promote the survival of the species by providing stable, productive habitat throughout the historical Mariana common moorhen range. This entails 1) securing and managing all primary habitats to maximize the habitat conditions; 2) maintaining the secondary habitats as wetlands or creating new wetlands for those that are lost; and 3) minimizing mortality from predation, poaching, and other factors including human disturbance.

Environmental baseline

In 2001, an island-wide survey produced an estimate of 154 Mariana moorhens on Saipan (Takano and Haag 2004, p. 245). The CNMI Division of Fish and Wildlife conducts quarterly surveys at 22 wetlands on Saipan. From 2007 to 2010 the total number of moorhens detected at these sites has remained stable between 70 to 80 moorhens per survey (CNMI DFW 2010, p. 44).

Surveys conducted from January to March of 2012 by USAF contractors detected a single adult Mariana common moorhen at the Coral Ocean Point golf course east pond. No moorhens were detected at the GSN water catchment basin or the Coral Ocean Point golf course west pond, and no other potential moorhen habitat is located within the action area. The Coral Ocean Point golf course east pond has an impervious lining that inhibits the growth of shoreline vegetation. The moorhen was observed roosting and taking cover under a *Bougainvillea spectabilis* plant along the northeastern shoreline. Mariana common moorhens have also been detected repeatedly at the Coral Ocean Point golf course east pond by the CNMI DFW during quarterly waterbird surveys. Due to the lack of vegetation around the golf course pond, suitable habitat for Mariana common moorhen breeding is not present, and Mariana common moorhen have not been observed nesting at either golf course pond. There are no moorhens located near the Saipan port facilities or the Saipan Upland Mitigation Bank.

Not Likely to Adversely Affect: Mariana common moorhen

The Coral Ocean Point golf course east pond is located approximately 650 meters from the southern edge of GSN and from the nearest potential construction site. Noise from construction of Divert facilities is unlikely to disturb Mariana common moorhens at the east pond because moorhens at this pond would be habituated to noise disturbance from the airport, golf course

operations, and a nearby helicopter launching pad. Mariana moorhens are not found close enough to airport runways to be at risk of a bird strike.

However, increased aircraft operations at GSN under Divert operations will cause an increase in ambient noise at the east pond. Operation of civilian 767 at GSN result in a noise level of approximately 93 dBA from at the east pond (Table 1) from take-offs and landings. Under implementation of the Divert Project, noise levels at the east pond will rise to approximately 118 dBA with take-off and landings of F-22 or similar fighter jets.

There have been numerous studies on the impacts of aircraft overflights to wildlife including studies of waterbirds (e.g., Ward, et al. 1999; Conomy, et al. 1998 a,b; Komenda-Zehnder, et al. 2003). These studies report a wide range of reactions to overflights depending on the biology of the species, its previous exposure to overflights, whether the species is breeding, the type of aircraft, the altitude of the aircraft, and the lateral distance between aircraft and the species. The variability in these reactions and their specific circumstances make it difficult to be certain how a particular species, such as the Mariana moorhen, will react to aircraft overflights.

Individuals with previous exposure to aircraft overflights may display less reaction to overflights than individuals without previous exposure (Andersen et al. 1989, Conomy et al. 1998b). This reduced reaction is believed to be a sign that these individuals have habituated to these overflights. This habituation, however, may be individual or species specific. For example, Conomy and others (1998b) found that black ducks (*Anas rubripes*) became habituated to aircraft noise with continued exposure while wood ducks (*Aix sponsa*) did not.

Given that Mariana common moorhens have been using the east pond for at least a decade, it can be assumed that these individuals have habituated to the current level of aircraft overflights. There is no moorhen habitat near Andersen Air Force Base on Guam to use as a comparison airport with high aircraft overflights. Moorhens on Saipan have also been found in other highly disturbed and noisy locations, including the flooded parking lot of an abandoned garment factory at a busy intersection on Saipan (Rounds 2012, pers com). On Guam, Mariana common moorhens nest in a pond immediately adjacent to a busy parking lot at an industrial fuel facility (Rounds 2012, pers com.). Use of these sites indicates that moorhens can tolerate high levels of human disturbance.

There will be a long-term and permanent increase in aircraft operations from the proposed Divert Project, and noise levels from aircraft overflights will increase with F-22 and other fighter jets operating out of GSN. Moorhens do not breed at the east pond so disturbance of nesting birds will not occur. Moorhens using the east pond may notice the increase in noise levels from aircraft overflights. However, given their tolerance of human disturbance and habituation to current noise levels, we do not believe this disturbance will rise to the level of harass or harm as defined by the ESA. Therefore, we have determined it is discountable that a Mariana common moorhen would be adversely affected by increased aircraft overflights at GSN given that moorhens are not breeding at the site, appear tolerant of some levels of human disturbance, and are habituated to the current noise levels from GSN.

Because comprehensive biosecurity measures, including HACCP planning and redundant brown treesnake inspections, will be implemented by the USAF to keep brown treesnakes, and other invasive species, off of Saipan, we do not expect adverse effects to Mariana moorhens from introduction of invasive species.

Mariana swiftlet

Listing Status

The Mariana swiftlet was federally listed as endangered on August 27, 1984 (USFWS 1984). A five-year status review was completed in 2010 (USFWS 2010) and a recovery plan for the Mariana swiftlet was completed in 1991 (USFWS 1991b).

Historic and Current Distribution

The Mariana swiftlet is endemic to Guam and the four southern islands of the CNMI (Cruz et al. 2008, p. 233). A population also became established on Oahu, Hawaii, between 1962 and 1965 (Wiles and Woodside 1999, p. 57). Most historical information on the species comes from Guam, where it was reported as being common and the third most abundant species seen during roadside counts, but declined to approximately its current levels by the late 1970s (USFWS 1991b, p. 7). The total number of Mariana swiftlets occurring within its historical range is currently over 6,000 individuals and it currently occurs on Guam (in three known caves within the Naval Munitions Site), Aguiguan (in nine known caves), and Saipan (ten known caves), and is considered extirpated from Tinian and Rota (CNMI DFW 2010, pp. 45-46; Navy 2011, p. 4; USFWS 1991b, pp. 8, 13-14; Engbring et al. 1986, pp. 58-59). Long-term data from swiftlet surveys at 10 caves on Saipan shows that swiftlet numbers have been steadily increasing, to a total count of over 5,500 individuals in 2010 (CNMI DFW 2010).

Ecology and Life History

The Mariana swiftlet nests and roosts in limestone caves with the following characteristics: entrances typically a minimum of 2 m (6.2 ft) high; chambers with dark zones; and fresh air (USFWS 1991b, p. 2). Most birds leave their cave at dawn and return at sunset, but often return from foraging to roost in caves during the day. Swiftlets navigate through the darkest portions of caves using echolocation (Vogt and Williams 2004).

Mariana swiftlets capture prey while flying, and foraging has been observed to occur over a wide variety of habitat types, including cleared and forested areas, but they appear to favor ridge crests and open grassy savanna areas (USFWS 1991b, p. 6). Large flocks have been reported to form in the evening with birds congregating and feeding close to the ground until it is dark (Chantler and Driessens 1995, p. 130). An analysis of swiftlet guano collected from occupied caves on Saipan found that the remains of flying ants (*Formicidae*) were common, as were the remains of beetles (*Coleoptera*) (Kershner et al. 2007).

Eggs are laid in cup-shaped nests made of moss and saliva attached to cave walls or ceilings. A single egg is laid, usually between January and July, which is incubated for approximately 23 days with fledging occurring after 47 days (Reichel et al. 2007). Both adults care for the nestling which is, on average, fed by each adult 1.8 times a day (Morton and Amidon 1996).

Threats to the Mariana Swiftlet

The restricted distribution of Mariana swiftlets, along with its small population size and dependence on caves, makes the species vulnerable to threats. The causes for the decline of Mariana swiftlets are mostly unknown, but human disturbance, predation, pesticides, and disease have all been hypothesized as having a role. Swiftlets have been documented to flush or fail to enter their caves when humans are near or within their caves (Wiles and Woodside 1999, pp. 57, 61). Swiftlet sensitivity to human presence has resulted in injuries to chicks and adults and could result in damage to eggs (Wiles and Woodside 1999, p. 61). Sources of human disturbance have included Japanese soldiers during World War II, guano mining, hunters, hikers, and vandalism.

While the introduction of brown treesnake is known to have caused the extirpation of many bird species in Guam and CNMI, it is not known whether it has significantly affected swiftlets. Brown treesnake predation on Mariana swiftlets is considered to be a regular event and only those birds able to find nest or roost sites on high, smooth walls and ceilings are able to avoid snake predation. In August, 2011, seven brown treesnakes were observed climbing the walls of the Mahlec cave on Guam (Mosher 2011, pers. com.). The use of pesticides such as DDT has been suspected of causing the decline of swiftlet populations on Guam (Diamond 1984, p. 452), but the concentrations of pesticide residues found in swiftlet guano have not supported this hypothesis (Grue 1985, p. 301). On Saipan, non-native cockroaches are known to destroy swiftlet nests by consuming the saliva that holds the nests to the walls or ceilings (Cruz et al. 2008, p. 242). Savidge (1986, p. 9) investigated the role of disease in the decline of birds on Guam and found that there is no evidence that it has played a significant role. The typhoons that frequently occur in the area may cause periodic declines in swiftlet populations, but are not expected to threaten the species as a whole since the species has survived numerous such events during its evolutionary history (USFWS 1991b, p. 22).

Conservation Needs

The primary threats to the species continue to be predation by the brown treesnake and disturbance at nesting caves. However, other introduced predators and introduced insect species also may have negative impacts to the species. Efforts to minimize disturbance and control snakes and other predators at some nesting colonies have been undertaken. However, additional efforts are needed to help recover the species.

Ongoing Conservation Actions

Brown treesnake trapping occurs at the three occupied swiftlet caves on Guam on the Naval Munitions Site. No predator trapping currently occurs at caves on Saipan or Aguiguan. Quarterly swiftlet departure counts are conducted on Saipan and Guam to monitor swiftlet population numbers.

Environmental Baseline

Swiftlets have been detected foraging over most areas of Saipan, though they are less frequently detected in urban areas (Marshall 2011, pers. comm.). Ten caves are known in Saipan, in the central portion of the island; however, swiftlets are regularly seen foraging in areas where no caves have been found. The nearest swiftlet cave to GSN is more than three kilometers (2 miles) away and the nearest cave to the Saipan port is approximately 1,200 meters away (0.75 mile). There are no known caves in the Saipan Upland Mitigation Bank, though swiftlets frequently

forage there. No Mariana swiftlets were detected during bird surveys at GSN for the proposed project. Island-wide surveys conducted by the Service and CNMI DFW on established transects on Saipan detected swiftlets primarily in the central parts of the island, but swiftlets were also detected in the vicinity of GSN (USFWS 2008).

Not Likely to Adversely Affect: Mariana swiftlet

There are no Mariana swiftlet caves near the Saipan airport or seaport, and no adverse impacts to swiftlet caves from the Divert project are expected. Mariana swiftlets are not detected frequently in the vicinity of GSN. If construction noise or noise from aircraft overflights disturbs swiftlets, they will easily be able to avoid the disturbance and forage elsewhere. The clearing of 4.5 ha of second-growth forest for the Divert Project would also not adversely affect the availability of foraging habitat in the area, or on Saipan. There have been no reports of aircraft striking Mariana swiftlets and the chance of such a strike is discountable given the distance from Mariana swiftlet caves and low presence of swiftlets in the area. Mariana swiftlets may forage near the Saipan seaport; however, this is an industrial port and the low-level of construction noise from the Divert Project in this area is unlikely to adversely affect a Mariana swiftlet. Mariana swiftlets commonly forage in the Saipan Upland Mitigation Bank. Mitigation actions, such as habitat restoration and invasive species removal, for the nightingale reed-warbler that occur in the SUMB will also beneficially affect the Mariana swiftlet. Overall, effects from the proposed project are discountable. Therefore, the project may affect, but will not adversely affect, the Mariana swiftlet, and mitigation actions may benefit the species.

Because comprehensive biosecurity measures, including HACCP planning and redundant brown treesnake inspections, will be implemented by the USAF to keep brown treesnakes, and other invasive species, off of Saipan, we do not expect adverse effects to Mariana swiftlets from introduction of invasive species.

Green sea turtle

The following section summarizes sea turtle biology based on the information in recovery plans and five-year status reviews developed by the NMFS and Service (NMFS and USFWS 1998, 95 pp.; 2007, 105 pp.). Sea turtles are highly migratory, globally distributed, and generally found in tropical and subtropical waters along continental coasts and islands between 30° north and 30° south latitude and, to a lesser extent, in subtropical waters with temperatures above 20° C. The geographic range of sea turtles includes the Caribbean Sea, Atlantic, Pacific, and Indian Oceans and associated bodies of water.

Sea turtles bury their eggs in the sand in upper areas of oceanic beaches. Reproductive maturity occurs at ages ranging from 20 to 50 years and varies by species. Female sea turtles have high site fidelity to their hatching (natal) beaches, returning close to their own hatching site to lay their nests. Females may nest multiple times over a given nesting season. Nesting seasons typically occur at semi-regular intervals, with inter-nesting intervals ranging between two to more than five years depending on the species. Hatchlings emerge 45 to 90 days after a nest is laid. Emerging hatchlings navigate toward the water using visual cues; they move toward the brighter horizon and away from darker silhouettes formed by dune line, tree lines, or cliff walls (Tuxbury and Salmon 2005, p. 312). In addition to nesting, green sea turtles may also use

beaches to haul out and bask, although this behavior has never been documented in Guam or the CNMI (Kelly, 2009, pers. comm.; Wusstig 2009, pers. comm.).

Numbers of breeding green sea turtle populations in Hawaii, Australia, and Japan are increasing (Chaloupka et al. 2008, p. 299; NMFS and Service 2007, p. 13) and numbers of turtles nesting on Guam have been stable (NMFS and Service 2007, p. 13). Approximately 1,000 to 2,000 green turtles inhabit island reef areas in Guam and the southern CNMI (Kolinski et al. 2004, pp. 98, 111). In 1995 and 2001 (Tinian), 1999 (Saipan), and 2003 (Rota), the majority of individuals observed in the surrounding waters were juveniles or sub adults (Kolinski et al. 2001, pp. 59, 66; Kolinski et al. 2004, p. 107; Kolinski et al. 2006, pp. 514, 517; Pultz et al. 1999, p. 92).

In CNMI, green turtle nesting occurs from March to August with some year round nesting documented. The CNMI DFW Sea Turtle Program has monitored green sea turtle nesting activity on Saipan since 1999, and has documented 4 to 18 nests laid per year (CNMI DFW unpublished annual reports). There are two nesting beaches found within the action area: Obyan beach and Coral Ocean Point beach.

Not Likely to Adversely Affect: Green sea turtle

No green sea turtle nesting beaches will be impacted by construction of Divert facilities. Hatchlings or nesting adult females may be exposed to noise from aircraft overflights on Obyan or Coral Ocean Point beaches. Obyan beach is located approximately 1,000 meters from GSN and in the worst-case scenario would have noise levels from aircraft overflights reaching 65-70 dBA. Coral Ocean Point beach is located approximately 900 meters from GSN, and noise levels from aircraft overflights could reach 70-85 dBA in a worst-case scenario. Noise contour lines under baseline conditions do not reach either beach, indicating that current noise levels are below 65 dBA.

Given the small number of green sea turtles nesting on Saipan, and the short period of time that hatchlings or adult female green sea turtles spend on beaches, there is only a small chance that aircraft overflights, which would occur for a maximum of 8 weeks a year, reaching 85 dBA (at Coral Ocean Point) would occur at the same time a hatchling turtle or adult turtle were on the beach. Based on observations of adult green sea turtles at Obyan beach and their reactions to aircraft overflights, it is not expected that the turtles would be adversely affected by a temporary increase in noise (Summers 2012, pers. com.). Therefore, the Divert Project may affect, but will not adversely affect, green sea turtles.

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**Formal Consultation for Divert Activities and Exercises at the Saipan International Airport,
Commonwealth of the Northern Mariana Islands**

August 20, 2013

Subject: Corrections made to Divert Biological Opinion (2012-F-0445) after signing

1. Page 11 (Brown Treesnake Interdiction and Control), paragraph 1, 1st sentence: Reference to "Public Law 110-417, [Division A], title III, Section 316, October 14,2008, 122 Statute 4410" should instead read "122 Statute 4356."
2. Page 11 (Brown Treesnake Interdiction and Control), paragraph 1, 2nd sentence: This text refers to JRM Instruction 5090.4 which is a draft instruction at this time. The applicable instructions are COMNAVMARIANASINST 5090.10A and 36 Wing Instruction 32-7004.
3. Page 13 cites a DOD Instruction 5090.10A. This should instead read COMNAVMARIANASINST 5090.10A.

APPENDIX C

CZMA Compliance Supporting Documentation



**STATUS OF FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT
NEGATIVE DETERMINATION FOR PROPOSED ACTIONS IN THE
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS**

A coastal zone negative determination (ND) assessment was submitted to Commonwealth of the Northern Mariana Islands (CNMI) Coastal Resources Management Office (CRMO) on May 18, 2012. The assessment encompassed all proposed actions described in the June 2012 Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands. Pursuant to 15 CFR Section 930.35(c), the CNMI CRMO was not obligated to respond to the ND, and since the CNMI CRMO did not respond to the ND within 60 days, the CNMI CRMO concurrence with the ND was presumed.

The USAF is initiating additional correspondence with the CNMI CRMO regarding the Revised Draft EIS to ensure compliance with the CZMA.

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**Coastal Zone Management Act (CZMA) Consistency Determination:
Negative Determination Notice**



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

MAY 18 2012

MEMORANDUM FOR MS. RITA C. CHONG
DIRECTOR, COASTAL RESOURCES MANAGEMENT OFFICE
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
P.O. BOX 10007
SAIPAN, MP 96950

FROM: HQ PACAF/A7
25 E Street, Suite D-306
JBPH-H, HI 96853

SUBJECT: Coastal Zone Management Act (CZMA) Consistency Determination:
Negative Determination Notice for Divert Activities and Exercises

1. Headquarters Pacific Air Forces (HQ PACAF) wishes to inform you of its negative determination under the CZMA regarding the subject proposed action. The Draft Environmental Impact Statement (DEIS) for Divert Activities and Exercises, (Atch 1) proposes federal action to improve an existing airport or airports and associated infrastructure in support of expanding mission requirements in the western Pacific.
2. HQ PACAF proposes to construct facilities and infrastructure at an existing airport or airports to support a combination of cargo, fighter, and tanker aircraft with associated personnel to support periodic joint military exercises and humanitarian assistance and disaster relief (HADR) efforts during times of need. Occasional emergency divert landings could also occur at the proposed improved airport. This action considers both the Saipan International Airport and the Tinian International Airport. HQ PACAF considers the Saipan Airport to be the preferred alternative location as outlined in the Draft EIS. (Atch 2)
3. The DEIS explains the details associated with our proposed action and we refer you to the executive summary for an overview of the proposed action.
4. Should you or your staff have any questions regarding this proposed action, please contact my POC, Mr. Mark Petersen at (808) 449-1078, or at mark.petersen.1@us.af.mil.


for KARL S. BOSWORTH
Director, Installations and Mission Support

- 2 Attachments:
1. Draft EIS for Divert Activities and Exercises, Guam and CNMI
 2. Summary of the Proposed Action

Summary of the Proposed Action

Section 2.1 of the draft Divert Activities and Exercises EIS describes the proposed action, which includes the following:

1. **Construction Phase.** The KC-135 Stratotanker (KC-135) aircraft is indicative of tanker or cargo aircraft used by the USAF in the western Pacific. The KC-135 aircraft is being used as the design aircraft for cargo and tanker aircraft in the EIS. The following elements would be designed and then constructed or improved at the selected airport or airports:
 - a. *Runway* – Potential extension of the runway up to 10,000 feet in order to meet optimal KC-135 requirements as identified by PACAF Strategy, Policy and Requirements Division. Options that would expand the runway to less than 10,000 feet, or not at all are also analyzed.
 - b. *Parking apron* - The parking aprons at the airport selected for expansion would need to meet design requirements for KC-135 aircraft.
 - c. *Associated pavement markings, lighting, and navigational aids*- All pavement markings, lighting, and navigational aids would be installed, upgraded, or relocated, as appropriate.
 - d. *Temporary munitions storage area*- The temporary munitions storage area would mainly be used to store munitions safely from diverted aircraft until the aircraft could return to its place of origin, or proceed to its planned destination.
 - e. *Hazardous cargo pad and arm/disarm pad*- The hazardous cargo pad would mainly be used to safely handle munitions or other hazardous cargo from diverted aircraft until the aircraft could return to its place of origin, or planned destination. The arm/disarm pad would be used to perform final safety checks on aircraft before takeoff by aircraft maintenance personnel. The arm/disarm pad would also be used to perform initial safety checks on aircraft after landing. The hazardous cargo pad could be designed and constructed to double as an arm/disarm pad.
 - f. *Aircraft hangar*- The hangar would be a closed structure to store aircraft awaiting maintenance or being repaired.
 - g. *Maintenance facility* – The maintenance facility would be used as an Aircraft Maintenance Unit/Aircraft Spares Management and for storage to assist aircraft at the proposed airfield.
 - h. *Jet fuel receiving, storage, and distribution infrastructure*- USAF proposes to maintain a 30-day supply of jet fuel to be able to provide fuel to aircraft through a hydrant system. In order to maintain the 30-day supply of jet fuel, a combination of fuel tanks including bulk storage and smaller operating tanks would be required. The ability to receive jet fuel on the island and ability to transfer it to the airfield would also be required.
 - i. *Billeting*- Temporary billeting, including medical, transportation, and dining services, would be required for the personnel supporting aircraft operations.
2. **Implementation Phase.** It is assumed that any mix of joint fighter, cargo, and tanker aircraft, not to exceed the design capabilities of the airport, could be diverted to or exercised from the airport

or airports selected for improvements. KC-135s would remain the design aircraft for the implementation phase. The following activities would occur at the selected airport or airports:

- a. *Unscheduled/unplanned divert landings*- Unscheduled aircraft landings, also known as “divert” landings would occur; divert landings would occur at these airports if other locations in the western Pacific, for example Andersen Air Force Base (AFB), are unavailable for landing, such as during emergencies or natural disasters.
- b. *Unscheduled/unplanned humanitarian airlift staging*- Humanitarian airlift staging, including non-combatant evacuation operations (NEOs), would also occur at the airport or airports proposed for improvements in the event of an emergency or disaster.
- c. *Military exercises*- A limited number of scheduled joint, combined, and unit-level military training activities and exercises, as described and analyzed in the Mariana Islands Range Complex (MIRC) EIS, for which a Record of Decision (ROD) was issued on July 20, 2010, would occur. It is assumed that both unit-level training and joint military exercises would each take place annually for a combined total of 60 days per year at the airport or airports selected for improvement. This EIS addresses only the ground movements and immediate approaches and departures at the airport or airports selected for development (e.g., take-offs and landings) during unit-level training and exercises. Actual air warfare and air logistics training (i.e., above 10,000 feet) are addressed by the MIRC EIS, for which a ROD was issued on July 20, 2010.
- d. *Jet fuel receiving, storage, and distribution*- A fuel delivery system, jet fuel storage, and means of fuel resupply would be required for the airport or airports selected for improvements. The ability to store fuel and transfer fuel from the receiving port to the airfield would be developed.
- e. *Billeting*- Temporary billeting, including medical, transportation, and dining services, would be required for the personnel supporting aircraft operations. This could be accomplished by using under utilized local hotels or temporary facilities consisting of tents and other support on or near airport property.

Pursuant to Section 7 of P.L. 3-47 [2 CMC Section 1513] federal lands in the CNMI are excluded from the CNMI Coastal Resource Management Program. The proposed fuel tank location at the Saipan harbor would be on federal property and would be constructed with adequate containment in accordance with all applicable standards and requirements. The proposed temporary munitions storage area at the Tinian alternative site would be located within the Military Leased Area on Tinian. No “spillover impacts” on the coastal zone would be anticipated from either of these proposed facilities.

The USAF evaluated whether the construction phase and implementation phase of the Proposed Action at GSN or TNI would have reasonably foreseeable direct or indirect effects on any coastal use or resource of the coastal zone of the CNMI. The USAF determined that with the measures in place that are outlined in the table of required permits and consultations in the attached EIS, that the proposed action would be consistent to the maximum extent practicable with the enforceable policies of the CNMI Coastal Resource Management Program. The USAF would comply with permitting and consultation requirements ensuring consistency with the CNMI Coastal Resources Management Program.

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APPENDIX D

NHPA Section 106 Consultation Supporting Documentation



**Section 106 Consultation Request Letter
February 1, 2012**



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

FEB 01 2012

MEMORANDUM FOR MR. JOHN PALACIOS
HISTORIC PRESERVATION OFFICER
DIVISION OF HISTORIC PRESERVATION
DEPARTMENT OF COMMUNITY AND CULTURAL AFFAIRS
PO BOX 500090 CK OR CALLER BOX 10007
SAIPAN, MP 96950

FROM: HQ PACAF/A7
25 E Street, Suite D-306
JBPH-H, HI 96853

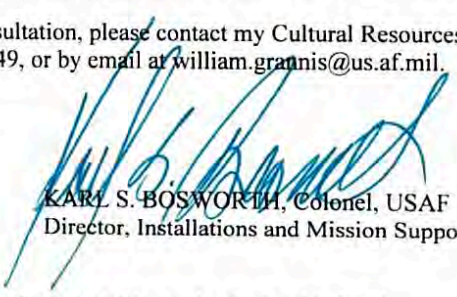
SUBJECT: Environmental Impact Statement and Section 106 Consultation for Improvements
Related to U.S. Air Force (USAF), Pacific Air Forces (PACAF), Divert Activities
and Exercises, Francisco C. Ada/Saipan International Airport, Saipan and Tinian
International Airport, Tinian, Commonwealth of the Northern Mariana Islands

1. My office is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to evaluate possible infrastructure improvements at Francisco C. Ada/Saipan International Airport (GSN) and/or Tinian International Airport (TNI). These improvements would facilitate proposed USAF use of one or both airfields. This NEPA evaluation will comply with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800. USAF will conduct Section 106 consultation concurrently with development of the EIS as recommended by NEPA's implementing regulations, Title 40 Code of Federal Regulations (CFR) Part 1502.25(a). In accordance with 36 CFR Part 800.3(c), this letter initiates our Section 106 coordination for this undertaking.
2. We are still in the planning stages. Given the potential for impact to important cultural resources, USAF seeks consultation with the Commonwealth Historic Preservation Office (HPO) and other interested parties so concerns can be identified early in project planning. USAF seeks consultation on determining the Area of Potential Effect (APE) for cultural resources at both GSN and TNI. We also seek input for designing appropriate cultural resources survey strategies to catalog historic properties in the APE.
3. The proposed improvements involve construction of facilities and infrastructure to support cargo, fighter, and tanker aircraft and associated support personnel for periodic divert landings, joint military exercises, and humanitarian assistance. The undertaking is needed since there is no airfield on U.S. territory in proximity of the Philippine Sea designed and designated to provide strategic capabilities when needed and humanitarian airlift for natural disasters. USAF is considering two action alternatives for the undertaking to include improvements at GSN and TNI. Existing capabilities at each of these airfields will play a major role in determining what improvements need to be made and thus the extent of the undertaking. USAF may also choose to employ some combination of the proposed action elements at both airfields to meet the objective.

4. HDR Inc. has been contracted to support development of the EIS. HDR Inc. archaeologists and architectural historians found Isley Field Historic District listed on the National Register of Historic Places. Isley Field Historic District encompasses numerous architectural and engineering features within and near the modern boundaries of GSN on Saipan. While most of the contributing elements to the district are visible, well-documented, and, therefore, easily avoided by construction and implementation activities, secondary impacts are possible.

5. Pursuant to 36 CFR 800.5, the USAF will consult with HPO to determine if the undertaking will have adverse effects to historic properties in the APEs. If the parties agree that historic properties will suffer adverse effects, the USAF will consult the Advisory Council on Historic Preservation (ACHP) as prescribed in 36 CFR 800.6 with the goal of entering into a Programmatic Agreement (PA) to address these issues and any others that might arise through the Section 106 consultation process. If the parties agree the undertaking has no effect or no adverse effect on historic properties, the USAF will notify ACHP of the finding and conclude Section 106 consultations. A proposed schedule for this Section 106 consultation is attached.

6. If you have any questions regarding this consultation, please contact my Cultural Resources Manager, Mr. William Grannis at (808) 449-4049, or by email at william.grannis@us.af.mil.



KARL S. BOSWORTH, Colonel, USAF
Director, Installations and Mission Support

cc: Barbara Alberti, National Park Service, Superintendent War in the Pacific National Historical Park, Guam, and American Memorial Park, CNMI

Attachment:
Proposed Schedule

Attachment 1: Proposed Schedule for Divert Activities and Exercises Section 106 Consultation

1. USAF provides HPO information describing conceptual project plans in Feb 2012.
2. Once HPO has had an opportunity to review the conceptual project plans, the USAF will work with HPO to determine appropriate APEs for the Saipan (GSN) and Tinian (TNI) project alternatives. USAF proposes 30 days for completion of negotiations. Our anticipated completion date is 15 Mar 2012.
3. USAF will prepare and submit a draft cultural resources report to HPO for review. USAF proposes a 30 day review period for HPO. Our anticipated submittal date is 30 Mar 12. Upon receipt of comments from HPO, USAF will prepare and submit a final draft, scheduled for no later than 30 Jun 2012.
4. If the USAF, in consultation with HPO, determines the undertaking will have adverse effects on historic properties, USAF will invite the ACHP to join in the Section 106 consultations with the goal of entering into a PA by 28 Sep 2012.

**Conceptual Project Plans for Section 106 Consultation,
February 28, 2012**

From: Grannis, William E Civ USAF PACAF PACAF/A7AV [william.grannis@us.af.mil]
Sent: Tuesday, February 28, 2012 9:15 PM
To: MLo65@gmail.com; barbara.alberti@nps.gov
Cc: 'Michael.Jennings@hdrinc.com'; 'James.Gallison@hdrinc.com';
'Benjamin.Fischer@hdrinc.com'; Pyle, Stephen G; Hokanson, Jeffrey H; Lynch, Edward J;
Edwards, Matthew; mtkani@cmnihpo.net; Petersen, Mark K Civ USAF PACAF PACAF/A7PI;
Hong, Julie Y CTR USAF PACAF PACAF/A7PI
Subject: Section 106 Consultation for Divert; Conceptual Project Plans
Attachments: Divert Conceptual Project Plans.pdf
Signed By: william.grannis@us.af.mil

Follow Up Flag: Follow up
Flag Status: Flagged

Ms. Mertie Kani and Ms. Alberti,

As indicated in the previously provided 1 Feb 12 memo from our Director, Installations and Mission Support, attached are the preliminary "conceptual project plans" for Air Force divert activities and exercises proposed for either the Saipan International Airport (GSN) or the Tinian International Airport (TNI). We hope this will assist in our forthcoming discussions to determine the appropriate Area of Potential Effect and evaluate any effects on cultural resources.

Please call or email me if you have any questions or concerns. I would greatly appreciate confirmation that you have received this email and attached information.

Respectfully,

Bill

William Grannis
Environmental Program Manager
HQ PACAF/A7AV
DSN 449-4049
Commercial (808) 449-4049

This conceptual plan presents concepts for proposed alternatives being considered in an Environmental Impact Statement (EIS) currently being conducted in support of potential divert activities and exercises in Guam and CNMI.

The purpose of the undertaking is to achieve and maintain USAF readiness by establishing additional divert capabilities, supporting and conducting joint military exercises, and establishing additional humanitarian response capability, while ensuring the capability to meet mission requirements in the event that access to Andersen AFB or other western Pacific locations is limited or denied.

The Proposed Action undergoing NEPA evaluation is to improve an existing airport or airports and associated infrastructure in support of expanding mission requirements in the western Pacific. Under this action, the USAF proposes to construct facilities and infrastructure at an existing airport or airports to support a combination of cargo, fighter, and tanker aircraft and associated support personnel for periodic divert landings, joint military exercises, and humanitarian assistance and disaster relief efforts. Saipan International Airport (GSN) and Tinian International Airport (TNI) are being considered as alternatives for the Proposed Action.

The general concept being evaluated under NEPA and concurrent Section 106 consultation is the same for both GSN and TNI. The difference is the locations of proposed elements that would need to be constructed. See **Figures 1 through 4** for the conceptual plans of the proposed facilities and infrastructure at GSN and TNI. Under either alternative, the airport environment would be improved to an airfield design that could accommodate 12 KC-135 aircraft to meet the purpose and need. During the Construction Phase (described below) the USAF would develop and construct facilities and infrastructure at GSN or TNI consistent with the Proposed Action. During the Implementation Phase (also described below), for either alternative, the improved facilities and infrastructure would support a combination of cargo, fighter, and tanker aircraft and associated support personnel for periodic exercises and unplanned divert landings and humanitarian assistance and disaster relief in the western Pacific.

The airfield design would also accommodate other military logistics and tactical aircraft. The airfield design assumes that the KC-135 aircraft represents large logistics (or heavy lift cargo) aircraft and it is assumed that the space to accommodate a KC-135 is roughly twice as large as the space to accommodate most tactical or fighter aircraft. A size ratio of 2 to 1 is assumed for heavy lift cargo aircraft to fighter and tactical aircraft; therefore, 24 fighter or tactical aircraft could be diverted to or exercised from the airfield simultaneously for any element of the Proposed Action, not to exceed the capabilities of the proposed design. Finally, it is also assumed that a mix of fighter, tactical, and large logistics aircraft (e.g., 10 large logistics aircraft and 4 fighters), could be diverted to or exercised from the airfield simultaneously for any element of the Proposed Action as long as the mix does not exceed airfield design capabilities. The temporary support personnel population accompanying the aircraft would not exceed 700, regardless of what mix of aircraft is diverted to or exercised from the airfield.

Components of the conceptual plan are as follows:

Summary

1. **Construction Phase.** The KC-135 Stratotanker (KC-135) aircraft is indicative of tanker or cargo aircraft used by the USAF in the western Pacific. The KC-135 aircraft is being used as the design aircraft for cargo and tanker aircraft in the EIS. The following elements would be designed and then constructed or improved at the selected airport or airports:
 - a. Runway - Potential extension of the runway up to 10,000 feet in order to meet optimal KC-135 requirements as identified by PACAF A5U. Options that would expand the

runway to less than 10,000 feet, or not at all, are also analyzed.

- b. Parking apron - The parking aprons at the airport selected for expansion would need to meet design requirements for KC-135 aircraft.
 - c. Associated pavement markings, lighting, and navigational aids- All pavement markings, lighting, and navigational aids would be installed, upgraded, or relocated, as appropriate.
 - d. Temporary munitions storage area- The temporary munitions storage area would mainly be used to store munitions safely from diverted aircraft until the aircraft could return to its place of origin, or planned destination.
 - e. Hazardous cargo pad and arm/disarm pad- The hazardous cargo pad would mainly be used to safely handle munitions or other hazardous cargo from diverted aircraft until the aircraft could return to its place of origin, or planned destination. The arm/disarm pad would be used to perform final safety checks on aircraft before takeoff by aircraft maintenance personnel. The arm/disarm pad would also be used to perform initial safety checks on aircraft after landing. The hazardous cargo pad could be designed and constructed to double as an arm/disarm pad.
 - f. Aircraft hangar- The hangar would be a closed structure to store aircraft awaiting maintenance or being repaired.
 - g. Maintenance facility - The maintenance facility would be used as an Aircraft Maintenance Unit/Aircraft Spares Management and for storage to assist aircraft at the proposed airfield
 - h. Jet fuel receiving, storage, and distribution infrastructure- USAF proposes to maintain a 30-day supply of jet fuel to be able to provide fuel to aircraft through a hydrant system. In order to maintain the 30-day supply of jet fuel, a combination of fuel tanks including bulk storage and smaller operating tanks would be required. The ability to receive jet fuel on the island and ability to transfer it to the airfield would also be required.
 - i. Billeting- Temporary billeting, including medical, transportation, and dining services, would be required for the personnel supporting aircraft operations.
2. **Implementation Phase.** It is assumed that any mix of joint fighter, cargo, and tanker aircraft, not to exceed the design capabilities of the airport, could be diverted to or exercised from the airport or airports selected for improvements. KC-135s would remain the design aircraft for the implementation phase. The following activities would occur at the selected airport or airports:
- a. Unscheduled/unplanned divert landings- Unscheduled aircraft landings, also known as "divert" landings would occur; divert landings would occur at these airports if other locations in the western Pacific, for example Andersen AFB, are unavailable for landing, such as during emergencies or natural disasters.
 - b. Unscheduled/unplanned humanitarian airlift staging- Humanitarian airlift staging, including NEOs, would also occur at the airport or airports proposed for improvements in the event of an emergency or disaster.
 - c. Military exercises- A limited number of scheduled joint, combined, and unit-level

military training activities and exercises, as described and analyzed in the MIRC EIS, for which a ROD was issued on July 20, 2010, would occur. It is assumed that both unit-level training and joint military exercises would each take place annually for a combined total of 60 days per year at the airport or airports selected for improvement. This EIS addresses only the ground movements and immediate approaches and departures at the airport or airports selected for development (e.g., take-offs and landings) during unit-level training and exercises. Actual air warfare and air logistics training (i.e., above 10,000 feet) are addressed by the MIRC EIS.

- d. Jet fuel receiving, storage, and distribution- A fuel delivery system, jet fuel storage, and means of fuel resupply would be required for the airport or airports selected for improvements. The ability to store fuel and transfer fuel from the receiving port to the airfield would be developed.
- e. Billeting- Temporary billeting, including medical, transportation, and dining services, would be required for the personnel supporting aircraft operations.



Figure 2. Overview of Proposed Action Areas at GSN



Figure 3. Overview of Proposed Action Areas at Port of Saipan

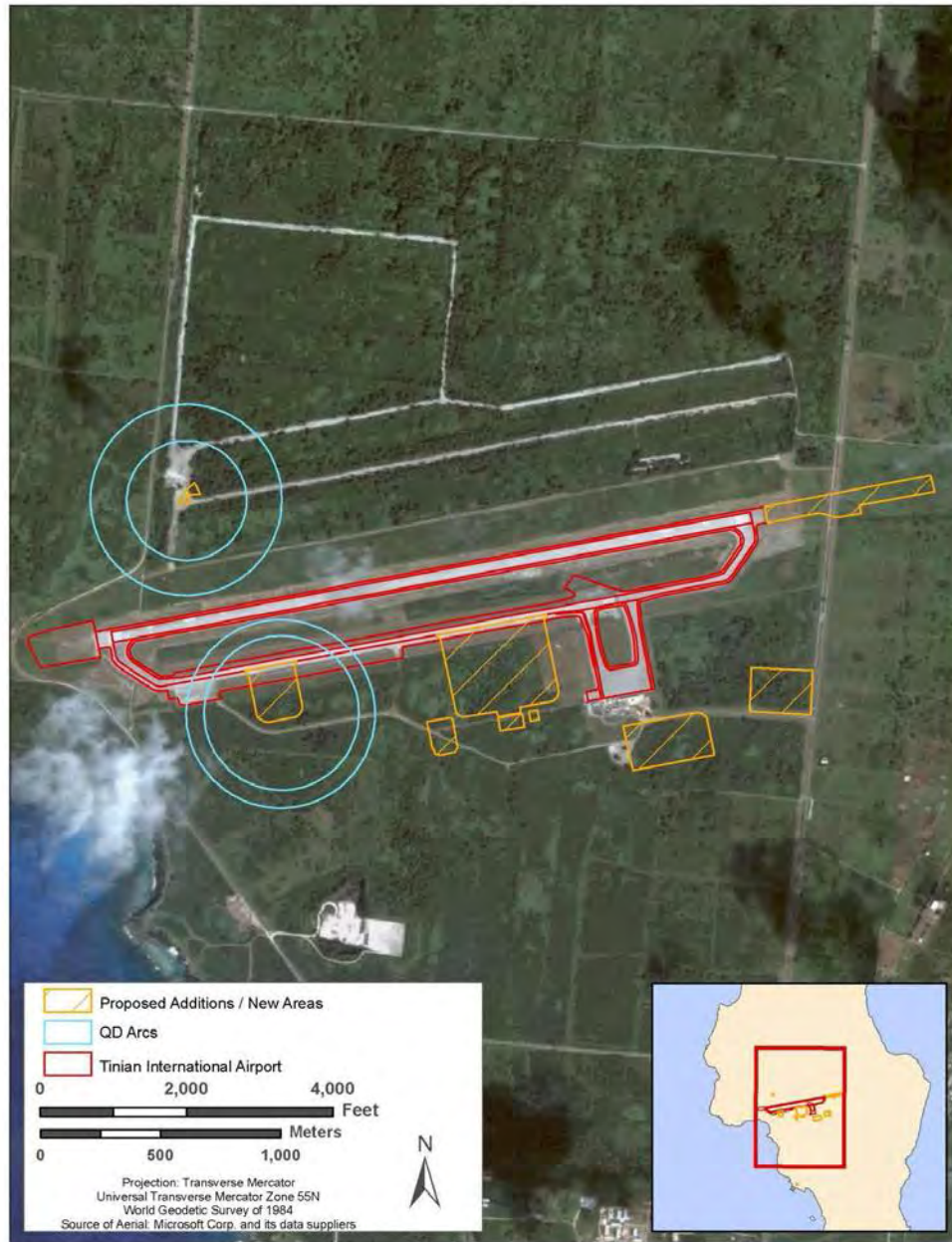


Figure 3. Overview of the Proposed Action at Tinian.



Figure 4. Overview of Proposed Action at Port of Tinian.

**Request for HPO and NPS Review of Draft Phase I Cultural Resources Report
April 16, 2012**



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

16 APR 2012

MEMORANDUM FOR MS. MERTIE KANI
HPO ACTING DIRECTOR
DIVISION OF HISTORIC PRESERVATION
DEPARTMENT OF COMMUNITY AND CULTURAL AFFAIRS
SAIPAN, MP 96950

FROM: HQ PACAF/A7AV
25 E Street, Suite B-206
Joint Base Pearl Harbor-Hickam HI 96853-5420

SUBJECT: Request for Review of Draft Phase I Cultural Resources Survey Supporting the
Environmental Impact Statement for Divert Activities and Exercises on Saipan
Commonwealth of the Northern Mariana Islands

1. As indicated in the previously provided memo from our Director, Installations and Mission Support, dated 1 Feb 12, the US Air Force is preparing an Environmental Impact Statement (EIS) for Divert Activities and Exercises. The Francisco C. Ada/Saipan International Airport is one of the alternatives being considered in the EIS. To address data gaps related to this alternative, the Air Force has conducted a survey of historic resources and is pleased to submit the subject draft survey report for your review.
2. The study area is contained within the boundaries of the NRHP-listed Isley Field Historic District (NRIS No.: 81000667), which itself is included in the Saipan Landing Beaches, Aslito/Isley Field and Marpi Point National Historic Landmark (NHLS No.: 85001789). As such, the U.S. Air Force evaluated these resources according to whether or not they constitute contributing elements of the Historic District/National Historic Landmark. Results of this evaluation are provided in the attached report.
3. Request your comments or concurrence by 20 May 12. Should you have any questions or concerns, please contact me at (808) 449-4049, or by email at william.grannis@us.af.mil.

A handwritten signature in cursive script, reading "William Grannis", is positioned above the typed name.

WILLIAM GRANNIS
Environmental Program Manager,
HQ PACAF/A7AV

Attachment: Draft Phase I Cultural Resources Survey Report

cc:

Barbara Alberti, National Park Service, Superintendent, War in the Pacific National Historical Park, Guam, and American Memorial Park, CNMI
Katty Harris, Program Analyst, Advisory Council on Historic Preservation

**Request for Review of Phase I Cultural Resources Survey,
May 25, 2012**



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

25 MAY 2012

MEMORANDUM FOR ELAINE JACKSON-RETONDO
ACTING HISTORY PROGRAM COORDINATOR
NATIONAL PARK SERVICE
PACIFIC WEST REGION
333 BUSH STREET, SUITE 500
SAN FRANCISCO, CA 94104-2828

FROM: HQ PACAF/A7AV
25 E Street, Suite B-206
Joint Base Pearl Harbor-Hickam HI 96853-5420

SUBJECT: Request for Review of Draft Phase I Cultural Resources Survey Supporting the
Environmental Impact Statement for Divert Activities and Exercises on Saipan
Commonwealth of the Northern Mariana Islands

1. The US Air Force is preparing an Environmental Impact Statement (EIS) for Divert Activities and Exercises. The Francisco C. Ada/Saipan International Airport is one of the alternatives being considered in the EIS. To address data gaps related to this alternative, the Air Force has conducted a survey of historic resources and is pleased to submit the subject draft survey report (Atch 1) for your review. The Air Force chose to conduct a cultural resources survey of the Saipan alternative in the EIS because of the potential impact to the National Historic Landmark and other NR-listed properties on Saipan.
2. The enclosed report presents the results of the cultural resources survey of 66.5 hectares (164.3 acres) at Saipan International Airport. The survey strategy was developed by our contractor, HDR, in consultation with John Palacios and Juan Diego C. Camacho from the Saipan Historic Preservation Office. The goal was to identify cultural resources in the area where proposed improvements to the airport would occur should the Saipan-based alternative be selected. The survey area encompassed the areas that may be part of the undertaking, including potential extensions to an existing runway and the footprints of a proposed hot cargo pad and arm/de-arm pad, two aprons and ramps, a maintenance facility, a hangar, magazines (one earth covered magazine and one multi-cube magazine), two fuel sites (bulk storage and operational tanks with hydrant system), and a Basic Expeditionary Airfield Resources (BEAR) kit site.
3. During the survey, three isolated occurrences were identified that date to the pre-contact period and consist of Latte phase ceramics and a sling stone. As isolated finds they may be useful in supplementing overall spatial analysis of the area, but individually and collectively do not provide additional information potential and lack sufficient integrity to be eligible for listing in the National Register of Historic Places (NRHP). The U.S. Air Force has therefore determined these resources as not eligible for nomination to the NRHP. Also identified were eleven newly recorded historic features that related either to the Japanese occupation or the American occupation. The features are shown on report figure 7-1 (provided separately at Atch 2) and include a concrete water tower (Feature 1), three concrete foundations with drains (Features 2, 3 and 4), three concrete foundations or pads (Features 5, 9, and 11), a Japanese

bunker (Feature 6), two water catchment features (Features 7 and 8), and a bottle dump (Feature 10). B-29 hardstands and taxiways, some portion of which were previously but imprecisely recorded, were also recorded evaluated during survey. Finally, eight previously recorded Japanese bunkers were revisited during survey (Features AB1 to AB8).

4. As described in the attached report, the study area is contained within the boundaries of the NRHP-listed Isley Field Historic District (NRIS No.: 81000667), which itself is included in the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHLS No.: 85001789). As such, the U.S. Air Force evaluated these resources according to whether or not they constitute contributing elements of the Historic District/National Historic Landmark (NHL).

5. All of the historic features recorded during the survey date to either the Japanese or American occupations of the airfield during WWII and served a military purpose; they therefore meet Criterion A as contributing elements to the District's association with events that have made a significant contribution to the broad patterns of American history, WWII in this case. Some of the features also have information potential and therefore meet Criterion D. However, the inquiry does not end with the determination that the criteria are met; the resources must also retain sufficient qualities or aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Most of the WWII-related sites, buildings, or structures documented in the survey meet the criteria and possess sufficient integrity and therefore do contribute to the District (see the enclosed Report). However, some of the features documented, though they lie within the boundaries of the Historic District/NHL and do meet Criteria A and D, lack sufficient integrity to be considered contributing elements (though they still would be non-contributing elements). Those elements are as follows:

- Feature 1, a concrete water tower dating to the Japanese occupation that is in poor condition and in a compromised setting; this feature lacks several aspects of integrity, including setting, workmanship, feeling and location.
- Feature 3, a concrete foundation with drain dating to the American occupation that is compromised by its isolated location relative to other WWII-era features in the area (and thus lacks several of the qualities of integrity, including location, setting, feeling, and association).
- Feature 5, a concrete slab dating to the American occupation that is in very poor condition, lacking the qualities of setting, workmanship, feeling, and association.
- Feature 9, a concrete foundation dating to the American occupation that is in very poor condition, lacking the qualities of setting, workmanship, feeling, and association.
- Feature 11, a concrete pad dating to the Japanese or American occupation that is in very poor condition and lacks integrity of setting, workmanship, feeling, and location.
- B-29 hardstands and taxiways, which due to decay, vegetation growth, and recent development of the airport, lack integrity of setting, feeling, workmanship and association.

6. The remaining identified features are determined eligible for nomination to the NRHP and as contributing elements to the District. Note that the eight previously recorded Japanese bunkers (Features AB1 to AB8) have previously been determined to be eligible for listing on the NRHP and to be contributing elements in the Isley Field Historic District.

- Feature 2, a concrete foundation with drain dating to the American occupation.
- Feature 4, a concrete foundation with drain dating to the American occupation.
- Feature 6, a Japanese bunker.
- Feature 7, a water catchment feature dating to the American occupation.
- Feature 8, a water catchment feature dating to the American occupation.
- Feature 10, a bottle dump dating to the American occupation.

7. Because the project is within the boundaries of the Historic District/NHL, the U.S. Air Force respectfully requests that the National Park Service evaluate and provide comments on these findings of eligibility provided in Chapter 9 of this survey report. Please note that once the NRHP eligibility of the identified resources is agreed upon, the U.S. Air Force will make a Determination of Effect and again ask NPS for comments. We believe this two-step approach is a good approach for a unique project such as this.

8. Request your comments by 13 Jun 12. Should you have any questions or concerns, please contact me at (808) 449-4049, or by email at william.grannis@us.af.mil.



WILLIAM GRANNIS
Environmental Program Manager,
HQ PACAF/A7AV

2 Attachments:

1. Draft Phase I Cultural Resources Survey Report
2. Report Figure 7-1, Map of Spatially Isolated Historic Features and Artifacts in the Project Area.

cc:

Barbara Alberti, National Park Service, Superintendent, War in the Pacific National Historical Park, Guam, and American Memorial Park, CNMI

Katry Harris, Program Analyst, Advisory Council on Historic Preservation

Mertie Kani, HPO Acting Director, Division of Historic Preservation, Department of Community and Cultural Affairs, Saipan

David Louter, PhD, Chief, Cultural Resources Program, Pacific West Region, National Park Service

Section 106 Review and Comments Letter from CNMI HPO
May 31, 2012



Commonwealth of the Northern Mariana Islands

Division of Historic Preservation
Department of Community & Cultural Affairs
P.O. Box 500090 CK, Airport Road
Saipan, MP 96950



TEL: 664-2120-25
FAX: 664-2139

May 31, 2012
Serial: HP-28510
File: Section 106/ FY'12/Dept. of Air Force

Mr. William E. Grannis, GS13
Environmental Program Manager
HQ PACAF/A7AV
25 E Street, Suite B-206
Joint Base Pearl Harbor-Hickam HI 96853-5420

Subject: Section 106 Review and Comments, Phase I Cultural Resources Survey
Supporting the Environmental Impact Statement for Divert Activities and Exercises
Commonwealth of the Northern Mariana Islands.

Dear Mr. Grannis:

We have reviewed the report of the above subject archaeological investigation and have the following comments.

The report is very well prepared and which followed most of the requirements in our guidelines and standards for archaeological documentation within the Commonwealth of the Northern Mariana Islands (CNMI). These include presentation and discussions of background research containing environmental overview, results of previous investigations, historic and land-use activities, discussion of site expectations based on the background research, research design, field methods, field results, national register eligibility determinations, and recommendations.

The archaeological investigation and its subsequent reporting of the results served its purpose well.

With regards to the National Register eligibility criteria, we agree with your opinion that Feature 1 to 11 are eligible for listing in the National Register under criterion A with the exception of Features 2, 4, 6, 7, 8 and 10, which are eligible under both criteria A & D. Features 1 to 11 include: A concrete water tower, three concrete foundations with drains, a concrete slab, a Japanese Bunker, two water catchment features, a concrete foundation, a bottle dump, and a concrete pad. We also agree that Hardstands, concrete roads and parking aprons for B-29 are eligible for the National Register under criterion A. We further agree the Features 1, 3, 5, 9, 11 and the hardstands are not eligible as contributing resources to the National Historic Landmark due to their compromised integrity.

For the Isolated Occurrences 1 to 3 which include one body sherd, a body sherd and a sling stone, and five body sherds and a rim sherd respectively, we agree with your evaluation that none of the Isolated Occurrence meets the National Register eligibility criteria due to their lack of integrity.

While the report is a good one, there are some submission standards that need to be mentioned. First, the final report must indicate "Final Report" in the front cover. Secondly, four copies of the final report must be submitted to the CNMI office of the Division of Historic Preservation, one copy to the CNMI Museum of History and Culture, one to the Archives at the Northern Marianas College, and one to the Micronesian Area Research Center at the University of Guam. In addition, one complete, and legible set of field notes, including a photo log shall be submitted to the CNMI Museum of History and Culture at the time the final report is submitted. Finally, there should be an acknowledgement section of the report.

If you have any questions, please do not hesitate to contact us at 664-2120/5. Please keep a copy of this letter in your files as evidence of your compliance with Section 106 process.

Sincerely,



Melvin L. O. Faisão
State Historic Preservation Officer

cc. Elaine Jackson-Retondo, NPS Coordinator
Katty Harris, Program Analyst for Advisory Council
David Louter, PhD, Chief, Cultural Resources Program, NPS
Barbara Alberti, NPS Superintendent

**Response to Request for Review of Phase I Cultural Resources Survey Letter,
June 25, 2012**



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, Washington 98104-1060



H3417 (PWR-CR)

June 25, 2012

William Grannis, Environmental Program Manager
Department of the Air Force
HQ PACAF/A7AV
25 E Street, Suite B-206
Joint Base Pearl Harbor-Hickam, HI 96853-5420

RE: Request for NPS Review of Draft Phase I Cultural Resources Survey Supporting the
Environmental Impact Statement for Divert Activities and Exercises on Saipan
Commonwealth of the Northern Mariana Islands

Dear Mr. Grannis:

Thank you for the invitation to review the Draft Phase I Cultural Resources Survey Supporting the Environmental Impact Statement for Divert Activities and Exercises on Saipan Commonwealth of the Northern Mariana (the Survey).

The National Park Service (NPS) is delegated monitoring and technical assistance responsibilities by Congress to ensure that National Historic Landmarks (NHL) retain the highest level of integrity. Our responsibilities include review and formal comment on individual proposed actions within National Historic Landmarks as well as the cumulative effect of changes through time on NHL properties. The NPS also prepares, reviews, and provides technical assistance in the preparation NHL nominations. It is our understanding that your request for NPS review is not part of a NHPA Section 106 consultation; rather it is a request for technical assistance prior to your development of alternatives under NEPA and prior to your assessment of effects. It is in the capacity of providing technical assistance that we have reviewed and are offering comments on the Survey. Specifically, the Air Force has requested NPS to evaluate and provide comments on the findings of eligibility presented in Chapter 9 of the Survey.

To best address the findings of the Survey, NPS comments are focused on a broader discussion about the Landing Beaches Aslito/Isley Field, Marpi Point National Historic Landmark District (NHL), as well as the method and process for identifying additional contributors and for determining when previously identified contributors no longer contribute to a NHL. We believe this discussion will prove beneficial for this and other projects involving NHLs.



As noted in May 25, 2012 cover letter and in the Survey, the study area for the proposed undertaking is located within the boundary of the Aslito/Isley Field portion of the NHLD. It appears that in the field survey individual properties located within the NHL boundary were identified and the eligibility of each resource assessed individually for listing in the National Register of Historic Places, which serves one aspect of identification and evaluation; however, it does not adequately address these same resources as contributors to the NHLD. Within the Aslito/Isley Field portion of the NHLD, the NHL nomination specifically identifies two large sites, a Japanese building and other Japanese concrete structures as part of the NHL; only one building and two vehicular/aircraft parking areas were identified as noncontributing. The following excerpt from the NHL nomination provides more specific information:

Recommended as part of a national historic landmark is the general area formerly known as Aslito Field and Isley Field to include: the site of the two B-29 runways, taxiways, and hardstands; the site of the Seventy-third Bombardment Wing's administrative area; the Japanese blockhouse on the beach at Unai Opyan; and the concrete Japanese structures associated with Aslito Field. Exempted are the modern air terminal, its vehicle parking lot, and its concrete aircraft parking area in front.

An assessment of whether these properties still contribute to the NHLD would require an evaluation of the integrity relative to the state of the properties at the time of designation. If the assessment were that contributors had lost a significant degree of integrity since designation, they would not become non contributors unless an update to the NHL nomination was prepared and accepted. The process for changing the boundary, period of significance or deeming contributors as non contributors starts with the NHL program. Based upon an update to the NHL nomination, the NHL program would make a recommendation to the NHL Committee of the NPS Advisory Board, which in turn would make a recommendation to the full Board followed by a recommendation to the Secretary of the Interior. Those determinations are not made by the SHPO. It is also important to note that the integrity of a historic site as a category of historic property is assessed slightly differently than that of a historic building or structure. Reference pages 40-41 of the National Register of Historic Places Bulletin, "How to Prepare a NHL Nomination" for additional information about sites.

As our comments indicate, assessing the eligibility of resources within a NHL requires a different process than employed in the Survey. However, the information provided in the Survey, specifically the identification of features and structures within the NHLD, could serve as a good start to a much needed update to the NHL nomination for Landing Beaches Aslito/Isley Field, Marpi Point National Historic Landmark District. If you have further questions, please do not hesitate to call or email Dr. Elaine Jackson-Retondo at 415 623 2368 or elaine_jackson-retondo@nps.gov.

Sincerely,



David Louter,
Chief, Cultural Resources Program
Pacific West Region

USAF News Release regarding historical sites at GSN and TNI
September 2, 2012



News Release



Headquarters Pacific Air Forces Public Affairs

25 E. Street, Suite I-106A

Joint Base Pearl Harbor-Hickam, HI 96853-5496

(808) 448-3224/3226

Release No. 010912

Sep. 2, 2012

Air Force seeks input on historic sites

Pacific Air Forces Public Affairs

JOINT BASE PEARL HARBOR-HICKAM, Hawaii – The U.S. Air Force is asking those with interest in the historical sites related to Francisco C. Ada (Saipan International) Airport, Tinian International Airport and the seaports of both islands, to provide information that they wish to be considered by the Air Force as part of its ongoing assessment of potential effects related to a planned Exercises and Divert Activities airfield improvement project.

The Air Force is considering the Saipan and Tinian airports as possible sites for future training exercises and missions related to overall emergency preparedness in the Pacific. The Air Force is proposing improvements to an existing airport that would involve construction of facilities and infrastructure to support a combination of military cargo, fighter, and tanker aircraft and associated support personnel for periodic divert landings, joint military exercises, and joint and combined humanitarian assistance and disaster relief efforts.

Existing capabilities at each of these airports and seaports will play an important role in determining what improvements need to be made, and which site is ultimately chosen for the proposed project. The Air Force could also choose to employ some combination of both airports to meet its objectives.

Saipan and Tinian were the sites of intense fighting in World War II as the U.S. sought to wrest control of the islands from Japanese forces. After a massive loss of life to the forces of both nations, the U.S. captured Japan's main airfield on the island, known as Aslito Field, on June 18, 1944.

The capture of Aslito Field proved decisive for the U.S. in the battle for Saipan. U.S. forces immediately began using the airfield for airstrikes, supply runs, and aerial photography missions that allowed for accurate mapping of Japanese positions, bunkers, and trench lines as well as Saipan's rugged terrain.

On July 24, 1944, two weeks after capturing Saipan, U.S. forces invaded Tinian. The island was secured on Aug. 1, 1944, after a loss of 8,010 Japanese lives. American casualties included 328 dead and 1,571 wounded.

American troops immediately began work repairing and expanding Gurguan Airfield, today the site of the international airport, and Ushi Point Airfield, which was transformed into the North Field, the largest airbase in the Pacific.

A year later, North Field became one of the most significant airfields in history when it served as the deployment point for the atomic bombing missions by Enola Gay to Hiroshima on Aug. 6, 1945, and Bockscar to Nagasaki on Aug. 9, 1945. These missions, the only wartime use of nuclear weapons in history, were a critical factor in Japan's surrender on Sept. 2, 1945.

Today, the landing beaches on Saipan used by U.S. forces, as well as Marpi Point, are part of the same National Historic Landmark as Aslito/Isley Field. North Field on Tinian is now a national historic district and part of the Tinian Landing Beaches, Ushi Point, and North Fields National Historic Landmark.

According to the National Park Service, national historic landmarks are buildings, sites, districts, structures, and objects that have been determined by the Secretary of the Interior to be nationally significant in U.S. history and culture. Designated national historic landmarks include some of the most historic properties in the U.S. and its territories. Many national historic landmarks still serve modern needs. North Field is part of the Exclusive Military Use Area military training area.

Not only is the consideration of potential effects of actions on historic properties required under various laws, but an understanding is essential to design and operation of the airfield improvements to fully evaluate the environmental impacts from the proposed action. The Air Force is in the process of preparing an Environmental Impact Statement, or EIS, for the proposed training exercises and missions.

The public has participated in these processes during Air Force sponsored EIS scoping meetings held on Guam, Saipan, Tinian, and Rota last September and during public hearings in Saipan and Tinian in July 2012, as required by the National Environmental Policy Act. The Air Force is also working with agencies charged with management of historic resources including the CNMI Historic Preservation Office, National Park Service, and Advisory Council on Historic Preservation to properly evaluate and avoid, minimize, or mitigate any effects to historic properties.

This article is intended to solicit public involvement in the effort to identify and protect historic resources that could be impacted by the proposed action. In addition to recognizing the rich World War II history of the CNMI, particularly Saipan and Tinian, the Air Force is also interested in gathering information pertinent to the area's history and use before European contact and its possible role in traditional beliefs and customs of native islanders and other communities today.

Those with interests and information pertaining to the historical attributes of the area are encouraged to submit their comments to PACAF/PA, 25 E Street, Suite G-108, Joint Base Pearl Harbor-Hickam, HI 96853, ATTN: PACAF Divert Marianas, or by email at pacaf.paops@us.af.mil.

The Air Force has also set up a Web site at <http://www.pacafdivertmarianaseis.com>, which houses important information about the proposed project and alternatives, including the Draft EIS and all related documents the Air Force has released for public review. Interested parties may also submit comments relating to the historic properties pursuant to Section 106 of the National Historic Preservation Act via this Web site.

Section 106 Consultation Initiation Letter
September 11, 2012



DEPARTMENT OF THE AIR FORCE
AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT
LACKLAND AIR FORCE BASE, TEXAS

11 Sep 12

MEMORANDUM FOR MELVIN FAISAO, HISTORIC PRESERVATION OFFICER
DEPARTMENT OF COMMUNITY AND CULTURAL AFFAIRS
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
P.O. BOX 500090, SAIPAN, MP96950

FROM: AFCEE/CMP

SUBJECT: Consultation Initiation per Section 106 of the National Historic Preservation Act

1. In support of USAF/s effort to conduct a National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) titled *Divert Activities and Exercises, Guam and the Commonwealth of the Northern Mariana Islands*, the Air Force Center for Engineering and the Environment (AFCEE) respectfully submits the attached distribution list (Attachment 1), along with the *Request for Consultation Initiation and Findings of Effect to Historic Properties* (Attachment 2).
2. The attached request for consultation also includes two enclosures containing both the figures showing direct and indirect Areas of Potential Effects (APE) for each alternative, and the Section 106 (NHPA) findings and determinations for Divert Activities and Exercises EIS.
3. We appreciate your attention to this Divert Activities and Exercises consultation initiation request. If you have any questions, please contact Mr. William Grannis by email at william.grannis@us.af.mil or by telephone at (808) 449-4049.

A handwritten signature in black ink, appearing to read "David A. Kaweck", is positioned above the printed name and title.

DAVID A. KAWECK, Colonel
Chief, AFCEE Pacific RMO

- 2 Attachments:
1. Distribution List
 2. Request for Consultation

cc:
HQ PACAF/A7P
AFCEE/TDX

ATTACHMENT 1

Distribution List for Consultation Initiation per Section 106, NHPA

Ms. Barbara Alberti, National Park Service
Ms. Michelle Cruz, Federal Aviation Administration, Western Service Center
Mr. Melvin Faisao, CNMI Department of Community and Cultural Affairs
Mr. Don Farrell
Mr. Walt Goodridge, Destination Saipan
Ms. Katry Harris, Advisory Council on Historic Preservation
Mr. Robert Hunter, CNMI Museum of History and Culture
Ms. Elaine Jackson-Retondo, National Park Service, Pacific West Regional Office
Ms. Mertie Kani, CNMI Dept. of Community & Cultural Affairs, Div. of Historic Preservation
Mr. Andre Kozej
Mr. Tom Linden, Military Integration Management Committee
Ms. MaryAnn Lizama, Commonwealth Ports Authority
Mr. Gordon Marciano, PDI Tour Agency
Mr. John Powell, Military Historical Tours, Inc.
Mr. Scott Russell
Ms. Carmen Sanchez, Tinian, CNMI Department of Community and Cultural Affairs
Ms. Ruth Tighe
Mr. Brad Wallis, Pacific Historic Parks
Mr. O. Warren Wiedhahn, Military Historical Tours, Inc.

ATTACHMENT 2

Request for Consultation Initiation and Findings of Effect to Historic Properties
Prepared in accordance with Section 106, National Historic Preservation Act (NHPA) of 1966
U.S. Air Force (USAF), Pacific Air Forces (PACAF), Divert Activities and Exercises,
Francisco C. Ada/Saipan International Airport, Saipan; and Tinian International Airport, Tinian,
Commonwealth of the Northern Mariana Islands

1. INTRODUCTION

On 1 February 2012, the Pacific Air Forces (PACAF), Director, Installations and Mission Support provided a notification letter to your office(s) to advise you that the USAF is preparing an Environmental Impact Statement (EIS) for Divert Activities and Exercises (the Undertaking) and requesting data related to determining the Area of Potential Effect (APE), as well as discussing cultural resource survey strategies to catalog historic properties within the APE. Alternatives being evaluated under Section 106 of the NHPA of 1966, in conjunction with the EIS, include use of the existing FAA-regulated airports on Saipan (GSN) and Tinian (TNI) and fuel storage facilities at their respective ports. USAF's determinations of the APE, identification of Historic Properties within the APE, and Finding of Effects are summarized in the attached APE maps (Enclosure 1) and Section 106 Findings and Determinations (Enclosure 2). These determinations were developed in accordance with Section 106 of the NHPA and its implementing regulations posted in 36 Code of Federal Regulations, Part 800 (36 CFR 800). The PACAF project planning team for the NEPA action is now seeking additional advice and comment regarding its obligation to consult, determine effects, and resolve any adverse effects, per the requirements of the NHPA and regulations.

2. DESCRIPTION OF THE UNDERTAKING

On 29 February 2012, Mr. Grannis, HQ PACAF/A7AV, provided a Conceptual Project Plan that describes the undertaking via email to the Saipan Historic Preservation Office (HPO) and National Park Service, Superintendent, War in the Pacific NHP, Guam, American Memorial Park, Saipan. This Plan was subsequently provided via email to the Tinian HPO on March 06, 2012. Additional description of the Undertaking may be found in the Draft Environmental Impact Statement at <http://www.pacafdivertmarianaseis.com/docs.html> and in Enclosure 2. To summarize, the Undertaking is to determine the location to improve an existing airport or airports and associated infrastructure in support of expanding mission requirements in the western Pacific. Under this action, the USAF proposes to construct facilities and infrastructure at an existing airport or airports and necessary fueling facilities at a port to support a combination of cargo, fighter, and tanker aircraft and associated support personnel for periodic divert landings, joint military exercises, and humanitarian assistance and disaster relief efforts.

3. DESCRIPTION OF AREA OF POTENTIAL EFFECT (APE)

As defined in 36 CFR 800.16(d), the APE "...means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." Because the Undertaking involves multiple alternative project areas and phases,

USAF has defined eight APEs reflecting potential effects on the selected location, project phase, and potential direct, or indirect effects. These APEs are illustrated and described in Enclosures 1-2 and include:

- a. Saipan Construction Phase Area of Potential Effect – Direct
- b. Saipan Construction Phase Area of Potential Effect – Indirect
- c. Saipan Implementation Phase Area of Potential Effect – Direct
- d. Saipan Implementation Phase Area of Potential Effect – Indirect
- e. Tinian Construction Phase Area of Potential Effect – Direct
- f. Tinian Construction Phase Area of Potential Effect – Indirect
- g. Tinian Implementation Phase Area of Potential Effect – Direct
- h. Tinian Implementation Phase Area of Potential Effect – Indirect

4. IDENTIFICATION OF HISTORIC PROPERTIES IN THE AREA(S) OF POTENTIAL EFFECT (APE)

Historic properties include "...any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register (16 U.S.C. Section 470(w)(5))." As described in greater detail in Enclosure 2, the following historic properties have been identified on Saipan and Tinian, within the APE, that may be affected by construction and/or implementation, whether direct or indirect:

- a. Saipan Construction Phase Area of Potential Effect - Direct
 - Aslito/Isley Field National Historic District portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHL)
 - Newly recorded eligible structures, sites, and features at Aslito/Isley Field that date to the period of significance for the NHL and *may* contribute to its significance
 - Newly recorded pre-contact isolated occurrences that do not contribute to the NHL
 - Additional undiscovered or unanticipated eligible resources
- b. Saipan Construction Phase Area of Potential Effect – Indirect
 - All of the above **plus** the Japanese hospital and Campaneyan Kristo Rai in Garapan
- c. Saipan Implementation Phase Area of Potential Effect - Direct
 - All of the above
- d. Saipan Implementation Phase Area of Potential Effect - Indirect
 - All of the above **plus** Saipan Landing Beaches portion of the Landing Beaches, Aslito/Isley Field and Marpi Point NHL and the Tinian Landing Beaches, Ushi Point Field, and North Field NHL
- e. Tinian Construction and Implementation Phase Areas of Potential Effect - Direct and Indirect
 - US anti-aircraft artillery site near TNI
 - House of Taga (San Jose)
 - Nanyo Kohatsu Kabushiki Kaisha Ice Storage Building (San Jose)

- Additional undiscovered or unanticipated resources

5. DETERMINATION OF POTENTIAL EFFECT

As discussed in Enclosure 2, the Undertaking could have adverse direct and indirect effects to historic properties. The extent of adverse effects will be determined by the actual facilities constructed and the actual operations conducted at either location. Since Congressional authorization is required for each facility, and military operational and readiness concerns determine the type and extent of military training required at the location, the resultant actual effects could be fewer and less adverse than those discussed here and in Enclosure 2.

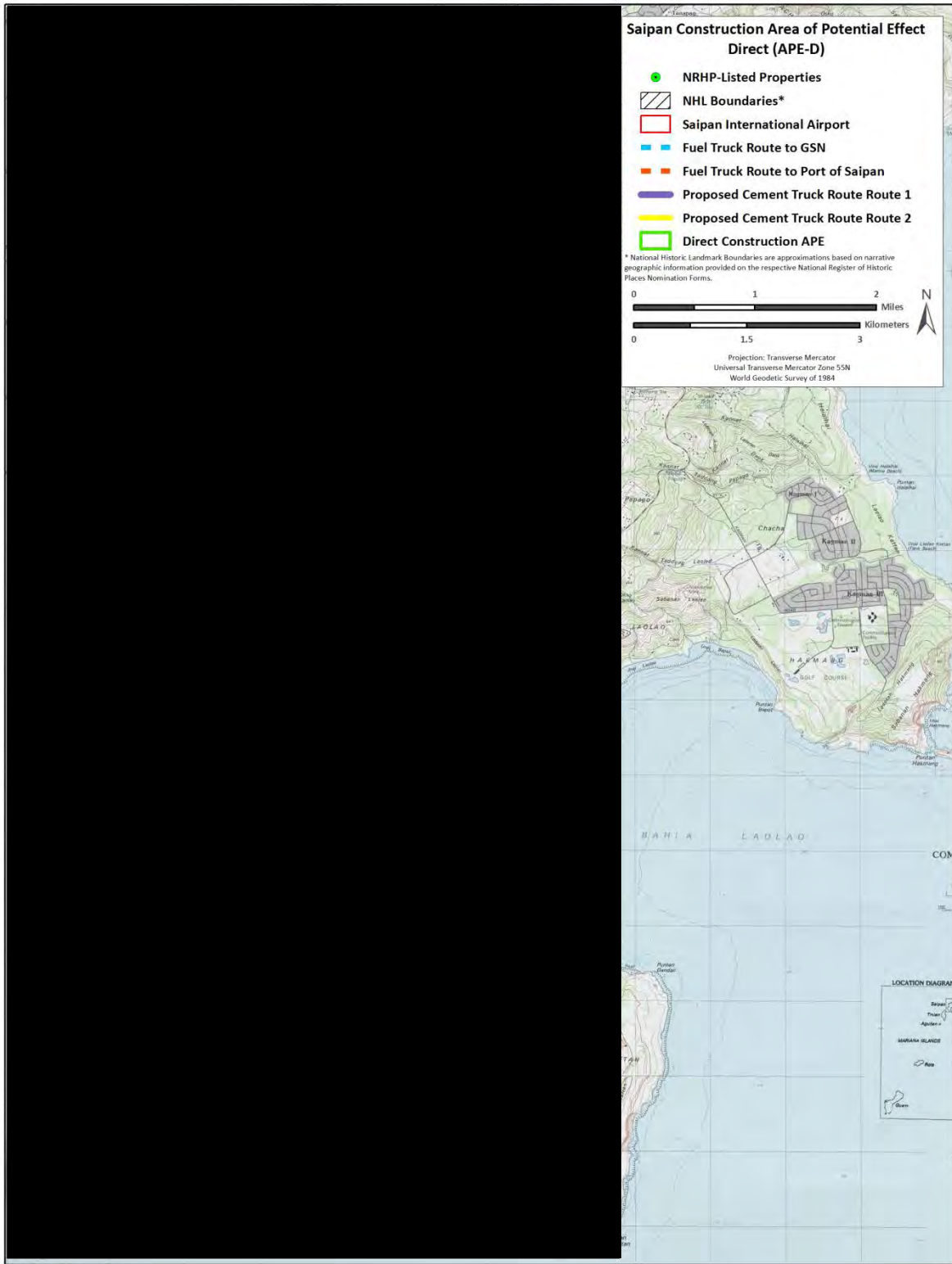
6. REQUEST FOR CONCURRENCE IN FINDINGS

We invite your comments on the definition of the APE, the adequacy of the efforts to identify historic properties potentially affected by the Undertaking, and the finding of effect. We are especially interested in identifying whether resources related to indigenous and/or traditional use or belief exist within the APE that qualify as traditional cultural properties (TCP) as outlined in 36 CFR 60.4. Based on our determination that the Undertaking may result in adverse effects to historic properties, we propose to resolve adverse effects to historic properties through development of an agreement, in consultation with your office and any other interested parties. Per 36 CFR 800.3(f), we are seeking to identify any other consulting parties. We welcome your recommendations on any parties to include in an invitation to consult on this project. Please indicate your concurrence with the above findings and proposal to develop an agreement within 30 days of receipt of this memo. If you have any questions or comments, or require any additional information, please contact Mr. William Grannis at (808) 449-4049, or by email at william.grannis@us.af.mil.

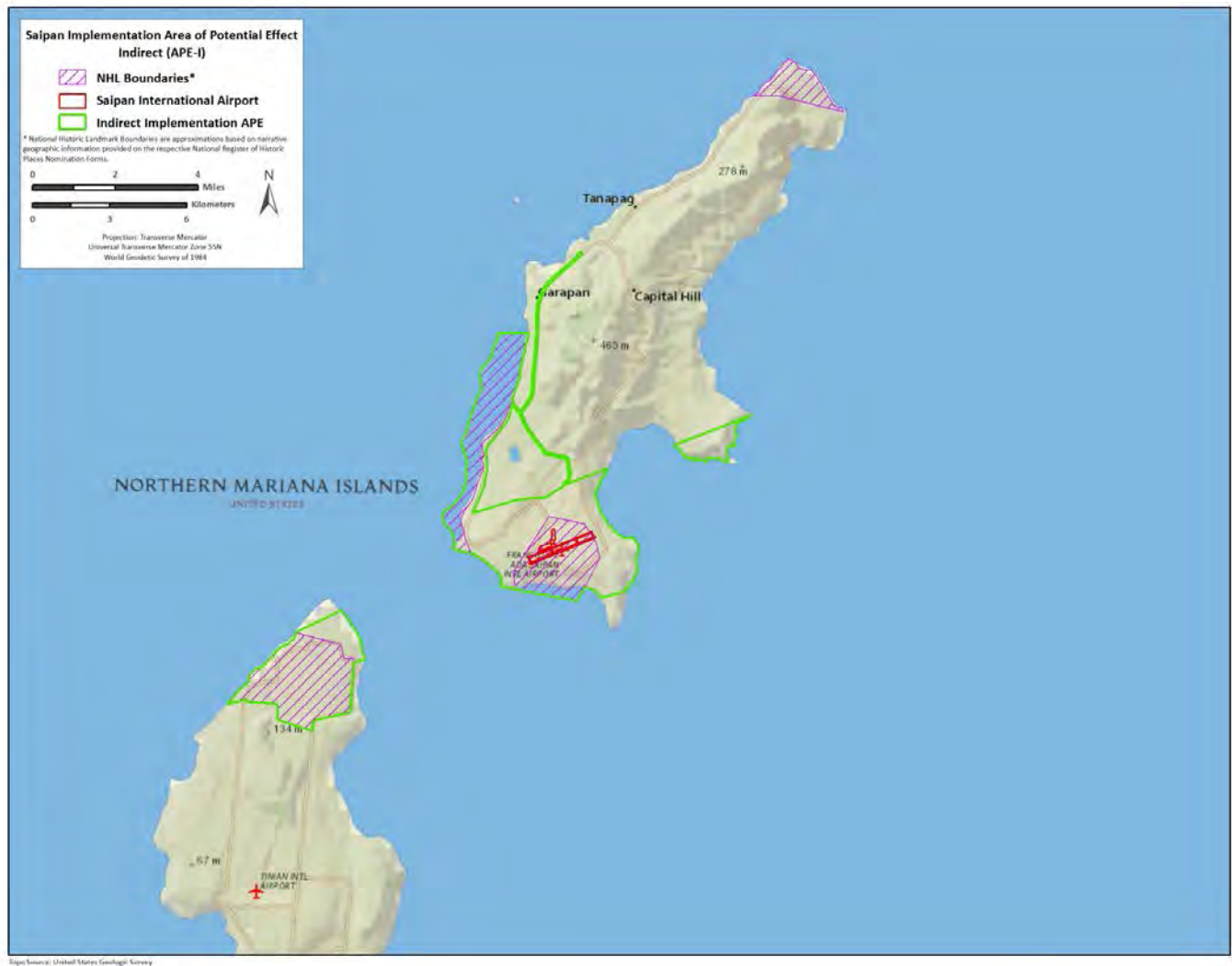
2 Enclosures:

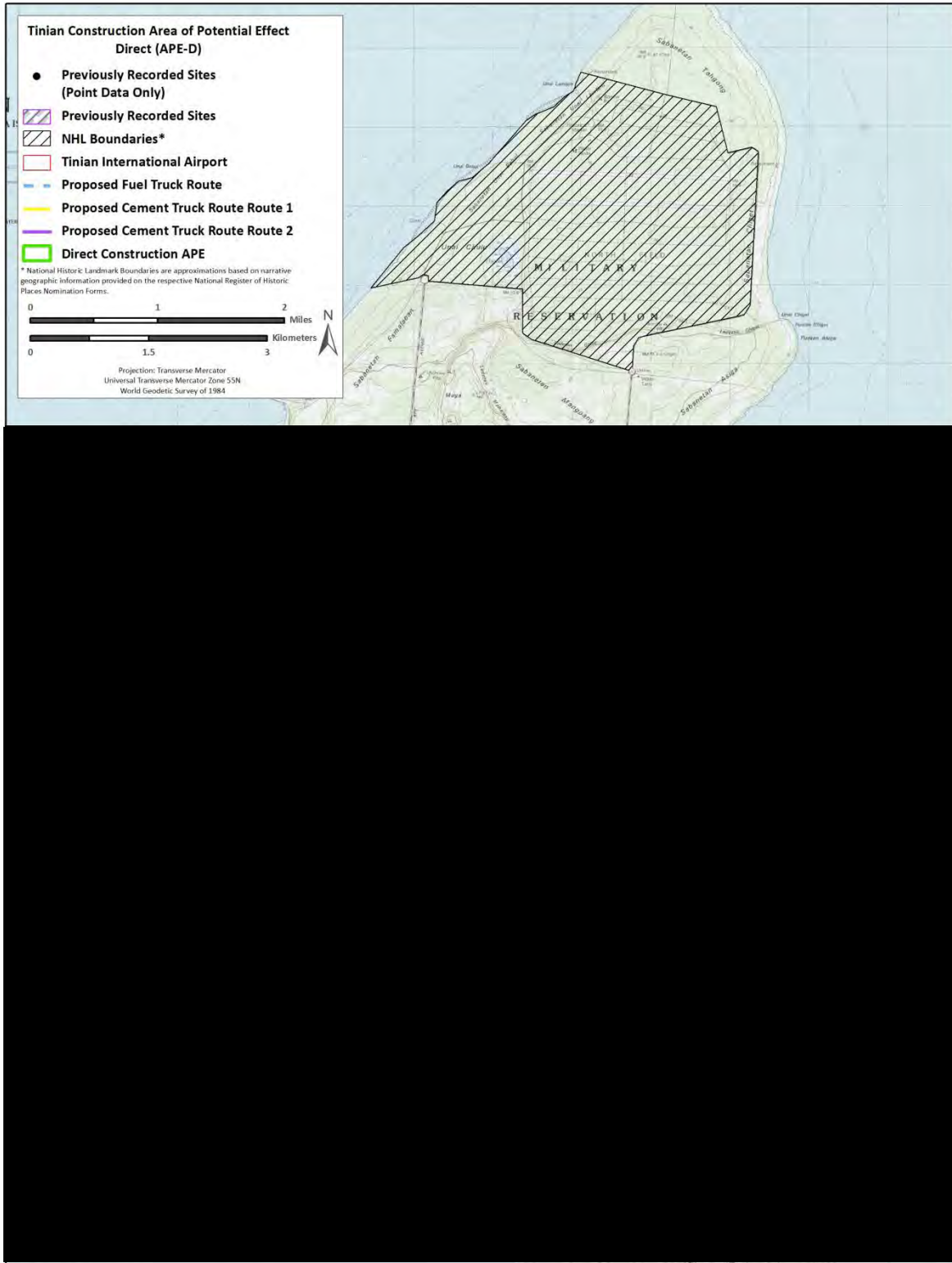
1. Figures showing Direct and Indirect Areas of Potential Effects (APE) for Each Alternative
2. Section 106 (NHPA) Findings and Determinations for Divert Activities and Exercises

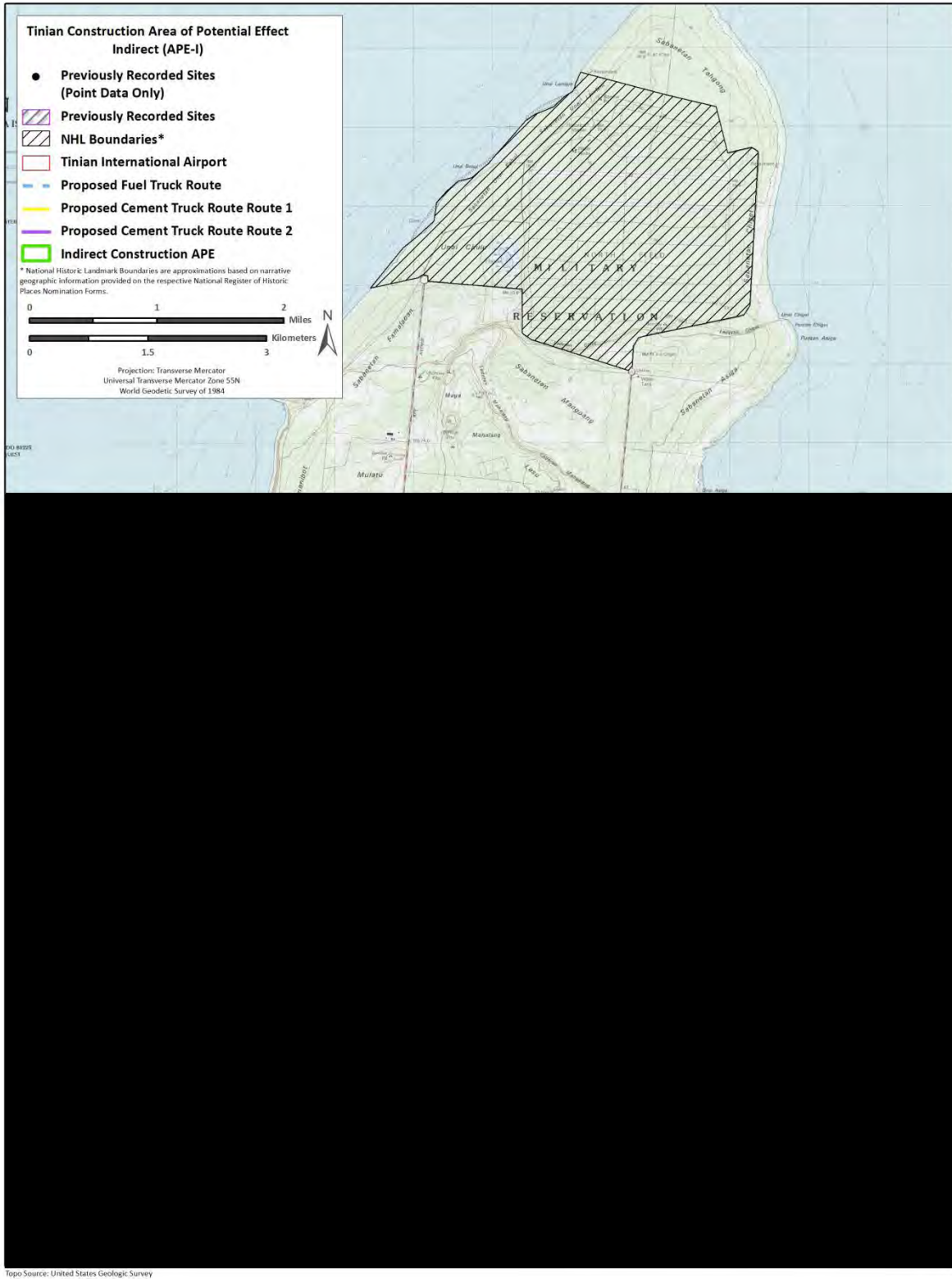
Enclosure 1: Figures showing Direct and Indirect Areas of Potential Effects (APE) for Each Alternative



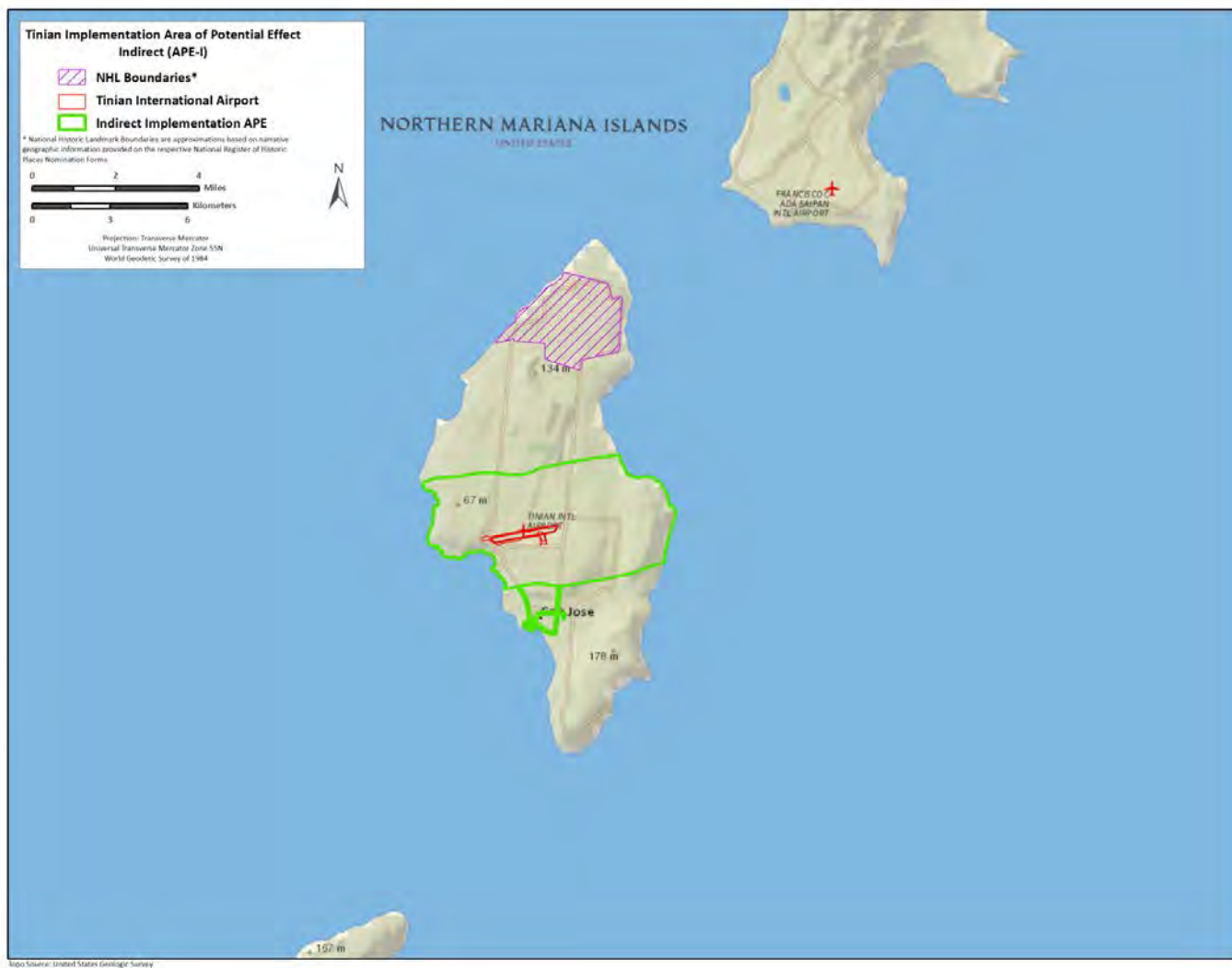












Map Source: United States Geological Survey

1. Introduction

This document presents a detailed description of the Area of Potential Effect (APE), historic properties in the APE, and the effects to those resources from the proposed U.S. Air Force (USAF), Pacific Air Forces (PACAF), Divert Activities and Exercises (Divert). The Divert action would improve an existing airport or airports and associated infrastructure in support of expanding mission requirements in the western Pacific. Under the Divert action, the USAF proposes to construct facilities and infrastructure at an existing airport or airports and necessary fueling facilities at a port to support a combination of cargo, fighter, and tanker aircraft and associated support personnel for periodic divert landings, joint military exercises, and humanitarian assistance and disaster relief efforts. Two alternative project areas in the Commonwealth of the Northern Mariana Islands (CNMI) for the Divert action are under consideration. The project itself will involve two phases: construction and implementation. Pursuant to 36 CFR 800.4, this document details the Areas of Potential Effects (APE) for both the Saipan and Tinian locations during both phases of the project and identified historic properties within the APE. Having defined the APE and identified potentially affected historic properties, an analysis of the potential for adverse effects is presented pursuant to 36 CFR 800.5.

2. Determination of the Area of Potential Effects

As defined in 36 CFR 800.16 (d), the APE "...means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." Because the Divert action involves multiple alternative project areas and phases, PACAF has defined eight APE's reflecting potential effects on the selected location, project phase, and whether effects are expected to be direct or indirect and include:

1. Saipan Construction Phase Area of Potential Effect – Direct (APE-SC-D)
2. Saipan Construction Phase Area of Potential Effect – Indirect (APE-SC-I)
3. Saipan Implementation Phase Area of Potential Effect – Direct (APE-SI-D)
4. Saipan Implementation Phase Area of Potential Effect – Indirect (APE-SI-I)
5. Tinian Construction Phase Area of Potential Effect – Direct (APE-TC-D)
6. Tinian Construction Phase Area of Potential Effect – Indirect (APE-TC-I)
7. Tinian Implementation Phase Area of Potential Effect – Direct (APE-TC-D)
8. Tinian Implementation Phase Area of Potential Effect – Indirect (APE-TC-I)

These APE's are illustrated in the cover maps and are described below.

2.1 Saipan

The modern Francisco C. Ada/Saipan International Airport (GSN) is completely contained within the boundaries of the Isley Historic District portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHL). Because of this landmark status, the historic property merits special consideration under 36 CFR 800.10. This document considers that an effect on any *contiguous* part of the NHL, or National Historic Landmark District (NHL), to be an effect to the entire NHL, though not necessarily the entire NHL. For instance, in the current analysis, PACAF finds potential direct and indirect effects to the Aslito/Isley Field NHL, potential indirect effects to the Saipan Landing Beaches, and no effect to Marpi Point.

The proposed activity would also involve construction of new parking apron space. The project would build two separate parking aprons on the north side of the existing runway. The parking aprons would be constructed as two separate aprons instead of one area to avoid cultural resources, specifically, two Japanese air raid shelters. The total footprint of the proposed parking aprons would measure 963,744 square feet.

Temporary Munitions Storage Area

The proposed activity would also include the construction of a temporary munitions storage area approximately 1,750 feet south of the centerline of the runway at Saipan International Airport. The temporary munitions storage area would consist of an earth covered magazine (ECM) measuring approximately 3,264 square feet and an adjacent multi-cube magazine measuring 40,392 square feet, for a total footprint of approximately 43,656 square feet.

Hazardous Cargo and Arm/Disarm Pad

Construction of a hazardous cargo and arm/disarm pad would take place at the eastern portion of the taxiway and would measure approximately 194,534 square feet.

Aircraft Hangar

To store aircraft awaiting maintenance or repair, one aircraft hangar measuring approximately 180 by 195 feet would be constructed to the east of the eastern portion of the new parking ramp and apron. The hangar's total footprint would be approximately 35,100 square feet.

Maintenance Facility

The Divert action would also include construction of a new maintenance facility north of the new parking apron measuring approximately 6,000 square feet.

Fuel Receiving, Storage, and Distribution

To provide for jet fuel receiving, storage, and distribution needs, the Divert action would entail construction of a new aboveground storage tank at Saipan International Airport, as well as two aboveground storage tanks at the Port of Saipan next to the U.S. Army Reserve Center inland from the existing commercial fuel storage area. Between the airport and the port, the fuel system would occupy a total of approximately 582,653 square feet.

Because effects to specific properties that make up the entire Aslito/Isley Field NHL are possible during the Construction Phase, the entire NHL is included in the APE. It is important to note that there is a difference between the boundary presented for the Isley Field National Historic District in its nomination and the boundary for the Aslito/Isley Field portion of the NHL as presented in the landmark nomination. The landmark boundary cuts off some portions of the B-29 hardstand system that was included in the district boundary (Figure 2). Therefore, for the purposes of this consultation, PACAF considers the APE to include the maximum extent of the combined boundaries.

The construction of the two aboveground storage tanks at the Port of Saipan next to the U.S. Army Reserve Center is also included in the Construction Phase APE for Direct Effects.

2.1.2 Construction Phase – APE for Indirect Effects

In addition to these specific construction projects, the USAF plans to ship Divert-related construction material between the Port of Saipan and these locations at the airport using existing roads. However, a study conducted by the California Department of Transportation (Caltrans) in 2002 found that earthborn

Enclosure 2: Section 106 (NHPA) Findings and Determinations
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2.1.1 Construction Phase – APE for Direct Effects

The APE for the Saipan alternative for the proposed Divert action includes a total construction footprint of approximately 2,748,947 square feet (63.1 acres). Nearly all of the proposed facilities and infrastructure would be constructed at GSN, with a small portion of the project to be built at the port of Saipan. The proposed construction is split into several discrete elements, which are detailed below (Figure 1).

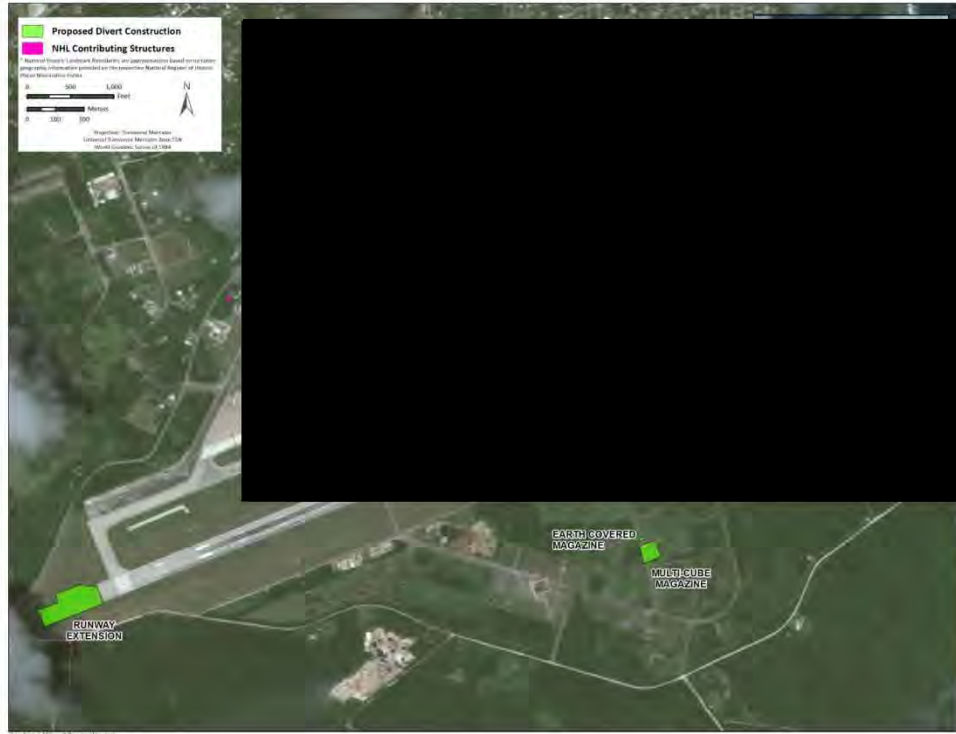


Figure 1. Proposed Divert Construction, Saipan Alternative

Runway and Parking Apron

Three options are under consideration for modifications to the existing runway and parking apron. Under Option A, Runway 07 (the southern runway) would be extended by 1,375 feet. Of that total, a portion 725 feet long and 150 feet wide plus 50 feet of paved shoulders would be built on the west end of the runway. The remaining portion measuring 650 feet long and 150 feet wide plus 50 feet of paved shoulders would be built on the east end of the runway. Under Option B, the runway would be expanded only on the east end with the addition of an expansion measuring 650 feet long and 150 feet wide plus 50 feet of paved shoulder. Under Option C, the runway would not be expanded. The proposed action would also upgrade pavement markings, lighting, and navigational aids. The total footprint of the runway expansion, including turnarounds, under Option A would be approximately 388,952 square feet.

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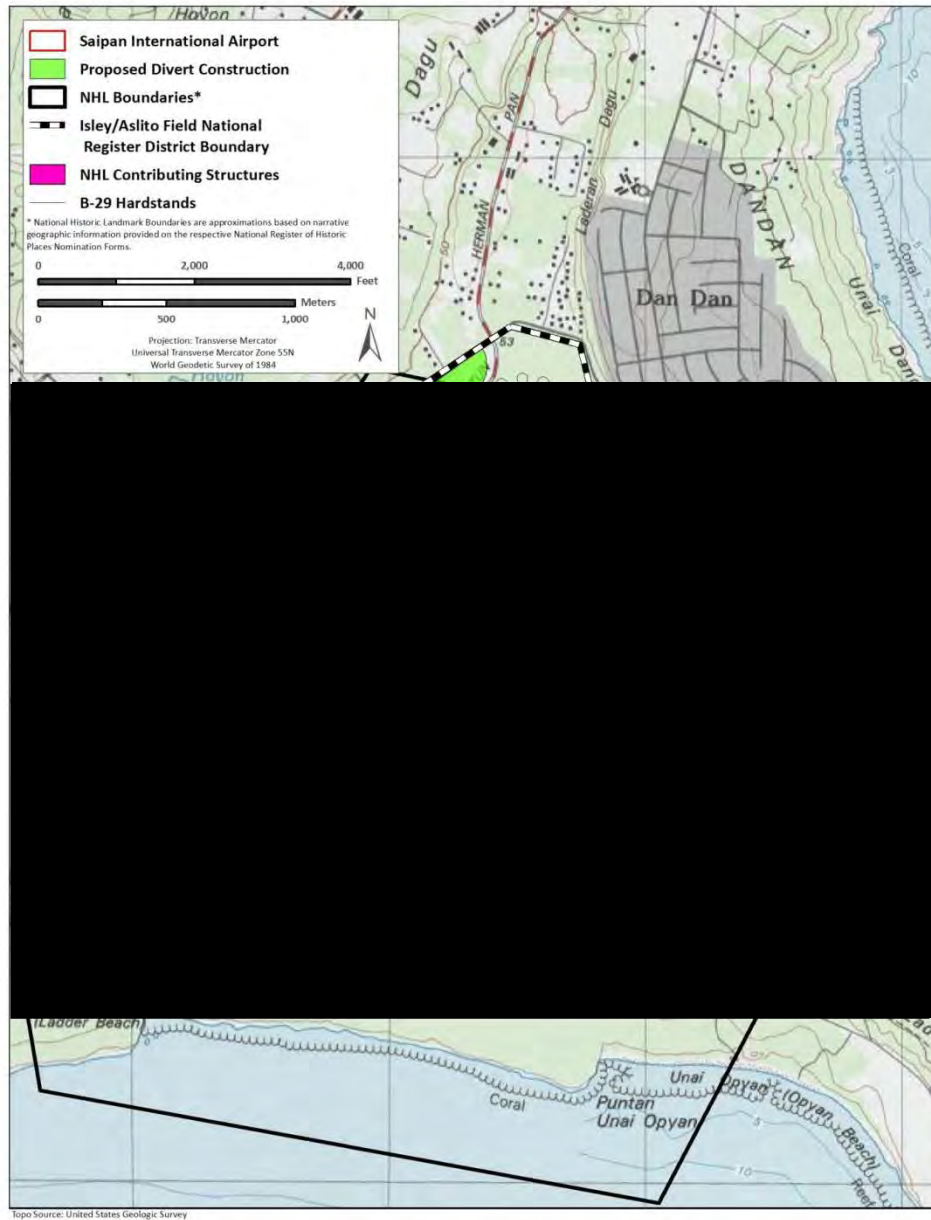


Figure 2. Aslito/Isley Field National Historic District portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point NHD.

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vibration from transportation along existing paved roads has virtually no impact on historic buildings located more than 5 meters away and that, in fact, such vibrations drop below the perception threshold beyond 45 meters. The study was very conservative, considering heavy trucks as the vehicular source of vibration (similar to the construction trucks likely to be used during Divert construction) and assuming wood framed historic structures. As a result, Divert transportation routes during construction are only considered here for their potential to cause indirect adverse effects due to vibration within the 45-meter threshold of perception. Therefore, the Construction Phase APE for Indirect Effects includes the Aslito/Isley Field NHL and the construction area for fuel tanks at the Port of Saipan plus a 45-meter buffer around the proposed routes for cement truck traffic during construction.

2.1.3 Implementation Phase – APE for Direct Effects

In addition to use of the new facilities built during the Construction Phase, temporary billeting of personnel will occur during Divert training exercises and missions. Normally this would involve the use of local commercial lodging. However, in some circumstances, a Basic Expeditionary Airfield Resources (BEAR) kit may be used. The BEAR kit would occupy approximately 12.3 acres (534,308 square feet) in a soccer field near the entrance to the airport. Infrastructure to the field would be improved to support the BEAR kit. Billeting for Divert-related personnel under the Saipan alternative would be temporary. Because this area is also within the boundaries of the Aslito/Isley Field NHL, the Implementation APE for Direct Effects includes the Aslito/Isley Field NHL and the construction area for fuel tanks at the Port of Saipan.

2.1.4 Implementation Phase – APE for Indirect Effects

Existing roads will also be used during implementation to ship fuel from the port to the airfield. However, as mentioned earlier, earthborn vibration from transportation along existing paved roads drops below perceptible levels at a distance 45 meters. As a result, Divert transportation routes during implementation are only considered here for their potential to cause indirect adverse effects due to vibration within the 45-meter threshold of perception.

The implementation phase of the Divert project could also have indirect adverse effects on historic properties in the form of increased aircraft noise. Under 36 CFR 800.5, effects include the introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features. On Saipan, increased aircraft noise would constitute an indirect adverse impact on the integrity of feeling of the Saipan Landing Beaches and Aslito/Isley Field portions of the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point NHL. Increased aircraft noise would also have an indirect adverse impact on the integrity of feeling of the Tinian Landing Beaches, Ushi Point Field, and North Field NHL on Tinian.

Therefore, the Implementation Phase APE for Indirect Effects includes all land areas under noise contour lines as they are currently drawn for the Divert exercises and missions. As mentioned above for the Aslito/Isley Field NHL, where these effects contact historic districts, as with the Saipan Landing Beaches portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point NHL and Tinian Landing Beaches, Ushi Point Field, and North Field NHL on Tinian, the entire district is included in the APE. The Implementation Phase APE for Indirect Effects on Saipan also includes a 45-meter buffer around the proposed routes for fuel trucks between GSN and the Port of Saipan during implementation as well as the port itself.

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2.2 Tinian

2.2.1 Construction Phase – APE for Direct Effects

The APE for the Tinian alternative for the Divert action includes a total construction footprint of approximately 4,182,517 square feet (96.0 acres), all but approximately 41,300 square feet of which would be at the Tinian International Airport with the remainder at the port of Tinian (Figure 3). The proposed construction is split into several discrete elements, which are detailed below.

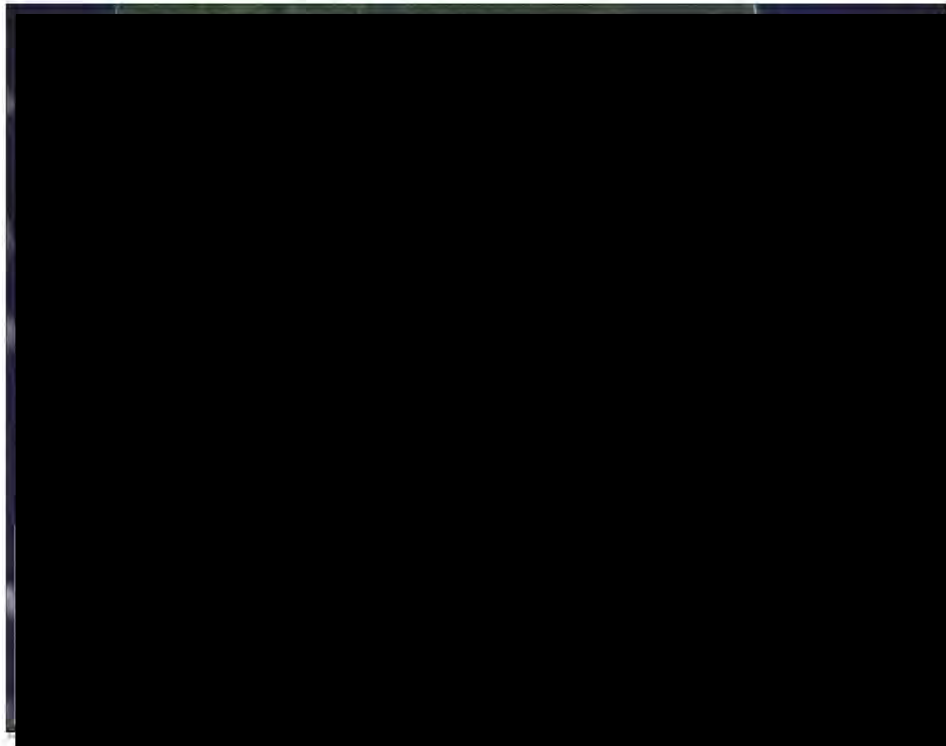


Figure 3. Proposed Divert construction, Tinian alternative.

Runway and Parking Apron

Two options are under consideration for expansion of the runway at Tinian International Airport. Under Option A, the runway would be extended to a total of 10,000 feet long by adding a segment 1,400 feet long by 150 feet wide plus 50 feet of paved shoulders, plus a 1,000 foot long Runway Safety Area. The extension would be to the eastern end of the runway, and Broadway Road would therefore be rerouted to the east of its current position. The total footprint of Option A would be approximately 539,748 square feet. Under Option B, the runway would not be extended.

To accommodate Divert aircraft, a parking apron at Tinian International Airport would be constructed to approximately 1,660,000 square feet.

Temporary Munitions Storage Area

The Tinian alternative would also include the construction of a temporary munitions storage area north of the airport consisting of an earth covered magazine (ECM) and an adjacent multi-cube magazine have a total footprint of approximately 37,062 square feet.

Hazardous Cargo and Arm/Disarm Pad

A combination hazardous cargo pad and arm/disarm pad would be built at the southeastern side of the runway have a total footprint of approximately 454,719 square feet.

Aircraft Hangar

The project would also involve the construction of an aircraft hangar south of the runway measuring approximately 180 by 195 feet, for a total footprint of approximately 35,100 square feet.

Maintenance Facility

A maintenance facility measuring approximately 6,000 square feet would be built adjacent to the proposed hanger and south of the proposed parking apron.

Fuel Receiving, Storage, and Distribution

As part of the Tinian alternative for the Divert project, jet fuel receiving, storage, and distribution facilities would be constructed at the airport and at the Port of Tinian. In total, between the airport and the port, the fuel system would occupy approximately 679,808 square feet. Approximately 41,300 square feet of that total would be at the port of Tinian.

The Construction Phase APE for Direct Effects includes these construction footprints at TNI and the Port of Tinian.

2.2.2 Construction Phase – APE for Indirect Effects

In addition to these specific construction projects, the USAF plans to ship Divert-related construction material between the Port of Tinian and construction locations at the airport using existing roads. Therefore, the Construction Phase APE for Indirect Effects includes the construction areas at TNI and the Port of Tinian plus a 45-meter buffer around the proposed routes for cement truck traffic during construction (see previous discussion).

2.2.3 Implementation Phase – APE for Direct Effects

In addition to use of the new facilities built during the Construction Phase, temporary billeting of personnel will occur during Divert training exercises and missions. Because of the limited supply of commercial lodging on Tinian, all personnel would be housed at a BEAR kit that would occupy approximately 17.8 acres (approximately 773,303 square feet) south of TNI. Infrastructure to the parcel would be improved to support the BEAR kit. The Implementation APE for Direct Effects therefore includes the proposed facilities at TNI and the Port of Tinian plus the BEAR kit site near the airport.

2.2.4 Implementation Phase – APE for Indirect Effects

Existing roads will be used during implementation to ship fuel from the port to the airfield. Further, under the high-noise scenario for Divert activities and exercises at TNI, noise levels would increase near the airport but not in San Jose. As a result, the Implementation Phase APE for Indirect Effects includes all land areas under noise contour lines as they are currently drawn for the Divert exercises and missions, a 45-meter buffer around the proposed routes for fuel trucks between TNI and the Port of Tinian during implementation, and the port itself.

3. Identification of Historic Properties

Having identified the APE, PACAF conducted a review of existing information regarding historic properties within the APE and has sought, or is seeking, additional information from consulting parties pursuant to 36 CFR 800.4 (a)(2)&(3). Although no Federally recognized Indian tribes or Native Hawaiian organizations exist in the CNMI pursuant to 36 CFR 800.4(a)(4), PACAF is also reaching out to Chamorro and Carolinian representatives. PACAF also contracted a cultural resources consulting firm, HDR, to perform a Phase I cultural resources survey and inventory of the proposed construction sites near GSN. The following tables and discussion are based on findings from these efforts and represent PACAF's good faith effort to identify historic properties within the APE pursuant to 36 CFR 800.4 (b).

3.1 Historic Properties within the APE for the Saipan Alternative

Table 1. Known Historic Properties, Saipan Alternative

HISTORIC PROPERTIES – SAIPAN ALTERNATIVE	POTENTIAL EFFECTS			
	CONSTRUCTION		IMPLEMENTATION	
	Direct	Indirect	Direct	Indirect
Salpan Landing Beaches, Aslito/Isley Field, and Marpi Point NHL, including:	P	P	P	P
Marpi Point	N	N	N	N
Saipan Landing Beaches	N	N	N	Y
Aslito/Isley Field NHLD, including:	P	Y	Y	Y
Isley Field NRHP Historic District, including:	P	Y	Y	Y
Japanese Barracks Complex ¹	N	Y	N	Y
Japanese Military Hospital ¹	N	Y	N	Y
Japanese Engineers Barracks ¹	N	Y	N	Y
Japanese Barracks Complex ¹	N	Y	N	Y
Japanese Staff Quarters ¹	N	Y	N	Y
Japanese Pyrotechnics Bldg. ¹	N	Y	N	Y
Japanese Garage ¹	N	Y	N	Y
Japanese Sentry Post ¹	N	Y	N	Y
Japanese Road ¹	N	Y	N	Y
Japanese Dispensary ¹	N	Y	N	Y
Japanese Administration Building ¹	N	Y	N	Y
Japanese Power Plant ¹	N	Y	N	Y

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HISTORIC PROPERTIES ² – SAIPAN ALTERNATIVE			POTENTIAL EFFECTS			
			CONSTRUCTION		IMPLEMENTATION	
			Direct	Indirect	Direct	Indirect
		Japanese Oxygen Generating Building ¹	N	Y	N	Y
		Japanese Repair and Maintenance Area #1 ¹	N	Y	N	Y
		Japanese Repair and Maintenance Area #2 ¹	N	Y	N	Y
		Japanese Semi Underground Bomb Storage ¹	N	Y	N	Y
		Japanese Airplane Hangers ¹	N	Y	N	Y
		Japanese Air Operations Building ¹	N	Y	N	Y
		Japanese Gasoline Storage Bunkers ¹	N	Y	N	Y
		Japanese Power Plant Building ¹	N	Y	N	Y
		Japanese Unidentified Structure ¹	N	Y	N	Y
		Japanese Water Supply Facility ¹	N	Y	N	Y
		Japanese Gasoline Bunker ¹	N	Y	N	Y
		Japanese Radio Station ¹	N	Y	N	Y
		Okinawan Housing Area ¹	N	Y	N	Y
		Japanese Service Apron ¹	N	Y	N	Y
		U.S. North Service Apron ¹	N	Y	N	Y
		U.S. Maintenance and Repair Complex ¹	N	Y	N	Y
		U.S. B-29 Hardstands ¹	P	Y	P	Y
		Japanese Air Raid Bunkers (11) ²	N	Y	P	Y
		Runways (2) ²	N	Y	P	Y
		Isley Field NRHP Historic District, newly recorded features, ³ recommended contributing	N	Y	N	Y
		Concrete foundations with drain (2)	N	Y	N	Y
		Japanese bunker	N	Y	N	Y
		Water catchment features (2)	N	Y	N	Y
		Bottle dump	N	Y	N	Y
		Isley Field NRHP Historic District, newly recorded features, ³ recommended non-contributing	P	Y	N	Y
		Concrete water tower	Y	Y	N	Y
		Concrete foundation with drain	Y	Y	N	Y
		Concrete slab	N	Y	N	Y
		Concrete foundation	N	Y	N	Y
		Concrete pad	Y	Y	N	Y
		Lattice phase isolated occurrences (3)	N	Y	N	Y
		Japanese Hospital, Garapan	N	N	N	N
		Camaneyan Kristo Rai (bell tower), Garapan	N	N	N	N
		Japanese 20mm Cannon Blockhouse, Agingan	N	N	N	Y
		Tinian Landing Beaches, Ushi Point Field, and North Field NHL	N	N	N	Y

*This list is based on current knowledge about the APE; it is possible that unrecorded or undiscovered historic properties, especially buried archaeological sites, exist in the area.

Properties listed in **Bold** are individually listed on the NRHP.

¹ These individual structures or features were identified by Denfeld and Russell (1984); some of them are combined on the NRHP nomination form.

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HISTORIC PROPERTIES – SAIPAN ALTERNATIVE	POTENTIAL EFFECTS			
	CONSTRUCTION		IMPLEMENTATION	
	Direct	Indirect	Direct	Indirect

² These features are noted in the NRHP nomination form but were not evaluated individually by Denfeld and Russell (1984).

³ These structures, features, and sites were recorded during a Phase I cultural resources survey of proposed construction areas within the Aslito/Isley Field NHLD and at the Saipan port in support of the Divert undertaking (HDR 2012).

POTENTIAL EFFECTS: Y = The property could be adversely affected
N = The property will not be adversely affected
P = Part of the property could be adversely affected

Numerous historic properties exist in or near the APE for the Saipan alternative (Table 1). With the exception of the aboveground storage tanks at the Port of Saipan and existing roads, all proposed Divert-related construction and implementation activities would take place within the boundaries of the Aslito/Isley Field portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point NHL. Aslito/Isley Field was nominated to the National Register in 1980 as the Isley Field Historic District but was later included in a NHL recommendation for three of Saipan's World War II-era sites. The separate World War II-related properties were listed as the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Landmark on February 4, 1985 (National Historic Landmark System [NHLS] No.: 85001789). Because the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point NHL includes three discontinuous areas, they are considered separately in this analysis. We use the term National Historic Landmark District (NHL.D) to distinguish between the NHL as a whole, and the spatially separate landing beaches, Marpi Point, and Aslito/Isley Field.

When Aslito/Isley Field was nominated as a historic district, the nomination listed the following 27 buildings and structures as contributing elements:

The operations center built and used by the Japanese and later used for similar purposes by the U.S. 73rd Bombardment Wing,
Four gas drum storage bunkers,
A power plant,
A building to house an electric generator,
A semi-subterranean bomb storage facility,
A defensive gun emplacement atop the bomb storage facility,
A semi-subterranean fuel storage facility,
Three associated fuel tanks,
A pump house,
A torpedo regulating shop,
A cold storage building,
Eleven air raid shelters,
Two runways, and
“(H)undreds of hardstands and foundations from the U.S. period.”

When Aslito/Isley Field was included in the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Landmark on February 4, 1985, the nomination form listed the following structures as contributing elements at the airfield: the air operations building, two power plants, four gasoline storage buildings, fourteen air raid shelters (an increase of three shelters from the district nomination), an aerial bomb magazine, a partly underground structure for gasoline storage tanks, and “various structural ruins.”

Enclosure 2: Section 106 (NHPA) Findings and Determinations
Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands

The nomination also lists the two runways and notes that “the nearly seven miles of B-29 taxiways and over 100 out of 181 hardstands (parking areas) around the runways may be traced in part.” The nomination also lists the site of the 73rd Bombardment Wing’s administrative area south of the runways. Finally, it lists the Japanese blockhouse on the beach at Unai Opyan. The nomination specifically excludes the site of Kobler Field southwest of Isley Field, which by 1985 had been converted into a large housing development and had therefore “lost the greater part of its integrity.”

The Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point NHL nomination form does not have a map of the landmark’s boundaries, a map of the elements contributing to the landmark, or a comprehensive itemized list of those contributing elements.

The HDR survey of construction areas conducted in support of the Divert action resulted in the identification of three pre-contact (Latte phase) isolated artifact occurrences and 11 historic features. The features include a Japanese bunker, several water catchment features, concrete foundations and pads, and a bottle dump. These features and materials probably date between 1935 and 1945. The three pre-contact occurrences are comprised of light scatters of Latte period sand-tempered sherds in disturbed soils and contexts.

Several properties that are individually listed on the NRHP are located near the APE including the bell tower (Campanayan Kristo Rai) and Japanese hospital in Garapan and a Japanese 20mm Cannon Blockhouse in Agingan.

3.2 Historic Properties within the APE for the Tinian Alternative

The vast majority of proposed Divert-related construction and ongoing activity would take place at the TNI. Previous research has recorded a large number of historic resources near the airport. The site of the pre-war Gurguan Airfield has been identified immediately west of the modern airport and appears as a long, narrow rectangle. This site has been recommended as eligible for listing on the NRHP. All of West Field, the Japanese-era airstrip as modified by U.S. forces during the Second World War and the basis of the modern airport, has also been recorded as a historic resource and has been recommended as eligible for listing on the NRHP. Pavement, hardstands, and other features associated with West Field are still visible on aerial photographs. However, background research did not find a boundary for the West Field site, and it is therefore unclear the degree to which the modern airport preserves intact Second World War-era features. The site of the WWII-era U.S. Naval Air Base HQ has been identified at the east end of the modern runway. This site has also been recommended as eligible for listing on the NRHP.

Table 2. Known Historic Properties, Tinian Alternative

HISTORIC PROPERTIES – TNI ALTERNATIVE	POTENTIAL EFFECTS			
	CONSTRUCTION		IMPLEMENTATION	
	Direct	Indirect	Direct	Indirect
House of Taga	N	P	N	P
NKK Administration Building, San Jose	N	N	N	N
Ice building, San Jose	N	N	N	P
Laboratory, San Jose	N	N	N	N
Japanese building (probable store), San Jose	N	N	N	P
Archaeological sites related to pre-WWII Japanese occupation near TNI (3)	N	N	N	Y

**Enclosure 2: Section 106 (NHPA) Findings and Determinations
Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands**

HISTORIC PROPERTIES – TNI ALTERNATIVE	POTENTIAL EFFECTS			
	CONSTRUCTION		IMPLEMENTATION	
	Direct	Indirect	Direct	Indirect
Gurguan Airfield	N	N	N	Y
West Field	N	N	N	Y
US Naval Air Base HQ	N	N	N	Y
US anti-aircraft artillery sites (2)	N	N	N	Y
Leposarium I & Leposarium II Latte phase sites (TN-594)	N	N	N	Y

*This list is based on current knowledge about the APE; it is possible that unrecorded or undiscovered historic properties, especially buried archaeological sites, exist in the area.

1. Properties listed in **Bold** are individually listed on the NRHP.
2. All other properties listed here have been recommended eligible listing on the NRHP.

POTENTIAL EFFECTS: Y = The property could be adversely affected
N = The property will not be adversely affected
P = Part of the property could be adversely affected

4. Assessment of Adverse Effects

According to 36 CFR 800.5(a)(1), "... (a)n adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." The following discussion outlines PACAF's application of the criteria of adverse effect to cultural resources identified on Saipan and Tinian during both the implementation and construction phases of the project.

4.1 Potential Adverse Effects to Cultural Resources – Saipan Alternative

Divert-related construction, the shipment of Divert-related construction material, and ongoing Divert operations under the Saipan alternative would have potential direct and indirect adverse effects on cultural resources on Saipan.

4.1.1 Potential Direct Construction Phase Effects to Cultural Resources

Divert-related construction at GSN has the potential to have direct adverse effects on the Asltio/Isley Field NHL/D by altering the integrity of the property's location, design, setting, materials, workmanship, feeling, or association, per 36 CFR 800.5.

All of the Divert-related construction footprints at GSN, with the exception of the extensions to the runway, would be constructed in the general vicinity of the locations of B-29 hardstands built by U.S. forces during the Second World War. Construction could therefore potentially directly affect the integrity of WWII-era hardstands that represent a contributing element to the National Historic Landmark.

Note that the Phase I Cultural Resources survey conducted in support of the project did not observe intact hardstand pavement within the proposed construction footprints of individual elements of the Divert project. The report also observed that WWII-era pavements could be very deeply buried or could have been destroyed by vegetation growth, post-war land clearance, or other forces.

The Phase I survey also found that the construction footprints of the proposed Divert-related structures at GSN would not directly impact any of the standing historic structures (listed above) that constitute contributing elements to the NHL.

The construction of Divert-related facilities would have no direct effects to the Landing Beaches portion of the NHL, which would see no modifications as part of the proposed Divert project. Divert-related construction would also have no adverse effects (direct or indirect) to the Marpi Point portion of the NHL, which is far to the north of all proposed actions.

Divert-related construction of aboveground fuel storage tanks at the Port of Saipan would have no direct adverse effects to cultural resources at the port. Although the area of the modern port was the site of Navy Seabee activity during the war, no evidence of this remains and the project construction footprint is well inland from where these activities are thought to have taken place. The port is not part of the NHL, nor is the construction footprint on or near an NRHP-listed or NRHP-eligible archaeological or historic resource.

During construction of Divert-related facilities, construction materials would be transported by truck along existing roads from the port to the airport. Construction traffic would pass close to (within .1 miles) the NRHP-listed Japanese hospital and Campaneyan Kristo Rai in Garapan.

4.1.2 Potential Indirect Construction Phase Effects to Cultural Resources

With the exception of the aboveground storage tanks at the port of Saipan, all proposed Divert-related construction would take place within the boundaries of the Aslito/Isley Field NHL. Specifically, the construction of new Divert-related facilities around existing historic structures at the airport would potentially alter the feeling of those historic structures that contribute to the NHL.

4.1.3 Potential Implementation Phase Direct and Indirect Effects to Cultural Resources

The proposed BEAR kit location at GSN is immediately adjacent to two historic structures (bunkers) that are contributing elements to the Aslito/Isley Field NHL. The billeting of personnel at the BEAR kit location during Divert activity would occur when adequate commercial billeting is limited for some reason. This temporary billeting of personnel could have potential adverse effects. However, this area has been used in the past for temporary military billeting during exercises, military personnel are briefed and educated on preservation and protection of historic structures.

Billeting of Divert personnel at the BEAR kit within the Aslito/Isley Field NHL could have indirect adverse effects on the integrity of feeling and setting of the landmark by altering the number of visitors to the landmark and by increasing traffic at the landmark. In addition, fuel supply trucks operating as part of Divert activities could potentially have direct and indirect adverse effects to the landmark by increasing vibration effects to standing structures and by increasing traffic volumes within the landmark boundaries, although, as mentioned above, a 2002 study conducted by the Caltrans found that earthborn vibration from transportation along existing paved roads has virtually no impact on historic buildings, especially concrete buildings that withstood WWII.

The implementation phase of the Divert project would also have an indirect adverse effect on historic properties in the form of increased aircraft noise under the high-noise scenario for Divert activities and exercises, which involves F-16 and F-22 fighter aircraft use of Saipan International Airport. Under 36 CFR 800.5, effects include the introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features. On Saipan, increased aircraft noise would constitute an indirect adverse impact on the integrity of feeling of the Saipan Landing Beaches and

Aslito/Isley Field portions of the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point NHL as well as the Japanese 20mm Cannon Blockhouse on the south coast of Saipan. Increased aircraft noise would also have an indirect adverse impact on the integrity of feeling of the Tinian Landing Beaches, Ushi Point Field, and North Field NHL on Tinian.

4.2 Potential Adverse Effects to Cultural Resources – Tinian Alternative

Previous cultural resources research on Tinian suggests that Divert-related construction and ongoing Divert-related activity could potentially have direct and indirect adverse effects on historic properties. San Jose contains several NRHP-listed properties, and many historic sites have been recorded close to TNI (Figure 4).

Note that although Tinian is home to the Tinian Landing Beaches, Ushi Point Field, and North Field NHL, the landmark is well to the north of the Divert action APE and the resource is unlikely to experience any direct or indirect adverse effects as a result of the action except under the Saipan Alternative (see above).

4.2.1 Potential Direct Construction Phase Effects to Cultural Resources

Construction of fuel storage and distribution facilities at the Port of Tinian would have no known direct effects to historic resources. The port does not contain known NRHP-listed or NRHP-eligible properties.

During construction of Divert-related facilities on Tinian, construction materials would be transported by truck from the port to the airport. Construction traffic would pass close to (within .1 miles) the NRHP-listed House of Taga and the Nanyo Kohatsu Kabushiki Kaisha Ice Storage Building in San Jose (Figure 5). Construction traffic has no potential to cause adverse effects to these structures, since, as noted above for transportation routes on Saipan, earthborn vibration from transportation along existing paved roads has virtually no potential to effect historic buildings (Caltrans 2002).

4.2.2 Potential Indirect Construction Phase Effects to Cultural Resources

There are no Construction Phase, indirect effects to known historic properties for the Tinian Alternative. However, effects to unrecorded or previously undiscovered cultural resources are possible.

4.2.3 Potential Implementation Phase Direct and Indirect Effects to Cultural Resources

Because of the limited precision of the boundaries of the historic sites recorded near Tinian International Airport, it is not possible to evaluate whether use of the proposed BEAR kit location for temporary living quarters would cause adverse effects to these resources.

Divert-related fuel truck traffic from the port to the airport could also have indirect adverse effects to the NRHP-listed House of Taga, Nanyo Kohatsu Kabushiki Kaisha Ice Storage Building, and a Japanese-era structure of unknown function in San Jose. However, any effects would be short-lived and would only occur during Divert activities and exercises.

The implementation phase of the Divert project would also have an indirect adverse effect on historic properties in the form of increased aircraft noise under the high-noise scenario for Divert activities and exercises, which involves F-16 and F-22 fighter aircraft use of TNI. On Tinian, increased aircraft noise could constitute an indirect adverse impact on historic properties located near the airport including the Gurguan Airfield site and the Naval Air Base HQ site.

5. Summary

In summary, the following historic properties have been identified on Saipan and Tinian, within the APE, that may be affected by construction and/or implementation, whether direct or indirect:

1. Saipan Construction Phase Area of Potential Effect - Direct
 - Aslito/Isley Field National Historic District portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHL)
 - Newly recorded, potentially eligible structures, sites, and features at Aslito/Isley Field that date to the period of significance for the NHL and may contribute to its significance
 - Newly recorded pre-contact isolated occurrences that do not contribute to the NHL
 - Additional undiscovered or unanticipated recourses
2. Saipan Construction Phase Area of Potential Effect – Indirect
 - All of the above **plus** the Japanese hospital and Campaneyan Kristo Rai in Garapan
3. Saipan Implementation Phase Area of Potential Effect - Direct
 - All of the above
4. Saipan Implementation Phase Area of Potential Effect - Indirect
 - All of the above **plus** Saipan Landing Beaches portion of the Landing Beaches, Aslito/Isley Field and Marpi Point NHL and the Tinian Landing Beaches, Ushi Point Field, and North Field NHL
5. Tinian Construction and Implementation Phase Areas of Potential Effect - Direct and Indirect
 - US anti-aircraft artillery site near TNI
 - House of Taga (San Jose)
 - Nanyo Kohatsu Kabushiki Kaisha Ice Storage Building (San Jose)
 - Additional undiscovered or unanticipated recourses

Enclosure 2: Section 106 (NHPA) Findings and Determinations
Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands

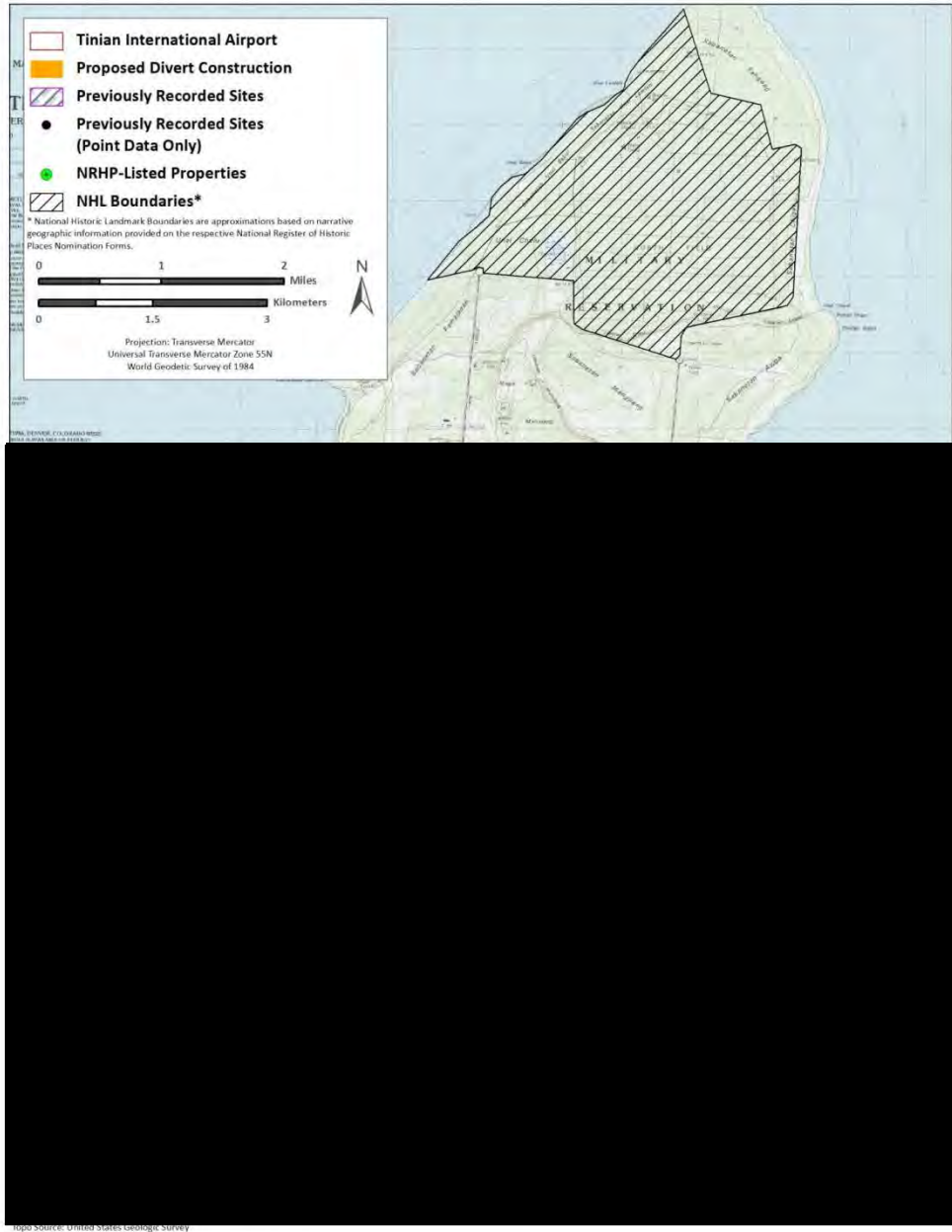


Figure 4. Cultural resources on Tinian.

Enclosure 2: Section 106 (NHPA) Findings and Determinations
Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands

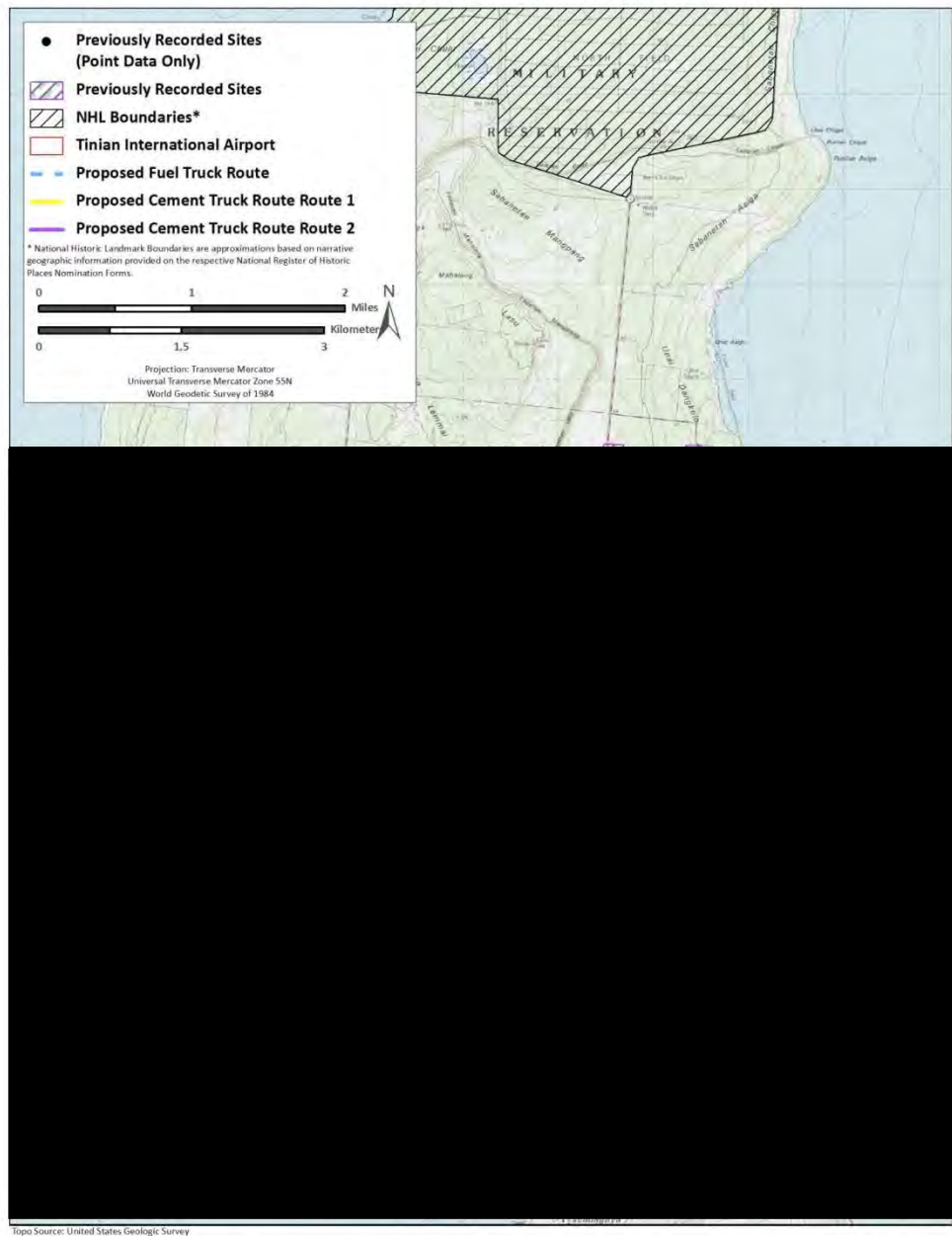


Figure 5. Divert truck routes, Tinian.

**National Park Service Letter regarding Section 106 Consultation
October 10, 2012**



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
909 First Avenue, Fifth Floor
Seattle, Washington 98104-1060



H3417 (PWR-CR)

October 10, 2012

William Grannis, Environmental Program Manager
Department of the Air Force
HQ PACAF/A7AV
25 E Street, Suite B-206
Joint Base Pearl Harbor-Hickam, HI 96853-5420

RE: Request for NPS Review of Section 106 Initiation for the proposed undertaking – Divert Activities and Exercises, Guam and the Commonwealth of the Northern Mariana Islands

Dear Mr. Grannis:

Thank you for the invitation to review the National Historic Preservation Act (NHPA) Section 106 initiation letter and attachments for the Divert Activities and Exercise. It is appropriate for the National Park Service to participate in the NHPA Section 106 consultation for this project because of the presence of the *Landing Beaches Aslito/Isley Field, Marpi Point National Historic Landmark* (NHL) within the Saipan project area and the proximity to the *Tinian Landing Beaches, Ushi Point Field, and North Point Field NHL* on the island of Tinian. This letter contains general comments regarding the NHPA Section 106 efforts for this proposed project as well as some detailed questions and comments on the enclosures included with your letter.

As you are aware, the National Park Service (NPS) is delegated monitoring and technical assistance responsibilities by Congress to ensure that NHLs retain the highest level of integrity (36 CFR § 65.7). Our responsibilities include review and formal comment on individual proposed actions within National Historic Landmarks as well as the cumulative effect of changes through time on NHL properties.

More specifically, there are special requirements that apply to National Historic Landmarks pursuant to Section 110 of the National Historic Preservation Act and Section 800.10 of the regulations: 16 USC §470h-2(f) mandates that "[P]rior to approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark." As you plan these military training activities, we encourage you to ensure that they are carried out in a manner that is consistent with this legal mandate.



Your memo outlines eight separate Areas of Potential Effect (APE) reflecting the potential for both direct and indirect effects on historic properties. While we understand that identifying direct and indirect effects to historic properties from the undertaking might provide easier project management, we believe these classifications obscure the overall impacts on the integrity of the NHL. All of the contributors to the NHL should be considered collectively. Otherwise, the effects on the entire NHL and its integrity could be overlooked.

On the Area of Potential Effect maps, the National Register of Historic Places properties on the Saipan maps are shown with a green circle/black center dot. On the APE maps for the Tinian alternative the same icon is on the map, but not on the legend. The legend has black dots for recorded sites only.

We suggest that you label or number the full page figures in Enclosure 1, so that they can be referred to more easily.

In Enclosure 2, Figures 1 and 2, the hardstands are not delineated as contributors to the NHL. Because the hardstands are contributors to the NHL, this should be clarified on the figures within the report.

Within Enclosure 2, Section 3.2 there is a discussion of National Register eligible properties including the historic airfield adjacent to and “under” the existing airport as not having clear boundaries. However, these sites have been recommended as eligible for the NRHP based on the aerial photograph evidence. We suggest that you create a figure that superimposes the existing airfield and proposed NRHP sites on the historic photographs to provide a sense of the overlap.

Under the Tinian Alternatives, please consider the landscape level effect of the proposed changes to Broadway. The Tinian North Field Cultural Landscape Report prepared by AECOM in Association with TEC Joint Venture, Inc. in 2010 identifies Broadway as significant to the historic character of the NHL. The southern end of Broadway is not currently part of the NHL, but as the main entrance route to the North Field area, this should be considered. The Tinian North Field Cultural Landscape Report under Views and Vistas states:

- Maintain the open linear views along Broadway to the American Memorial Hinode Shrine. Restore the focal point by replacing the shrine’s vertical torii gate.
- Maintain the open linear views along Eighth Avenue to the westbound roundabout.

In closing, the National Park Service supports your finding of potential *Adverse Effects* to the NHL as defined in 36 CFR § 800.5. We look forward to continued consultation as outlined in 36 CFR § 800.6 to resolve the adverse effects through the development and evaluation of alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic properties.

If you have further questions, please do not hesitate to call or email Cari Kreshak at 808-228-5334 or cari_kreshak@nps.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'DL', with a long horizontal stroke extending to the right.

David Louter,
Chief, Cultural Resources Program
Pacific West Region

Cc
Barbara Alberti, NPS
Elaine Jackson-Retondo, NPS
Cari Kreshak, NPS
Katry Harris, ACHP
Mertie Kani, CNMI HPO

**Section 106 Consultation and Findings of Effects to Historic Properties,
October 16, 2012**



Commonwealth of the Northern Mariana Islands
Division of Historic Preservation
Department of Community & Cultural Affairs
Airport Road
P.O. Box 500090 C.K.
Saipan MP 96950



TEL: 664-2120-24
FAX: 664-2139

October 16, 2012

Serial: HP-28691
Fiscal Year 2012
File: Section 106 (6.3.255 / DOAF, HQ PACAF)

Marc M. Aoyama, P.E., GS-15
Chief Program division
Directorate of Installation and Mission Support
Department of the Air Force
HQ PACAF/A7P
25 E Street, Suite D-306
Joint Base Pearl Harbor Hickam, HI 96853-5420

Subject: National Historic Preservation Act (NHPA) of 1966 Section 106 Consultation and Findings of Effects to Historic Properties Related to U.S. Air Force (USAF) Pacific Pacific Air force (PACAF), Divert Activities and Exercises, Francisco C. Ada/ Saipan International Air Port, Saipan; and Tinian International Air Port, Tinian, Commonwealth of the Northern Mariana Islands

Dear Mr. Aoyama:

First of all we would like to commend and congratulate you for a very well prepared document that describes in detail the Area (s) of Potential Effect and the determination of the Effects both the direct and indirect to known and potentially unrecorded or undiscovered historic properties within the determined Areas of Potential Effect for this undertaking.

Your determination of "No Adverse Effect" and "Areas of Potential Effect" are well justified based on existing historic/prehistoric information accordingly, we concur with both determinations. The only resolution to the Adverse Effect is through implementation of a Memorandum of Agreement and we look forward to working with you on this agreement. Although the actual effects on historic properties may be less adverse than what is presented and discussed, it is always best to anticipate for the worst.

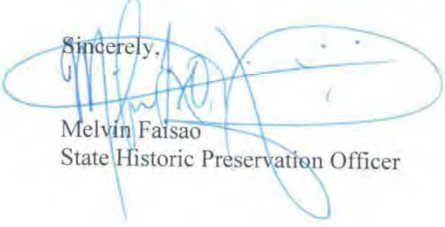
With regards to potential Traditional Cultural Properties within the Areas of Potential Effect, that is another undertaking beyond our capabilities considering time involved in identifying and or interviewing knowledgeable individuals regarding traditional use of plants or beliefs. Therefore

we strongly recommend that the Air Force hires someone knowledgeable about survey of Traditional Cultural Properties to conduct such a study.

We have identified several groups that we think should be invited as interested public for consultation. They include Friends of Marpi, CNMI Indigenous Organization, Carolinian Indigenous Group, CNMI Community College, and Tinian Mayor's Office.

Again, thank you for a very well documented Section 106 determination and if you have any questions, please call our office at 664-2120/4 or e-mail Mertie Kani at mtkani@cnmihpo.net.

Sincerely,



Melvin Faisao
State Historic Preservation Officer

**Section 106 Consultation and Notification of Adverse Effect,
October 29, 2012**



**DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE PEARL HARBOR – HICKAM HAWAII**

29 Oct 2012

MEMORANDUM FOR MS. KATRY HARRIS
PROGRAM ANALYST
ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 PENNSYLVANIA AVENUE, NW, SUITE 803
OLD POST OFFICE BUILDING
WASHINGTON, D.C. 20004

FROM: AFCEC/CFP
25 E Street, Suite C317
JBPH-H, HI 96853

SUBJECT: Notification of Adverse Effect Finding under Section 106, National Historic Preservation Act (NHPA), for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (CNMI)

1. In accordance with 36 CFR Section 800.6(a)(1) and Section 800.10(b), the U.S. Air Force (USAF) hereby requests the participation of the Advisory Council on Historic Preservation (ACHP) to join in consultation with us, the CNMI Historic Preservation Officer (HPO), the National Park Service (NPS), and others to determine how best to mitigate adverse effects to National Register of Historic Places eligible properties at the Aslito/Isley Field portion of the Saipan Landing Beaches, Alsito/Isley Field and Marpi Point National Historic Landmark as a result of the proposed Divert Activities and Exercises (Undertaking).
2. The USAF is seeking to improve an existing airport or airports in the Mariana Islands in proximity to the Philippine Sea, in support of expanding U.S. strategic interests and Department of Defense (DOD) mission requirements in the western Pacific. The USAF's intention is to establish additional divert capabilities to support and conduct current, emerging, and future exercises, while ensuring the capability to meet mission requirements in the event that access to Andersen Air Force Base (AFB) or other western Pacific locations is limited or denied. The Undertaking is needed because no divert or contingency airfield exists on U.S. territory in the western Pacific designed and designated to provide strategic operational and exercise capabilities for U.S. forces, and humanitarian airlift and disaster relief in times of natural or man-made disasters.
3. The USAF prepared a Draft Environmental Impact Statement (*Draft EIS for Divert Activities and Exercises, Guam and CNMI*, June 2012) analyzing the environmental effects of the proposed action. The analysis included public scoping and public participation carried out in a coordinated manner for purposes of the National Environmental Policy Act (NEPA) and Section 106 of the NHPA. As a result, the USAF has identified two site alternatives that meet, or have the ability to meet the purpose and need for the proposed action; Saipan International Airport (GSN as designated by FAA) and Tinian International Airport (TNI as designated by FAA). The

Draft EIS and materials prepared for Sec 106 purposes may be found at: <http://www.pacafdivertmarianaseis.com/>. In addition, descriptions of both alternatives are provided in the attachment to this memo.

4. The Area of Potential Effects (APE) and findings of effects were reached in consultation with the CNMI HPO, and other participating parties including the NPS. Potential effects for both alternatives are considered for purposes of Section 106 of the NHPA. In summary, we have determined that the Undertaking may adversely affect historic properties, particularly the Aslito/Isley Field portion of the National Historic Landmark that includes the Saipan Landing Beaches, Aslito/Isley Field and Marpi Point. Documentation required under 36 CFR Section 800.11(e) in support of these findings is attached. Because of its landmark status, the property merits consideration under Section 110(f) of the NHPA, and 36 CFR Section 800.10.

5. Because of this finding, and in coordination with other consulting parties, we are proposing to develop a Memorandum of Agreement (MOA) for the Undertaking, including identification of measures and actions intended to minimize harm to the NHL to the maximum extent possible. With this letter, we are inviting the ACHP to participate in development of this MOA, in accordance with 36 CFR Section 800.6(c).

6. Please notify my Environmental Program Manager, Mr. William Grannis of your decision to participate in consultation within 15 days of receipt of this invitation. If you have any questions or concerns, you may contact Mr. Grannis at (808)449-4049, or by email at william.grannis@us.af.mil.



DAVID A. KAWECK, Col, USAF
Chief, Pacific Division
Facilities Engineering Center of Excellence
Air Force Civil Engineer Center

Attachment (on CD)
36 CFR Part 800.11 Documentation

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FINAL REPORT

PHASE I CULTURAL RESOURCES SURVEY

SUPPORTING THE ENVIRONMENTAL IMPACT STATEMENT

FOR DIVERT ACTIVITIES AND EXERCISES ON SAIPAN

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS



HDR

October 2012

Locational information related to cultural resources has been removed from this report pursuant to the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470ii) and Section 7.18 of the implementing regulations at 43 CFR Part 7.

FINAL REPORT
PHASE I CULTURAL RESOURCES SURVEY
SUPPORTING THE ENVIRONMENTAL IMPACT STATEMENT FOR
DIVERT ACTIVITIES AND EXERCISES
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

By

Ben Fischer
Jim Gallison, PhD, RPA
Jeff Hokanson, MA, RPA
Michael Jennings
Matthew Edwards, MHP, PhD, RPA
And
Michael Church, PhD, RPA

Maps by

Ben Fischer

Prepared For:

Headquarter, Pacific Air Forces
Joint Base Pearl Harbor-Hickam, Hawai'i

Prepared By:



HDR Environmental, Operations and Construction, Inc.
9563 South Kingston Court
Englewood, CO 80112

October 2012

ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Engineering and the Environment
az	Azimuth
BEAR	Basic Expeditionary Airfield Resources
B.P.	Before Present (radiocarbon years)
CFR	Code of Federal Regulations
CNMI	Commonwealth of the Northern Mariana Islands
cm	centimeters
EIS	Environmental Impact Statement
ENSO	El Nino/Southern Oscillation
ft	feet
FHP	Forest Health Protection
FIA	Forest Inventory and Analysis
GPS	Global Positioning System
GSN	Francisco C. Ada/Saipan International Airport
HDR	HDR Environmental, Operations and Construction, Inc.
HPO	Historic Preservation Office
IO	Isolated Occurrence
km	kilometers
km ²	square kilometers
m	meters
m ³	cubic meters
mi ²	square miles
mm	millimeters
NHL	National Historic Landmark
NHLS	National Historic Landmark System
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
NRIS	National Register Inventory System
PACAF	Headquarters, Pacific Air Forces
U.N.	United Nations
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WWII	World War II

ACKNOWLEDGEMENTS

The authors would like to thank the following individuals and institutions whose assistance greatly facilitated the completion of this volume: Juan Camancho at the CNMI Division of Historic Preservation, for assisting with background research in advance of the survey; security staff at Saipan International Airport for facilitating access to survey areas on airport property; Bernard Marcos with PACAF who provided us with up-to-date project planning information in the field to help direct our survey efforts; Bill Grannis with PACAF and Toni Ristau at AFCEE provided valuable advice on a draft version of the report that greatly contributed to the quality of this final version. Comments on the draft from Merti Kani and Historic Preservation Officer Melvin Faisao, also at the CNMI Division of Historic Preservation, are also appreciated. While many individuals and institutions made contributions to this volume, the authors are solely responsible for any inaccuracies that it may contain.

ABSTRACT

HDR Environmental, Operations and Construction, Inc. (HDR), was contracted by the Air Force Center for Engineering and the Environment (AFCEE) on behalf of Headquarters, Pacific Air Forces to complete a cultural resource survey pursuant to the preparation of an Environmental Impact Statement (EIS). The EIS will evaluate possible infrastructure improvements at Francisco C. Ada/Saipan International Airport (GSN), along with other alternatives. However, given the potential for impact to important cultural resources, specifically the Isley Field Historic District, which is also part of the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark, survey of the GSN Alternative was deemed prudent. This report details the approach used by HDR to identify, record, and evaluate cultural resources within the project area.

Selection of the GSN Alternative would entail extensions to an existing runway and the footprints of a proposed hot cargo pad and arm/de-arm pad, two aprons and ramps, a maintenance facility, a hangar, magazines (one earth covered magazine and one multi-cube magazine), two fuel sites (bulk storage and operational tanks with hydrant system), and a Basic Expeditionary Airfield Resources (BEAR) kit site. As part of the survey, HDR surveyed 66.5 hectares (164.3 acres) in the vicinity of the airport. The project also involves the use of fuel storage tanks and offloading facilities at the Port of Saipan.

The area that could be impacted by the selection of the GSN Alternative was surveyed by HDR cultural resources professionals who meet or exceed the Secretary of Interior's Professional Qualification Standards. During the course of the investigation, which took place September 17–29, 2011, HDR found and recorded three pre-contact isolated occurrences and 11 features associated with the Historic District/Landmark. In addition, eight previously recorded Japanese bunkers (AB1 through AB8) were found to be adjacent to the study area as were remnants of B-29 hardstands.

The three isolated occurrences date to the pre-contact period and consist of Latte phase ceramics and a sling stone. As isolated finds they are important for spatial analysis of the area but individually do not retain adequate integrity or additional information potential. They are therefore recommended as not eligible for nomination to the National Register of Historic Places (NRHP).

The 11 features are historic in age and related either to the Japanese occupation or the American occupation. The features include bottle middens, ceramic scatters, concrete foundations, water catchment features, and a previously unrecorded Japanese bunker. Features 1 and 3, the remains of water catchment or storage structures, and Features 5, 9, and 11, concrete foundation pads, do not retain significant integrity to be considered eligible for the NRHP under any criteria. The remaining newly recorded features do retain sufficient integrity to warrant inclusion as contributing elements to the Isley Field Historic District/Landmark.

Six of the previously recorded Japanese bunkers are north of the runway and can be avoided by the project as can the other two bunkers at the edge of the BEAR-kit site. The hardstand remnants exist across the project area. While they were originally included as contributing elements to the Historic District/Landmark, they no longer retain sufficient integrity to remain so.

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1. INTRODUCTION

This report details the results of the cultural resource inventory completed by HDR Environmental, Operations and Construction, Inc. (HDR). HDR was contracted by the Air Force Center for Engineering and the Environment (AFCEE) to complete the survey on behalf of Headquarters Pacific Air Forces (PACAF) pursuant to the preparation of an Environmental Impact Statement (EIS) to evaluate possible infrastructure improvements at Francisco C. Ada/Saipan International Airport (GSN), along with other alternatives. Given the potential for impact to important cultural resources, specifically the Isley Field Historic District, which is also part of the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHL), survey of the GSN Alternative was deemed prudent. This report details the approach used by HDR to identify, record, and evaluate cultural resources within the study area. The inventory was completed between September 17 and September 29, 2011.

Much of the study area had been previously surveyed by Micronesian Archaeological Survey in 1980. The previous survey identified 29 features, all of which are associated with the Japanese and American occupations during World War II (WWII). In 1981 the airfield was listed on the NRHP as the Isley Field Historic District. In 1985, Isley Field was included in a discontinuous National Historic Landmark (NHL) that also includes Marpi Point on the northern tip of the island and the U.S. landing beaches along the island's western shore (Figure 1-1).

Most of the survey areas are located in and adjacent to GSN in I Fadang on the island of Saipan (Figure 1-2). This part of the island lies upon a clastic and reef limestone plateau covered by shallow soils that were leveled during activities and events related to WWII. Vegetation is generally composed of secondary growth limestone forests that include a mixture of native and introduced species, specifically Tangantangan (*Leucaena leucocephala*). A small portion of the heavily developed Port of Saipan was also surveyed (Figure 1-3).

This report has been prepared in accordance with the requirements and guidelines established by the Commonwealth of the Northern Mariana Islands (CNMI) Historic Preservation Office (HPO), in the Department of Community and Cultural Affairs. Prior to beginning fieldwork, HDR archaeologists completed background research and prepared a research design that guided all field efforts and prioritized the data that was gathered. All background research, fieldwork, and report compilation activities were supervised or performed by professionals meeting the Secretary of Interior's Professional Qualification Standards as promulgated in 36 *Code of Federal Regulations* (CFR) Part 61. These standards define minimum education and experience requirement to identify, evaluate, record, and treat cultural resources. HDR personnel involved in the survey reported here who meet these requirements for archaeology are Jeffrey Hokanson, Dr. James Gallison, Dr. Michael Church, and Dr. Matthew Edwards. Dr. Edwards also meets the professional qualification standards for architectural history. Jeffrey Hokanson served as Principal Investigator for the project.

This report presents the results of the survey of all project areas. Chapter 2 provides an overview of the natural environment and discusses local flora, fauna, geology, and climate. Chapter 3 is an overview of the cultural history of the Northern Marianas and provides the context for interpretation and evaluation of the cultural resources identified during the survey. Chapter 4 discusses previous cultural resource inventories in the area and an overview on the Isley Historic District. Chapter 5 presents the project research design. Field and lab methodology are the focus of Chapter 6. Chapter 7 discusses the results of the field investigations. Chapter 8 includes interpretation of the sites and a discussion of how the data collected relates to the research design. Management recommendations are presented in Chapter 9, and the bibliography is Chapter 10.

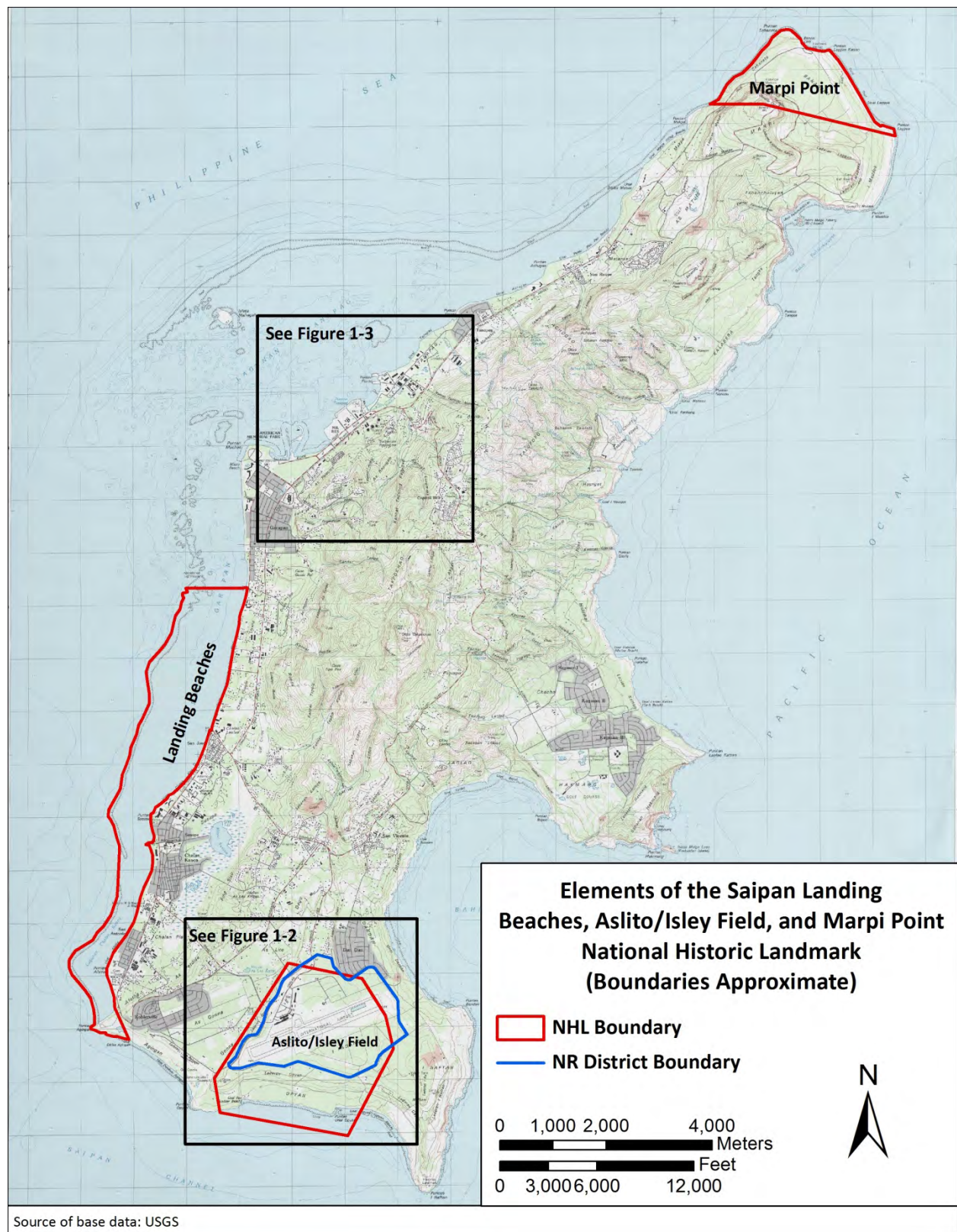


FIGURE 1-1. NATIONAL HISTORIC LANDMARK LOCATIONS.

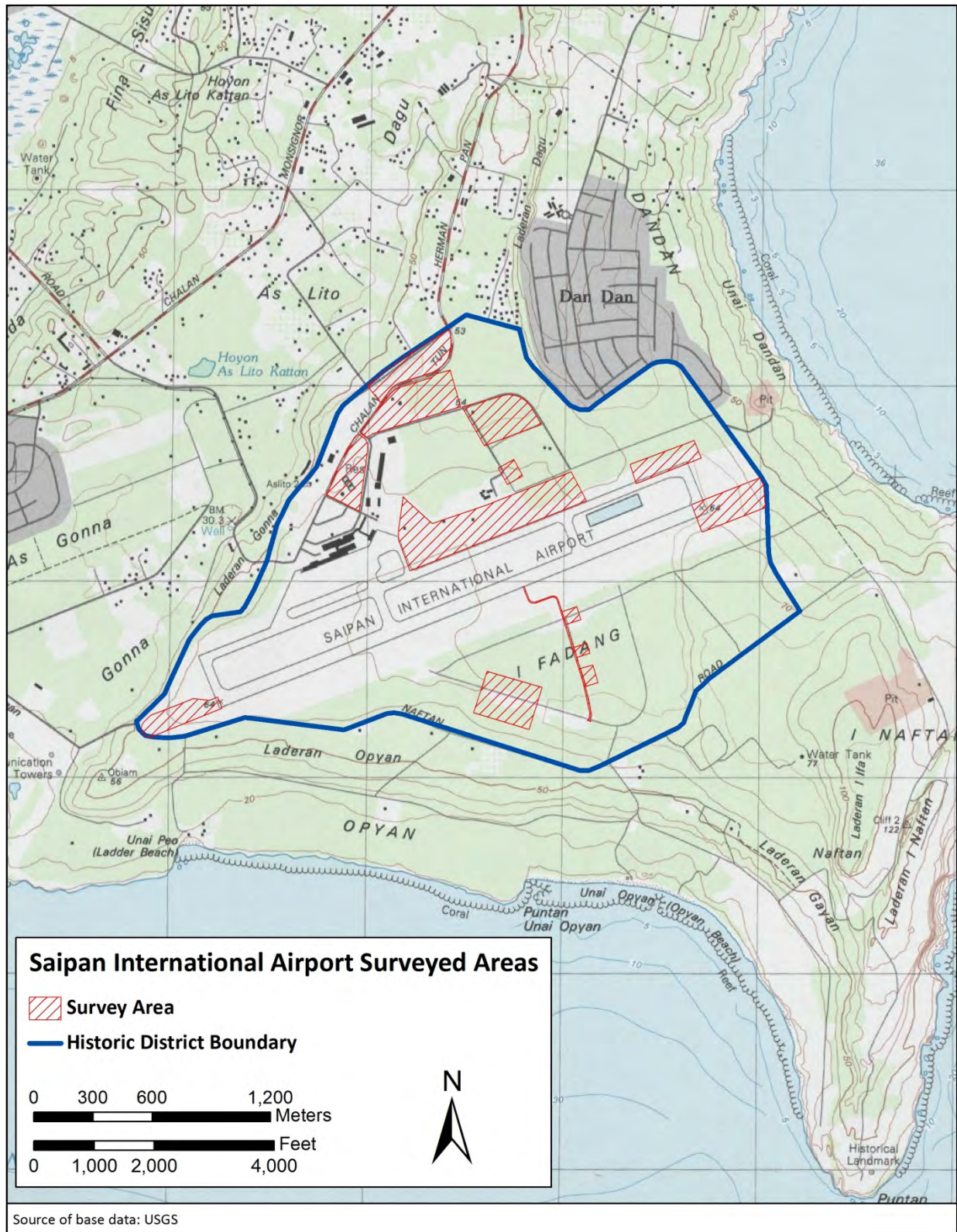


FIGURE 1-2. SURVEY AREA.

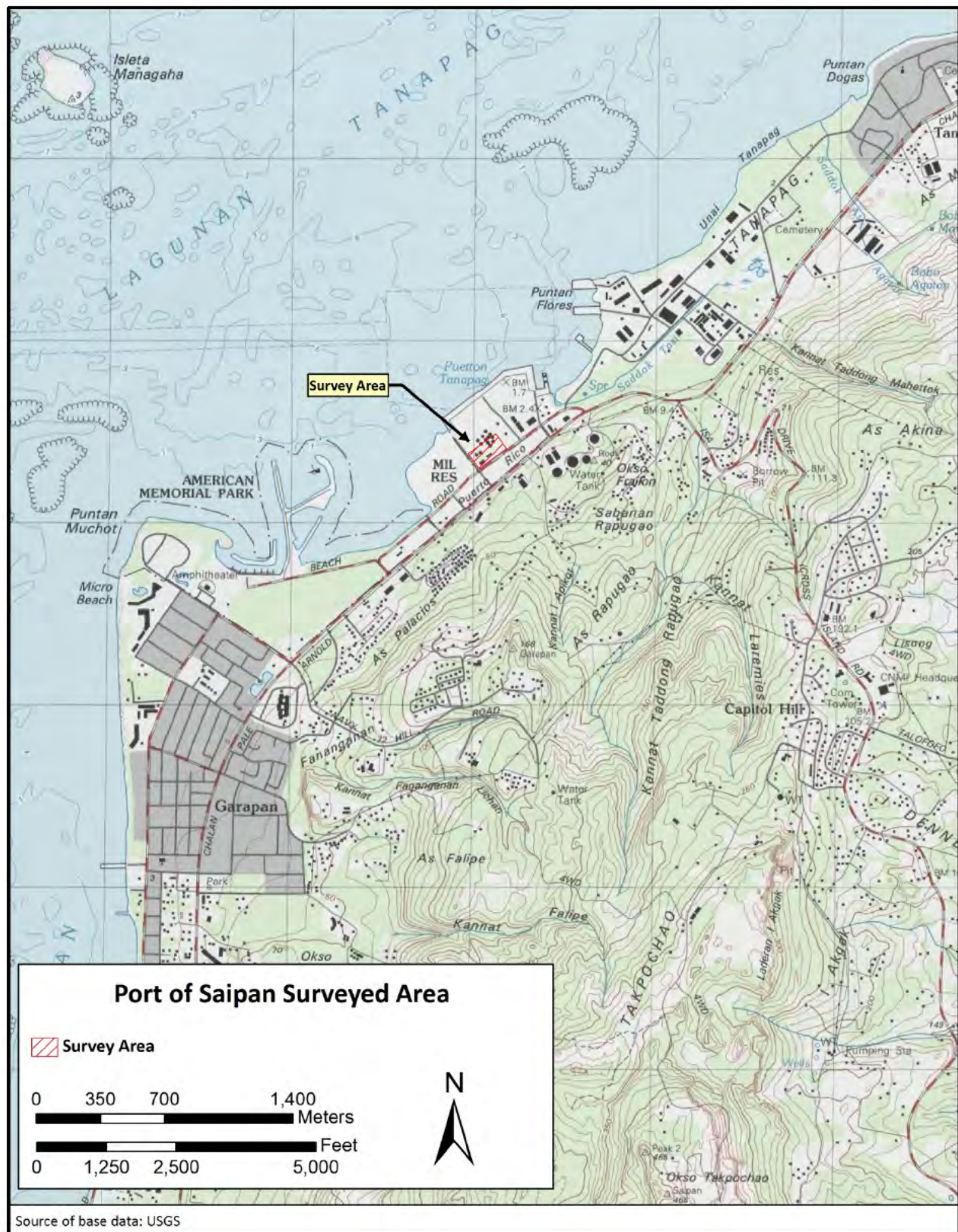


FIGURE 1-3. SURVEY AREA (CONTINUED).

2. ENVIRONMENTAL OVERVIEW

The Mariana Islands are an archipelago of 15 islands that make up the northernmost extent of Micronesia. Guam, the largest and southernmost of the Mariana Islands (not within the CNMI, but forming its own political territory within the United States) encompasses roughly 538 square kilometers (km²) (208 square miles [mi²]). The other 14 islands are part of the Commonwealth of the Northern Mariana Islands (CNMI). The largest islands in the CNMI are Saipan, Rota, and Tinian. Saipan is the second largest island in the Marianas after Guam and encompasses roughly 121 km² (47 mi²) while Rota and Tinian are roughly 85 km² (33 mi²) and 101 km² (39 mi²) respectively. Of the three islands, Rota boasts the highest point of elevation, Mt. Manira at 490 meters (m) (1,612 feet [ft]). The highest point in Saipan, Mt. Tapotchau, is 472 m (1,554 ft), Guam's highest point, Mt. Lamlam, is 406 m (1,332 ft) and the highest point in Tinian, Puntan Carolinas, is just 196 m (557 ft) above sea level.

Weather in the Mariana Islands is considered tropical, generally warm and humid throughout the year with a relative humidity above 80 percent and an average annual temperature between 24° and 27° Celsius (75° and 80° Fahrenheit). Rainfall is seasonal with a typical dry season lasting from January to April and a wet season lasting from July to November with a mean annual rainfall of about 216 centimeters (cm) (85 inches).

2.1. Flora and Fauna

The native vegetation of the Mariana Islands has been drastically altered by human activity and agricultural practices. Much of the natural vegetation was utterly destroyed during WWII. Most notably, Saipan, Tinian, and Guam were the setting for major military campaigns that profoundly altered the landscape (DeBell and Whitesell 1993). Since the war, much of the remaining natural flora and fauna have given way to invasive species.

Several attempts have been made to categorize the vegetative communities of the CNMI. In 1980, a survey was conducted on Saipan, Rota, and Tinian by the U.S. Forest Service in partnership with the CNMI government (Liu and Fischer 2006). The survey produced vegetation maps from the interpretation of black and white aerial photographs taken in 1976. The results indicated that the native limestone forest type of vegetation environment was dominant only on Rota. Introduced tree species and secondary vegetation encompassed significant portions of Tinian and Saipan.

More recently, a vegetation survey was undertaken for the CNMI and Guam. The survey used high resolution spatial imagery and was a concerted effort by the U.S. Department of Agriculture (USDA) Forest Service Pacific Southwest Region, Forest Health Protection (FHP) and the Pacific Northwest Research Station, Forest Inventory and Analysis (FIA) programs (Liu and Fischer 2006). The survey concluded that roughly half of Guam is now covered by secondary vegetation.

The second largest island (Saipan) of the Marianas has a complicated geologic structure and topographic diversity; as well as more than 3,500 years of human history including extensive landscape augmentation (Fosberg 1960). Saipan has also undergone recent rapid growth and urban development, further fragmenting what is left of native limestone forests. The majority of the island has been disturbed at some point during the island's history, resulting in unstable vegetation patterns.

The native vegetation communities of the CNMI and the island territory of Guam are considered a primary limestone forest. Saipan was most likely forested with a mix of vegetation dominated by gulos (*Cynometra ramiflora*), acacia petit feuille (*Acacia confuse*), *Barringtonia*, and *Erythrina* (Mueller-Dombois and Fosberg 1998). Thatch screw pine (*Pandanus tectorius*) and screw pine (*Pandanus dubius*), grand devil's claw (*Pisonia grandis*), umbrella catchbirdtree (*Pisonia umbellifera*), fago (*Ochrosia*

oppositifolia), and sea or beach hibiscus (*Hibiscus tiliaceus*) are common species found in this type of mixed forest. Common shrubs in these forests include beach naupaka (*Scaevola sericea*), panago (*Jasminum marianum*), alahe'e (*Canthium odoratum*), and grande sultane (*Ipomea tuba*) (Fosberg 1960).

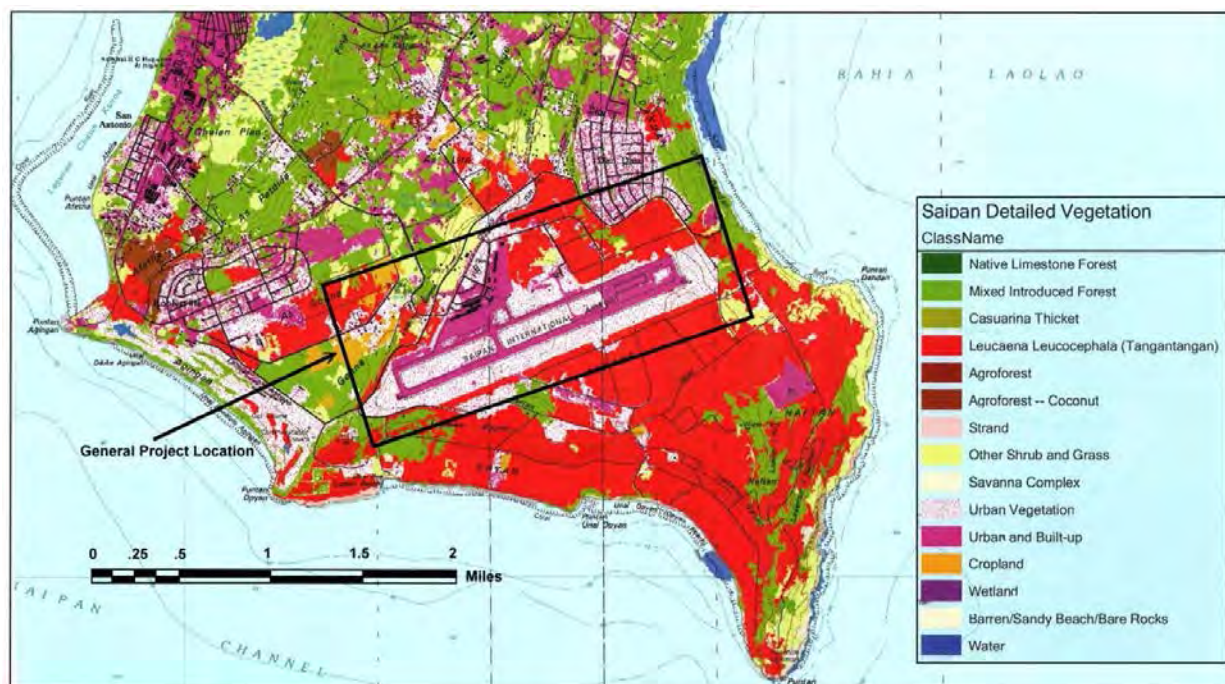
Invasive and introduced species include Japanese introduced cane plants (*Saccharum spontaneum*), invasive species of elephant grass (*Pennisetum purpureum*), and vines like the stinking passionfruit (*Passiflora foetida*) and blue morning glory (*Ipomoea indica*). Level and sloping ground areas of secondary forest commonly include mixed stands of siris tree (*Albizia lebbek* and *A. confuse*) and coast sheoak (*Casuarina equisetifolia*). Along the coastlines the madras thorn (*Pithecellobium dulce*) is common and its bark was used historically by the Spanish for tanning hides. In areas along the island that were historically rice fields, breaks of large perennial grass, *Phragmites karka*, and scrubby vegetation of *H. tiliaceus*, lodugao (*Clerodendrum inerme*), golden leather fern (*Acrostichum aureum*), scattered *Casuarina* trees, and patches of salt jointgrass (*Paspalum vaginatum*), and para grass (*Panicum purpurascens*) are common. Areas that are described as volcanic are mostly covered by giant miscanthus (*Miscanthus floridulus*) and associated species as well as invasive coast sheoak and siris tree. In some of the more eroded areas it is common to find umbrella fern (*Gleichenia linearis*), staghorn clubmoss (*Lycopodium cernuum*), golden false beardgrass (*Chrysopogon aciculatus*), black speargrass (*Heteropogon contorius*), showy pigeonpea (*Cantharospermum scarabaeoides*), *S. sericea*, and petai laut (*Desmodium umbellatum*). In the strand vegetative areas of Saipan, typically associated with the eastern coastline, the area supports *Pemphis acidula* scrub and lantern tree (*Hernandia nymphaeifolia*), portia tree (*Thespesia populnea*), and *P. grandis* (Fosberg 1960).

Large portions of the project area are home to some of the aforementioned hibiscus and mixed scrub vegetation, which consists of broad expanses of sea hibiscus (*H. tiliaceus*), tangantangan (*Leucaena leucocephala*), and other disturbance species. A vegetation map produced by the FHP and the FIA programs described the study area as having urban vegetation, *L. leucocephala*, small portions with mixed introduced forest vegetation, and areas containing other shrubs and grasses (Liu and Fischer 2006) (Figure 2-1). The Tangantangan forest is a secondary growth of introduced *L. leucocephala*, which has been on the Mariana Islands since the early 1900s. After WWII, the U.S. Navy continued to seed the tree to prevent erosion (Berger et al. 2005). Additional invasive species in the project area include the mimosa (*Mimosa diplotricha*), abas gayaba (*Mikania scandens*), and the kesengesil (*Chromalena odorata*).

The varying landscapes of Saipan, including the study area, support a variety of fauna including native forest birds, freshwater birds, sea birds, mammals, invertebrates, reptiles, and several non-native species of animals. Native forest birds of Saipan include the locally protected golden white eye (*Cleptornis marchei*), the locally protected and listed Mariana fruit dove (*Ptilinopus roseicapilla*), the endangered Mariana swiftlet (*Aerodramus bartschi*), the rare and endangered Micronesian megapode (*Megapodius laperouse*), the endangered nightingale reed-warbler (*Acrocephalus luscini*), the locally protected rufous fantail (*Rhipidura rufifrons*), the Saipan bridled white-eye (*Zosterops concillatus saypani*), and the locally protected white-throated ground dove (*Gallicolumba xanthonura*). The only freshwater species of birds that may be in the project area is the endangered Mariana common moorhen (*Gallinula chloropus guami*), and the only sea bird that may be in the project area is the wedge-tailed shearwater (*Puffinus pacificus*). The only indigenous mammalian species on the island, though not likely within the study area, is the threatened and endangered Mariana fruit bat (*Pteropus marianus*). Invertebrates that may be within the study area include the coconut crab (*Birgus latro*) and the humped tree snail (*Partula gibba*). Reptiles within the study area include the Micronesian gecko (*Perochirus ateles*), and the rock gecko (*Matus pelagicus*) (Berger et al. 2005).

Like the flora of Saipan, several species of animals have been threatened or eradicated due to introduced species. During the Spanish era (1521–1899), ungulates were introduced and included goats (*Capra hircus*), cattle (*Bos taurus*), pigs (*Sus scofra*), and deer (*Cervus unicolor*). Today these ungulates are feral

and considered problematic. The brown tree snake (*Boiga irregularis*), an invasive species that was accidentally introduced to Guam in the mid twentieth century, has also been sighted on Saipan and is considered an immediate and serious threat to the bird and reptile population (Berger et al. 2005).



**FIGURE 2-1. DETAIL VEGETATION MAP OF THE PROJECT AREA IN SAIPAN
(ADAPTED FROM LIU AND FISCHER 2006).**

2.2. Geology and Soils

American Samoa, Guam, and the islands of the CNMI are part of the western Pacific island chain and cover an area larger than the continental United States. The Mariana Islands are composed of 15 islands that are the exposed parts of one of two concentric island arcs along the Mariana Trench-Ridge System (Karig 1971). This paleo-volcanic chain is west and north of the Mariana Trench and is a product of the subduction of the Pacific Plate under the Philippine plate. The volcanic chain that includes the islands of Rota and Tinian formed earlier during the Late Eocene to Early Oligocene around 45 million years ago (Ma) and the islands of Guam and Saipan were continually active volcanically until as late as the mid-Miocene between 15 to 12 Ma (Dickinson 2000). These islands are mantled by later Miocene, Pliocene, Pleistocene, and Holocene limestones that can be characterized as having terrace features and are the product of the interaction between hydro-isostatic and tectonic influences.

2.3. Saipan Geology

Saipan is the second-largest island in the Mariana archipelago. The geology of Saipan is known principally from the work of Cloud et al. (1956). The island is composed of Late Eocene to Early Oligocene volcanic rocks that contain lavas and breccias. The volcanics are interbedded and capped with Tagpochau Miocene Limestone units that also contain conglomerates and sandstone interbeds. Overall, the area is Pliocene-Pleistocene Mariana Limestone composed of coral reef features (Figure 2-2). The oldest volcanic materials are the dacties found in the Sankakuyama Formation followed by andesitic material in the Hagman and Densinyama Formations. Limestone deposits cover most of the island. The

oldest are the late Eocene Matansa Formation and the Miocene Tagpochau Formation. The Pleistocene Mariana Formations cover the largest area.

A mountainous ridge extends north and south along the center length of the island and is referred to as the axial upland (Cloud et al. 1956). The core of the island consists of volcanic rock capped and bordered with limestone formations that make up five other geomorphic features. Mt. Tagpochau stands at 473 m (1,555 ft) and is composed of uplifted limestone. On the northwestern and eastern coastlines are low terrace benches. The western shoreline is referred to as the western coastal plain. Located along the eastern coastline, bordering the entrance to Bahia Laolao, are the south-eastern coastal fault ridges. Towards the center of the island is the Donni clay hills belt. The Saipan airport is on the Kagman Peninsula, a 50 to 70 m (164 to 230 ft) high area known as the southern low limestone platform. This central peninsula is composed mainly of Mariana Limestone that consists of clastic and reef limestone with argillaceous rubbly facies (Carruth 2003). The limestone is tilted upwards towards the north from faulting and erosion and is underlain by the volcanic Fina-sisu hills to the west and predominately Dandan Limestone to the east; to the north is the internally drained Dago Depression filled with late Quaternary clays (Cloud et al. 1956:30).

Uplift created a series of well-developed terraces during periods of emergence region wide. The highest and oldest uplifts are within Miocene limestone at 500 m (1,640 ft) with younger terraces in the Mariana Limestone that reach elevations of greater than 50 m (164 ft) (Dickinson 1999). The younger emergent Pleistocene-Holocene reef limestones are mapped as Tanapag Limestone (Cloud et al. 1956). The last high stand in sea levels occurred throughout the Mariana Islands around 4200 radiocarbon years Before Present (B.P.) and then declined at unknown rates to create the modern coastline (Kayanne et al. 1993). According to Dickinson (2000), emergent reef flats and benched paleoshorelines during the post Middle Holocene were exposed to a level of 1.2 to 1.9 m (3.9 to 6.2 ft) above modern low tide. The coastal plains from Tanapag Harbor to the south end of the island and along the shores of Magicienne Bay exhibit a gently sloping western coastline containing a lagoon and barrier reef system. Fringing reefs also occur along the eastern side of the island. Many of these features are the products of an expanded shoreline following mid-Holocene sea level decline.

The soils on Saipan are largely the product of weathering of the local limestone and to a lesser degree the weathering of volcanic bedrock, with some coral sand and marsh deposits (McCracken 1953; Taylor 1951). A soil map of the study area around the airport shows that this area consists of Chinen-Urban Land soils formed in limestone that are well drained and nearly level and disturbed from construction activity and the events of WWII (Young 1989). Bulldozed areas, areas of limestone gravel fill, and piles of concrete and rubble characterize these areas. Most of this disturbance in the study area is probably associated with the development of the flight line and supporting facilities at the airport. This Chinen-Urban Land soil unit makes up about 4 percent of the soils on Saipan and typically consists of gravelly sandy loam fill material to a depth of 25 cm spread over older Chinen soils. The older Chinen soils are typically 50 to 75 cm thick over jagged, irregular limestone and consist of thin, very dark grayish brown clay over a yellowish red clay loam. This unit has pockets of gravelly sand loam and local rock outcrops of limestone.

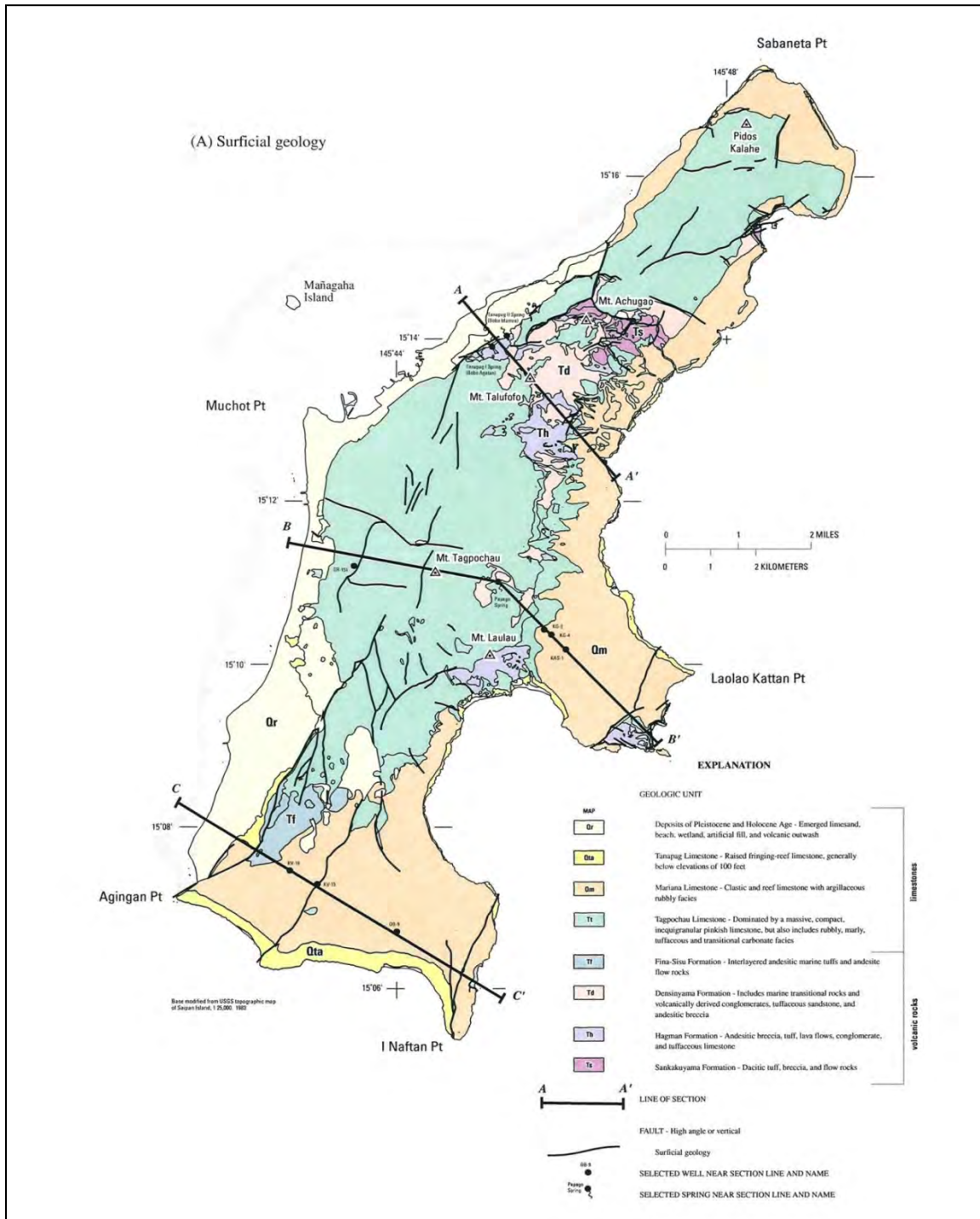


FIGURE 2-2. GENERALIZED SURFACE GEOLOGY MAP OF SAIPAN (ADAPTED FROM CLOULD ET AL. 1956).

2.4. Conclusion

The natural environment of Saipan has provided food and shelter for humans for thousands of years. Native flora and fauna and in particular marine resources were exploited by Chamorros. The island's fertile soils support various indigenous plant foods which have aided in sustaining local populations.

Vegetation in the project area is primarily a hibiscus and mixed scrub community. This vegetative community is dominated by sea hibiscus (*H. tiliaceus*, also called pago), tangantangan (*L. leucocephala*), and other disturbance species. The presence of this type of vegetation is an indicator of human disturbance as it is a non-native species. Tangantangan was planted on the island to curb the erosion that took place shortly after the bombardment of the island. The activities and developments associated with WWII have drastically altered the natural landscape within the study area. In this environment, prehistoric materials are expected to be in a secondary context. WWII-era material is more likely due to its proximity to Aslito/Isley airfield.

3. PREHISTORIC AND HISTORIC CONTEXT

The Mariana Islands have been occupied for at least 3,500 years and have been home to prehistoric Chamorro populations and much more recent settlers from Spain and its colonies, the Caroline Islands, Germany, Japan, and the United States. This chapter presents a chronological overview of the human occupation of the Marianas and describes the archaeological traces these settlers left on the islands. The islands have been the subject of archaeological research since the 1920s (Thompson and Hornbostel 1932), and the presence of the U.S. military brought considerable attention to Marianas archaeology in the mid 1940s (Osborne 1947; Reed 1954). Current understanding of Marianas prehistory is largely the work of one researcher, Alexander Spoehr, who surveyed Guam, Saipan, Rota, and Tinian in the mid 1950s and who developed the first prehistoric chronology (Spoehr 1957). Knowledge dramatically increased after 1977 with the start of the Micronesian Survey of the Office of Historic Preservation for the U.S. Trust Territories of the Pacific Islands (Craib 1983). Major themes in Marianas archaeology include the degree of socio-political complexity, the effects of colonizing populations on island ecology, and the age and timing of colonization (Kirch and Ellison 1994; Rainbird 1994).

3.1. Pre-Contact Period

The Marianas were colonized about 3500 B.P., well before other islands in Micronesia. Radiocarbon dates indicate an initial colonization by 3479 ± 200 B.P. for Saipan and 3270 ± 170 B.P. for Guam (Craib 1983). Paleoenvironmental data from the Pago River Valley on Guam shows a sharp increase in charcoal around 4300 B.P. (possibly due to forest clearing by humans), a contemporaneous appearance of coconut pollen from potentially human-introduced trees, and then, slightly later, a reduction in pollen from forest trees and an increase in pollen from fire-adapted ferns (Athens et al. 2008). Another sample, from the Orote Peninsula on Guam, found evidence of human arrival at 3550 B.P. (charcoal), significant forest clearing by 2450 B.P., and significant grassland expansion by 1400 B.P.; these dates compare well with the direct archaeological evidence of colonization by about 1500 B.C. (Athens et al. 2004, 2008; Athens and Ward 2004). Colonization on Guam must have post-dated 3000 B.C., as the earliest remains from the Tarague Beach site on Guam overlie Merizo limestone that was deposited about 3000 B.C. (Kurashina and Clayshulte 1983).

A date of colonization by 3000 B.P. fits with linguistic evidence (Spriggs 1996, 1998), although linguistic data do suggest the possibility of a much earlier colonization date, between 4500 and 4000 B.P. (Spriggs 1999). Most of the colonists in Micronesia were part of the Oceanic subgroup of the Austronesian language, but the Chamorro and Palauan languages are exceptions—both belong to the Western Malayo-Polynesian subgroup that is most closely related to the Philippine-Sulawesi area and, in the case of Chamorro, possibly Formosan languages of Taiwan (Blust 2000). This southeast Asian origin for the Chamorro people is supported by craniofacial characteristics (Hanihara 1997; Ishida and Dodo 1997).

Colonization of the Marianas and other island chains may have been aided by a system in which colonists expanded slowly to new locations over long distances then used these isolated colonies to quickly spread to relatively close islands (Clark et al. 2010). This model may explain the pauses indicated by the archaeological record in the colonization of the Pacific islands (Irwin 1998). However, as they moved across the vast expanse of ocean, these colonists caused environmental changes (Kirch 2002). Over time, colonists introduced rats, which probably had a significant influence on ground nesting land and seabird populations. Colonists also introduced geckoes, skinks, garden snails, and weeds. Once colonists started thinning and burning forest, landscape would have become dominated by fire-resistant ferns and grasses. Deforestation would have led to accelerated erosion on steep slopes, infilling and extending valley bottoms along coastal plains. In addition, increased sediment transportation in freshwater streams and rivers would have modified the inshore marine environment, changing the types of marine resources available. Humans and rats appear to have reduced bird diversity across the Pacific.

Kirch says that the big themes across the Pacific islands are pre-contact population sizes, colonization history including languages and spatial origins, intensification and specialization in agricultural practices (note that Marianas lack the really intensive terraces of other Pacific islands such as Hawai'i) especially in regards to "social production" for status contests, and of course status and power differentiation.

3.1.1. Pre-Latte Phase (ca. 1500 B.C. – A.D. 800/1000)

The Pre-Latte phase begins with the colonization of the Marianas and is defined by two kinds of pottery: Marianas Red pottery, which has thin walls, red slips or paint, and calcareous sand-temper, and lime-filled impressed pottery, which has the same paste and calcareous sand temper and distinct impressed or incised decoration that was filled with white lime after firing. Both types are somewhat similar to the Lapita ceramics of Melanesia, and it is likely that both Marianas and Lapita ceramics are descendants of an older southeast Asian tradition (Kirch 2002; Spoehr 1957). Marianas pottery is quite similar to types recovered from the Philippines in assemblages from the early to middle second millennium B.C., and is part of the ongoing question of Taiwanese or Philippine-Sulawesi origins for the Chamorro peoples (Kirch 2002).

Pre-Latte phase pottery changed slightly over time (Moore and Hunter-Anderson 1996). The pottery made until about 500 B.C. consists of thin-walled (4–6 millimeter [mm]) ceramics with calcareous sand temper that is found in two forms, an undecorated globular jar with a restricted mouth and a small carinated bowl. Ceramics made between about 500 B.C. and A.D. 1 have less complex rim forms, decoration only on vessel lips, less lime filling of designs, and either calcareous sand or mixed calcareous and volcanic sand temper. Ceramics from 500 B.C. to A.D. 1 are usually open bowls with vertical sides. Between A.D. 1 and 1000, pottery was made as bowls with round bottoms and sometimes with suspension holes. These vessels have thinner walls and surfaces that are either untreated, polished, burnished, or striated. The researchers speculate that the change in form to flat-bottom bowls may be for use in earth ovens instead of aboveground hearths. Researchers suggest that change in form was due to increasing population density and larger food-consuming groups as people expanded from small sandy beaches to interior areas, where agriculture would have been possible.

Artifacts from Pre-Latte phase sites also include flaked stone, some of which may have been made from materials imported from other Northern Marianas Islands (Spoehr 1957). Assemblages also include shell adzes, fishhooks, fishing sinkers, and shell bracelets, beads, and other ornaments. Burials have been found but are much less common than burials associated with the Latte phase (Liston 1996).

Pre-Latte phase sites are located on the coastal lowlands, with a smaller number of sites in major river valleys, and into the uplands of the island interior. Procurement of resources depended on site location. The presence of bivalves at sites suggests that people in coastal settlements harvested resources from shallow water and lagoon areas. Occupants probably collected wild plants for food, and may have cultivated plants, although specific evidence for agriculture or horticulture is lacking (Liston 1996).

The Pre-Latte phase people used the entire island and exploited resources in both coastal and inland environments using a mix of hunting, gathering, and possibly horticulture. However, settlement focused on coastal regions. The emphasis on coastal resources meant that Pre-Latte period populations were small. Coral reefs are productive, but not enough to sustain large populations – 17 kilometers (km) of coastal zone would be needed to support 30 people (Bayliss-Smith 1975). Coastlines during the period were further inland than they are now. Carson (Carson 2011; Carson and Peterson 2011) says that sea level increased during the early Holocene, peaking at about 1.8 m higher than today between 3400 through 1050 B.C. Coral reefs were already present by 3000–2000 B.C., prior to colonization. Sea level then began to drop through A.D. 200, quickly reaching modern levels. Sea level decrease produced more coastal land, supplemented by storm surge deposits. Indeed, it is this decline in shoreline that may have made the Marianas suitable for large-scale human occupation (Dickinson 2000). These geomorphic

processes mean that Pre-Latte phase sites are poorly known. Test excavations on Guam found massive sand deposits over Pre-Latte sites, which can be 2 m below the modern surface and well inland of current shorelines (Carson and Peterson 2011).

The Pre-Latte phase is well-documented on Saipan due to excavations at Chalan Piao on the island's west coast, which was first occupied around 1700–1200 B.C. when the site area was a shallow embayment with sand bars that later became a sandy beach fronting brackish marsh. The site was first documented by Spoehr in the 1950s. Salvage excavations in 1989 excavated 4.5 cubic meters (m³) of cultural deposits (Amesbury et al. 1996). The youngest intact deposits dated to 1396–865 B.C. (one radiocarbon dated sample), the oldest to 1731–1226 B.C. (one dated sample). Sherds from the site are Marianas Red with thin walls, red slipped or painted, calcareous sand temper; a small number were decorated with lime-filled lines. The researchers recovered 355 whole beads, as well as unfinished beads and bead-making tools. Beads became smaller over time. Shell adzes, which are common at Latte period sites but rare at Pre-Latte sites, were recovered only from the surface. Fishing gear was rare compared to Latte-period sites on Saipan, possibly indicating a change in fishing techniques. The researchers suggest that the simplification of pottery decoration and forms and the reduction in the number and size of shell ornaments may reflect an increasing use of inland plant foods and inshore marine resources and possibly social change related to this change in landscape use (Amesbury et al. 1996).

On Tinian, the early Pre-Latte phase is represented by the Unai Chulu site on the largest beach of the northwest coast of the island (Craib 1993). Although disturbed during the invasion by U.S. forces in WWII and by subsequent impacts, the site preserves two distinct cultural horizons, with the earlier horizon radiocarbon-dated to approximately 3865–3490 B.P. Cultural materials at the site include abundant pot sherds and shell beads and a very small number of lithic artifacts. Pottery at the site shows a slow transition from calcareous sand temper to a mix of calcareous sand and volcanic sand temper. The site demonstrates that Tinian was colonized at about the same time as Guam, Saipan, and Rota.

3.1.2. Latte Phase (A.D. 800/1000 – Contact)

The Latte phase is named for the stone columns found at many sites dating to after about A.D. 1000. Although deposits associated with Latte sites have been radiocarbon dated to A.D. 845 ± 145, this single early date is from a site that is dominated by a much later component, and no dates from materials directly associated with latte sets are known from before A.D. 1150 (Graves 1986). These columns, called latte, were cut from rock outcrops of limestone or basalt and consisted of two parts. The upright foundation rock is called a *haligi*, and the hemispherical cap on top of the haligi is called the *tasa*. They typically occur in two parallel rows, each row consisting of three to eight latte. Latte can be more than 2 m tall, although at archaeological sites they are usually found as fallen haligi without the attached tasa (Liston 1996). Latte may be a Marianas manifestation of hierarchical social structures common to Micronesia (Bodner 1997). Social change and the accompanying construction of latte may also be part of a Pacific-wide phenomenon of fortified constructions associated with periods of storminess and drought in the region during the Little Ice Age of 1450 to 1850 (Field and Lape 2010). Latte on the Mariana Islands range from 6 to 14 stones. The number of latte sets corresponds to the superstructure's likely size. Latte sets with 8 stones are most common; sets with 10, 12, or 14 stones are progressively less common.

Latte sets are associated with artifacts and features indicative of a wide range of domestic activities, and include prepared floors, cooking areas, fire-cracked rock, ceramic vessels, grinding tools, scrapers made of stone and shell, faunal remains, shell and stone debitage, fishing tools, and sling stones (Graves 1986). Latte sets are also associated with burials.

The latte are believed to have had several functions. Early Spanish explorers describe villages where individuals with high social status lived in dwellings raised on stone posts. Latte are believed to be the remains of these stone posts. An intensive analysis by Graves (1986) supports this interpretation,

concluding that most latte sets represent bases for the residences of high-ranking members of prehistoric Chamorro social groups. Burtchard suggests that the latte structures were used in a highly developed social system in which villages competed for resources due to population pressures, limited agricultural land, and a strain on food sources (Burtchard 1991). The competition may have led to warfare between villages and resulted in the formation of a hierarchical social system where villagers with higher social status built houses elevated on the latte foundations. Some researchers have associated latte with burial practices and others infer that latte served as territorial markers for lineages and markers of land and resources ownership (Liston 1996).

Latte are associated chronologically with dramatic changes in landscape use and climate (Nunn 2007; Nunn et al. 2007). Around A.D. 1300, the entire Pacific Basin was affected by rapid cooling and sea-level fall, and possibly increased storminess, that caused massive and enduring changes to Pacific environments relative to the warm, dry, and more stable period during the Medieval Climate Anomaly (A.D. 750–1250). As sea levels fell, fewer food resources would have been available in coastal zones, leading to persistent conflict, shifts in settlements to inland areas or small islands, and an end to long-distance ocean voyages. In the Marianas, Hunter-Anderson (2010) points out that the conditions of the Medieval Climate Anomaly would have been favorable to agriculture, with reliable harvests encouraging expansion into the uplands and increases in populations. Latte appear during this climate regime. When conditions became less predictable during the Little Ice Age (1350–1900 A.D.), prehistoric Chamorros may have moved to high-elevation locations where rainfall was more consistent, and adopted rice as a supplement to other food plants and one that could be grown at the edges of interior wetlands. Hunter-Anderson observed an increase in the number of inland storage or camp sites at sites occupied during the Little Ice Age, replacing the comparatively high proportion of inland habitation sites that were occupied during the Medieval Warm Period. She attributes the change to the shift from low return but low labor domestic crops to higher labor but higher return crops. The presence of sling stone caches suggests increased territoriality and competition for inland areas suited to agriculture.

The ceramics of the Latte phase, which actually appear about 200 years before lattes, differ from the Pre-Latte phase in vessel rim shape, temper, and decoration. The base and body of Latte-phase vessels are round and the openings are small. Rims are generally plain and usually thicker than the vessel walls. The majority of vessels are plain and undecorated, but some have wiped or combed finishes. Most ceramics have volcanic sand temper, while other vessels have a mixed sand temper. A small percentage of the vessels from Latte-phase contexts have grog (crushed sherd) temper. The round ceramic design may have been designed for boiling and storing food (Liston 1996). Latte period ceramics also show regional variation. Graves believes that the early uniform ceramic production tradition in the Marianas was altered into two traditions, one on Saipan and Tinian and one on Guam and maybe Rota, beginning by A.D. 1000 or maybe earlier (Graves et al. 1990). Compositional analysis confirms this two-tradition model: there are at least two clay sources indicated for Saipan and for Guam. These findings suggest that there was a limit to movement of pottery-making techniques that separated Guam and Saipan during the Latte period. However, he says, pottery exchange across islands increased during the Latte period, whereas Pre-Latte period pottery was mostly exchanged within islands. Graves concludes that the patterning in Latte period pottery is consistent with the other evidence (especially latte sets) indicating hierarchical social organization, aggregated settlements, and higher population density, all of which would have led to greater competition between settlements and created an atmosphere conducive to the use of pottery traditions as a way of distinguishing communities from each other.

The majority of Latte-phase habitation sites are along the coast and in fertile river valleys. Small settlements have also been found near freshwater sources and upland marshes. These inland settlements are believed to be associated with a larger population and greater reliance on agriculture (Liston 1996).

Features associated with the Latte phase include subsurface postholes, fire pits, ovens, burials, stone alignments, and support holes for haligi. Typical artifacts include ceramics, basalt mortars, pestles, sling stones, shell beads, shell fishhooks, bone fishhooks, and bone spear points. The presence of pestles, pounders, and mortars suggest a subsistence regime that included the cultivation of starchy foods.

Burials are most often found located between latte rows or on the seaward side of a latte row. When a burial is located between latte rows, skeletons are extended with feet toward the shore and oriented perpendicular to the long axis of the set of latte. When a burial is located on the ocean side of a latte row, the skeleton is oriented either perpendicular or parallel to the shoreline. Burials are usually primary interments or partial or whole secondary interments. Artifacts associated with burials include sling stones, coral rocks, and stone and shell tools. In some instances, ceramic sherds have been found near the ankles and/or wrists (Liston 1996).

The large number of Latte-phase burials has allowed for extensive research on prehistoric health and diet, especially after the completion of several large-scale cultural resources management projects in the 1990s (Hanson and Pietrusewsky 1997). The Latte-phase diet included shellfish, sea turtles, and deep water and near-shore fish such as marlin, swordfish, dolphin fish, and tuna (Ambrose et al. 1997), all of which continued to be used into historic times (Allen and Bartram 2008; Amesbury et al. 2003; Hensley and Sherwood 1993). All resources were used—for example, analysis of shellfish suggests that prehistoric Mariana Islanders did not necessarily select species with high caloric returns over species with lower caloric returns (Szabó and Amesbury 2011). The only land fauna were coconut crabs, land crabs, fruit bats, monitor lizards, and birds, several species of which may have been hunted to extinction in prehistory (Pregill and Steadman 2009; Steadman 1999a, 1999b). Pigs, dogs, and chickens, although found elsewhere in Micronesia, have not been observed archaeologically in the Marianas, but rats appear to have arrived around 800 to 1000 A.D. (Pregill and Steadman 2009; Steadman 1999b). Diets were dominated by terrestrial plant foods—marine resources made up less than 30 percent of diets (Ambrose et al. 1997). Plant foods were mostly starchy tree and root crops: breadfruit, taro, yams, bananas, sugar cane, coconuts, and rice. Minor plant foods included arrowroot, cycad seeds, pandums, fruit, and seaweed (Ambrose et al. 1997). Yam and other roots and tubers may have been cooked using pits, a historically documented technique that may have appeared about 1000 years B.P., indicating inland agriculture by that time (Moore 2005). DNA analysis indicates that the two breadfruit species on Guam originated from multiple crossings of plant strains across Micronesia, not just a single colonization spread (Zerega et al. 2004).

Although historic and linguistic sources indicate that the indigenous Mariana Islanders of Micronesia cultivated rice before initial Western contact in the early 1500s, it is not known when or why rice cultivation was adopted in these islands, the only case of rice cultivation in remote Oceania (Hunter-Anderson et al. 1995). Recent excavations in Guam have confirmed the late prehistoric presence of rice in pottery sherds, and the available evidence—from archaeology, palaeoethnobotany, linguistics, and history—suggest that labor-intensive rice agriculture may have been valuable in ceremonial exchanges (Ibid.). Early Spanish accounts of Chamorro culture report that rice was involved in rituals, feasts, exchange, and other status-related behavior (Pollock 1983).

Researchers note that the different types of mollusks in prehistoric sites are due to a change to or from mangrove habitat at specific locations (Amesbury 1996). When mangrove forest disappeared, human populations were forced to collect mollusks from coastal reefs. This change in habitat explains what would otherwise be interpreted as overexploitation of particular species of mollusks. Mollusks are therefore more useful for reconstructing past environment than reconstructing past diets (Amesbury 1996).

Diets varied slightly from island to island. Diets of individuals from Guam and Rota were fairly similar, but Saipan diets had much less protein and more sugar cane and/or seaweed (Ambrose et al. 1997). An isotopic analysis of 10 Latte-phase burials from Afetna, Saipan, indicates higher than expected open ocean food (McGovern-Wilson and Quinn 1996). However, another isotopic analysis of individuals from Saipan and Rota found that Rota's occupants ate more marine foods than those from Saipan during the Latte period, that some individuals during the Latte period had greater access than others to marine resources, and that Pre-Latte period diets consisted of both coastal and open ocean or deep water fish while Latte period diets consisted mostly of fish from coastal reefs and lagoons (Pate et al. 2009).

Remains from the Latte period site of Apurguan on Guam suggest a well-balanced and varied diet, average age at death of 43.5 years with a large number of deaths at 2 to 9 years, some prevalence of arthritis, slow population growth, and possible sex differences in the use of betel nuts (Douglas et al. 1997). Dental health was generally good, with relatively few caries or other problems, possibly due to the side effects of chewing betel nuts (increased saliva flow, cleansing due to abrasion, etc.) (Hocart and Frankhauser 1996). Yaws disease was common, affecting 21 percent of the individuals in one sample from Latte period sites in Guam (Pietrusewsky et al. 1997). The population also showed evidence of high levels of physical activity and habitual motion compared to contemporaneous Hawaiians (Pietrusewsky et al. 1997). The specific types of skeletal stress is consistent with the use of trumplines, but there is little ethnohistoric or ethnographic evidence for their use in the Marianas (Hanson and Butler 1997). However, health was not uniformly good: data from the dental remains from juvenile burials suggests that Latte-period populations were densely concentrated and subject to frequent disruptions to subsistence due to storms and drought, resulting in impaired immune systems and physiological stress (Stodder 1997). Some high-ranking individuals may have had greater access to subsistence resources and were thus better able to survive fluctuations (Ibid.)

Although researchers agree that Latte-period social structures were hierarchical, there is less agreement on the details. Thompson and Hornbostel (1932) argued for a three-tier society based mostly on a single Spanish observer's comments in the 1600s and another Spanish observer's comments from the 1800s. Cordy's (1986) analysis of social stratification across Micronesia finds that greater population density is associated with reduced social stratification, but that absolute population correlates positively with social stratification. Because the Marianas consisted of a very large number of political entities with small absolute populations, social stratification was very limited, producing only two status tiers (Cordy 1986). Cordy (1983) also cites primary documentary evidence suggesting that there were no hierarchies other than chiefs and everyone else. There may have been high-status individuals associated with chiefs, but they were not a separate class. Moreover, chiefs drew power in part from consensus and did not receive hugely different treatment. Villages only allied for special events (i.e., war) and not often enough to produce another tier of nobility.

In summary, the Latte phase is characterized by a time of population growth, a change in ceramic technology, and the use of stone architecture. The ceramic technology, the construction of fire pits and ovens, and the construction of latte suggest that people invested more time in habitation areas or settlements. This pattern indicates a less mobile lifestyle and the transition from horticulture to more intensive agriculture. Settlement took place mainly along the coastal areas where food resources were abundant, but population increase likely prompted the settlement of inland environments and a move toward agricultural subsistence to supplement wild food.

During his survey of Saipan, Spoehr (1957) observed that twentieth century plowing had disturbed archaeological materials despite shallow plow depths. He also noted that expansion of the village of Garapan and construction of a large sugar mill and an accompanying village at Chalan Kanoa had destroyed many archaeological sites. However, he said the largest source of disturbance was the invasion of the island during WWII and the construction of base facilities following the American occupation.

Local informants and previous archaeological investigations reported that most of the archaeological sites were on the western and southern coastal areas. After U.S. capture of the islands, great areas were bulldozed and then covered with crushed limestone to provide foundations for warehouses, troop quarters, and airstrips. The entire coastal terrace from Agingan to Cape Obian was transformed into a giant ammunition dump, with virtually all the topsoil bulldozed into revetments. Despite the damage, Spoehr identified six partially intact Latte sites: the Objan, Laulau, Bapot, Fanunchulujan, Chalan Kija, and Chalan Galeite sites. He excavated portions of three sites, Objan, Laulau, and Chalan Kija. He also observed several sites consisting only of ceramic artifacts, but said none of these sites had evidence of middens, houses, or other large features.

On Tinian, Spoehr found much less disturbance to prehistoric sites other than around the harbor. Most of the disturbance to archaeological sites was in the caves used as strong points by Japanese forces. Spoehr recorded 11 sites with latte sets, a latte quarry, and two large artifact scatters. One of those sites, the House of Taga, has by far the largest latte in the Marianas.

On Rota, Spoehr's less comprehensive survey recorded a large number of Latte sites, especially on the north coast. The Muchon Point site includes a 14-column latte structure. Despite disturbance, including a coastal trench system built by Japanese forces during the war, Rota's prehistoric sites were in relatively good condition, although with shallow cultural deposits.

3.2. Post Contact Context

3.2.1. The Spanish Period (1521 – 1898)

Spanish explorers first saw the Pacific Ocean in 1513 from the west coast of Panama. Six years later, five ships left Spain under the command of the Portuguese pilot Ferdinand Magellan and his mostly Spanish crew of 265 men. In March 1521, the four surviving ships and their starving crew landed on Guam. Magellan's landing site is not known. Chamorro tradition says that Magellan made landfall in Umatac Bay (Rogers and Ballendorf 1989), but the exact location is not known. Magellan named Guam and the rest of the island chain the "Ladrones," or thieves, as a comment on the residents' thefts from his ships. Magellan died in the Philippines shortly after the fleet left Guam. In 1522, 31 of the expedition's original crew returned to Spain on the *Victoria*, the fleet's single surviving vessel and the first ship to circumnavigate the globe.

In 1526, the Loyosa expedition, piloted by a veteran of the Magellan expedition Sebastian del Cano, reached the Marianas and retrieved a crew member who had deserted from the Magellan expedition and was living on Rota. However, the great distance from Spain to the western Pacific limited Spanish interest in the region. In addition, Spain ceded its rights to parts of the Pacific to Portugal; the line of demarcation was 297.5 marine leagues (about 1,500 km or 900 miles) east of Maluku in what is now Indonesia. The Philippines remained on the Spanish side. Portugal began expanding into the area, creating a trade route that extended around Africa to India and ultimately to Japan.

It was not until 1564 that Spain showed significant interest in the eastern Pacific. In November of that year, a fleet of five ships under Miguel Lopez de Legazpi left New Spain (Spain's western hemisphere possessions) seeking a shorter route to Spain's eastern Pacific territory than the route around Africa. In 1565, the expedition landed in the Marianas, the first Spanish contact with the islands since 1526, and claimed them for Spain. Legazpi then left for Cebu in the Philippines. In 1571, the Spanish presence in the Philippines shifted to Manila.

The distance between Manila and Spain meant that the Philippine colony was supplied from New Spain. Although it was a dependency of the Viceroyalty of New Spain, Manila did gain some self-government in 1583 and an autonomous Supreme Court in 1595. Over the late 1500s and 1600s, the ostensibly Spanish

city became dominated by Chinese immigrants while the Spanish population remained extremely small. Moreover, the Manila economy depended on direct financial assistance from New Spain in the form of silver from New World mines, even in the early 1800s.

The galleons that carried this silver sailed once every year, and often stopped at the Marianas for resupply during the crossing from Mexico. Roughly 100 ships stopped in the Marianas between Legazpi's visit and the mid 1600s, leading to steady but rare contact between Chamorros and Spanish sailors eager to trade iron for fresh fruits and vegetables. Some of these stops did not end peacefully—Spanish accounts include mention of combat between sailors and Chamorros. The return voyage from Manila to Mexico sailed further north and avoided the Marianas.

Spain did not have an active presence in the Marianas until 1668. In 1662, the Jesuit Diego Luis de San Vitores applied to Mariana, the queen regent of Spain, for permission to found a mission in the islands. Arriving in 1668, he renamed the islands *Los Marianas* in honor of the Queen Regent. Spanish explorers and missionaries arrived on Saipan, Rota, and Tinian in the same year.

Early Spanish accounts of the Chamorro population describes them as fishermen and farmers who used outrigger canoes, nets, spears, and hooks and lines; they also gathered shellfish from the reefs (Spoehr 1954). They raised yams, taro, bananas, breadfruit, sugar cane, coconut palms, and rice. They had no domesticated animals. The Chamorros lived in small hamlets and villages, usually located along the coast, although fertile interior areas were also occupied. Villages featured bachelors' houses where ancestors' skulls were stored. They had a hierarchical social structure and conducted frequent warfare with one another.

San Vitores composed a Chamorro-language grammar and catechism but was killed in 1672 by Chamorros in what would lead to a decade of conflict between the indigenous population and the tiny number of Spaniards on Guam. Conflict was probably the result of imposed baptism of infants, different perspectives on premarital sex and other traditional practices, and other factors. All resistance was crushed after the arrival in 1679 of Jose de Quiroga, who commanded the campaign against the Chamorro and who largely succeeded by 1685. Resistance was completely crushed by the end of the 1600s. Filipinos began settling on Guam, displacing the remnant population. Introduced disease was a major factor that decimated the indigenous population. Shell estimates the total Marianas population in 1568 at 72,000, in 1600 at 61,000, in 1638 at 42,000, in 1668 at 25,619, and in 1699 only 8,100 (Shell 1999, 2001). The Spanish responded to this demographic catastrophe by forcibly concentrating populations on Guam, Saipan, and Rota. By 1700, the remaining indigenous population was concentrated on Guam and Rota.

By 1700 agriculture consisted of native food crops as well as introduced tobacco, maize, sweet potatoes, squash, red peppers, cucumbers, tomatoes, onions, garlic, beans, eggplant, pineapple, cantaloupe, watermelon, lemons, limes, oranges, peanuts, coffee, cacao, and cassava. The Spanish also introduced water buffalo, cattle, pigs, goats, cats, dogs, horses, mules, and probably chickens, as well as deer.

During the 1700s, Tinian and Saipan were visited only occasionally. The British Commodore George Anson circumnavigated the globe between 1740 and 1744 to disrupt Spanish commerce; he spent several months on Tinian gathering food and allowing his crew to recuperate. Anson encountered only a small group of Spaniards and Chamorros who were on Tinian to hunt feral pigs and cattle. Tinian served mostly as a larder for Guam for most of the eighteenth century, but it is not known whether Saipan had a similar function.

For the Marianas as a whole, population waned again during the mid- to late-nineteenth century as waves of epidemics hit the islands. The most notable epidemics were from smallpox, measles, whooping cough, and influenza. These diseases affected the population in 1849, 1855, 1856, 1861, 1883, 1888, and 1890

and claimed the lives of thousands of people (DeFant and Leon Guerrero 2006:8). As a result of these epidemics and scant financial support from Spain and the Philippians, Guam ended the nineteenth century weak and vulnerable.

Despite continued low populations, attempts were made to settle Saipan and Agrihan, but only by tiny and transient groups. The first real attempt to resettle Saipan was by Caroline Islanders, who started making regular trading voyages to Guam by the early 1800s. In 1815, Carolinians were given government permission to settle on Saipan in exchange for transporting pork and beef from Tinian to Guam. By 1849, Caroline Islanders had founded the town of Garapan, which had 424 Carolinian and 9 Chamorro inhabitants by 1865. Chamorro population increased in the late 1800s. The two groups preserved some cultural distinctions, including matrilineal lineages and clans among Carolinians.

Meanwhile, Tinian was resettled in 1869 by H. G. Johnson, who obtained a concession giving him usufruct of Tinian for eight years and who brought approximately 230 Carolinians to the island to work. When Johnson died in 1875, these Carolinians moved to the town of Tanapag on Saipan.

Municipal government on Saipan was basically nonexistent until 1855, when the Spanish governor of the Marianas imposed municipal government and assimilation under a Spanish official. Tradition evolved where the *gobernadorcillo*, the third position behind the *alcalde* (governor) and friar-priest, would move from Agana to a northern island after he finished his term of office. The limited role of government was hampered by slow communications between the Philippines, which oversaw the Marianas, and local Marianas government in Agana—in the late 1800s, mail ships arrived at Agana only twice a year.

3.2.2. The Early Twentieth Century (1898 – 1941)

Spain ceded Guam to the United States after the end of the Spanish-American war in 1898 and sold the other Mariana Islands to Germany. Germany formally took control of the Marianas north of Guam in November 1899 after purchasing the islands from Spain in the same year and administered them as part of Germany's New Guinea Protectorate. Under Bismarck, Germany sought colonies to match other European powers and to have a presence in the Pacific. Indeed, Germany had also claimed the Caroline Islands and had captured Yap in 1885. This dispute was settled by the Papacy and Spain retained sovereignty, but Germany had freedom of trade and was allowed to establish coaling stations on the Carolines (Hezel 1983).

Although the number of Germans on the islands was never large, Germany did initiate smallpox vaccinations, provided a government doctor, and opened schools on Saipan and Rota. Germany was primarily interested in coconut production. Increasing numbers of Chamorros settled on Saipan during this period. Also, a group of Carolinians left Guam for Saipan due to dislike for American efforts to get them to wear western clothing.

On Guam, the First American Period (1898–1941) began when the United States captured Guam during the Spanish-American War. The bloodless capture of Guam began on June 20, 1898, when the USS *Charleston* under Captain Henry Glass entered Apra Harbor and fired on the long-abandoned Fort Santa Cruz. After waiting for and being disappointed by the lack of return fire, Captain Glass prepared an armed landing party. In the meantime, locals began to gather on the shore. They assumed the shelling was a salute and sent for two little antique brass cannons in order that they could return the courtesy (Rogers 1995:110). However, the cannons were of little use as there was no gunpowder on the island. This prompted the Spanish to launch a party by boat to the USS *Charleston* to apologize for not returning the salute. Upon learning that the shells represented an attack, the Spanish outpost surrendered (Wolff 1961). The U.S. flag was raised over Fort Santa Cruz on June 21, 1898. The following day, Glass and his ship withdrew to the Philippines, leaving no one behind to rule the island. The island fell into a state of

authoritative confusion which would not be resolved until the arrival of the first U.S. naval governor on August 7, 1899.

The U.S. Navy was responsible for Guam for the next 42 years. It established a naval base, started English-speaking schools, and created a public health system. During this time the population, particularly those considered “native,” rebounded substantially. The naval administration’s desire for economic sustainability led to the development of a system of landholding that allowed anyone to claim tracts of unused land for agricultural development. Copra (coconut) plantations became numerous, and an increasing number were owned by Japanese farmers (Liston 1996), a trend that would foreshadow future events.

Germany lost control of the Northern Marianas in October 1914 when Japan captured the islands during the First World War. In 1919, the League of Nations recognized the Japanese protectorate over the northern Marianas. Protectorate status meant that residents of the islands were considered citizens of Japan. Japanese schools were established, sugar cane became the main crop, and colonists arrived from Japan and Japanese possessions. The political separation of Guam and the Commonwealth of the Northern Mariana Islands is a result of this early twentieth century history.

In 1922, the Japanese navy was replaced with the civilian South Seas Government as the manager of Micronesian islands. The same year, sugar cane production began to increase on Saipan and eventually dominated agricultural activity on the island thanks to the efforts of Haruji Matsue, a recent graduate of Louisiana State University. By 1934 Matsue was shipping 640,000 metric tons of sugar per year to Japan, and a mill, town, and narrow-gauge railroad were built at Chalan Kanoa for sugar cane production (Figure 3-1). A mill was also built on Rota. With sugar cane intensification, large numbers of Japanese workers moved to Saipan and other Marianas islands. In 1935, the Japanese withdrew from the League of Nations but claimed the islands remained part of their empire. By 1937, there were nearly 21,000 Japanese on Saipan, mostly from Okinawa. These Okinawan settlers were largely egalitarian, although archaeological evidence suggests signs of an emerging economic class structure (Dixon 2004). Garapan became a mostly Japanese town. Japan built Aslito Field on Saipan in 1934 and began fortifying the Marianas in 1935.

Chamorro and Carolinian culture remained largely intact during the early years of the Japanese period, although the Caroline Islanders considered themselves a marginalized group (Alkire 1984). Traditionally, Chamorro and Carolinian families had a village house and a farm house. As the Japanese population increased and the sugar industry increased demand for agricultural land, political and economic forces made it difficult for Chamorro and Carolinian families to retain ownership of their land. The Japanese government initially validated Chamorro and Carolinian land ownership, and Japanese farmers paid rent for sugar cane production (Petty 2002). This process made land a commodity with a cash value, not something to be developed as new rural homesteads. By 1931, Japanese were allowed to purchase private land, and by 1944 at least one third of Chamorro and Carolinian families owned no rural property (Spoehr 1954). The project area has a remnant of this period in the form of an Okinawan farm house; these formal structures probably replaced the more expedient rural houses built by the original Chamorro or Carolinian land owners.



FIGURE 3-1. MAP OF RAIL LINES ON SAIPAN (SUGAR KING FOUNDATION 2011).

3.2.3. World War II (1941 – 1944)

On December 7, 1941, Japan bombed Pearl Harbor in Hawai'i, bringing the United States into WWII. Japan bombed Guam within hours of the Pearl Harbor attack; however, due to the International Date Line it was evening on December 8, 1941. Japan invaded Guam on December 10, 1941, with a force of 5,000 men. The American naval government surrendered after a brief fight, and Japan occupied the island for the next two and a half years (Sanchez 1979). The Japanese Imperial Army fortified the island by building concrete bunkers around critical embayments and placing guns atop the natural cliffs along beachheads. The Japanese occupation was tragic for the native Chamorros: many were forced to labor for Japanese forces and were systematically executed just before American forces retook the island.

The Marianna islands of Saipan, Tinian, and Guam were indispensable strategic strongholds for the Japanese during WWII. The islands served as important defensible locations for Japan as well as outposts for bombing missions and airstrikes.

The American forces recognized the importance of these islands and surprised the Japanese with a drive across the Pacific toward the Marianas. The Japanese did not expect the United States to attack the Marianas because of its relative close proximity to Japan and its distance from Hawai'i. The Japanese were convinced that the next target of the United States would be Palau instead (Bowers 2001[1950]). After February 1944, Japan realized that U.S. forces were likely to strike the Marianas and began to reinforce the 1,500 military personnel then on Saipan. However, U.S. submarines sank many Japanese troop carriers and cargo ships supplying the Marianas. Although many passengers survived, they often arrived in the Marianas without weapons or other equipment. The loss of equipment meant that Japanese defenses on the islands were incomplete at the time of the U.S. invasion. Although the troop complement on Saipan had increased to a total of roughly 31,000 Japanese troops (25,000 Army and 6,000 Navy personnel) and many pillboxes, blockhouses, and other fortifications had been built, many large guns were not emplaced. Aslito Field had no ground defenses and lacked provisions for demolition if threatened with enemy capture (Denfeld 1997).

On June 15, 1944, the 2nd and 4th Marine Divisions invaded Saipan. Prior to the invasion, 7 battleships and 11 destroyers shelled the islands of Saipan and Tinian for two days. The U.S. landing on June 15th was made on the west side of the island on the coastal lowlands, when 700 amphibious vehicles transported troops to the beaches on both sides of Afetna Beach. Invasion was aided by air power (Tate 1995) and by tracked landing vehicles, at least one of which still sits off the Saipan coast (Arnold 2011). The 2nd and 4th Marine Divisions were the first to make landfall marking the first time U.S. soldiers set foot on Japanese soil during the war (Bowers 2001[1950]). Over 8,000 Marines landed on that beach; 2,000 of them were killed during the first day of action.

The Japanese fighter strip on the west side of the island was the first area captured during the assault. On the night of June 16th, the second day of the invasion, a tank battle ensued. The battle involved 44 Japanese tanks, the largest such battle in the Pacific. The U.S. dominated this battle and obliterated the Japanese tank fleet on the island (Chapin 1994). On the third day of fighting, the 27th Army Division joined the battle. On June 19th, the Japanese Imperial Navy tried to destroy the U.S. Saipan invasion Naval Fleet. The air to sea battle was later dubbed The Great Marianas Turkey Shoot and ultimately resulted in the destruction of 330 Japanese aircraft (Chapin 1994). Aside from this sea battle, the effectiveness of the U.S. Naval fleets proved to be critical for the victory in Saipan. The U.S. Navy reduced the transportation of weaponry, construction materials, and troops that were destined for the defense placements on Saipan.

On June 18, 1944, during the battle of Saipan, Aslito Field renamed Conroy Field in honor of Colonel Gardiner Conroy of 165th regiment, who was killed in battle for Makin in the Gilbert Islands in November 1943. In late June 1944, the Navy renamed the field in honor of Lieutenant Commander Robert Isley, who was shot down and killed over Aslito on 13 June (Goldberg 2007)

On June 22nd, Aslito Field was taken by U.S. troops. The airfield was used almost immediately for airstrikes, supply runs, and aerial photography missions: the latter were used to mark the locations of bunkers, trench lines, and the natural contours of the island.

On July 6th in Paradise Valley, just north of Tanapag, Lieutenant General Yoshitsugu Saito gave his last order for Japanese troops to fight to the death. The order was given to surmount a final *gyokusai*, a banzai attack or suicide charge. After the order, Lt. Gen. Saito committed ritual suicide, or *hari-kari*. On July 7th the banzai attack ensued and resulted in the death of 4,311 Japanese soldiers (Chapin 1994).

The remaining soldiers killed themselves and Japanese civilians with gunfire, grenades, and hand weapons rather than allowing themselves or the civilians to surrender to American soldiers. Hundreds of Japanese civilians—men, women, and children—also committed suicide; several hundred jumped to their deaths at the northern end of the island off of the steep precipices now named Suicide and Banzai Cliffs.

On July 9th, the island of Saipan was considered secure; at final count 23,811 Japanese soldiers were known dead, 3,225 U.S. soldiers were killed in action, and an additional 326 soldiers were listed as missing in action. Five American soldiers were given a Medal of Honor commendation for their heroic actions during the war; three were awarded posthumously.

Today remnant scars of the battle of Saipan and the Japanese encampments prior to the battle remain. Within close proximity of the project area, located between the main and commuter terminals is the former Japanese and American Air Operations Building. To the north of the Air Operations Building and the current Saipan terminals, a Japanese building, water supply structure, and a bunker remain. Southwest of this network of buildings, four gasoline storage structures still stand. One of these structures currently houses the Saipan HPO. North of these structures is the former Japanese power plant, now the American Red Cross building. Along the road to the airport are remains of Japanese barracks and air raid shelters. Northeast of the airport terminal are the remains of a complex of Japanese buildings used during the war including a hospital, barracks, a refrigerated pyrotechnics building, a dispensary, a headquarters building, a power plant, an oxygen building, a maintenance building, a bomb storage facility, and hangars, as well as an American maintenance complex and 65 keyhole-shaped paved hardstands for B-29s (Lotz 1998). Beyond the immediate project area, previous archaeological survey (Denfeld 1992) recorded two 6-inch gun casemates at Aginan Point. At Aginan Beach, one circular blockhouse for four 20 mm guns still stands in a beach park at Coral Ocean Point Resort. Many caves contain artifacts from Japanese forces, which used caves as defensive positions (Taborosi and Jenson 2002). At Nafutan Point shore and Mount Nafutan are the caves used to defend against U.S. Army 27th division. On the peninsula are two guns from the 140 mm and 6 inch Whitworth Armstrong batteries.

On Rota, the Ginalagan complex of caves and associated defenses was in excellent condition in the early 1990s (Denfeld 1992). The complex consists of 1.5 km of natural caves with a 150 m parapet of stone and concrete forming a protected trench, as well as associated cisterns, gun positions, pillboxes, and other structures. The complex never came under heavy attack and therefore survived the war relatively intact.

On Tinian, Denfeld recorded several remaining Japanese defenses, including a 6-inch gun and three gun cave positions on the southern end of the island, several pillboxes on the eastern shore of the island, and pillboxes and a 140 mm defense gun at the north end of the island (Denfeld 1992). The Japanese inter-island radio station at the center of the island still stands and was used as a slaughterhouse in 1992. Although Ushi airfield was expanded by U.S. forces as North Field for B-29 Superfortress use, the airfield preserves the Japanese-built air operations building, air headquarters, bombproof power plant, air raid shelters, and underground storage bunker.

3.2.4. The Second American Period (1944 – present)

The post-war economy focused on government jobs and private industry and caused cultural changes such as a reduction in the Chamorro use of *lanchos*, which involved families living in rural areas during the weekdays to raise crops and returning to villages for church and social affairs on the weekends (Rogers 1995:202). In fact, subsistence farming nearly ceased in the post-war years. Tourism, particularly from Japan, Korea, and Taiwan, has become increasingly important to Guam's economy. Currently, the Guam government, the tourist/service industry, and U.S. military bases are the primary sources of employment for Guam's population (Liston 1996).

The U.S. role in the governance of Saipan, Rota, and Tinian differs from Guam due to differences in how the islands were acquired (Herald 1992, McKibben 1990). Spain ceded Guam to the United States after the end of the Spanish-American war in 1898. Guam's territorial status, under which it was managed by the U.S. Congress, was part of a trajectory that traditionally resulted in statehood. Guam is one of the four unincorporated territories currently held by the United States, the others being Puerto Rico, the Virgin Islands, and American Samoa. In contrast, the United States was given supervisory control of the other Mariana Islands and the rest of Japan's Micronesian possessions by the United Nations (U.N.) under the Trust Agreement. The Trust Agreement was a bilateral contract between the United States and the U.N. Security Council that made the United States responsible for providing for the islands' political, economic, and social needs and to promote the island's eventual adoption of self-government. The United States demanded that the U.N. designate the Trust territory a strategic area, a concession that gave the Security Council, not the General Assembly, authority over the Trust Agreement. This ensured that the United States could veto any decisions regarding the islands. The United States did little to develop the islands until formally criticized by the U.N. in 1961. Congress increased appropriations for the islands and in 1964 created a Congress of Micronesia. In 1969, the Marianas chose to become a separate entity from the rest of the Micronesian islands and in 1972 began negotiating commonwealth status, in part because the proximity of the Northern Marianas to Guam made them more Americanized. The resulting formation of the Commonwealth of the Northern Mariana Islands led the other Micronesian islands to separate into three political entities: the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau. Each entity negotiates its relationship with the United States separately and each has its own constitution. Under the Trust Agreement, in contrast, the United States was to aid the Micronesian territories in becoming independent.

4. PREVIOUS RESEARCH

Prior to the beginning of fieldwork, HDR conducted a search for previous archaeological research in the project area.

4.1. Saipan

The project area was previously surveyed in 1980 in preparation for nominating Isley Field to the National Register of Historic Places (Denfeld and Russel 1984). The field was listed on the National Register of Historic Places as a Historic District in 1981 (National Register Information System [NRIS] No.: 81000667). As recorded, the district includes 27 intact structures, an Okinawan farm house foundation, two runways, hundreds of hardstands and foundations from the U.S. period, concrete and asphalt roads, and many other features and artifacts (Figure 4-1). The nomination separated Isley Field into three areas: the Japanese Aslito Field complex; the two Isley runways, taxiways, and 110 hardstands; and the 73rd Bomb Wing Headquarters and associated structures. The nomination used the airport perimeter fence as it stood in 1980 as the Isley Field site boundary. The nomination specifically identified 29 structures and other features, with all B-29 hardstands collapsed into a single data point (Table 4-1). The Isley Field nomination form strongly suggests that additional features and associated artifacts not specifically mentioned in the nomination are present at the site, and the HDR survey was expected to encounter many cultural resources associated with both the Japanese and U.S. occupations of the area. Because of the site's construction history, HDR expected that Japanese-built features would differ stylistically from U.S. features and would be less expedient in their design and construction.

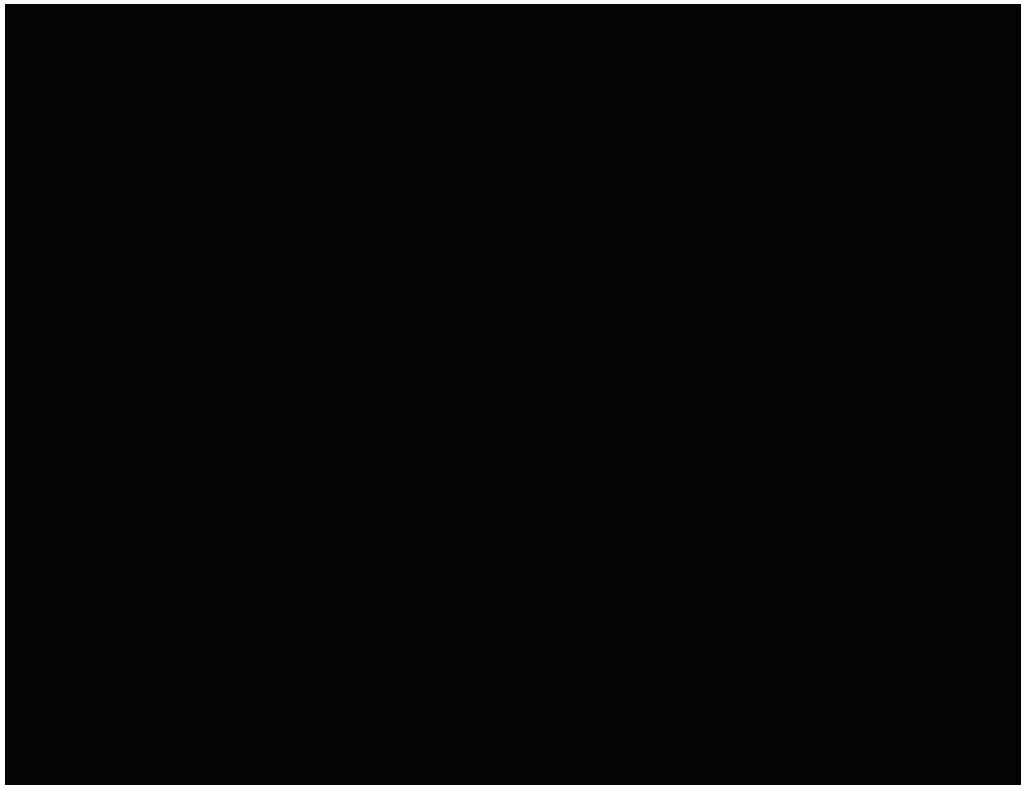


FIGURE 4-1. ISLEY FIELD STRUCTURES AND FEATURES RECORDED AS PART OF THE SITE'S NRHP NOMINATION PROCESS (DENFELD AND RUSSEL 1984).

**TABLE 4-1. FEATURES AND STRUCTURES RECORDED BY DENFELD AND RUSSEL (1984)
AT ISLEY FIELD.**

Feature or Structure Number	Description
SP-H-1	Japanese Barracks Complex
SP-H-2	Japanese Military Hospital
SP-H-3	Japanese Engineers Barracks
SP-H-4	Japanese Barracks Complex
SP-H-5	Japanese Staff Quarters
SP-H-6	Japanese Pyrotechnics Bldg.
SP-H-7	Japanese Garage
SP-H-8	Japanese Sentry Post
SP-H-9	Japanese Road
SP-H-10	Japanese Dispensary
SP-H-11	Japanese Administration Building
SP-H-12	Japanese Power Plant
SP-H-13	Japanese Oxygen Generating Building
SP-H-14	Japanese Repair and Maintenance Area #1
SP-H-15	Japanese Repair and Maintenance Area #2
SP-H-16	Japanese Semi Underground Bomb Storage
SP-H-17	Japanese Airplane Hangers
SP-H-18	Japanese Air Operations Building
SP-H-19	Japanese Gasoline Storage Bunkers
SP-H-20	Japanese Power Plant Building
SP-H-21	Japanese Unidentified Structure
SP-H-22	Japanese Water Supply Facility
SP-H-23	Japanese Gasoline Bunker
SP-H-24	Japanese Radio Station
SP-H-25	Okinawan Housing Area
SP-H-26	Japanese Service Apron
SP-H-27	U.S. North Service Apron
SP-H-28	U.S. Maintenance and Repair Complex
SP-H-29	U.S. B-29 Hardstands

4.2. Summary of National Register Status

The former Aslito/Isley Field was nominated to the NRHP as a historic district on September 16, 1980, and was included in the NRHP on June 26, 1981, as the “Isley Field Historic District” (NRIS No.: 81000667). As nominated, the district is defined by the “perimeter road,” probably Flame Tree Road (on the north, west, and east) and Naftan Road (along the south), that encircles Saipan International Airport and encompasses 1,189 acres (see Figure 1-2). The condition of the historic fabric contained within the district is listed as deteriorated and altered by the modern airport. Twenty-seven buildings and structures are mentioned in the nomination as contributing to the NRHP eligibility of the property. These include:

- Operations Center. This building was built and used by the Japanese and later used for similar purposes by the U.S. 73rd Bombardment Wing. At the time of the nomination the structure had been refitted for use by the Marianas Visitors Bureau, now known as the Marianas Visitors Authority, and was called out as a “...fine example of adaptive reuse.”
- Four gas drum storage bunkers
- Power plant.
- A building to house an electric generator.
- Semi-subterranean bomb storage facility. This structure was called out in the nomination as being particularly unique, representing “...the only remaining example of this type of building in Micronesia, and the structure is in excellent condition.”
- Defensive gun emplacement atop the bomb storage facility.
- Semi-subterranean fuel storage facility.
- Three associated fuel tanks.
- Pump house.
- Torpedo regulating shop.
- Cold storage building.
- Eleven air raid shelters.

The nomination also briefly mentions the two runways as well as “...hundreds of hardstands and foundations from the U.S. period.” The Historic Properties Database lists 27 contributing buildings (those listed above), two contributing structures (probably the runways), and zero non-contributing elements but no other details are offered.

Isley Field was later included in a National Historic Landmark (NHL) recommendation for three of Saipan’s WWII-era sites (see Figure 1-1). The separate WWII-related properties were listed as Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point NHL on February 4, 1985 (National Historic Landmark System [NHLS] No.: 85001789). In the landmark nomination, Isley Field’s size is listed as 1,453 acres, whereas the district nomination is for 1,189 acres. No reason for the expansion is given although the NHL nomination notes a Japanese blockhouse on Unai Obyan beach (Koblerville) as a contributing element to the Aslito/Isley Field portion of the NHL that was not included in the district nomination. All of the features noted in the district nomination are recommended for inclusion in the Aslito/Isley Field portion of the landmark designation including:

- The sites of the two B-29 runways, taxiways, and hardstands.
- The 73rd Bombardment Wing’s administrative area, listed as the Operations Center in the district nomination.

- All concrete structures associated with Aslito Field. This would presumably include all of the structures listed on the district nomination (above) as well as any previously undocumented Japanese structures within the district boundary such as the semi-subterranean bunker discovered during the present study and described in this report.

4.3. Conclusion

The previous research on the Marianas suggests that severely disturbed prehistoric material such as ceramic, flaked stone, and ground stone artifacts, probably from the Latte period given the rarity of inland Pre-Latte phase sites, are likely to exist in the project area. The significant amount of historic modification to the area likely impacted pre-contact sites and therefore the presence of intact features, although possible, is not likely. It is much more likely to encounter historic artifacts and features associated with the construction of Japanese Aslito Field beginning in 1934 and the U.S. expansion of the facility during WWII (at which time it was renamed Isley Field). Artifacts dating to this period may include bottle dumps, military supplies and equipment, refuse piles, and other durable metal objects. Features associated with this period, such as concrete foundations, are also likely to be encountered.

5. RESEARCH DESIGN

5.1. Prehistoric Period Research Questions

The analysis of prehistoric cultural materials will focus on obtaining information on when and how the interior of Saipan was used and how that patterning varies from previous archaeological findings. While more is known about the archaeology of the coastal areas of Saipan and the other southern Mariana Islands, the prehistoric archaeology of the interior limestone plateaus has also been studied. Extensive residential sites reflecting sedentary populations are well documented along the coast (DeFant and Leon Guerrero 2006), and past research suggests that these populations exploited all areas of the islands (Hunter-Anderson and Moore 1994). However, inland sites are not as well documented and generally consist of sherd scatters, sometimes with grinding stones and other stone tools. Latte sets are extremely uncommon at inland sites. The limited finds suggest that the upland plateaus, including the limestone plateau on which Saipan International Airport is located, were used during the Latte phase as occasionally occupied resource procurement and agricultural areas (Reinman 1977; Kurashina 1986). However, DeFant and Leon Guerrero (2006) note that the reasons for this shift are unknown. They suggest that the most plausible reasons involve population increase, environmental change, and/or the intensification of agriculture. A further issue is the actual timing of this expansion to inland areas. As Graves et al. (1990) point out, Marianas pottery is more variable than is often assumed, so ascription of Pre-Latte or Latte phase dates to artifact scatter sites may not be accurate.

The current project's research questions will aim to provide data on when, why, and how upland resources were added to the prehistoric economy of the Mariana Islands. Differences in the environmental conditions of habitats along the coastline and near shore environments and of habitats in the upland interior project area suggest that the upland limestone forest was used in response to ecological effects or changes to the structure of the island culture.

As explained in the review of the prehistory period, the prehistoric record of the larger islands in the Marianas can be summarized as consisting of the Pre-Latte phase and the Latte phase. Pre-Latte phase sites are small and are usually located on small beaches and along former lagoons. The sites were likely temporary and utilized a wide variety of environments oriented toward exploitation of fish, shellfish, and gathered plants. The artifact inventory from Pre-Latte phase sites indicate an emphasis on marine resources and little evidence for processing plant foods. The interior limestone forest may have held little interest as a food source at this time. During the early part of the Latte phase, populations increased and settlements expanded in size and number. The Latte phase is characterized by latte structures, often associated with human burials and larger villages. Tool kits were more diverse with large thick pottery and subsistence shifts from bivalve to gastropod shellfish and adoption of deep-water fishing. Dry land rice cultivation may have been introduced at this time (Hunter-Anderson et al. 1995).

This record of settlement change correlates in time with eustatic and isostatic changes in sea level, climate change, and vegetation changes. Most of the earliest settlements in the Marianas were located very near the shorelines (Hunter-Anderson and Butler 1995). Pre-Latte phase sites were located on narrow beaches recently exposed from a decline in sea level from a mid Holocene high stand of up to 3 m above modern levels (Nunn 2007). Extensive use of the near-shore resources was supplemented with inland areas that provided areas for crops or forest products as well as areas in which to hunt for birds and fruit bats or to obtain other protein sources such as coconut crabs and large monitor lizards (Carson 2011).

Interior settlement may have occurred as a result of utilizing a wide variety of habitats during this time. However, larger interior settlements were likely placed specific to certain topographic locations that provided the best soils for supporting agriculture and horticultural activities. Continuing sea level decline during the late years of the Pre-Latte phase increased beach progradation and created larger areas for settlement and more backshore area for crops (Nunn 1995). On the west coast of Saipan at the site of

Chalan Piao, these changes resulted in a shift in onshore environments from open water lagoons to mangrove swamps. As sea levels continued to fall, the coastal mangrove fringe eroded and disappeared, which changed the ecosystem. Shellfish diets changed as a result, with the larger arc clam (*Anadara antiquata*) used during the Pre-Latte phase shifting to smaller bivalves (*Tellina* and *Fragum*) and gastropods (*Strombus* sp.) from coral reefs during the Latte phase (Amesbury 2007).

The Latte phase is associated with a time when the falling sea levels in the Marianas stabilized around 2,000 years ago. This period is generally assumed to have seen an increase in population as more of the shoreline was exposed and opened for settlement (Butler 1990). Latte sites are also found in island interiors (Hunter-Anderson and Moore 1994). The increased use of the interior for farming is supported in part by studies on Guam that indicate increased slope erosion and increased levels of sedimentation with significant amounts of charcoal from burning the forest to clear areas for gardening beginning around 2000 B.P. (Athens and Ward 2004). The shift to larger settlements on the coast is accompanied by an increased use of terrestrial food relative to marine foods as indicated by stable isotope data for late prehistoric remains (Ambrose et al. 1997, McGovern-Wilson and Quinn 1966). On Saipan, isotopic analysis of collagen and apatite carbonate from prehistoric human remains indicated that sugar cane and seaweeds may have been very important dietary items (Ambrose et al. 1997). According to Moore (2005), a variety of indigenous plant foods were consumed prehistorically that included indigenous breadfruit, taro, yams, bananas, sugar cane, coconuts, and rice. The terrestrial plant diet was supplemented by shellfish and mostly reef and lagoon fishes and fewer deep ocean fish species (Ambrose et al. 1997).

The establishment of more permanent settlements during the Latte period accompanied major changes in technology, and the range of cultural materials became more numerous and more diverse. As population increased so did agricultural production (Butler 1988). Latte-phase ceramic vessel forms suggest increased use of pots for boiling and storing food, and there appears to be more use of stone mortars, pounders, and pestles; both changes are consistent with increased intensification of plant food use. Meanwhile, the larger populations of the Latte phase required expansion of site locations to a wider range of island habitats. This expansion would have involved more use of the interior areas of the island with the use of small short term camps for extracting local resources (Hunter-Anderson and Butler 1995).

The use of interior resources may have also been in response to stresses associated with food shortages from changes in climate that reduced the availability of marine resources. Saipan is affected by a variety of weather related events tied to oscillations in El Nino and La Nina phenomena and shifts in the tropical atmosphere that produce the wet season monsoons and dry season trade winds. During an El Nino year the mean sea level drops and during La Nina events the sea level is elevated above its normal value. Records from Guam, Yap, and Saipan indicate the net difference is about 0.6 m (Lander 2004). Drought cycles are also associated with El Nino/Southern Oscillation (ENSO) phenomena that can last from two to seven years (Vander Brug 1986) and some were likely as severe as the drought during the Little Ice Age in A.D. 1350–1900, which was accompanied by a decrease in sea levels of as much as 0.9 m below present levels (Nunn 1998). As Moore (2005) argues, changes in the climate that created periods of drought may have required the placement of a number of gardens in a variety of areas to offset food shortages. Coastal residents would therefore have been forced to move inland to farm.

Finally, the interior may have been used in response to damage associated with typhoons. Although the coastline is generally protected from typhoon driven waves, the storms do damage resources. At higher than normal seasonal extremes, typhoon-related storm surges would increase tidal sea-level inundations and increase erosion of offshore reefs and beaches, resulting in considerable damage to inshore marine resources. These events would likely force coastal residents to seek shelter and find alternative food resources in the interior. Depending on the frequency and intensity of storms, the interior may have provided a refuge that, with time, caused changes in settlement patterns and a shift to a greater reliance on resources available in the limestone forest.

A review of the literature on the prehistoric period in the Marianas strongly suggests it is unlikely that the area near Saipan International Airport was ever densely populated or extensively utilized. The forest environment was likely used prehistorically to collect wild plant foods and hunt small animals, activities that would have left relatively little trace. The area may also have been used for agriculture or horticulture, but it lacks water and has what Young (1989) describes as very shallow and well drained Chinen-Takpochao and Chinen-lands soils. These soils are considered poorly to moderately suited to commercial and subsistence farming (Young 1988). However, the land before construction of the airport was topographically fairly level with slopes less than 5 percent and was less than 2 km from settlements along the western coast at Chalan Piao and Agingan. Access to the area was not restricted by steep slopes and required an elevation gain of less than 60 m.

The largest obstacle to finding evidence for prehistoric use of the project area is the construction of the airport. Much of the project area at the Saipan International Airport was cleared and leveled in 1934 when the Japanese built Aslito Field. The continued expansion of the airport during and since WWII has required grading activities and placement of bulldozed fill for the construction of the runways and airport facilities. It is obvious that these activities have greatly altered and modified the original landscape. Young (1988) describes the land in this area as bulldozed and disturbed with piles of rubble and debris fills. About 90 percent of the area is characterized as strongly altered by human activity with up to 25 cm of gravel materials placed over the original soils.

Despite the obvious disturbance to the project area, archaeological materials may still be present in surface and subsurface contexts. At the survey level, the goal is to document any archaeological resources and investigate areas to determine their physical features. Inspection of cut features and debris piles may find fire cracked rock, charcoal, and pottery fragments, and other artifacts that indicate the presence of subsurface cultural deposits. Even if subsurface cultural deposits are not found, disturbed surface finds will show the range of prehistoric human activity that occurred in the project area. Vegetation patterns may also help to define areas that potentially preserve buried deposits. For example, areas that support large trees may indicate areas that have not been bulldozed. In these areas, the investigation of subsurface exposures and the examination of sediment in upturned tree roots may be the best way to find evidence for buried sites.

In sum, there are three main likely causes of inland landscape use: intensification due to population increase, use of inland resources to offset loss of marine resources from short-term climate-related sea level change, and use of inland areas to offset loss of coastal resources as a result of typhoons. Archaeological survey will help to understand the degree to which these different causes were at work. The focus will be on several types of artifacts and their chronological patterning. First, ground stone artifacts and agricultural features will be treated as indicators of intensification of plant food resource use consistent with increased population as the primary causal factor in inland resource exploitation. However, evidence indicating that sites date to the periods when sea levels were increasing or decreasing rapidly will instead support inland resource use as a response to large-scale climate change, as these climate changes took place well after the Latte-phase increase in population. Finally, highly ephemeral sites may be indicative of short-term use of inland resources in response to typhoon damage.

5.2. Historic Period Research Questions

At the time of European contact, the Chamorro population on Saipan lived primarily along the coast in small villages that provided suitable farmland for cultivated plant crops and access to supplies of seafood. Ethnographic information on use of the interior portions of the island is limited. After European contact the addition of chicken, dog, and pig were added to the local diet (Steadman 1999a). However, the very small number of Spaniards on Saipan between first contact and the island's forcible depopulation in 1698 suggest that cultural materials from this period may be indistinguishable from prehistoric materials. This expectation is only reinforced by the sharp drop in the Chamorro population following contact with

European explorers. The abandonment of the island from 1698 to 1815 means that any materials from these years will be an important data point in understanding the degree to which Saipan was used during this period. Particular attention will be paid to decorated European ceramics, which may indicate very specific date ranges.

During the periods of German and Japanese control, Chamorro and Caroline Islander populations increased on Saipan. Spoehr (1954) reports that the established pattern in Chamorro society was for each family to have two residences: a larger house in a village and a second smaller structure (lancho) on a farm. Cultivated areas were small to accommodate manual slash-and-burn agriculture that was still prevalent in the 1950s. However, what is not as well documented is whether Chamorro and Caroline populations followed this pattern during the period of Japanese control of Saipan, when the island was largely turned over to sugar cane production and was home to large numbers of Japanese and Okinawan immigrants. Survey may find indications of which groups used the interior during this period. Evidence for Chamorro lancho farms and Okinawan farmhouses may be preserved in the project area as overgrown cultivated areas and groves of banana trees with agricultural field features and collapsed structures along with the outlines of oxcart trails that lead to coastal villages.

The most likely outcome of archaeological survey is artifacts and features related to WWII and the Japanese preparations for war beginning in the 1930s. Because this period is very well-documented, any artifacts or features recorded on survey will be evaluated against the documentary record to determine, for example, if particular artifacts can be assigned to particular military units. In the case of military features, particular attention will be paid to how complete they were during the war to provide additional information on the degree to which Japanese forces were able to dig in prior to the U.S. invasion.

6. METHODOLOGY

6.1. Pre-Field Investigations

Prior to fieldwork, HDR completed a thorough review of existing cultural resource reports and other documentation relevant to the project area and its immediate vicinity. Any previously recorded cultural properties (prehistoric or historic archaeological sites) in the project area were noted and their locations recorded.

6.2. Field Methods

The project area was surveyed by archaeologists walking multiple, parallel, and non-overlapping transects spaced at 10 m intervals. The survey entailed thorough surface inspection.

For this survey, sites were defined as any area that contained evidence of purposeful human activity as demonstrated by the presence of 10 artifacts (ceramics, ground stone, flaked stone) in a 10 x 10 m (or 100 m²) area or the presence of a feature (such as a latte).

When cultural remains were encountered, a determination was made as to whether they were an isolated occurrence (IO) or a site. IOs are isolated cultural remains that do not qualify as sites and generally consist of a single artifact or an artifact scatter that is of extremely low density and widely dispersed. When an IO was encountered, all artifacts comprising the isolate were recorded and their location plotted on a map of the project area and recorded using a Global Position System (GPS).

When sites were encountered, boundaries were defined and plotted on a scaled plan view map along with prominent landscape and cultural features. Digital photographs were taken showing the site setting, features, and artifact concentrations. Sites were plotted on the site map, and the site itself was plotted on the U.S. Geological Survey (USGS) quadrangle map. Further, the site locations were recorded using a GPS.

6.3. Artifact Recording

Ceramics and ground stone are expected to be the most common artifact classes encountered in the project areas. Proper analysis of these artifact classes is important for addressing the research issues presented above. Therefore, robust analytical methods have been devised to record and extract useful data about these artifacts.

6.3.1. Ceramic Analysis

Each sherd was examined and placed in the current ceramic typology. The main attributes recorded in the field were Type of Temper, Temper Size and Density, Surface Treatment, Vessel Form, and Thickness. All pertinent data was collected in the field and therefore surface collection was not necessary. Note that particular attention was paid to the attributes that best correlated with the island of manufacture—temper type and sherd thickness (Graves et al. 1990).

Temper type was determined by examining the consistency of the temper and determining its composition. Temper types included sand, volcanic, and calcareous sand. Temper size was determined by measuring the largest clast visible in the cross-section of a sherd. Temper density estimates were achieved by counting the total number of pieces of tempering material visible in the profile and on the surface of each sherd.

Surface treatment was determined with the aid of a magnifying glass. Evidence for surface treatment was recorded as a qualitative variable and included textured or smooth. Texture was further refined into incised, lime-impressed, or random marked.

Vessel form was determined by examining sherd characteristics including thickness and circumference. Form was recorded as simple bowl, simple jar, complex bowl, or complex jar. Simple forms have little evidence of finishing such as polishing or rim modification. Complex forms show signs of smudging, interior smoothing, and/or highly modified rims. Rims were recorded in terms of rim eversion or inversion, thickness, and decoration or surface treatment.

Thickness was measured using standard calipers. Measurements included thickness to the nearest mm and when possible, 1/10 mm.

6.3.2. Ground Stone

Ground stone artifacts identified during the survey will be analyzed to address issues relating to food processing strategies, tool use, and technology. Attributes recorded included raw material type, artifact size, form, number of facets, and the presence of pecking.

Raw materials will be recorded as the type of material from which the grinding implement was made. Basalt and limestone are expected to be the most common.

Artifact size will be measured in centimeters. Measurements of maximum length, maximum width, maximum thickness, and depth or basis will be collected. Ground stone form will be recorded as flat, shallow mortar/basin, or deep mortar. The number of identifiable facets will be counted for all ground stone and recorded as an integer. Finally, the presence of pecking or rejuvenation will be recorded as either present or absent.

6.3.3. Metal, Concrete, and Glass

Metal and glass artifacts along with concrete features encountered were from the historic period. Metal artifacts were measured, markings and manufacturing technology noted, and function determined (when possible).

Like ceramics, concrete is composed of paste and temper. Variation in temper (e.g., crushed rock, natural gravel, or sand) varied with manufacturing preferences both geographically and through time, and thus allowed for relative dating (when possible). Observations on temper included type, size, and density.

Attributes recorded for glass artifacts included color, size, markings, and frequency. Color was recorded as clear, amber (brown), green, and clear. Size was recorded in terms of container size. Markings, exterior textures, and embossing on the sides and bases were also recorded. Special attention was paid to the basal markings which were used to determine where a bottle was made and when it was made. Analysis of the markings on bottles can often determine when and where the bottles were made and thus when they may have been deposited. Examination of bottle size and the associated artifacts was used to infer the activities associated with the creation of a historic site.

6.4. Other Artifacts and Features

All other artifacts were noted and their physical properties recorded. Attributes included type of material from which the artifact was made, type, size, and evidence of use or damage. Features were measured and their manufacturing style recorded. Presence of feature fill, datable material, or additional information potential was also noted.

6.5. Evaluation Standards: National Register of Historic Places Eligibility Criteria

Upon completion of the fieldwork, data from site recording was assembled and organized, and a recommendation was made for each site based upon the NRHP eligibility criteria.

The development of NRHP eligibility recommendations follows the guidelines set forth under the National Historic Preservation Act (NHPA), Section 106 guidelines. All cultural resources were evaluated for significance using the NRHP criteria in 36 CFR 60.4. To be listed in or considered eligible for the NRHP, a cultural resource must meet at least one of the four following criteria:

- A. The resource is associated with events that have made a significant contribution to the broad pattern of history.
- B. The resource is associated with the lives of people significant in the past.
- C. The resource embodies distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic value; or represents a significant and distinguishable entity whose components may lack individual distinction.
- D. The resource has yielded, or may be likely to yield, information important in prehistory or history.

A step-by-step process for applying the criteria of 36 CFR 60.4 is described in detail in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service [NPS] 2002):

- *Categorize the property.* A property must be classified as a district, site, building, structure, or object for inclusion in the NRHP.
- *Determine which prehistoric or historic context(s) the property represents.* A property must possess significance in American history, architecture, archaeology, engineering, or culture when evaluated within the historic context of a relevant geographic area.
- *Determine whether the property is significant under the NRHP criteria.* This is done by identifying the links to important events or persons, design, or construction features, or information potential that make the property important.
- *Determine if the property represents a type usually excluded from the NRHP.* If so, determine if it meets any of the criteria considerations.
- *Determine whether the property retains integrity.* Evaluate the aspects of location, design, setting, workmanship, materials, feeling, and association that the property must retain to convey its historic significance.

In addition to meeting at least one of the above criteria, a cultural resource must also possess the majority, if not all, of the aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Integrity is defined as the authenticity of a property's historic identity, as evidenced by the survival of physical characteristics it possessed in the past, and its capacity to convey information about a culture or people, historic patterns, or architectural or engineering design or technology.

Location refers to the place where an event occurred or a property was constructed. Design considers elements such as plan, form, and style of a property. Setting is the physical environment of the property. Materials refer to the physical elements used to construct the property. Workmanship refers to the craftsmanship of the creators of a property. Feeling is the property's ability to convey its historic time and place. Association refers to the link between the property and a historic event or person.

As described in Chapter 4, the former Aslito/Isley Field, Saipan International Airport, is listed on the NRHP as an historic district for its association with the Battle of Saipan and the War of the Pacific during WWII as the “Isley Field Historic District” (NRIS No.: 81000667). For the purposes of the NRHP, a District “...possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development (NPS 1993:10).”

Not every site, building, structure, or object within the boundaries of a NRHP-eligible district contribute to the district’s overall eligibility. In order to be a contributing resource, each site, building, structure, or object within the district must be evaluated as to whether it possesses the following characteristics (NPS 1993:11):

- It was present during the period of time that the property achieved its significance.
- It relates to the documented significance of the property.
- It possesses historical integrity or is capable of yielding important information relevant to the significance of the property.

Districts may also be discontinuous, as when several historically-related sites or buildings are fragmented by modern development (NPS 1993:11). Additional guidance in dealing with districts associated with a historic battle is also relevant for evaluating Aslito/Isley Field. Because the historic event, the battle, is itself both destructive and temporary, the location, setting, feeling, and association aspects of integrity are weighted more heavily in evaluating the historic integrity of a property than for properties associated with other types of historical events. A NRHP Bulletin devoted to the evaluation of historic battlefields offers a basic test of integrity by asking whether a participant in the battle would recognize the property as it exists today (NSP 1999).

6.6. Conclusion

Following these methods ensured that the project area was thoroughly investigated and that all cultural resources comprehensively recorded. The specific data requirements for the presented research questions were collected and new data concerning the use of the area was developed. Finally, all sites found during the course of the project were evaluated pursuant to the NRHP criteria thereby guaranteeing that important sites or sites with additional information potential can be identified prior to any undertaking.

7. SURVEY RESULTS

The survey resulted in the identification of three pre-contact IOs and 10 historic features (Figure 7-1). The features include a Japanese bunker, several water catchment features, and a bottle dump. These features and materials probably date between 1935 and 1945. The three pre-contact IOs are comprised of Latte period sand-tempered sherds. IO2 consisted of a Latte period pottery sherd and a sling stone.

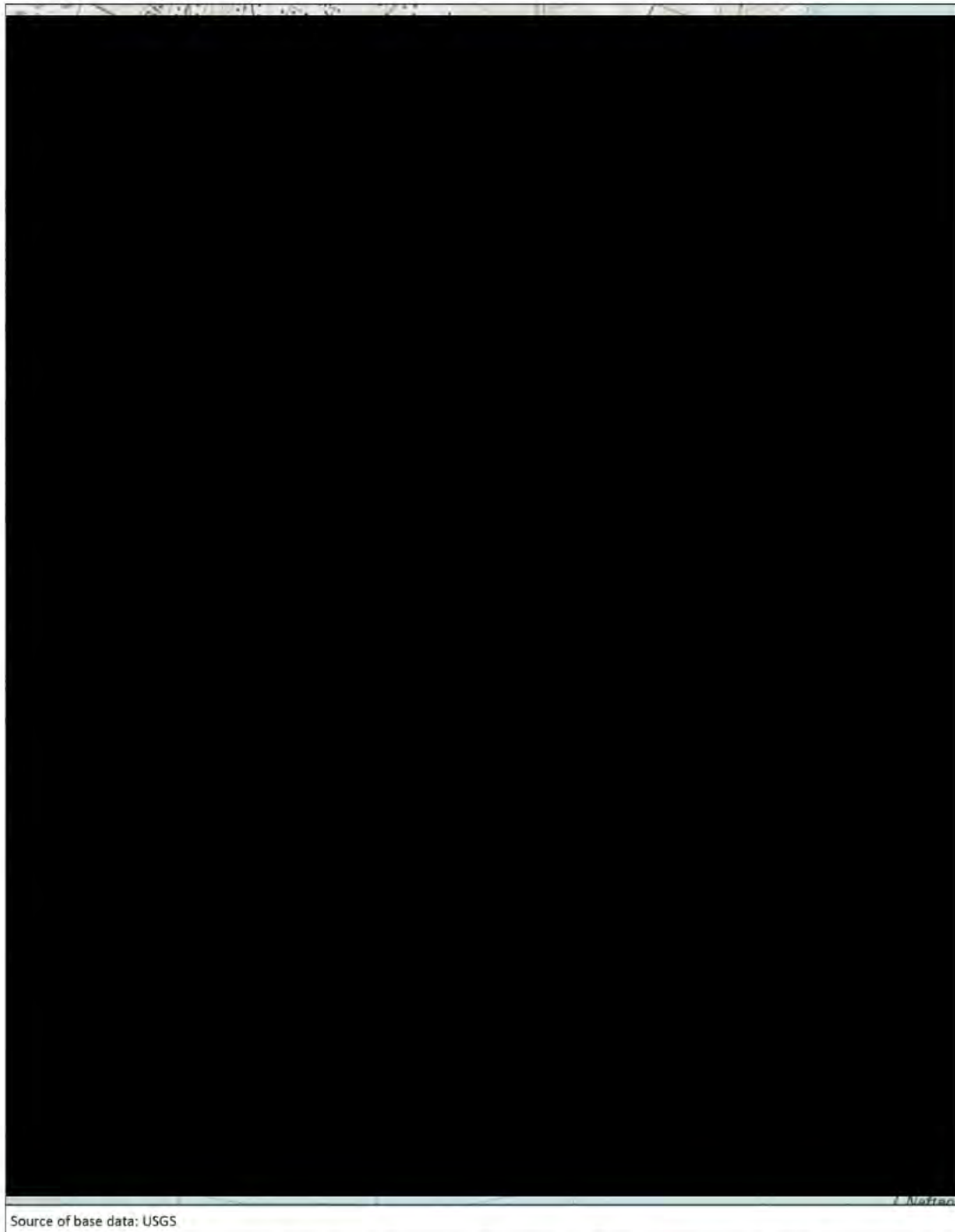


FIGURE 7-1. MAP OF SPATIALLY ISOLATED HISTORIC FEATURES AND ARTIFACTS IN THE PROJECT AREA.

7.1. Isolated Occurrences

Survey recorded three pre-contact IOs consisting of eight Latte-period sherds and one sling stone (Table 7-1). These artifacts were found within approximately 230 m of one another.

TABLE 7-1. PRE-CONTACT IOs RECORDED DURING SURVEY.

IO No.	Description	Cultural/Temporal Affiliation
IO1	1 Latte phase plainware body sherd	Latte phase
IO2	1 Latte phase plainware body sherd and 1 sling stone	Latte phase
IO3	6 Latte phase plainware sherds (5 body, 1 rim)	Latte phase

IO1 is a single Latte-phase plainware body sherd with sand temper that measures 1 x 1 x 0.5 cm [REDACTED]. IO2, [REDACTED] consists of one Latte phase ceramic sherd and one sling stone. The sherd is a plainware sand tempered sherd that measures 3 x 1.5 x 1 cm (Figure 7-2). The sling stone is 3 x 2.5 cm with rounded ends and made of igneous material with pecking evident throughout (Figure 7-3). These artifacts were in a disturbed area atop a bulldozer push pile.



FIGURE 7-2. IO2 PLAINWARE CERAMIC SHERD.



FIGURE 7-3. IO2 SLING STONE.

IO3 [REDACTED] consists of six Latte phase sherds including five body sherds and one rim sherd. The ceramic sherds are all sand tempered. A total of five body sherds and one rim sherd were identified. The rim sherd is trapezoidal in shape and is 5 x 4 x 3 x 4.5 cm and >0.5 cm thick (Figure 7-4).



FIGURE 7-4. IO3 PLAINWARE CERAMIC RIM SHERD.

The sherds observed during survey are consistent with Marianas-wide pottery technology. During the Latte phase, potters used a range of temper, including volcanic sand, calcareous sand, a mix of the two, crushed sherd temper, or no temper at all (Dickinson et al. 2001). Quartz sand or crystal temper occurs only in ceramics made on Saipan (Graves et al. 1990). Quartz sand-tempered pottery was exported throughout the islands (Dickinson et al. 2001). Saipan and Tinian ceramics are dominated by sherds with plain (unmodified and scraped) surfaces, while assemblages from Guam and possibly Rota are more mixed and have only a slight majority of one treatment (wiped or brushed surfaces) (Graves 1990). Sherds from Saipan and Tinian are considerably thicker than sherds from Guam and Rota (approximately 12 mm vs. approximately 8 mm) (Ibid.).

The sherds recorded during survey have a mix of calcareous sand and weathered volcanic sand temper, making identification of a specific island of manufacture impossible. The sherds range in thickness from 0.5 cm to 1.0 cm thick, suggesting that some may be from pots made on Guam or Rota, but this conclusion is by no means certain given that Graves' work found considerable variation in sherd thickness even on artifacts of known origin.

None of the prehistoric IOs (IO1, IO2, IO3) are recommended as eligible for listing in the NRHP under any criteria. They retain minimal information potential, most of which was exhausted through field recording, and they were located in disturbed contexts.

7.2. New Features to Isley Field Historic District

Survey recorded a large number of features and artifacts associated with the Japanese and U.S. occupations of Aslito/Isley Field between the field's construction in 1934 through the years immediately following WWII (Table 7-2).

TABLE 7-2. NEWLY IDENTIFIED ISLEY FIELD HISTORIC DISTRICT FEATURES

Feature or Artifact Number	Cultural Material	Temporal Association
Feature 1	Concrete water tower	Japanese Occupation (1934–1944)
Feature 2	Concrete foundation with drain with one Japanese porcelain sherd	Japanese Occupation (1934–1944) American Occupation (1944–1945)
Feature 3	Concrete foundation with drain	Japanese Occupation (1934–1944) American Occupation (1944–1945)
Feature 4	Concrete foundation with drain	Japanese Occupation (1934–1944) American Occupation (1944–1945)
Feature 5	Concrete slab	Japanese Occupation (1934–1944) American Occupation (1944–1945)
Feature 6	Japanese bunker	Japanese Occupation (1934–1944)
Feature 7	Water catchment feature	American Occupation (1944–1945)
Feature 8	Water catchment feature	American Occupation (1944–1945)
Feature 9	Concrete foundation	American Occupation (1944–1945)
Feature 10	Bottle dump	American Occupation (1944–1945)

Survey recorded 5 spatially isolated historic features. These features include three (Feature 2, Feature 3, Feature 4) identical 4 x 4 ft (1.2 x 1.2m) concrete structures that appear to be water catchment devices, one water retention tower (Feature 1), and one concrete foundation (Feature 5).

7.2.1. Feature 1

Feature 1 is [REDACTED] The feature is a circular concrete water retention structure. The feature is 6 ft (1.8 m) tall and 8 ft (2.4 m) in diameter with 12 inch (30.5 cm) thick walls (Figure 7-5). The feature has no roof or cap. Standing water is visible inside the feature.



FIGURE 7-5. VIEW SOUTH OF WATER RETENTION STRUCTURE (FEATURE 1).

7.2.2. Features 2, 3 and 4

Features 2, 3, and 4 are square cement foundations that measure 4 x 4 ft (1.2 x 1.2 m) (Figure 7-6). Each foundation is roughly 18 inches deep and has 1 foot wide cutouts on each side covered with wire screen (Figure 7-7). Centered in the foundations are 6-inch diameter drains (Figure 7-8). Feature 2 [REDACTED] includes one Japanese porcelain sherd located adjacent to the cement foundation. The sherd lacks maker's marks or other identifying features, but is assumed to date to the period of Japanese construction and occupation of Aslito Field. [REDACTED]

[REDACTED] The fact that the dimensions correspond to English measurements strongly suggest these three features were built by U.S. forces.



FIGURE 7-6. OVERVIEW OF FEATURE 3 (TYPICAL OF FEATURES 2, 3, AND 4).



FIGURE 7-7. FEATURE 3 DETAIL OF CONCRETE PIT EAST WALL.



FIGURE 7-8. FEATURE 3 DRAIN CENTERED FEATURES 2, 3, AND 4.

7.2.3. Feature 5

Feature 5 is [REDACTED] a rectangular cement foundation with a 20 ft north-south (6.1 m) by 40 ft east-west (12.19 m) footprint. No identifying marks or attributes were observed during the investigation. The intended use of this feature is unclear although the size is comparable to the foundations used for 20 by 40 ft Quonset huts.

In addition to the spatially isolated historic artifacts and features discussed above, survey recorded a cluster of historic features 67 m (220 ft) south of Airport Road (Figure 7-9). These features are a Japanese air raid shelter, a large cement pad or foundation, two water catchment features, and a large bottle dump. Vegetation in the area is secondary growth limestone forest with a sparse canopy and thick understory.



FIGURE 7-9. LOCATIONS OF FEATURES 6 THROUGH 10.

7.2.4. Feature 6

Feature 6 is a Japanese bunker constructed of concrete with entrances at both ends of its long axis (Figure 7-10 through Figure 7-13). The entire structure is covered with earth and limestone boulders that hide the structure from view. Six stairs, partially covered with sediment, lead down to the arched entrances. Although the entrances have provision for hinges, they lack hinges and doors. The faces of the bunker are 1.8 m (5.9 ft) wide including the 0.4 m (1.3 ft) thick walls on both ends. The stairway and open space of the entry are 1 m (3.3 ft) wide. The bottom of the set of stairs is 125 cm (49.2 in) below the current ground surface. The interior footprint of the bunker is 9.8 m (32.2 ft) long and 1.7 m (5.6 ft) wide. The bunker has an arched roof profile and vertical interior walls. The vertical portion of the interior wall rises 1.3 m (4.3 ft) from the floor to where the arched ceiling begins. The height at the peak of the ceiling is 1.7 m (5.6 ft). The bunker has five square air vents centered along the peak of the ceiling. The air vents measure 12 x 12 inches (30.5 x 30.5 cm) and are evenly distributed along the length of the bunker. The walls of the structure are 0.4 m (1.3 ft) thick. Seams from the bunker's construction are visible on the interior walls. Also present on the interior walls are two small holes (4 x 5 cm) near the floor on the northeast wall, and three nails protrude from the wall. Their function is unknown. The bunker is consistent with descriptions of army airfield shelters on other Pacific islands (Denfeld 1992). No defense gun emplacements or firing slits were identified in the bunker. Given the absence of gun emplacement it can be inferred that this bunker was intended only as a shelter. The absence of doors could indicate that this structure was not complete when American forces seized the area.

Several artifacts were present in the interior of the bunker. Two peeled logs are situated near the north end of the bunker. A 6-inch diameter ceramic pipe is situated on the floor in the center of the bunker. Also located on the floor is a Japanese amber glass bottle with "KOZAN" embossed on the shoulder and "KONDO/TOKYO" embossed on the heel (Figure 7-14). A date range for the bottle could not be determined. A whiteware rim sherd with hand-painted decoration and two metal hinges were found on the south end of the bunker floor. An aqua bottle fragment with a heel marking of "YAMASA SHOYU CO LTD." was found outside of the bunker atop the south entrance. This bottle is a soy sauce bottle; its age could not be determined.



FIGURE 7-10. INTERIOR OF JAPANESE BUNKER, FEATURE 6.

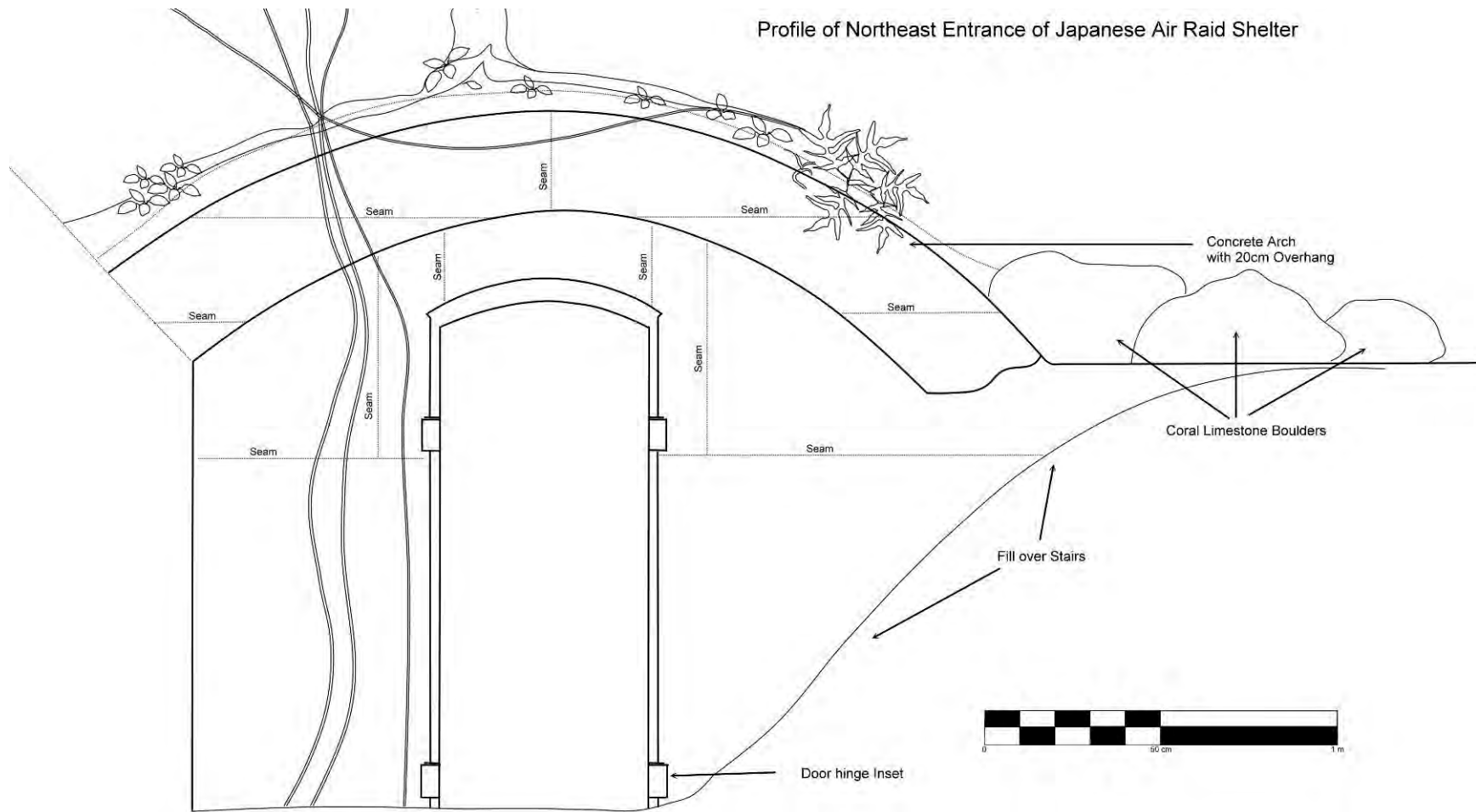


FIGURE 7-11. BUNKER ENTRANCE PROFILE.

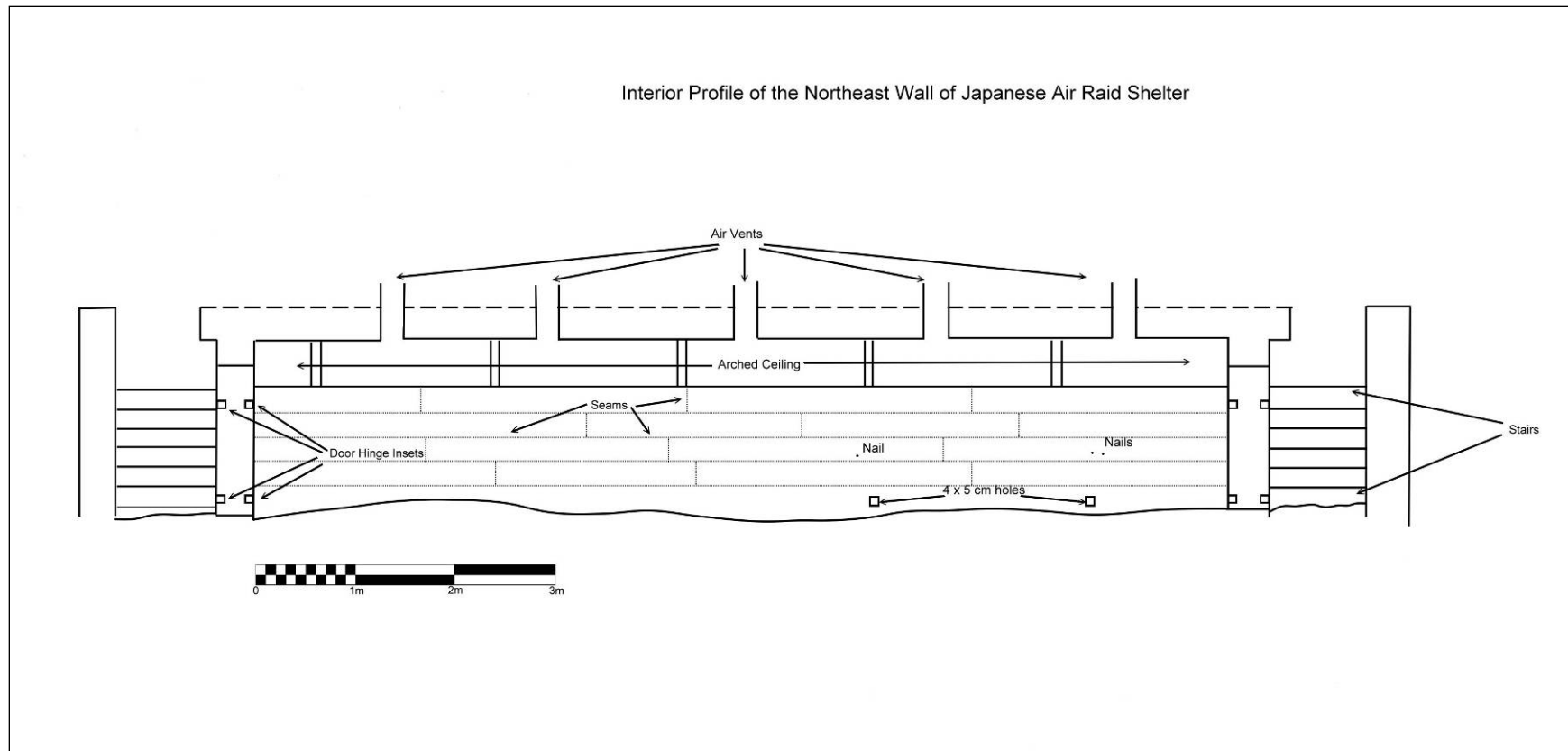


FIGURE 7-12. BUNKER INTERIOR PROFILE.

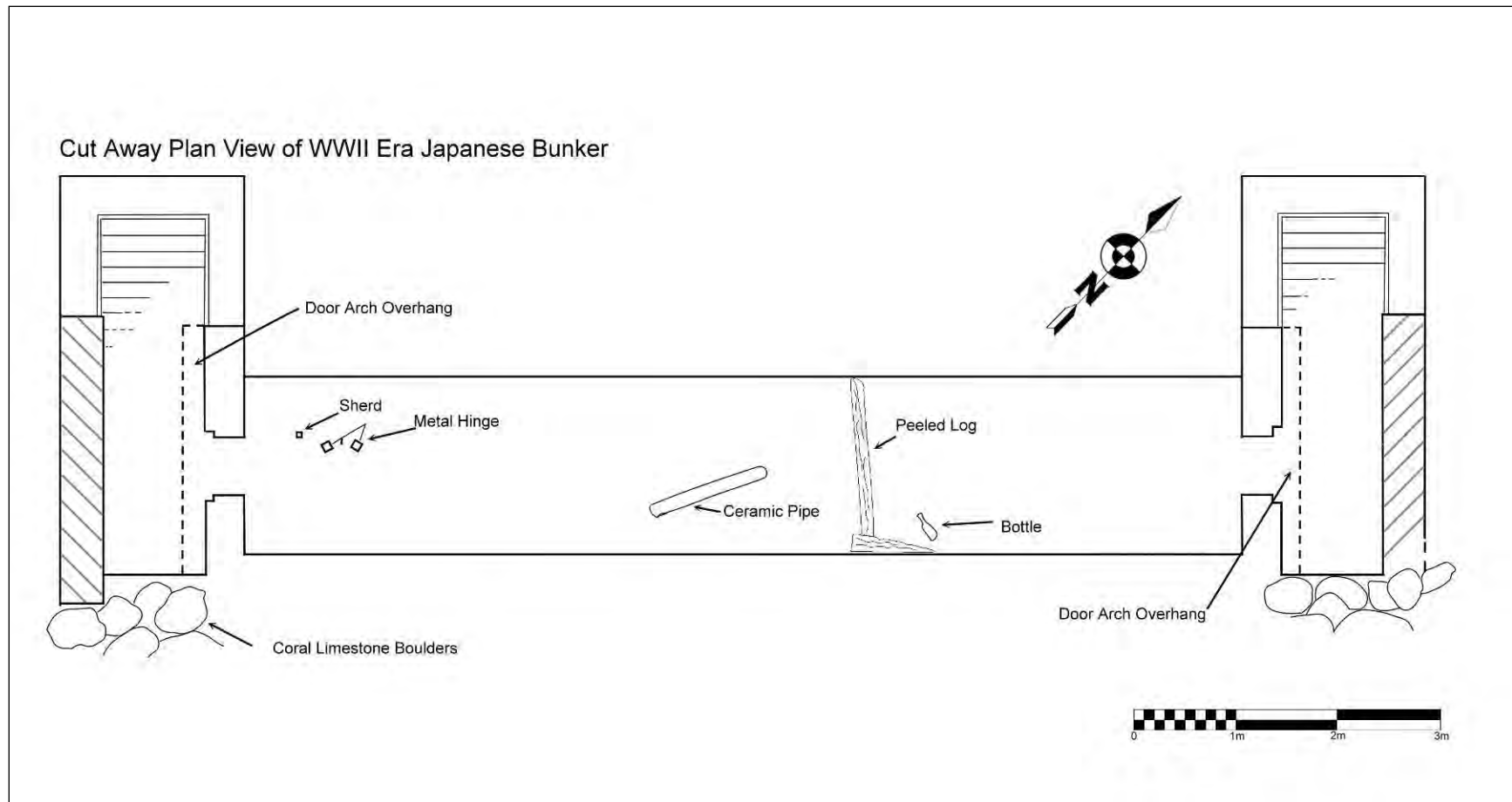


FIGURE 7-13. BUNKER PLAN VIEW.



FIGURE 7-14. JAPANESE BOTTLE INSIDE BUNKER.

7.2.5. Feature 7

Feature 7, immediately west of the bunker's west entrance, consists of four square cement pilings in a rectangular arrangement (Figure 7-15). The pilings measure 11 inches wide (27.9 cm) at ground level tapering to 9 inches (22.9 cm) at the top, and stand roughly 33 inches (83.8 cm) in height. The east-west oriented pilings are spaced 4 ft (1.2 m) apart while the north-south oriented pilings are 27 inches (68.6 cm) apart. One of the pilings retains an iron support post, while the others have corroded away. A 4 ft (1.2 m) section of 2 inch (5.1 cm) diameter hose was located on the ground surface near the pilings. The feature's function is unknown, but it likely served as a water catchment device.



FIGURE 7-15. PILINGS, FEATURE 7.

7.2.6. Feature 8

Feature 8, 15 m (49.2 ft) southwest of the bunker, consists of four cement pilings in a rectangular arrangement, a small pit, a drainage line, and a cement pad (Figure 7-16, Figure 7-17). The square pilings are 33 inches (83.8 cm) tall and taper from 9 inches (22.9 cm) at ground level to 8.5 inches (21.6 cm) at the top and are arranged in a rectangle that measures 56.5 inches (143.5 cm) east-west by 85.5 inches (217.2 cm) north-south. In the center of the pilings is a pit 20 inches (50.8 cm) deep; the western side of the pit has collapsed, exposing a concrete foundation. A roughly constructed drainage line consisting of cement and limestone cobbles begins at the northwest corner of the pit and ends at a cement pad 5.2 m west-northwest of the pilings and pit. The pad measures 8 ft (2.4 m) east-west by 6 ft (1.8 m) north-south. Feature 8 appears to be a water catchment device but its actual function is unknown. The feature's English unit measurements suggest it was built during the American occupation of the airfield.



FIGURE 7-16. PILINGS, FEATURE 8.



FIGURE 7-17. DRAINAGE LINE, FEATURE 8.

7.2.7. Feature 9

Feature 9, 30 m west of the bunker, is a concrete foundation measuring 136 ft (41.5 m) by 39 ft (11.9 m) (Figure 7-18). The foundation has a cement curb-like border around its perimeter. The cement boundary is 3 in (7.6 cm) high and 4 in (10.2 cm) wide. It is assumed that this feature is related to the American development of the airfield due to its English-unit dimensions.



FIGURE 7-18. CONCRETE PAD, FEATURE 9.

7.2.8. Feature 10

Feature 10 is a dump of approximately 364 glass bottles and other refuse (Figure 7-19). The bottles include short-neck amber beer bottles, long-neck amber beer bottles, short-neck clear beer bottles, whiskey bottles, and soda bottles. The dump measures roughly 30 m (100 ft) x 20 m (65 ft). It lies in an eroded area of deflated topsoil suggesting that the trash deposits are neither stratified nor deep and that the surface area represents its full extent. There are two distinct concentrations of bottles (concentration A and concentration B). Concentration A is 10 m (32 ft) in diameter and contains 328 bottles (Table 7-3). The concentration consists of 190 short-neck amber beer bottles, 129 short-neck clear beer bottles, 7 Coca-Cola bottles, 1 green club soda bottle, and 1 amber cork top whiskey bottle. Concentration B is 5 m (16 ft) in diameter and contains 36 bottles (Table 7-4). The bottles include 35 long-neck amber beer bottles and one clear glass Pepsi-Cola bottle. A ceramic plate and a small tire were also found in association with the bottle dump. The plate fragment in the refuse scatter was a piece of Shenango china, manufactured by the New Castle Pottery Company of New Castle, Pennsylvania (Figure 7-20). The company was in operation from 1913–1991 (Lawrence County Historical Society 2011). The maker's mark is a "fouled anchor." This type of hollowware was used by the U.S. Navy and Merchant Marines from the early 1900s to the 1970s as fine china for formal dinner service.



FIGURE 7-19. BOTTLE DUMP, FEATURE 10.

TABLE 7-3. CONCENTRATION A.

Count	Artifact Type	Description	Manufacture Date
190	Short-neck amber beer bottles	12 oz., basal mark of Armstrong Cork CO., Glass Division, Lancaster, Pennsylvania	1938–1969
129	Short-neck clear beer bottles	12oz., basal mark of Knox Glass Bottle CO., Knox, Pennsylvania	1917–1956
7	Clear glass bottles	10 oz., Coca-Cola bottles, Trademarked	1941–1960s
1	Green glass bottle	16 oz., Clicquot Club Soda bottle with Owens Illinois basal mark, plant 23, Los Angeles, California	1946
1	Amber cork top bottle	16 oz. amber whiskey bottle, basal mark of Owens Illinois	1947

TABLE 7-4. CONCENTRATION B.

Count	Artifact Type	Description	Manufacture Date
35	Long-neck amber beer bottles	12 oz., basal mark of Thatcher Manufacturing Company.	1946
1	Clear glass bottle	Pepsi-Cola	1940s



FIGURE 7-20. SHENANGO CHINA PLATE FOUND IN FEATURE 10.

7.2.9. Feature 11

Feature 11 is [REDACTED] Two Japanese air raid bunkers (AB7 and AB8, discussed below) are just to the north. The feature is a rectangular cement pad or foundation that measures 120 ft (36.6 m) long by 20 ft (6.1 m) wide and is oriented SW-NE. No identifying marks or attributes were observed during the investigation. The intended use of this feature is unclear.

7.2.10. Hardstands

When completed in 1944 for use during WWII, Isley Field had 181 keyhole-shaped asphalt hardstands for B-29 bombers connected by a series of taxiways (Figure 7-21). The 1980 Micronesian Archaeology Survey recorded 65 surviving hardstands (Denfeld and Russel 1984). The Micronesian Archaeological survey focused on central Isley Field, which contained the majority of the historic standing structures. The HDR survey encountered portions of B-29 hardstands. While the hardstands are technically part of the Historic District it is unclear if they are actually contributing elements. The issue resides in their integrity and whether they retain significant integrity to convey their significance. In order for a property to be eligible under NRHP criteria it must look much like it did during its period of significance. The property should retain integrity of location, setting and feeling. In the case of the hardstands the sections in the northeast and south of the main runway retain integrity of location. The hardstands near the main airport have been seriously compromised by construction of roads, airport facilities, and the like. These same impacts have significantly impaired integrity of setting and feeling. Thus, while remnants of hardstands exist in and around the project area they should not be considered contributing elements since they lack the necessary integrity.

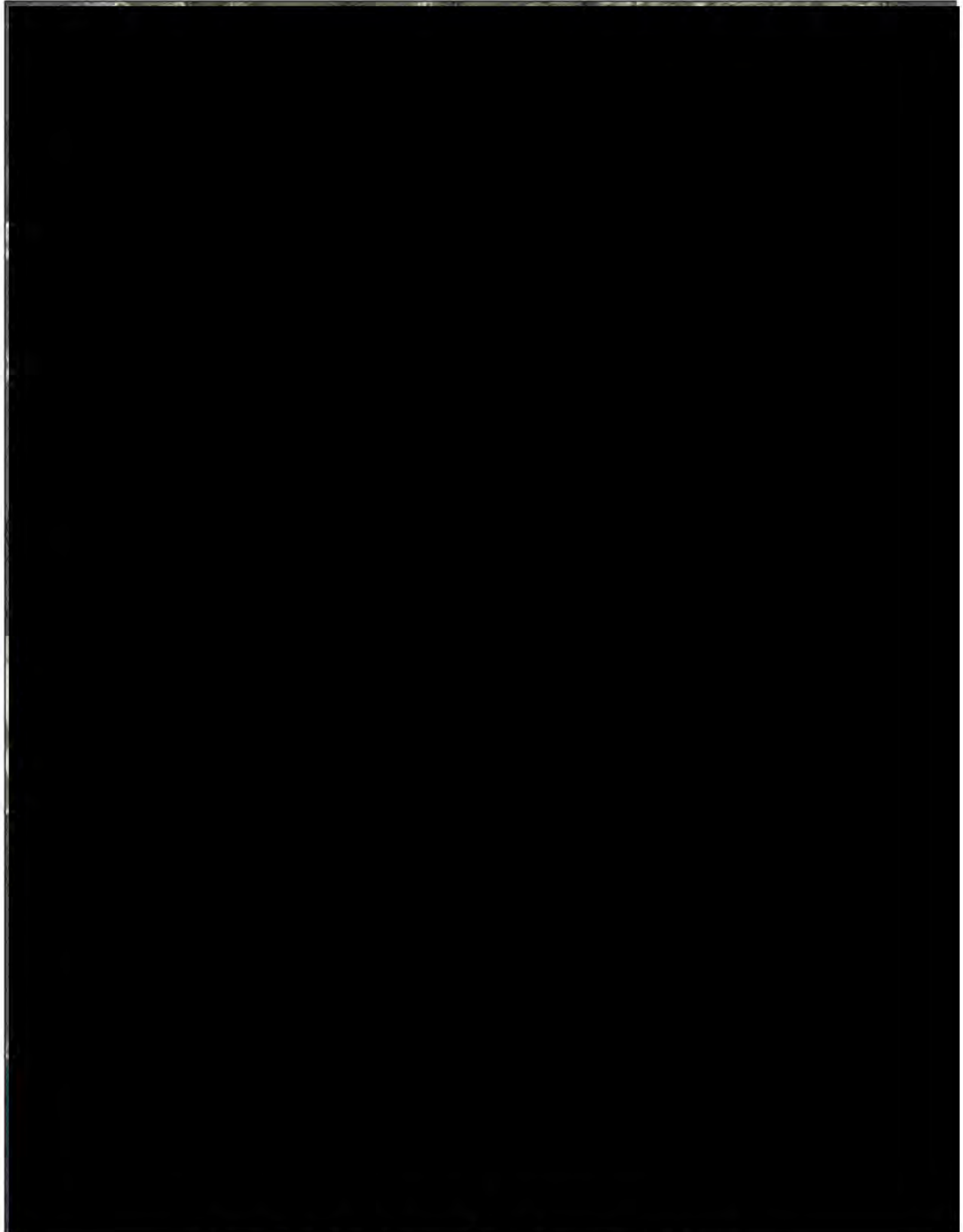


FIGURE 7-21. MAP OF HISTORIC B-29 HARDSTAND LOCATIONS.

7.2.11. Japanese Bunkers at Isley Field

There are six extant Japanese bunkers [REDACTED]

[REDACTED] The bunkers are essentially identical in shape and construction. The evaluated bunkers measure 19 m long by 3 m wide by 2 m tall and are constructed of reinforced concrete. The bunkers consist of four vaulted bays. The main bays are long and narrow and have three openings. The fenestration pattern consists of a window:door:window pattern on one side of the structure and a door:window:door pattern on the other. The windows of the window:door:window pattern faces are usually offset from the door so that they are as far apart as possible within the structural constraints of the building, but in one case the windows are placed closer together (Bunker AB2, Figure 7-2424). This deviation from the normal pattern may have been functional or may have been due to the misplacement of precast elements during construction. The doors are fronted by wall segments that are 4 m long, 1 m thick, and 2 m tall and 0.6 m away from the doorways to form short, narrow access corridors. These walls are inferred to have been blast shields.

The asymmetry of fenestration discussed above in which one side of the structure exhibits a window:door:window pattern (two window or 2w) and the other side a door:window:door (1w) pattern gives the structures a directional aspect. In general, and viewed from a specific vantage point, each bunker can be flipped so that it faces that vantage point with either its 2w or 1w side. [REDACTED]

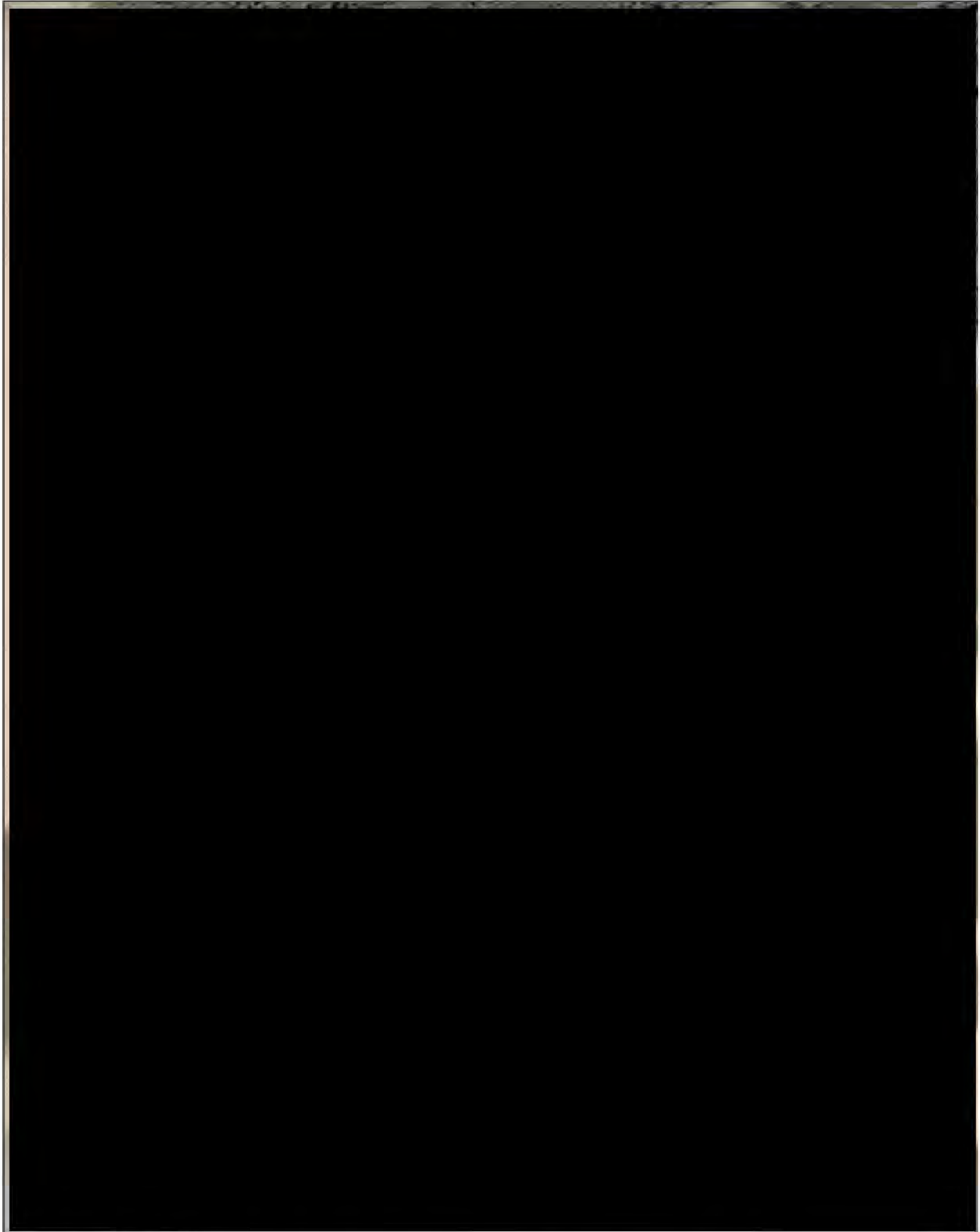
The bunkers have a standardized orientation. Structures AB1, AB2, and AB3 are oriented [REDACTED] at an 80° azimuth (az). AB1 is the easternmost bunker [REDACTED] AB2 stands 150 m away to the west-southwest (250°) and AB3 stands 180 m from AB2 at an azimuth of 260°.

[REDACTED] The other three bunkers evaluated during this study are much closer together [REDACTED]

[REDACTED] These three bunkers are oriented exactly north-south. From the north AB4 stands at [REDACTED] and AB5 stands just 50 m south [REDACTED] AB6 is offset from AB4 and AB5 to the west [REDACTED]. It is located 40 m to the west and 10 m to the south of AB5. Modern repair sheds that abut the bunker have adversely effected AB6's conservation and it is arguably the least well preserved bunker considered here.

[REDACTED] AB7 is the southernmost of these bunkers [REDACTED] These bunkers (AB7 and AB8) are the most deteriorated of those evaluated during the survey. Vandalism has adversely effected their conservation [REDACTED]

¹ UTM Zone 55P, datum WGS 84



Source of base data: ESRI 2011

FIGURE 7-22. MAP OF JAPANESE BUNKER LOCATIONS.

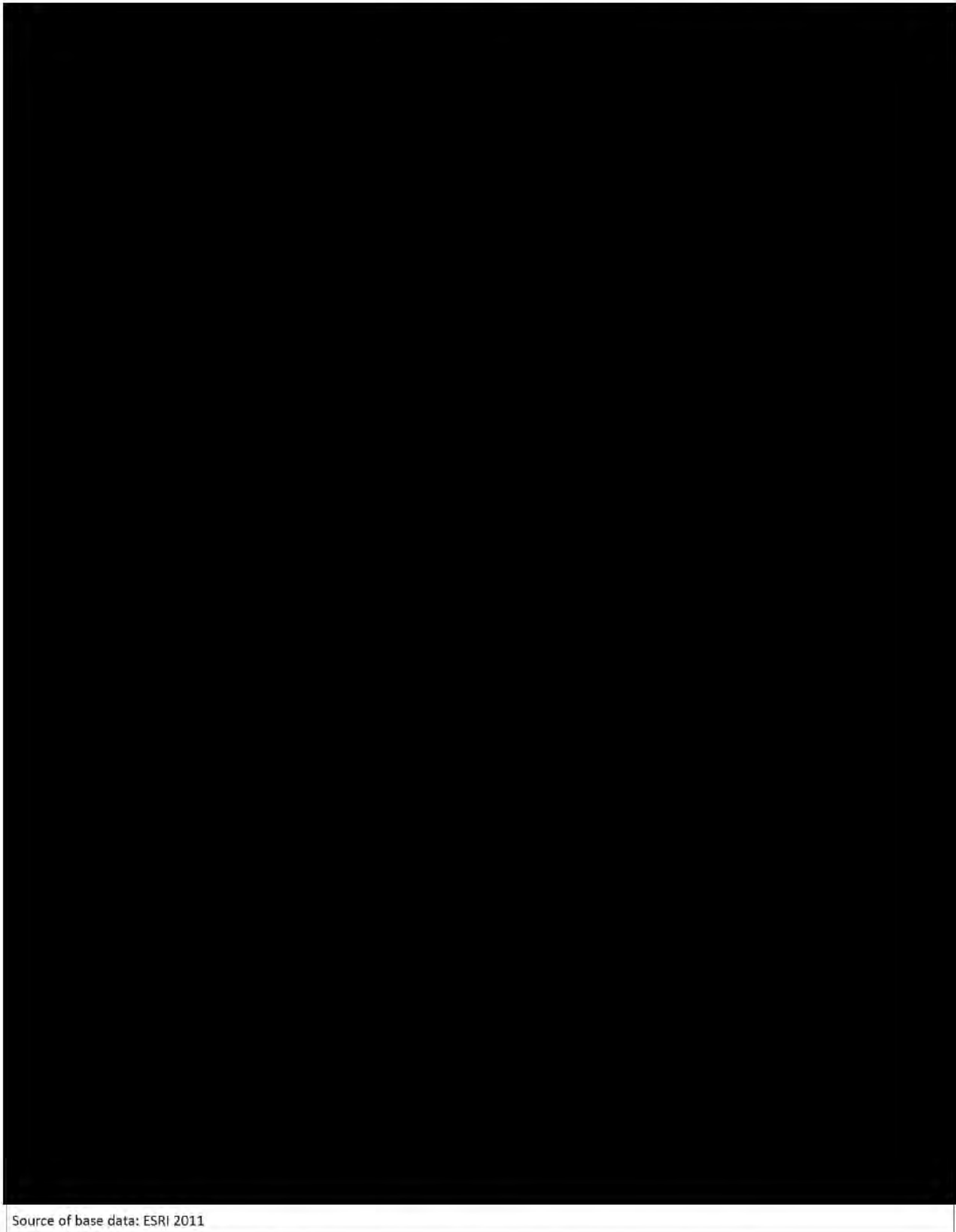


FIGURE 7-23. MAP OF JAPANESE BUNKER LOCATIONS (CONTINUED).



FIGURE 7-24. VIEW SOUTHEAST OF BUNKER AB2.

8. DISCUSSION

8.1. Analysis of Prehistoric Period Resources

The project's research questions for the prehistoric period involve the relationship between interior land use patterns and the greater forces that led to that landscape use. The potential causes included population pressures, competition for resources, and environmental change. During the Pre-Latte phase, populations were small and concentrated in coastal areas close to marine resources (Cunningham 1992). During the Latte phase (A.D. 800/1000–Contact) the archaeological record shows an increase in population. This increase coincides with lower sea levels and El Nino and La Nina weather patterns. Records from Guam, Yap, and Saipan indicate the net difference was about 0.6 m (Lander 2004). The change in sea level provided more inhabitable coastline which added marine food sources and thus stimulated an increase in population. Population increase would have increased demand and competition for marine resources and coastal farmland, necessitating expansion of inland hunting, gathering, and agriculture. The severity of the period's ENSO events would have reduced the reliability of coastal resource yields. An increase in typhoons and tropical storm surges associated with large-scale climate patterns would have altered coastal habitat. For example, bivalve species from Latte-phase shell middens indicate silty habitats that could have resulted from erosion caused by severe storms (Amesbury 1996); storm-related erosion could also have damaged lowland areas suited to agriculture. In addition, populations may have moved inland for shelter from frequent storms.

Although survey recorded very few prehistoric artifacts, these artifacts are consistent with increased interior landscape use. The remains of pottery are indicative of interior use for resource collection or storage. The sling stone is consistent with either hunting or with conflict over inland territory. Unfortunately, the modification of the project area by the bombardment of the island prior to the U.S. invasion and by the construction of Aslito/Isley Field destroyed any evidence that may have existed of prehistoric agricultural fields, occupation sites, or short-term activity areas, making interpretation of the prehistoric archaeological record difficult.

8.2. Analysis of Historic Period Resources

The research questions for historic-period cultural resources involved the Japanese occupation of the island prior to and during WWII. Survey recorded no historic artifacts or features that date to before the construction of Aslito Field, and the project's results therefore do not allow for evaluation of the research questions involving the effects of Japanese colonists and colonial-era landscape use on Chamorro and Carolinian population's subsistence and settlement patterns.

The project also sought to evaluate the extent to which Japanese forces were able to prepare for the U.S. invasion during WWII. Japan expected U.S. forces to attack Palau before the Marianas, and did not begin preparing facilities in the Mariana Islands for invasion until February 1944, only five months before the U.S. invasion. Aslito Field served as the principal airbase in the Marianas functioning as a fighter field and a forward maintenance facility. The field was defended by 2 medium anti-aircraft guns, and 11 medium anti-aircraft guns were located south of the field. In February 1944 Japan began reinforcing the 1,500 military personnel on Saipan, and 31,000 troops were in place when U.S. forces arrived. However, U.S. submarines took a heavy toll on Japanese vessels, severely disrupting the transport of construction equipment and military hardware from Japan to the Marianas. Although Saipan had many pillboxes, blockhouses, and other fortifications, several large guns were not emplaced, and Aslito Field had no ground defenses. In addition, the airfield had no provisions for demolition if threatened with capture, so U.S. forces were able to begin using the facility soon after the invasion.

This incomplete preparation for invasion by Japanese forces may be the reason for the incomplete state of the Japanese airfield defense bunker recorded during the current survey. Although the bunker is basically

complete and covered in earth and limestone boulders, it lacks doors. There are two likely explanations. One is that the doors were never installed because they were lost in transport from Japan due to U.S. attacks on supply ships. The alternative is that the doors were removed as scrap metal after the war, but the other six bunkers that were evaluated as part of the survey still have their doors, making this explanation less likely.

Survey also recorded several features that were probably built by U.S. forces after the capture of Aslito Field. The strategic location of the Marianas for B-29 bomber missions to Japan meant that the U.S. military began improving and expanding Aslito Field soon after the invasion. These improvements included 181 hardstands and associated taxiways but also included a large number of quickly built structures. The concrete pedestals and pads recorded during survey are probably supports for temporary buildings and provisions for water supply and wastewater removal for U.S.-built structures. Concrete slabs comparable in size to the one recorded during the current survey have been identified as Quonset hut briefing rooms (Grant et al. 2007). The bottles in the bottle dump recorded during survey were made between 1938 and 1969 but were probably left at Isley Field during the field's occupation by the U.S. military between 1944 and 1949. However, these features and artifacts do not expand in any substantive way on the history of Isley Field as preserved in the documentary record and as known through the material record of hardstands, runways, standing buildings, and other features.

9. RECOMMENDATIONS

The study area is contained within the boundaries of the NRHP-listed Isley Field Historic District (NRIS No.: 81000667), which itself is included in the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Landmark (NHLS No.: 85001789). The cultural resources identified during survey were evaluated first according to whether or not they are contribute to the overall eligibility of the historic district/National Historic Landmark (District). As discussed in Section 6.5, sites, buildings, structures, or objects within the District need to meet the following criteria to be considered a contributing resources:

- It must have been present during the period of time that the property achieved its significance. In this case the Japanese build-up during WWII (1934-1944), the Battle of Saipan, or the American occupation after the battle (1944-1945).
- It relates to the documented significance of the property, in this case Japanese and American military use during WWII.
- It possesses historical integrity or is capable of yielding important information relevant to the significance of the property.

Cultural resources not identified as contributing elements of the District were evaluated on their own according to the guidelines outlined in Section 6.5 (NPS 2002).

All but three cultural resources recorded by the survey date to either the Japanese or American occupations of the airfield during WWII and served a military purpose therefore meeting the first two criteria for consideration as resources that contribute to the district. Less clear, however, is the third criteria – whether or not the resource possesses historical integrity or is capable of yielding important information relevant to the significance of the property. Most of the WWII-related sites, buildings, or structures possess integrity or information potential and therefore contribute to the District, however, HDR identified five exceptions (Table 9-1). These resources are excluded due to their lack of integrity.

TABLE 9-1. FEATURES ASSOCIATED WITH THE DISTRICT'S PERIOD OF SIGNIFICANCE.

Feature or Artifact Number	Cultural Material	Temporal Association	NRHP Eligibility Criteria	Integrity							NHL Contributing Resource?
				Location	Design	Setting	Materials	Workmanship	Feeling	Association	
Feature 1	Concrete water tower	Japanese Occupation (1934-1944)	A	x	x		x				N
Feature 2	Concrete foundation with drain with one Japanese porcelain sherd	American Occupation (1944-1945)	A, D	x	x	x	x	x	x	x	Y
Feature 3	Concrete foundation with drain	American Occupation (1944-1945)	A		x		x	x			N
Feature 4	Concrete foundation with drain	American Occupation (1944-1945)	A, D	x	x	x	x	x	x	x	Y
Feature 5	Concrete slab	American Occupation (1944-1945)	A	x	x		x				N
Feature 6	Japanese bunker	Japanese Occupation (1934-1944)	A, D	x	x	x	x	x	x	x	Y
Feature 7	Water catchment feature	American Occupation (1944-1945)	A, D	x	x	x	x	x	x	x	Y
Feature 8	Water catchment feature	American Occupation (1944-1945)	A, D	x	x	x	x	x	x	x	Y
Feature 9	Concrete foundation	American Occupation (1944-1945)	A	x	x		x	x			N
Feature 10	Bottle dump	American Occupation (1944-1945)	A, D	x		x	x		x	x	Y
Feature 11	Concrete pad	Japanese Occupation (1934-1944) American Occupation (1944-1945)	A	x	x		x				N
Hardstands	Concrete roads and parking aprons for B-29s	American Occupation (1944-1945)	A	x	x		x				N
AB1	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB2	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB3	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB4	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB5	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB6	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB7	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y
AB8	Japanese bunker	Japanese Occupation (1934-1944)	A	x	x		x	x		x	Y

9.1. Features Found Ineligible for Inclusion to the District as Contributing Elements

9.1.1. Feature 1

This concrete water tower's function and role in military use of the airfield during WWII is clear and other than its ability to yield important information relevant to the significance of the property beyond what is already known is minimal. Although its association with WWII and, therefore, its eligibility under Criterion A is established the resource lacks three of the recommended aspects of integrity (see Chapter 6): setting, feeling, and association. The structure is in a badly decayed state and lies at the edge of fuel storage area where its setting and association is greatly compromised.

9.1.2. Feature 3

We identified three of these concrete foundations with drains during the survey, each of them identical. The other two, Features 2 and 4, are associated with one another and therefore, when taken together, could provide some information on wartime water delivery and drainage systems. Because Feature 3 is isolated from other such structures its historical integrity and information potential are compromised.

9.1.3. Features 5, 9, and 11

All three of these features are concrete pads or foundation of some kind. All lack superstructures or any other identifying characteristics. They differ in size and probably differed in original function. All are badly decayed and becoming buried by overburden and vegetation. Other than their size and location, which is already recorded in this report, they have little information to yield relevant to the significance of the District. Further, because they lack superstructures or other identifying characteristics they lack key aspects of integrity such as setting, feeling, and association. Applying the NPS's rule of thumb, would a participant in the battle recognize these features as they exist today, the answer would undoubtedly be "no".

9.1.4. Hardstands

Much the same can be said for the hardstands as can be said for the concrete pads and foundations identified as Features 5, 9, and 11 and these have been subjected to many of the same assaults due to neglect. The hardstand system has been significantly compromised by recent development and vegetation. These impacts limit the feature's ability to convey the full picture necessary to be considered a contributing element. That said, the hardstand systems, northeast and south of the runways may retain sufficient integrity and therefore may be contributing elements. However, again, vegetation growth and decay have significantly affected integrity of setting and feeling. It is recommended that a portion of the hardstands, most likely the portion northeast of the runways be preserved.

TABLE 9-2. PREHISTORIC ISOLATED OCCURANCES.

Feature or Artifact Number	Cultural Material	Temporal Association
IO1	One body sherd.	Latte phase (A.D. 800/1000-Contact)
IO2	One body sherd and one sling stone.	Latte phase (A.D. 800/1000-Contact)
IO3	Five body sherds and one rim sherd.	Latte phase (A.D. 800/1000-Contact)

9.2. Prehistoric Isolated Occurrences

The three prehistoric period IOs (IO1, IO2, and IO3) do not date to the District's period of significance and therefore are not contributing elements to the District. These resources were, therefore, evaluated for eligibility on the NRHP in their own right. Prehistoric archaeological sites and materials are generally evaluated under Criterion D, their ability to yield "...information important in prehistory or history."

Under this criterion the IOs recorded during the survey are recommended as not eligible for listing on the NRHP (Table 9-2). The artifacts are spatially isolated and in extremely disturbed contexts. They do not retain integrity of location and do not have the potential to yield additional information about the prehistory of Saipan. No further management action is necessary for these resources.

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**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
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JUN 09 2015

Ms. Kate Kerr
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington DC 20001-2637

Dear Ms. Kerr

We are contacting you to seek your input regarding revisions to a proposed Undertaking involving infrastructure improvements on Tinian and Saipan to facilitate U.S. Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting your input on the revised Area of Potential Effects (APE) as described below and in Attachment 1.

This letter is intended to (a) formally request continued participation in Section 106 consultation, pursuant to 36 CFR 800.3; (b) provide detailed information on the current scope and scale of the revised Undertaking; (c) seek your input on the APE for the Undertaking as now defined; (d) discuss the proposed timeline for Section 106 consultation; (e) describe our plan for public involvement in finalizing the Section 106 process, and finally; (f) to seek your assistance in identifying any additional consulting parties or current consulting parties who may no longer wish or be able to participate, or whose participation is no longer warranted due to the current scale and scope of the Undertaking and resulting APE.

Revised Undertaking and Area of Potential Effects (APE): PACAF provided descriptions of the Undertaking and resulting APE determination to consulting parties on September 11, 2012. These descriptions were based on the alternatives to be considered during the NEPA process and were the basis for subsequent Section 106 consultation. Since then, through evaluation of project alternatives in the June 2012 Draft EIS (DEIS), comments provided as part of the Section 106 and NEPA processes as well as ongoing discussions between my office and CNMI officials, we

have determined it necessary to revise the Undertaking and APE to reflect modified versions of the alternatives presented in the previous DEIS. A detailed description of the revised Undertaking is provided in Attachment 1. Based on the revised Undertaking we have also revised the APE for the Divert Activities and Exercises proposal (also discussed in Attachment 1). The purpose of the Undertaking is to improve facilities and infrastructure to support divert landings, joint military exercises, and humanitarian assistance since there is not an existing divert airfield on U.S. territory in the western Pacific that is designed and designated to provide strategic operational and exercise capabilities for U.S. forces when needed and humanitarian assistance and disaster relief in times of natural or man-made disasters.

Proposed Schedule for Continued Consultation: We are seeking input from SHPO on our proposed schedule. We will seek comments from consulting parties and the interested public on the description of the revised Divert Undertaking, revised APE, identification of historic properties, and adequacy of our efforts to assess and resolve adverse effects to historic properties. Our proposed schedule for continued consultation can be found in Attachment 2.

If you have any questions regarding this consultation, please contact Mr. William Grannis at (808) 449-4049 or by email at william.grannis@us.af.mil.

Very Respectfully



STEVEN L. BASHAM
Brigadier General, USAF
Director of Strategy, Plans & Programs

2 Attachments:

1. Description of Revised Undertaking and Area of Potential Effect (APE)
2. Proposed Schedule for Continued Section 106 Consultation



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
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JUN 09 2015

Chairman Pedro Jun Duenas
c/o Division of Historic Preservation, Dept. of Cultural and Community Affairs
CNMI Government
P.O. Box 500090CK
Saipan, MP 96950

Dear Mr. Duenas

We are contacting you to seek your input regarding revisions to a proposed Undertaking involving infrastructure improvements on Tinian and Saipan to facilitate U.S. Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting your input on the revised Area of Potential Effects (APE) as described below and in Attachment 1.

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and NEPA processes as well as ongoing discussions between my office and CNMI officials, we have determined it necessary to revise the Undertaking and APE to reflect modified versions of the alternatives presented in the previous DEIS. A detailed description of the revised Undertaking is provided in Attachment 1. Based on the revised Undertaking we have also revised the APE for the Divert Activities and Exercises proposal (also discussed in Attachment 1). The purpose of the Undertaking is to improve facilities and infrastructure to support divert landings, joint military exercises, and humanitarian assistance since there is not an existing divert airfield on U.S. territory in the western Pacific that is designed and designated to provide strategic operational and exercise capabilities for U.S. forces when needed and humanitarian assistance and disaster relief in times of natural or man-made disasters.

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If you have any questions regarding this consultation, please contact Mr. William Grannis at (808) 449-4049 or by email at william.grannis@us.af.mil.

Very Respectfully



STEVEN L. BASHAM
Brigadier General, USAF
Director of Strategy, Plans & Programs

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**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
JBPH-H HI 96853-5420

JUN 09 2015

Mr. Mark McClardy
FAA Airports Division Manager
Western-Pacific Region (AWP-600)
P.O. Box 92007
Los Angeles, CA 90009

Dear Mr. McClardy

We are contacting you to seek your input regarding revisions to a proposed Undertaking involving infrastructure improvements on Tinian and Saipan to facilitate U.S. Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting your input on the revised Area of Potential Effects (APE) as described below and in Attachment 1.

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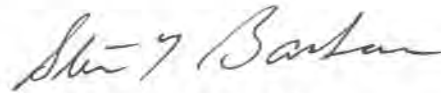
Revised Undertaking and Area of Potential Effects (APE): PACAF provided descriptions of the Undertaking and resulting APE determination to consulting parties on September 11, 2012. These descriptions were based on the alternatives to be considered during the NEPA process and were the basis for subsequent Section 106 consultation. Since then, through evaluation of project alternatives in the June 2012 Draft EIS (DEIS), comments provided as part of the Section 106 and NEPA processes as well as ongoing discussions between my office and CNMI officials, we

have determined it necessary to revise the Undertaking and APE to reflect modified versions of the alternatives presented in the previous DEIS. A detailed description of the revised Undertaking is provided in Attachment 1. Based on the revised Undertaking we have also revised the APE for the Divert Activities and Exercises proposal (also discussed in Attachment 1). The purpose of the Undertaking is to improve facilities and infrastructure to support divert landings, joint military exercises, and humanitarian assistance since there is not an existing divert airfield on U.S. territory in the western Pacific that is designed and designated to provide strategic operational and exercise capabilities for U.S. forces when needed and humanitarian assistance and disaster relief in times of natural or man-made disasters.

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If you have any questions regarding this consultation, please contact Mr. William Grannis at (808) 449-4049 or by email at william.grannis@us.af.mil.

Very Respectfully



STEVEN L. BASHAM
Brigadier General, USAF
Director of Strategy, Plans & Programs

2 Attachments:

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2. Proposed Schedule for Continued Section 106 Consultation



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

JUN 09 2015

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
JBPH-H HI 96853-5420

The Honorable Joey P. San Nicolas
Mayor of Tinian
P.O. Box 520059 San Jose,
Tinian, MP 96952

Dear Mayor San Nicolas

We are contacting you to seek your input regarding revisions to a proposed Undertaking involving infrastructure improvements on Tinian and Saipan to facilitate U.S. Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting your input on the revised Area of Potential Effects (APE) as described below and in Attachment 1.

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Sincerely



STEVEN L. BASHAM
Brigadier General, USAF
Director of Strategy, Plans & Programs

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DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
JBPH-H HI 96853-5420

JUN 09 2015

Patricia Neubacher, Regional Director
National Park Service
333 Bush Street, Suite 500
San Francisco, CA 94104-2828

Dear Ms. Neubacher

We are contacting you to seek your input regarding revisions to a proposed Undertaking involving infrastructure improvements on Tinian and Saipan to facilitate U.S. Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting your input on the revised Area of Potential Effects (APE) as described below and in Attachment 1.

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Very Respectfully



STEVEN L. BASHAM
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Director of Strategy, Plans & Programs

2 Attachments:

1. Description of Revised Undertaking and Area of Potential Effect (APE)
2. Proposed Schedule for Continued Section 106 Consultation



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
JBPH-H HI 96853-5420

JUN 09 2015

Rear Admiral Bette Bolivar
CDR, Joint Region Marianas
PSC 455 Box 211
FPO AP, Guam 96540

Dear Admiral Bolivar

We are contacting you to seek your input regarding revisions to a proposed Undertaking involving infrastructure improvements on Tinian and Saipan to facilitate U.S. Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting your input on the revised Area of Potential Effects (APE) as described below and in Attachment 1.

This letter is intended to (a) formally request continued participation in Section 106 consultation, pursuant to 36 CFR 800.3; (b) provide detailed information on the current scope and scale of the revised Undertaking; (c) seek your input on the APE for the Undertaking as now defined; (d) discuss the proposed timeline for Section 106 consultation; (e) describe our plan for public involvement in finalizing the Section 106 process, and finally; (f) to seek your assistance in identifying any additional consulting parties or current consulting parties who may no longer wish or be able to participate, or whose participation is no longer warranted due to the current scale and scope of the Undertaking and resulting APE.

Revised Undertaking and Area of Potential Effects (APE): PACAF provided descriptions of the Undertaking and resulting APE determination to consulting parties on September 11, 2012. These descriptions were based on the alternatives to be considered during the NEPA process and were the basis for subsequent Section 106 consultation. Since then, through evaluation of project alternatives in the June 2012 Draft EIS (DEIS), comments provided as part of the Section 106 and NEPA processes as well as ongoing discussions between my office and CNMI officials, we

have determined it necessary to revise the Undertaking and APE to reflect modified versions of the alternatives presented in the previous DEIS. A detailed description of the revised Undertaking is provided in Attachment 1. Based on the revised Undertaking we have also revised the APE for the Divert Activities and Exercises proposal (also discussed in Attachment 1). The purpose of the Undertaking is to improve facilities and infrastructure to support divert landings, joint military exercises, and humanitarian assistance since there is not an existing divert airfield on U.S. territory in the western Pacific that is designed and designated to provide strategic operational and exercise capabilities for U.S. forces when needed and humanitarian assistance and disaster relief in times of natural or man-made disasters.

Proposed Schedule for Continued Consultation: We are seeking input from SHPO on our proposed schedule. We will seek comments from consulting parties and the interested public on the description of the revised Divert Undertaking, revised APE, identification of historic properties, and adequacy of our efforts to assess and resolve adverse effects to historic properties. Our proposed schedule for continued consultation can be found in Attachment 2.

If you have any questions regarding this consultation, please contact Mr. William Grannis at (808) 449-4049 or by email at william.grannis@us.af.mil.

Sincerely



STEVEN L. BASHAM
Brigadier General, USAF
Director of Strategy, Plans & Programs

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DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

Brigadier General Steven L. Basham
HQ PACAF A5/8
25 E Street, Suite L-213
JBPH-H HI 96853-5420

JUN 09 2015

Ms. Merti Kani
State Historic Preservation Officer
Department of Community and Cultural Affairs
Commonwealth of the Northern Mariana Islands
P.O. Box 500090 CK
Saipan, MP96950

Dear Ms. Kani

On February 1, 2012 Headquarters Pacific Air Forces (PACAF) initiated consultation with your office regarding possible infrastructure improvements on Tinian and Saipan to facilitate United States Air Force (USAF) use for Divert activities and exercises (Undertaking) in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking, in coordination with CNMI officials. PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). Accordingly, PACAF is requesting input on the revised Area of Potential Effects (APE), as described below and in Attachment 1.

PACAF will also send similar input requests to other consulting parties identified earlier in the process, including: the Historic Preservation Review Board, the Advisory Council on Historic Preservation (ACHP), the Mayor of Tinian, the National Park Service (NPS), the Federal Aviation Administration (FAA), Joint Region Marianas (JRM), and community members with a demonstrated interest in the Undertaking. These letters are intended to (a) formally request continued participation in Section 106 consultation, pursuant to 36 CFR 800.3; (b) provide detailed information on the current scope and scale of the revised Undertaking; (c) seek your concurrence on the APE for the Undertaking as now defined; (d) discuss the proposed timeline for Section 106 consultation; (e) describe our plan for public involvement in finalizing the Section 106 process, and finally; (f) seek your assistance in identifying any additional consulting parties, or suggest consulting parties whose participation is no longer warranted due to the current scale and scope of the Undertaking and resulting APE.

Revised Undertaking and Area of Potential Effects (APE): PACAF provided descriptions of the Undertaking and resulting APE determination to consulting parties on September 11, 2012.

These descriptions were based on the alternatives to be considered during the NEPA process and were the basis for subsequent Section 106 consultation. Since then, through evaluation of project alternatives in the June 2012 Draft EIS (DEIS), comments provided as part of the Section 106 and NEPA processes as well as ongoing discussions between my office and CNMI officials, we have revised the Undertaking and APE to reflect modified versions of the alternatives presented in the DEIS. A detailed description of the revised Undertaking is provided in Attachment 1. Based on the revised Undertaking, we also revised the APE for the Divert Activities and Exercises proposal (also discussed in Attachment 1). The purpose of the Undertaking is to improve facilities and infrastructure to support divert landings, joint military exercises, and humanitarian assistance since there is not an existing divert airfield on U.S. territory in the western Pacific that is designed and designated to provide strategic operational and exercise capabilities for U.S. forces when needed and humanitarian assistance and disaster relief in times of natural or man-made disasters.

Proposed Schedule for Continued Consultation: We will seek comments from consulting parties and the interested public on the description of the revised Divert Undertaking, revised APE, identification of historic properties, and adequacy of our efforts to assess and resolve adverse effects to historic properties. Our proposed schedule for continued consultation can be found in Attachment 2.

If you have any questions regarding this consultation, please contact Mr. William Grannis at (808) 449-4049, or by email at william.grannis@us.af.mil.

Very Respectfully



STEVEN L. BASHAM
Brigadier General, USAF
Director of Strategy, Plans & Programs

2 Attachments:

1. Description of Revised Undertaking and Area of Potential Effect (APE)
2. Proposed Schedule for Continued Section 106 Consultation

Attachment 1: Description of Revised Divert Undertaking and Area of Potential Effect (APE)

Through evaluation of project alternatives in the June 2012 DEIS and evaluation of public, agency, and stakeholder comments as part of both the Section 106 and NEPA processes, PACAF has determined it necessary to revise the Undertaking and the resulting APE to reflect modified versions of the alternatives presented in the DEIS. The modified alternatives include a modified Saipan alternative, a modified Tinian alternative, and a hybrid modified alternative. All three modified alternatives include a reduction in proposed development and removal of fighter aircraft operations and associated munitions storage requirements. The modified alternatives represent reduced capability compared to that presented in the DEIS, but meet PACAF operational selection standards while incorporating public and consulting party input. The hybrid modified alternative combines development on both Saipan and Tinian that was previously analyzed in the June 2012 DEIS. However, the hybrid modified alternative would focus most Divert development and operations on Tinian. Also, the hybrid modified alternative would include development on either the south side of the Tinian International Airport or on the north side of the airport. All alternatives may be subject to further revisions as discussions between the USAF and CNMI continue.

1. Modified Saipan Alternative

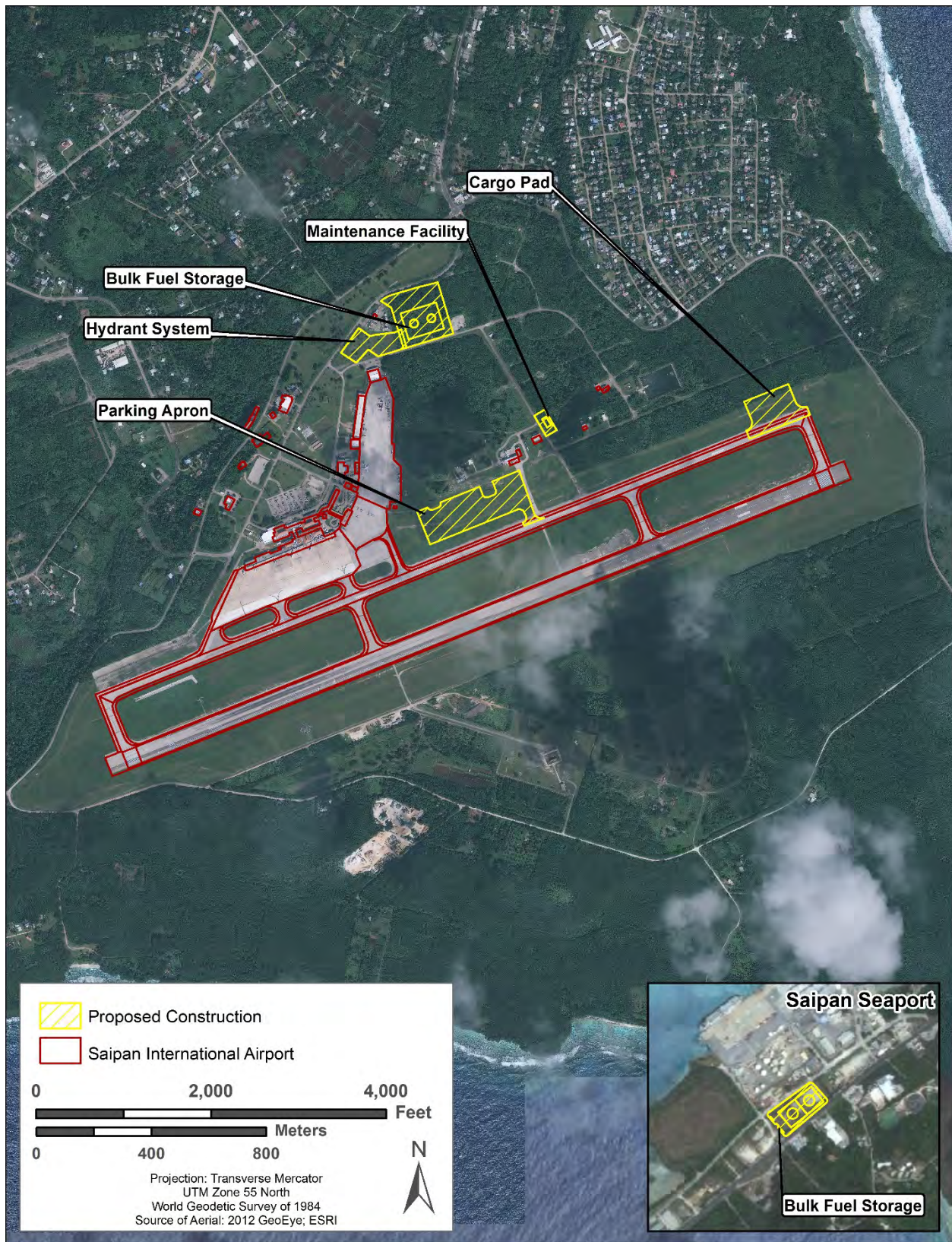
Under the Modified Saipan Alternative (**Figure 1**), the USAF would build one parking apron, one cargo pad, and one maintenance facility.

The USAF would also construct storage capacity for 220,000 barrels of fuel. The expected configuration would store approximately 100,000 barrels at the airport and 100,000 barrels at the seaport (configured using two 50,000 barrel tanks at the seaport and two 50,000 barrel tanks at the airport). Typical configurations would also include approximately 20,000 barrels in operational tanks at the airfield; connected directly to a hydrant system to facilitate pumping directly to the aircraft (configured using two 10,000 barrel operational tanks). The hydrant system would be incorporated into the parking apron. The exact size, configuration and type of storage tank will be dictated by mission requirements and allocated funding.

Fuel would initially be stored at the seaport and then transported by truck to the bulk storage tanks at the airport. Prior to use, fuel would flow to the operational tanks and hydrant system for delivery to the aircraft.

The parking apron could accommodate up to six KC-135s. The cargo pad could accommodate up to three KC-135s.

Temporary billeting, including medical, transportation, and dining services, would be required for up to 265 personnel supporting aircraft operations and would be procured on the local economy.



Note: Infrastructure footprints are approximate and subject to further revisions.

Figure 1. Proposed Construction at Saipan under the Modified Saipan Alternative

The Modified Saipan Alternative includes a reduced operational capability in terms of types of aircraft flown to and from GSN, as well as a decrease in operations during exercises described in the Draft EIS. The Modified Saipan Alternative would continue to include emergency military divert landings or emergency humanitarian assistance staging referenced in the Draft EIS. At GSN, these emergency activities (i.e., divert landings and humanitarian assistance) could also occur under the No Action Alternative in compliance with FAA Airport Sponsor Assurance C. 27, and 36th Wing Instruction 13-204, Airfield Operations Instruction.

Under the Modified Saipan Alternative, only wide-body type aircraft such as the KC-135 would participate in joint military exercises as part of divert activities and exercises. These aircraft have similar flight characteristics and noise patterns as existing commercial aircraft operating from GSN. Specific types of aircraft that could be flown to and from GSN would include, but not be limited to, the KC-135 used for aircraft refueling and airlift; the KC-46 Pegasus used for aircraft refueling; the C-130 Hercules used for airlift; the C-17 Globemaster used for airlift; and the C-5 Galaxy used for airlift. All aircraft flown to and from GSN as part of divert activities and exercises under the Modified Saipan Alternative would:

- Have the same or similar noise profile as the KC-135, which was the aircraft analyzed in the noise Low Scenario in the Draft EIS **Section 4.1**;
- Have the same or similar air emissions as the KC-135, which was the aircraft analyzed in the noise Low Scenario in the Draft EIS **Section 4.2**;
- Not transport munitions.

Under the Modified Saipan Alternative, the USAF anticipates typical exercises at GSN to include 2-4 wide-body type aircraft for up to eight weeks per year, rather than 12 aircraft for 8 weeks as originally described in the Draft EIS; therefore, reducing the overall expected number of flights to and from GSN. The USAF anticipates that under the Modified Saipan Alternative, 2-4 KC-135s would operate up to eight weeks annually (typically not on weekends). A past example of a typical exercise is Cope North, where each aircraft would take off and land twice per day, for a total of 4 operations per day, and would fly 5 days per week. Therefore, each aircraft would complete 60 operations over a three week period; and up to 4 aircraft would complete 240 operations. During another past example, Exercise Valiant Shield, each aircraft would take off and land 4 times per day, for a total of 8 operations per day, and would fly 5 days per week. Therefore, during three weeks of Valiant Shield, each aircraft would complete 120 operations; 4 aircraft would complete 480 operations. Based on the reduced operations described above, approximately 720 operations by KC-135 or similar aircraft would be completed annually under the Modified Saipan Alternative, in contrast to the 1,920 operations described under Alternative 1 in the Draft EIS. This is a reduction of more than half of the originally proposed operations, in addition to limiting the type of aircraft being flown.

As noted in our 2012 description of the Undertaking, GSN is completely contained within the boundaries of the Isley Historic District portion of the Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHL), or National Historic Landmark District (NHLD). Because of this landmark status, the historic property merits special consideration under 36 CFR 800.10. Despite the reduced impact at GSN in this modified Undertaking compared to the original Undertaking, we consider an effect on any *contiguous* part of the NHL to be an effect to that entire part of the NHL, or NHLD.

With the Modified Saipan Alternative, the USAF has attempted to address the comments of concerned parties provided during the Section 106 process in regards to how the proposed projects would adversely affect the NHLD and additional resources resulting in a single APE for construction and operational activities, as well as both direct and indirect effects (**Figure 2**). With the change in the APE, modifications to proposed projects and operations within the APE have been made as well. These modifications have reduced or removed some of the direct and indirect adverse effects to the NHLD.

2. Tinian Alternative (Modified)

Under the Modified Tinian Alternative (**Figure 3**), the USAF would build one parking apron, one cargo pad, and one maintenance facility. Development would occur on either the North or South side of the runway.

For the North Option, all construction would be on the North side of the runway. The USAF would build taxiways to connect the cargo and parking aprons to the runway.

For the South Option, all construction would be on the South side of the runway. No new taxiways are required.

We would also construct storage capacity for 220,000 barrels of fuel. The expected configuration would store approximately 100,000 barrels at the airport and 100,000 barrels at the seaport. Typical configurations would also include approximately 20,000 barrels in operational tanks at the airfield, connected directly to the hydrant system to facilitate pumping to the aircraft. The hydrant system would be incorporated into the parking apron. The exact size, configuration and type of storage tank will be dictated by mission requirements and allocated funding.

Fuel would initially be stored at the seaport and then transported by truck to the bulk storage tanks at the airport. Prior to use, fuel would flow to the operational tanks and hydrant system for delivery to the aircraft.

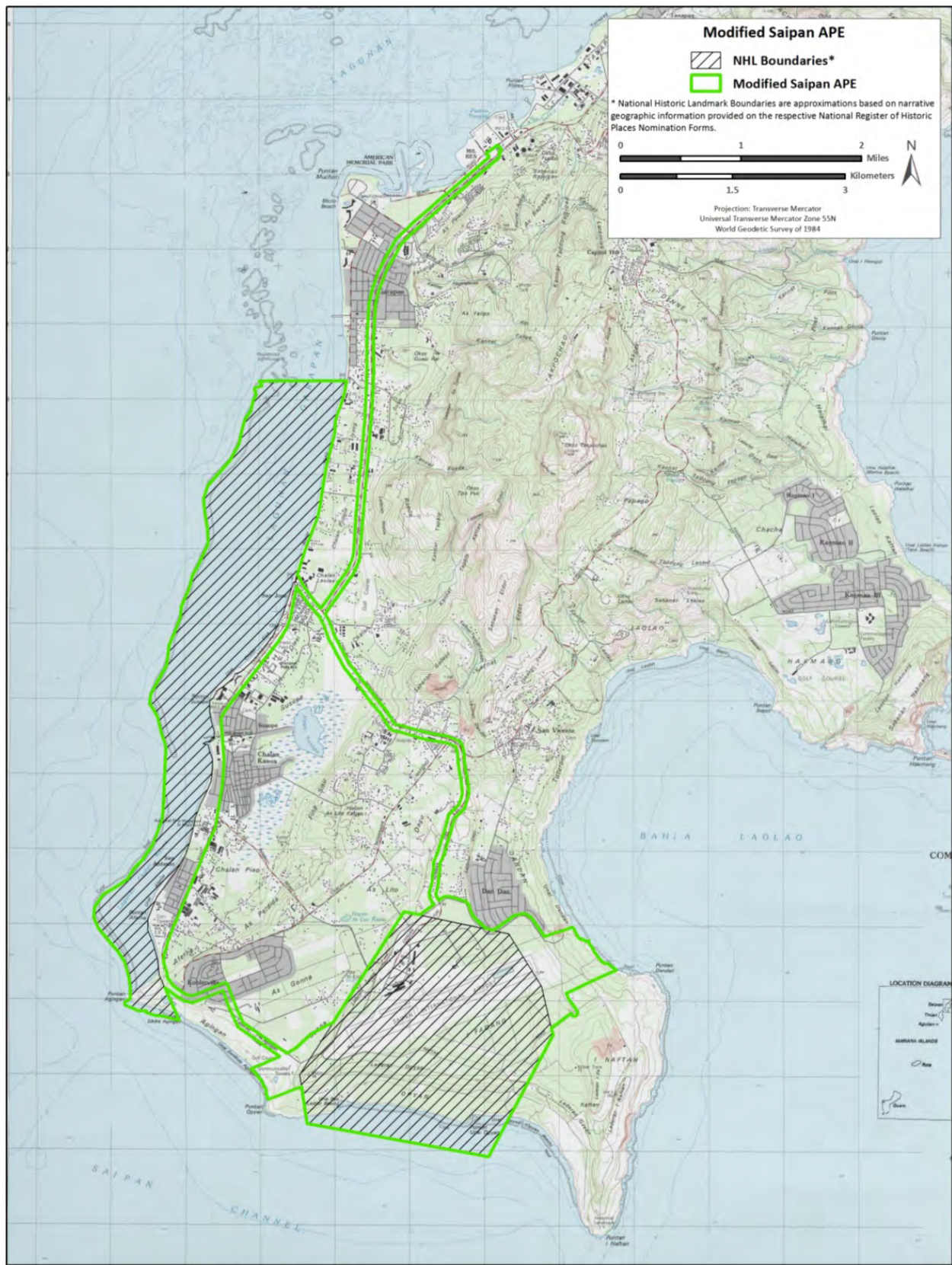
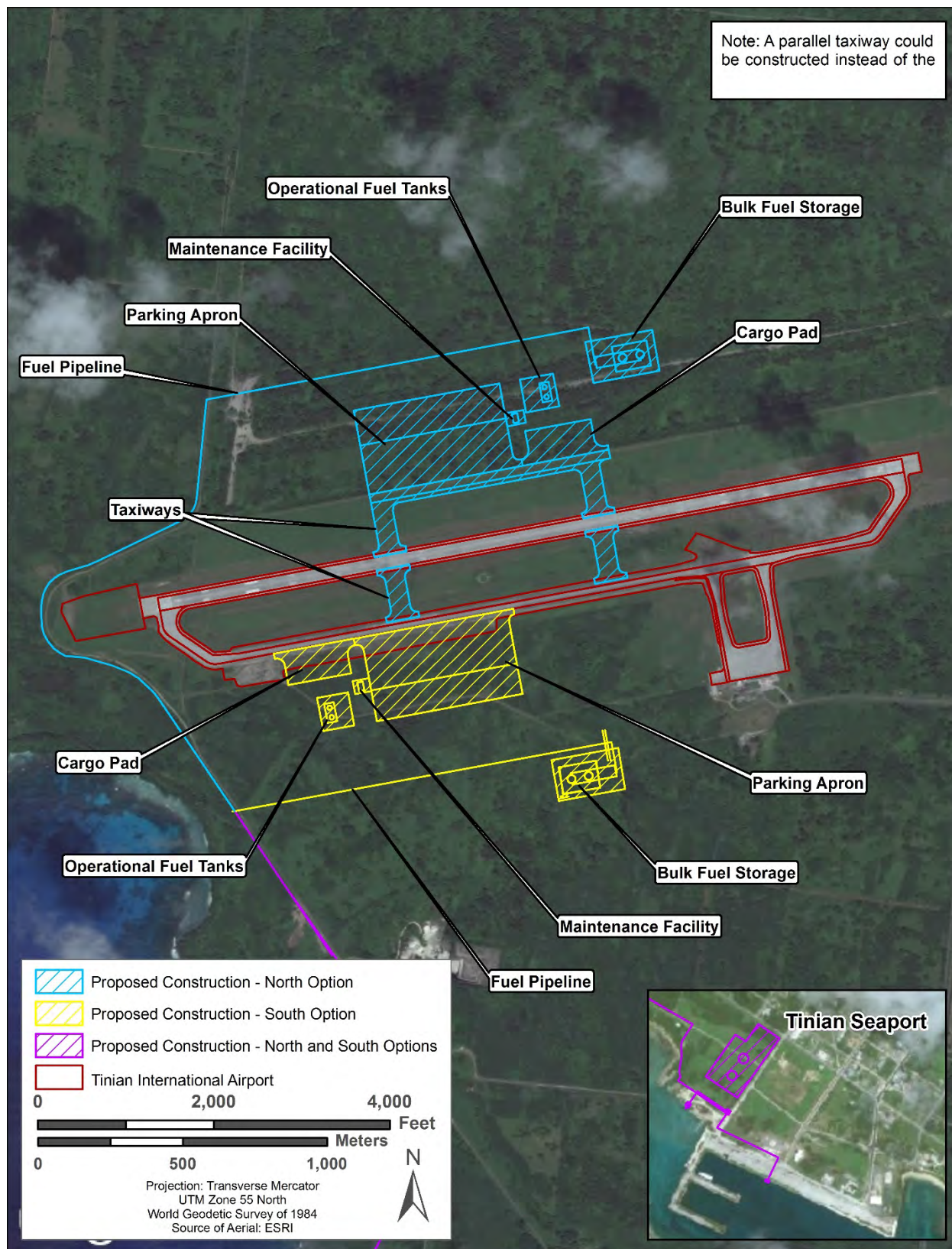


Figure 2. Modified Saipan APE under the Modified Saipan Alternative



Note: Infrastructure footprints are approximate and subject to further revisions.

Figure 3. Proposed Construction at Tinian under the Modified Tinian Alternative

An underground pipeline from the seaport to the north side or south side of the airfield at TNI would be constructed, depending on whether the Tinian North or South option is selected. The pipeline corridor would be six feet wide and the pipeline would be buried four feet deep. Constructing a pipeline would alleviate the need to use tank trucks to transport fuel from the seaport to the bulk storage tanks on the airfield. Additionally, initial consultations with Defense Logistics Agency (DLA) indicate the use of a pipeline may eliminate the requirement for seaport bulk fuel tanks. In that event, all the bulk fuel could be stored at the airfield in two 100,000 barrel tanks and two 10,000 barrel operating tanks. For either option, a total of 220,000 barrels of fuel must be readily available.

The parking apron could accommodate up to twelve KC-135s.

Temporary billeting, including medical, transportation, and dining services, would be required for up to 265 personnel supporting aircraft operations and would be procured on the local economy.

The Modified Tinian Alternative includes a reduced operational capability in terms of types of aircraft flown to and from TNI as well as a decrease in operations during exercises described in the Draft EIS. The Modified Tinian Alternative also includes emergency military divert landings or emergency humanitarian assistance staging described in the Draft EIS.

Under the Modified Tinian Alternative, TNI would not be used to support fighter aircraft during joint military exercises, and the USAF would reduce the number of operations to be flown by wide-body type aircraft, and how many wide-body type aircraft are flown from TNI during the exercises. The operations under the Modified Tinian Alternative Implementation Phase at TNI would be the same as that described for the Modified Saipan Alternative.

- Only wide-body type aircraft would be flown to and from TNI during divert exercises;
- A total of 720 operations by KC-135 or similar aircraft would be completed annually, in contrast to the 1,920 operations described under the proposed action in the Draft EIS.

3. Hybrid Modified Alternative

Under the Hybrid Modified Alternative, the USAF would divide our construction and subsequent operations among the two airfields. The total fuel requirement would be 220,000 barrels as described for the Modified Saipan Alternative and the Modified Tinian Alternative, but would be divided among the two locations with 80,000 barrels being stored at Saipan and 140,000 barrels at Tinian.

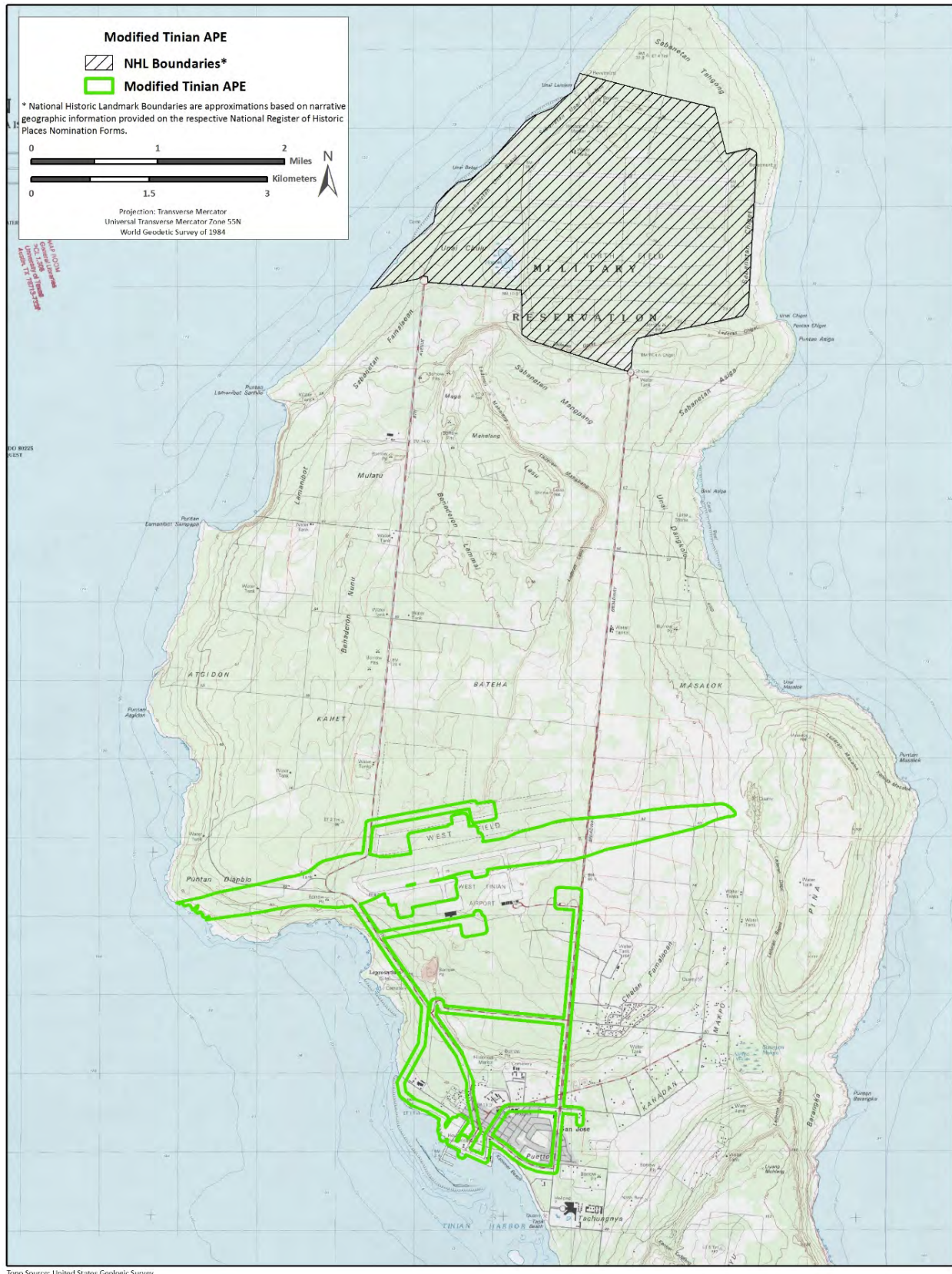


Figure 4. Modified Tinian APE under the Modified Tinian Alternative

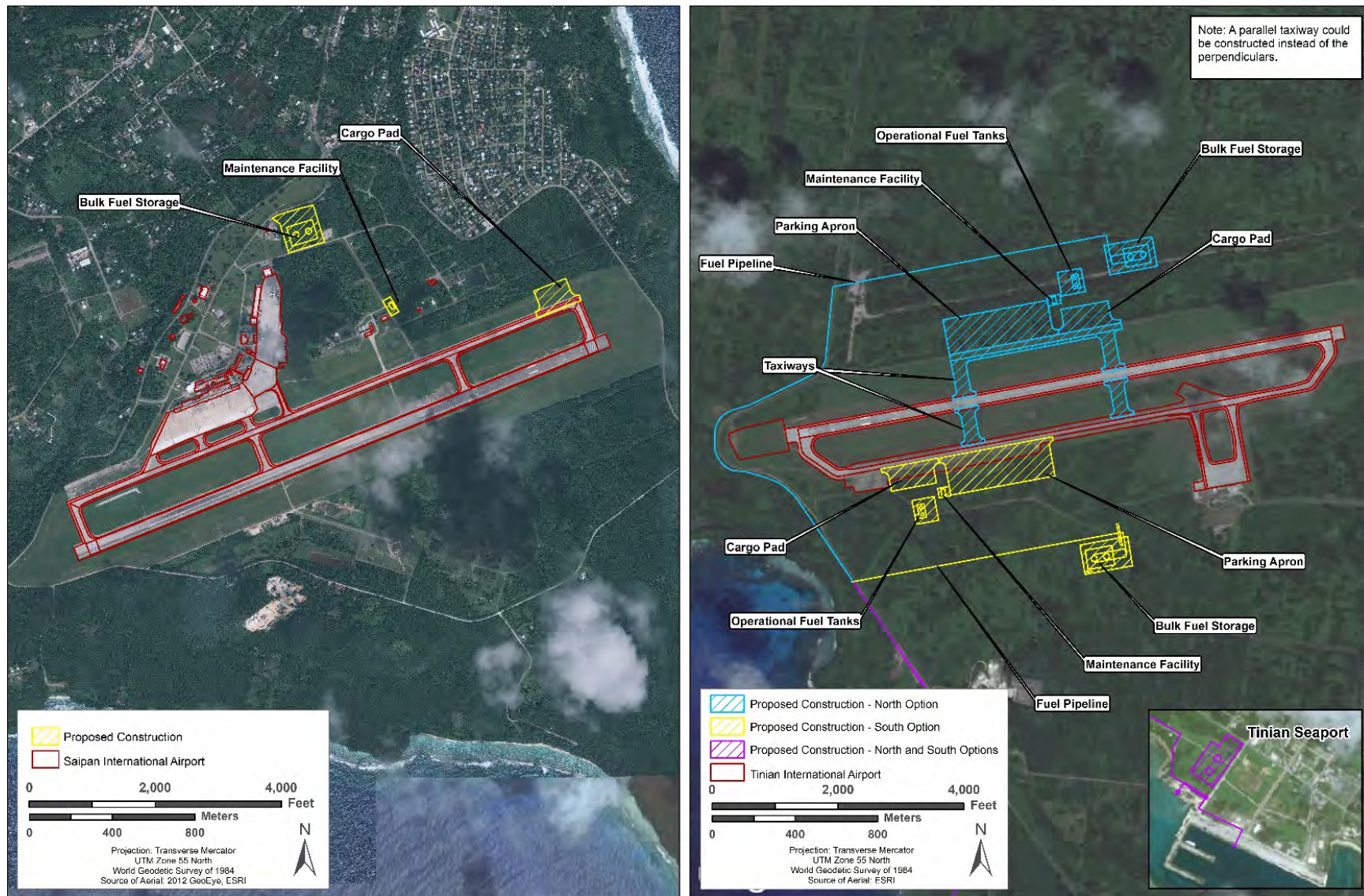
Under the Hybrid Modified Alternative at Saipan (**Figure 5**), the USAF would build a cargo pad and a maintenance facility. The USAF would also construct storage capacity for 80,000 barrels of fuel at GSN. The expected configuration would consist of two large (approximately 40,000 barrels) tanks at the airport. The exact size, configuration and type of storage tank will be dictated by mission requirements and allocated funding. Fuel reception and staging capacity at the Saipan seaport would be procured on the commercial market. No hydrant system or operational tanks would be installed at GSN under the Hybrid Modified Alternative. Fuel would be delivered from the Saipan seaport to GSN via truck. This service would be procured on the commercial market. The proposed cargo pad would accommodate up to three KC-135 aircraft. No parking apron at GSN would be constructed under this alternative. Temporary billeting on Saipan, including medical, transportation, and dining services, would be required for approximately 265 personnel supporting aircraft operations and would be procured on the local economy.

Under the Hybrid Modified Alternative at Tinian (**Figure 5**), the USAF would build a cargo pad, parking apron, and a maintenance facility. The parking apron at TNI would accommodate six KC-135 aircraft and the cargo pad would accommodate up to four KC-135 aircraft. The USAF would also construct storage capacity for 140,000 barrels of fuel on Tinian. The expected configuration would store approximately 120,000 barrels in storage tanks at TNI and 20,000 barrels in operational tanks at TNI connected directly to the hydrant system to facilitate pumping directly to the aircraft. The hydrant system would be incorporated into the parking apron. The exact size, configuration and type of storage tank will be dictated by mission requirements, and allocated funding.

An underground pipeline from the Tinian seaport to the north side or south side of the airfield at TNI would be constructed, depending on whether the Tinian North or South option is selected. The pipeline corridor would be six feet wide and the pipeline would be buried four feet deep. Constructing a pipeline would alleviate the need to use tank trucks to transport fuel from the seaport to the bulk storage tanks on the airfield. Additionally, initial consultations with Defense Logistics Agency (DLA) indicate the use of a pipeline may eliminate the requirement for seaport bulk fuel tanks. In that event, all the bulk fuel can be stored at the airfield in two large (up to 60,000 barrels) tanks and two 10,000 barrel operating tanks.

As in the Modified Tinian Alternative, development could occur on the North or South side of the runway. Development on the north side of the runway would require construction of taxiways from the cargo and parking aprons to the runway. South side development does not require any additional taxiways.

Temporary billeting on Tinian, including medical, transportation, and dining services, would be required for approximately 265 personnel supporting aircraft operations and would be procured on the local economy.



Note: Infrastructure footprints are approximate and subject to further revisions.

Figure 5. Proposed Construction at Saipan and Tinian under the Hybrid Modified Alternative

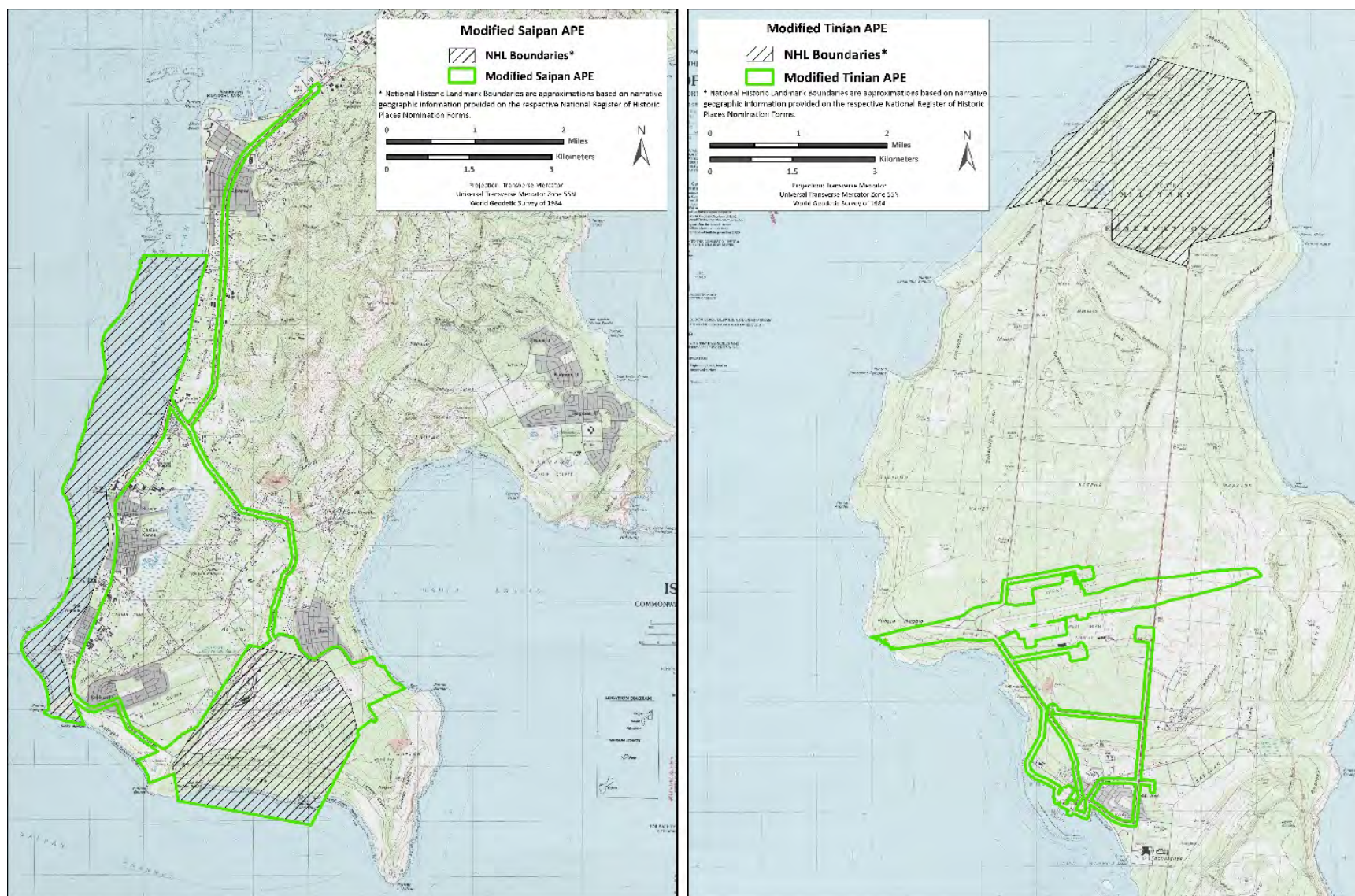


Figure 6. Modified Tinian and Saipan APE under the Hybrid Modified Alternative

The Hybrid Modified Alternative would support the same total number of expected operations by KC-135 aircraft (720 per year) as the Modified Saipan Alternative and the Modified Tinian Alternative but would distribute those operations over both GSN and TNI. TNI would be the primary divert/exercise location and would realize the majority of the development. GSN would be the secondary divert/exercise location and experience significantly less development. The specific number of aircraft expected to utilize each location would vary and will depend on mission requirements. For planning purposes, the TNI portion of this alternative, when complete, is expected to have parking capacity for 7 to 10 KC-135 or similar aircraft. The GSN portion is expected to have parking capacity for 2 to 5 KC-135 or similar aircraft. While the construction and expected operations are distributed among the two locations, environmental analysis should be performed using 720 as the number of annual operations as exercises may occur at either location. As in the alternatives described above, the KC-135 is the primary aircraft and will be the platform used for analysis.

The Hybrid Modified Alternative would also include emergency military divert landings or emergency humanitarian assistance staging at GSN and TNI described in the Draft EIS.

Attachment 2: Proposed Schedule for Continued Section 106 Consultation

PACAF seeks to have a Section 106 agreement document negotiated and signed by August 17, 2015, so that it can be included in the Final Environmental Impact Statement (EIS). In order to meet this schedule, we would implement a program of public and consulting party outreach related to Section 106. The main objective of these efforts is to seek further comment from consulting parties and the public on our historic properties identification efforts to date and the adequacy of those efforts for the modified Undertaking and APE discussed in **Attachment 1**.

The main elements of our consultation plan would include the release of a statement to the press notifying the public of the current status of the Undertaking and requesting additional public input regarding potential effects to historic properties by Divert. The press release would advertise Divert Section 106-specific public meetings to be held on both Tinian and Saipan. Our consultation plan would also include meetings with consulting parties on each island to be held in coordination with the public meetings.

Due to changes in the Undertaking resulting from the NEPA process and described in **Attachment 1**, we will reassess our previous findings relative to the scaled-back Divert scope and seek continued input from the consulting parties, including SHPO and the public. Once the analysis is complete, we will provide our finding of effect (FOE) to the consulting parties in writing. This letter will also invite the consulting parties to a conference call to discuss the FOE and propose a meeting to reach agreement on resolution of adverse effects, if needed, and to develop an agreement to resolve any adverse effects. The conference call will be scheduled about a week after receipt of the FOE.

We also propose that a week-long conference be conducted on Saipan with consulting parties to discuss modification of the existing, but not yet signed, draft Section 106 agreement. A public meeting would be held toward the end of the conference to describe the agreement and seek comment. PACAF expects that an agreement document acceptable to all the consulting parties and incorporating any final comments from the public will be ready to go out for signature by the end of the conference. And therefore, PACAF expects that a signed, final document will be ready in time for issuance of the Final EIS.

U.S. Air Force Seeks Input on Historic Properties in Revised Divert Proposal



The U.S. Air Force is asking for public comments. The Air Force requests comments on the potential effects to historic properties from the revised Divert proposal near and at Francisco C. Ada (Saipan International) Airport, Tinian International Airport, Saipan seaport, and Tinian seaport.

The Air Force previously sought input on historic properties in 2012 when it proposed to improve the Saipan and/or Tinian International Airports to accommodate training exercises and missions related to overall emergency preparedness in the Pacific. After receiving input from the CNMI government, Federal and local agencies, and community members, the Air Force has revised its proposal and is again inviting members of the public to assist in identifying potential adverse effects to historic properties.

The Air Force initially proposed building facilities and infrastructure at the Saipan and/or Tinian International Airports to support a combination of military cargo, fighter, and tanker aircraft and associated support personnel for diverted aircraft landings, joint military exercises, and humanitarian assistance and disaster relief efforts. Although the mission remains the same, the Air Force has revised its proposal to no longer include fighter aircraft; to decrease the extent of airport improvements; and to dramatically reduce the number of planned operations from 1,920 take-offs and landings to 720. As a result of these changes, the Air Force has developed three modified alternatives that include a reduced level of development at Saipan and Tinian.

With the proposed revisions to the Divert Activities and Exercises undertaking, the Air Force is revisiting the potential for adverse effects to historic properties in accordance with Section 106 of the National Historic Preservation Act. The Air Force will conduct open house public outreach meetings on Saipan and Tinian to discuss the revised undertaking and seek public input on historic property identification, traditional cultural properties, and potential effects on historic properties. The public outreach meetings will be held at the following dates, times, and locations:

- **Tinian:** Friday, July 24, 2015; 4:30-7:30pm; Tinian Elementary School, San Jose.
- **Saipan:** Saturday July 25, 2015; 1:30-4:30pm; Saipan Multipurpose Center, Susupe.

Written and verbal comments related to historic properties will be accepted at the meetings. Interested individuals may also request to join the consultation process as an interested party. Those with interest in or information pertaining to the historic properties within the areas of potential effect are encouraged to submit comments to PACAF Public Affairs (ATTN: PACAF Divert Section 106 Consultation), 25 E Street, Suite G-108, Joint Base Pearl Harbor Hickam, HI 96853, or by email at pacaf.paops@us.af.mil. Comments will also be accepted on the project website at www.PACAFDivertMarianasEIS.com



DEPARTMENT OF THE AIR FORCE

PACIFIC AIR FORCES

August 14, 2015

MEMORANDUM FOR COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS HISTORIC PRESERVATION OFFICER

FROM: PACAF/A5X
25 E Street Suite L-200
JBPH-H HI 96853-5420

SUBJECT: Divert Activities and Exercises Section 106 Consultation and Findings of Effect

1. We at the Pacific Air Forces (PACAF) are keenly aware of the recent devastation inflicted on Saipan from Typhoon Soudelor. We want those consulting parties in the Commonwealth of Northern Mariana Islands (CNMI) to know that our thoughts are with you during this difficult time.
2. Your concurrence on our attached findings of effect for the U.S. Air Force's (USAF's) Divert Activities and Exercises proposed undertaking is requested, in accordance with the regulation 36 CFR 800. We are currently at a critical junction in the Section 106 consultation for the Divert undertaking where input is needed from consulting parties in CNMI. We would like to work with you and all consulting parties to find a mutually acceptable timeframe to develop an agreement to resolve adverse effects.
3. During the week of July 20, 2015 we held meetings with consulting parties and the public on Saipan and Tinian where we requested input on the Areas of Potential Effect (APEs) and identification of historic properties for the alternatives under consideration: the Modified Saipan Alternative, Modified Tinian Alternative, and Hybrid Modified Alternative. With consideration to the input we received during consultation, we have summarized the results of our identification of historic properties and findings of effect, per 36 CFR 800.5 and 36 CFR 800.11. Per 36 CFR 800.5(b), the Air Force finds the proposed action would have no direct adverse effect on contributing elements to the Aslito/Isley Field portion of the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (NHL) or other historic properties on Saipan. However, the USAF finds that certain proposed actions in the various alternatives could have an adverse effect on the American administration-period West Field site on Tinian and possible indirect adverse effect on the setting and feeling of the Aslito/Isley Field National Historic Landmark District on Saipan.

4. We would normally expect your response to our no adverse effect finding within thirty (30) days of receipt of this letter, per 36 CFR 800.5(c). However, in recognition of the recent devastation experienced on Saipan, we will consider any responses received by October 15, 2015. Regarding the finding of effects to Tinian's West Field and Saipan's Aslito/Isley Field, we request your comments and look forward to further consultations on ways to avoid, minimize, or mitigate the effects. We also invite you to participate in a conference call concerning these findings after you return to official duty. We will send a separate invitation for this call by email that provides date, time and call-in information.

5. Thank you for your continued interest and involvement in Section 106 consultation for the Divert proposal. Please contact Mr. William Grannis at (808) 449-4049 or by email at william.grannis@us.af.mil with any questions or comments regarding the Divert proposal.


MICHAEL R. CARDOZA, Colonel, USAF
Chief, Strategy and Plans Division

Attachment:

Section 106 Findings of Effect for Divert Activities and Exercises

cc:

Commonwealth of the Northern Mariana Islands Historic Preservation Review Board
Federal Aviation Administration, Western-Pacific Region
Governor of the Commonwealth of the Northern Mariana Islands
Individual Consulting Parties: Mr. Sam McPhetres and Ms. Deborah Fleming
National Park Service, Pacific-West Region
Office of the Mayor, Tinian
Commander, Joint Region Marianas
Advisory Council on Historic Preservation

1. Introduction

This document presents the U.S. Air Force (USAF), Pacific Air Forces' (PACAF) findings regarding effects to historic properties from the proposed Divert Activities and Exercises (Divert) undertaking (Undertaking) (Figure 1). A detailed description of the Undertaking and Areas of Potential Effect (APE) (Figure 2) were presented to the consulting parties in a letter dated June 9, 2015 and during meetings with the consulting parties and the public on Saipan and Tinian during the week of July 20, 2015. PACAF has considered the input it has received so far from the consulting parties and the public in this Finding of Effect (FOE).

2. Identification of Historic Properties (36 CFR 800.4)

Having defined its Undertaking and identified the APE, PACAF conducted a review of existing information regarding historic properties within the APE and has sought, or is seeking, additional information from consulting parties pursuant to 36 CFR 800.4 (a)(2)&(3). Although no Federally recognized Indian tribes or Native Hawaiian organizations exist in the Commonwealth of the Northern Marianas Islands (CNMI) (36 CFR 800.4(a)(4)), PACAF is reaching out to Chamorro and Carolinian representatives.

In its review of existing information, PACAF has found that the majority of the APE on Tinian has been previously surveyed for cultural resources and its findings are based on the results of those studies (Figure 3). Similarly, the APE on Saipan was surveyed in 1980 in preparation for nominating Isley Field to the National Register of Historic Places (NRHP) (Denfeld and Russell 1984). PACAF also contracted a cultural resources consulting firm to perform a Phase I cultural resources survey and inventory of proposed construction sites at Saipan International Airport (FAA airport code GSN) as it is part of a National Historic Landmark (NHL).

The following discussion is based on findings from these efforts and represent PACAF's good faith effort to identify historic properties within the APE pursuant to 36 CFR 800.4 (b).

2.1 Modified Saipan Alternative

2.1.1 Previous Survey Coverage of the APE

As already mentioned, the Modified Saipan APE was surveyed for archaeological sites, historic buildings and structures, and other cultural resources in recent decades. The portion of the APE comprising the Isley Field Historic District was surveyed in 1980 in preparation for nominating Isley Field to the National Register of Historic Places (NRHP) and includes all proposed construction areas at GSN (Denfeld and Russell 1984). USAF also surveyed the proposed construction areas for the parking apron, bulk fuel storage, maintenance facility, and cargo pad at GSN as well as for the bulk fuel storage area at the Port of Saipan in support of the Section 106 process associated with an earlier version of the Divert EIS (Fischer et al. 2012). No cultural resource surveys have been performed to date along existing roads proposed for use.

2.1.2 Historic Properties within the APE

Under the Modified Saipan Alternative, the vast majority of construction and ongoing activity would take place at GSN with much less construction and activity at the seaport. With the exception of the aboveground storage tanks at the Port of Saipan and existing roads, all proposed Divert-related construction and implementation activities would take place within the boundaries of Aslito/Isley Field.

Aslito/Isley Field was nominated to the National Register in 1980 as the Isley Field Historic District but was later included in a National Historic Landmark (NHL) recommendation for three of Saipan's World War II-era sites. The three World War II-related properties were listed together as the Saipan Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark (SNHL) on February 4, 1985 (National Historic Landmark System No.: 85001789). Because the SNHL consists of three discontinuous areas, they are considered separately in this analysis. We follow the SNHL nomination in using the term National Historic Landmark District (NHLD) to refer to the individual components of the NHL (the Landing Beaches, Marpi Point, and Aslito/Isley Field) rather than the NHL as a whole.

When Aslito/Isley Field was nominated as a historic district, the nomination listed the following buildings and structures as contributing elements:

- The operations center built and used by the Japanese and later used for similar purposes by the U.S. 73rd Bombardment Wing,
- Four gas drum storage bunkers,
- A power plant,
- A building to house an electric generator,
- A semi-subterranean bomb storage facility,
- A defensive gun emplacement atop the bomb storage facility,
- A semi-subterranean fuel storage facility,
- Three associated fuel tanks,
- A pump house,
- A torpedo regulating shop,
- A cold storage building,
- Eleven air raid shelters,
- Two runways, and
- “(H)undreds of hardstands and foundations from the U.S. period.”

When Aslito/Isley Field was included in the SNHL, the nomination form listed the following buildings and structures as contributing elements at the airfield: the air operations building, two power plants, four gasoline storage buildings, fourteen air raid shelters (an increase of three shelters from the district nomination), an aerial bomb magazine, a partly underground structure for gasoline storage tanks, and “various structural ruins.” The nomination also lists the two runways and notes that “the nearly seven miles of B-29 taxiways and over 100 out of 181 hardstands (parking areas) around the runways may be traced in part.” The nomination also lists the site of the 73rd Bombardment Wing's administrative area south of the runways. Finally, it lists the Japanese blockhouse on the beach at Unai Opyan. The nomination specifically excludes the site of Kobler Field southwest of Isley Field, which by 1985 was converted into a large housing development and had therefore “lost the greater part of its integrity.” Also excluded are the “modern air terminal, its vehicle parking lot, and its concrete aircraft parking area in front.”

The 2012 USAF survey identified three pre-contact isolated occurrences and ten historic features within the boundaries of the Aslito/Isley Field portion of the SNHL. The features include a Japanese bunker, several water catchment features, concrete foundations and pads, and a bottle dump. These features and materials probably date between 1935 and 1945. The three pre-contact occurrences are comprised of light scatters of Latte period sand-tempered pottery fragments in disturbed soils and contexts.

2.2 Modified Tinian Alternative

2.2.1 Previous Survey Coverage of the APE

The APE for the Modified Tinian Alternative was surveyed for historic properties in recent decades (Allen and Nees 2001; Athens 2009; Dixon and Welch 2002; Franklin and Haun 1995; Gosser et al. 2001; Henry and Haun 1995; Jones 1991; More et al. 1986; Thursby 2010). Areas that have been previously surveyed include all proposed construction areas at the seaport, all proposed construction areas at Tinian International Airport (FAA airport code TNI) under both the North and South Options, and portions of the APE incorporating noise contour areas. The only areas that have not been previously surveyed include about 3.5 kilometers (2.2 miles) of existing roads in and around San Jose that would possibly serve as truck routes for construction material and fuel trucks.

In addition to archaeological and architectural surveys, a Traditional Cultural Property (TCP) study conducted on Tinian in support of a separate undertaking being considered by the U.S. Marine Corps Forces, Pacific (MARFORPAC) (Griffin et al. 2015). The study used ethnographic information from archival research, oral history interviews, and natural resource inventories to identify and evaluate potential TCPs in the Military Lease Area on the northern two-thirds of Tinian.

2.2.2 Historic Properties within the APE

Under the Modified Tinian Alternative, the vast majority of construction and ongoing activity would take place at TNI with much less construction and activity at the seaport. Previous surveys have recorded a large number of historic resources near the airport, especially to the west. Many of these sites may be associated with the pre-war Gurguan Airfield and have been recommended eligible by MARFORPAC in survey reports they have produced for their CNMI Joint Military Training (CJMT) undertaking (Dixon et al. 2014). The site of the WWII-era U.S. Naval Air Base Headquarters (HQ) has been identified at the east end of the modern runway. This site has also been recommended as eligible for listing on the NRHP. These sites lie under the noise effects portion of the APE.

All of West Field, the Japanese-era airstrip as modified by U.S. forces during the Second World War and the basis of the modern airport, has also been recorded as a historic resource and has also been recommended as eligible for listing on the NRHP (Dixon et al. 2014). Pavement, hardstands, and other features associated with West Field are still visible on aerial photographs. However, the exact location of preserved historic fabric related to the site has not been determined at this time.

2.3 Modified Hybrid Alternative

The Modified Hybrid Alternative APE is a combination of the APEs for the Modified Saipan and Tinian APEs; therefore, previous coverage of the APE and historic properties within the APE are the same as those detailed above for each alternative.

3. Assessment of Adverse Effects (36 CFR 800.5)

According to 36CFR800.5(a)(1), “...(a)n adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” Direct effects may include actions such as ground-disturbing activity within archaeological sites and modifications to historic structures. Indirect effects may include vibrations caused by vehicle traffic and changes to the setting or view-shed of a historic

property. The following discussion outlines PACAF's application of the criteria of adverse effect to cultural resources identified on Saipan and Tinian.

3.1 Modified Saipan Alternative: Construction and Implementation

Based on the results of previous inventories, construction proposed under the Modified Saipan Alternative would have no direct adverse effects to known contributing elements of the Aslito/Isley Field portion of the SNHL or other historic properties on Saipan. The proposed construction footprints for several elements, including the proposed cargo pad, parking apron, and hydrant system are in the general vicinity of the American administration-period B-29 hardstand network identified in Denfeld and Russell (1984) as "Site 29." However, our survey identified no remains of the B-29 hardstand network in proposed construction areas. Our report observed that WWII-era pavements could be very deeply buried or could have been destroyed by vegetation growth, post-war land clearance, or other forces (Fischer et al. 2012). Furthermore, HDR concluded that construction footprints of the proposed Divert-related structures at GSN would not directly affect any of the standing historic structures (listed above) that constitute contributing elements to the NHL.

USAF identified one feature in proposed construction areas that could sustain direct effects. However, we have recommended that this feature, an American Administration-period concrete foundation referred to as "Feature 9," does not contribute to the character defining properties of the SNHL (Fischer et al. 2012). The feature is badly decayed, lacks superstructure or other identifying characteristics, and lacks key aspects of integrity such as setting, feeling, and association. The USAF recognizes that the determination of whether the feature contributes to the NHL is ultimately a determination made by the Secretary of Interior. Other non-contributing features are also present in areas proposed for construction; however, adverse effects to non-contributing features generally do not affect the integrity and eligibility of the larger district or NHL.

The construction of Divert-related facilities would not have direct effects to the Landing Beaches portion of the SNHL, which would see no modifications as part of the proposed Divert project. Divert-related construction would also not have adverse effects to the Marpi Point portion of the SNHL, which is north of all proposed actions and the APE.

Divert-related construction of aboveground fuel storage tanks at the Saipan seaport would not have direct adverse effects to historic properties at the port. Although the area of the modern port was the site of Navy Seabee activity during the war, no evidence of this remains and the project construction footprint is well inland from where these activities are thought to have taken place. The port is not part of the SNHL, nor is the construction footprint on or near an NRHP-listed or NRHP-eligible archaeological or architectural resource.

Under 36 CFR 800.5, adverse effects include the introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features. Construction of new Divert-related facilities around existing historic structures within the boundaries of the Aslito/Isley Field NHL may alter the integrity of setting and feeling of contributing historic structures. Visual, atmospheric and audible elements of the implementation phase of the Divert undertaking would consist of slightly increased aircraft noise over a maximum of eight week period per year and presence of tanker aircraft parked on the parking apron or cargo pad or arriving/departing the airport, which is consistent with existing use of the airfield. The USAF has determined the increased noise and presence of tanker aircraft for a short period of time would not constitute an indirect adverse affect on the integrity of setting or feeling of the SNHL.

The Modified Saipan Alternative would involve transportation on existing roads of construction material and fuel from the Port of Saipan to the airport. This activity would have no adverse effects to historic properties. A study conducted by the California Department of Transportation in 2002 found that ground vibration from transportation along existing paved roads had virtually no effect on historic buildings located more than 5 meters away and that, in fact, such vibrations dropped below the perception threshold beyond 45 meters. The study considered heavy trucks as the vehicular source of vibration, similar to the trucks likely to be used during Divert construction or for fuel transportation, and assumed wood-framed historic buildings and structures. The standing structures in the SNHL are of stronger concrete construction and even more resistant to vibration effects.

The Modified Saipan Alternative could contribute to long-term, indirect, adverse cumulative effect on historical resources associated with the Japanese and U.S. occupations prior to, during, and immediately following WWII. Most of the historic structures in the Isley/Aslito field historic district and landmark are far enough away from the Divert activity and training exercise areas proposed under this alternative that long-term, cumulative effects on these structures are expected to be minimal to none. The district as a whole also faces increased fragmentation of its constituent parts from development. This process is already well underway from continued improvements for commercial air travel at GSN. However, effects to the district's overall cohesiveness from Divert-related construction and implementation activities are possible.

3.2 Modified Tinian Alternative: Construction and Implementation

Proposed construction under either the Tinian North Option or South Option of the Modified Tinian Alternative could have direct and/or indirect adverse effects to one archaeological site, TN-6-0030 (also sometimes referred to as Site 3005). That site is the American administration-period West Field, which has been recommended eligible for listing in the NRHP under Criteria A and D (Dixon et al. 2014). Construction under either option would potentially compromise archaeological deposits that make the site eligible under Criterion D. Construction would also introduce new elements to the landscape at TNI that could diminish integrity of setting, design, and feeling at West Field.

Under the Modified Tinian Alternative, the vast majority of construction and ongoing activity would take place at TNI with much less construction and activity at the seaport. Construction of fuel storage and distribution facilities at the Port of Tinian would have no direct effects to historic properties. The port does not contain known NRHP-listed or NRHP-eligible properties.

Although Tinian is home to the Tinian Landing Beaches, Ushi Point Field, and North Field NHL, the landmark is well to the north of the APE and the resource will not experience any direct or indirect adverse effects as a result of the undertaking, nor would any of the TCPs identified by MARFORPAC (Griffin et al. 2015).

Historic properties located near the airport such as those associated with the Gurguan Airfield site to the west and the Naval Air Base HQ site to the east of TNI lie under the noise effects portion of the APE. However, noise effects are normally assessed in terms of interference with appreciation of a property's historical feeling or setting. Since these sites are not widely accessible or interpreted for public visitation, USAF finds that noise effects to these sites are minimal and that they will not be adversely affected by the Undertaking. Further, USAF finds no adverse effect to the setting and feeling of historic properties whose period of significance dates to times when Gurguan and West fields were considerably more active than would be the case during Divert activities and exercises.

The Modified Tinian Alternative would involve transportation on existing roads of construction material and fuel from the port in San Jose to the airport. As discussed above for the Saipan alternative, this type of traffic would have no adverse effects to historic properties.

3.3 Hybrid Modified Alternative: Construction and Implementation

Direct effects from construction under the Hybrid Modified Alternative would be the combination of those discussed for the Modified Saipan Alternative and Modified Tinian Alternative. Construction would not result in direct, adverse effects to historic properties on Saipan. Although construction on Tinian would be reduced compared to the Modified Tinian Alternative, construction would still take place within West Field and thus could adversely affect that site through ground-disturbing activities potentially compromising archaeological deposits and/or structural remains.

Indirect effects from construction under the Hybrid Modified Alternative are similar to those discussed for the Modified Saipan Alternative and Modified Tinian Alternative. Construction of new Divert-related facilities at GSN and TNI would potentially alter the feeling of historic structures that contribute to the NHL on Saipan and West Field on Tinian, although the modified hybrid alternative involving Saipan would have a much smaller construction footprint and corresponding reduced effect on the feeling of the historic structures at the Aslito/Isley Field NHL.

Under the Hybrid Modified Alternative, the implementation phase of the proposed undertaking would divide the deployment of personnel and aircraft among the two islands. However, any given operation could take place at one island or the other, and the full number of 265 personnel and 720 operations on each island were used for the analysis. Therefore, adverse effects for the implementation phase would be the combination of those described under the Modified Saipan Alternative and Modified Tinian Alternative. These effects consist of an indirect adverse effect on the integrity of feeling of the Saipan Landing Beaches and Aslito/Isley Field portions of the SNHL and an indirect adverse effect on historic properties located at or near TNI including West Field, the Gurguan Airfield site, and the Naval Air Base HQ site.

Cumulative adverse effects on historic properties under the Hybrid Modified Alternative would be the combination of those discussed under the Modified Saipan Alternative and Modified Hybrid Alternative. These effects include fragmentation of the Aslito/Isley Field NHL.

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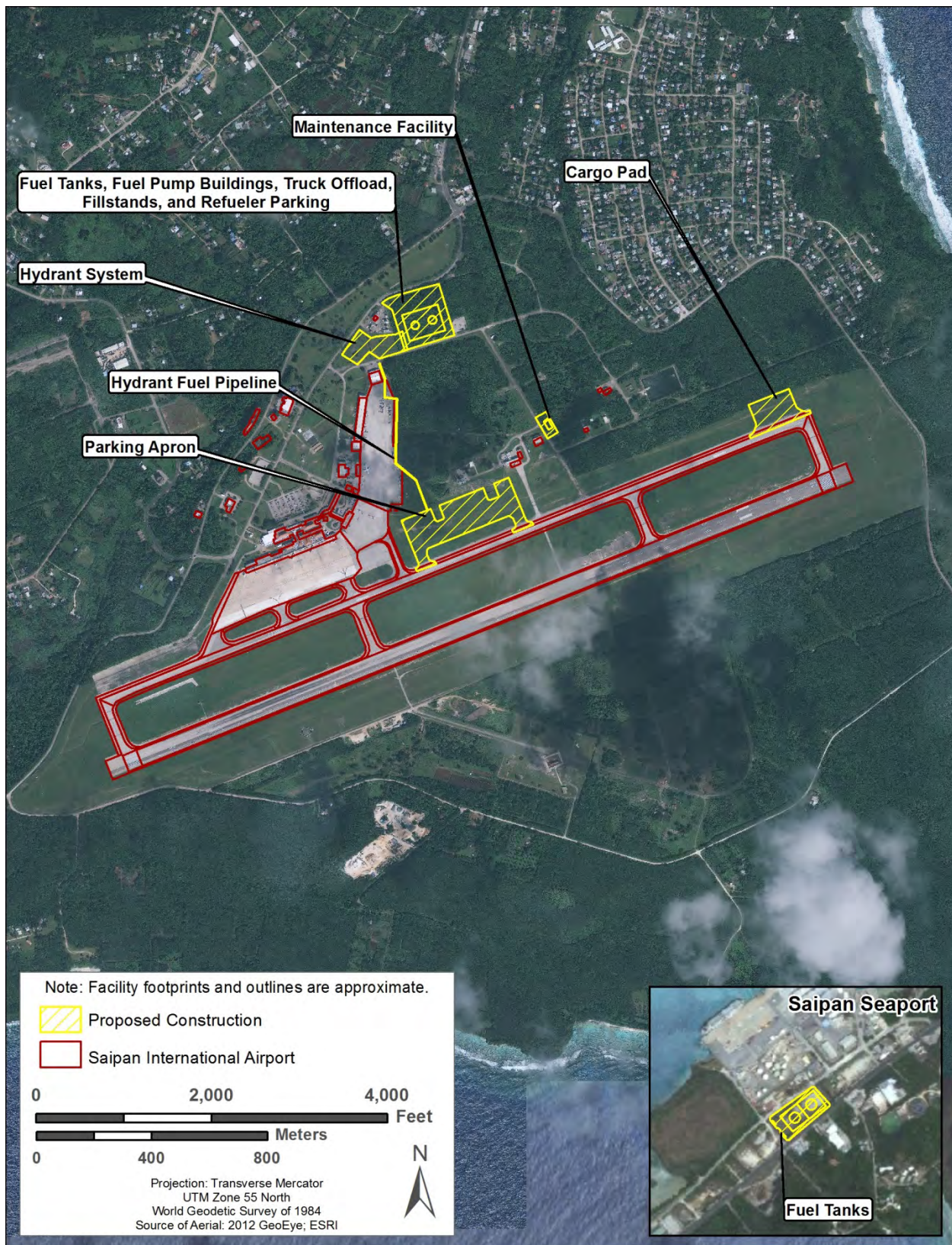
5. Figures

Figure 1. Divert Activities and Exercises Undertaking Maps

Figure 2. Divert Activities and Exercises Areas of Potential Effects (APE) Maps

Figure 3. Previous Survey Coverage Map for Modified Tinian Alternative

Figure 1. Divert Activities and Exercises Undertaking Maps



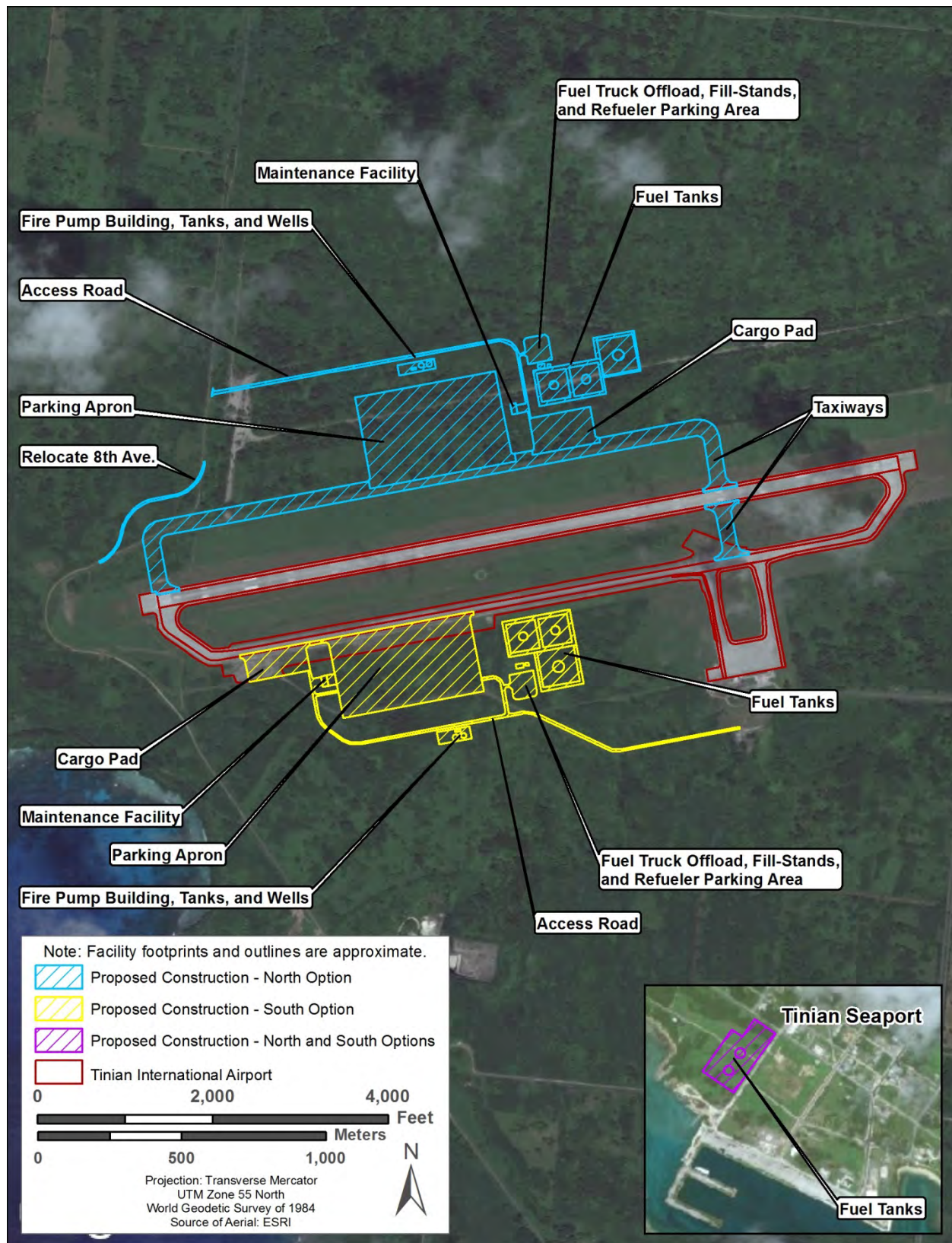
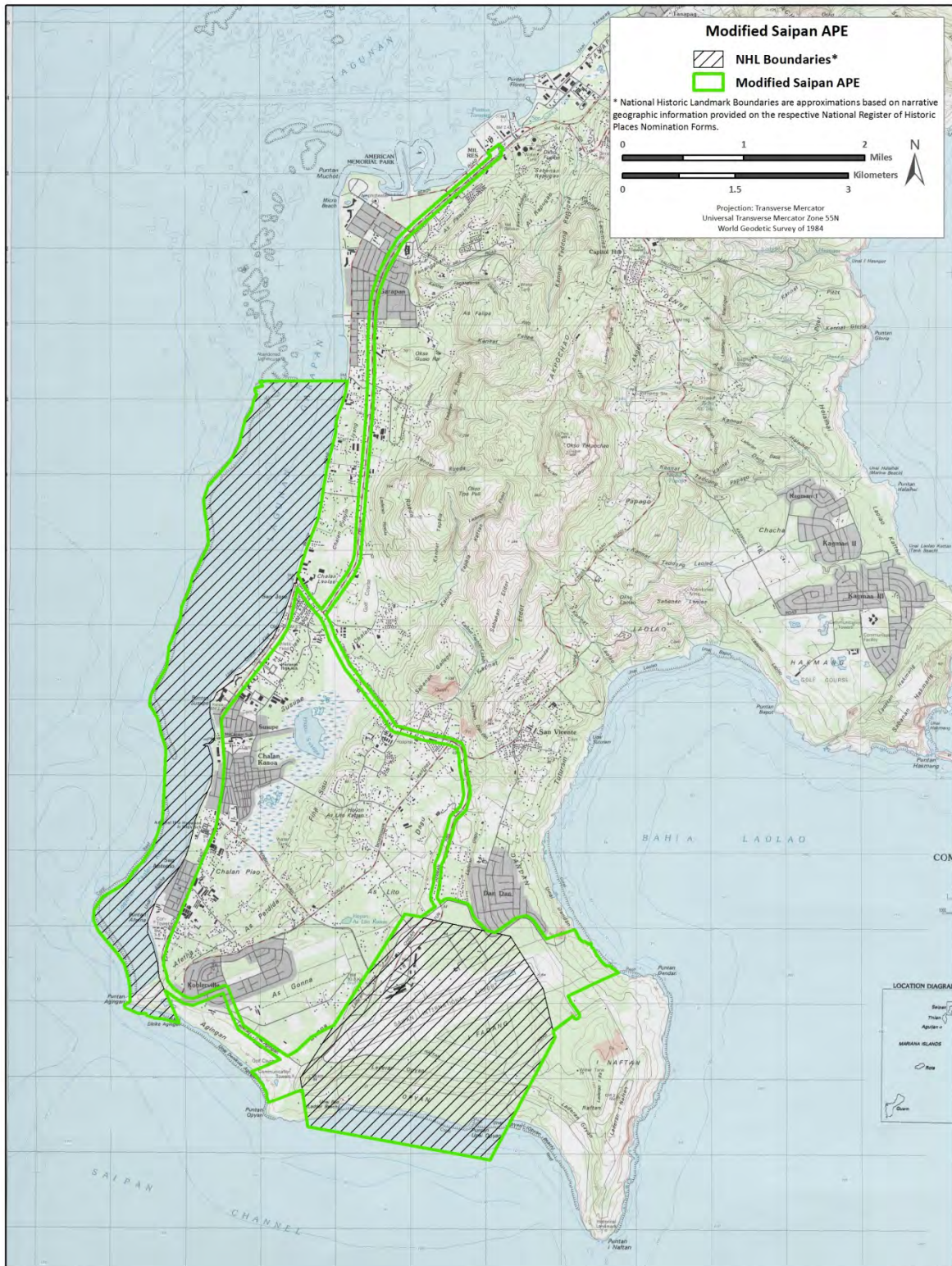


Figure 2. Divert Activities and Exercises Areas of Potential Effects (APE) Maps



Section 106 (NHPA) Finding of Effects
EIS for Divert Activities and Exercises, Commonwealth of the Northern Mariana Islands, August 2015

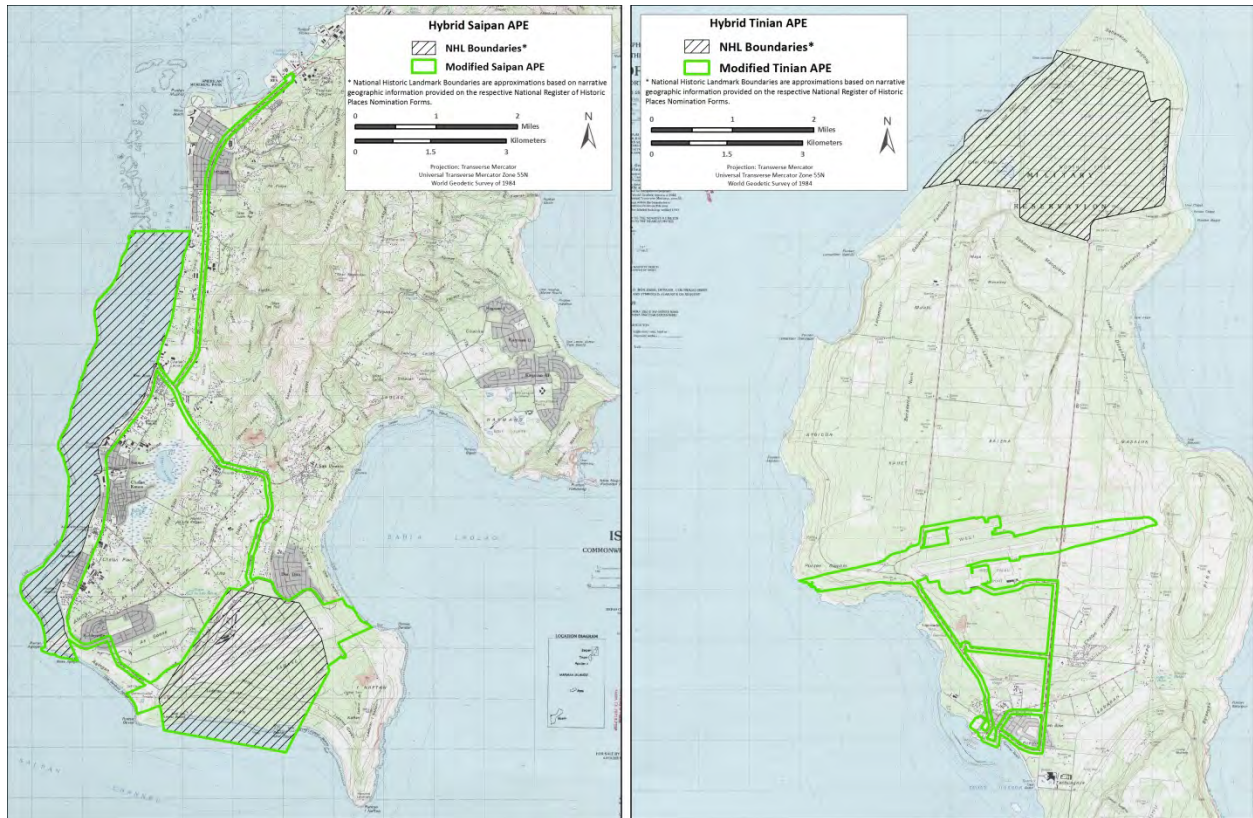
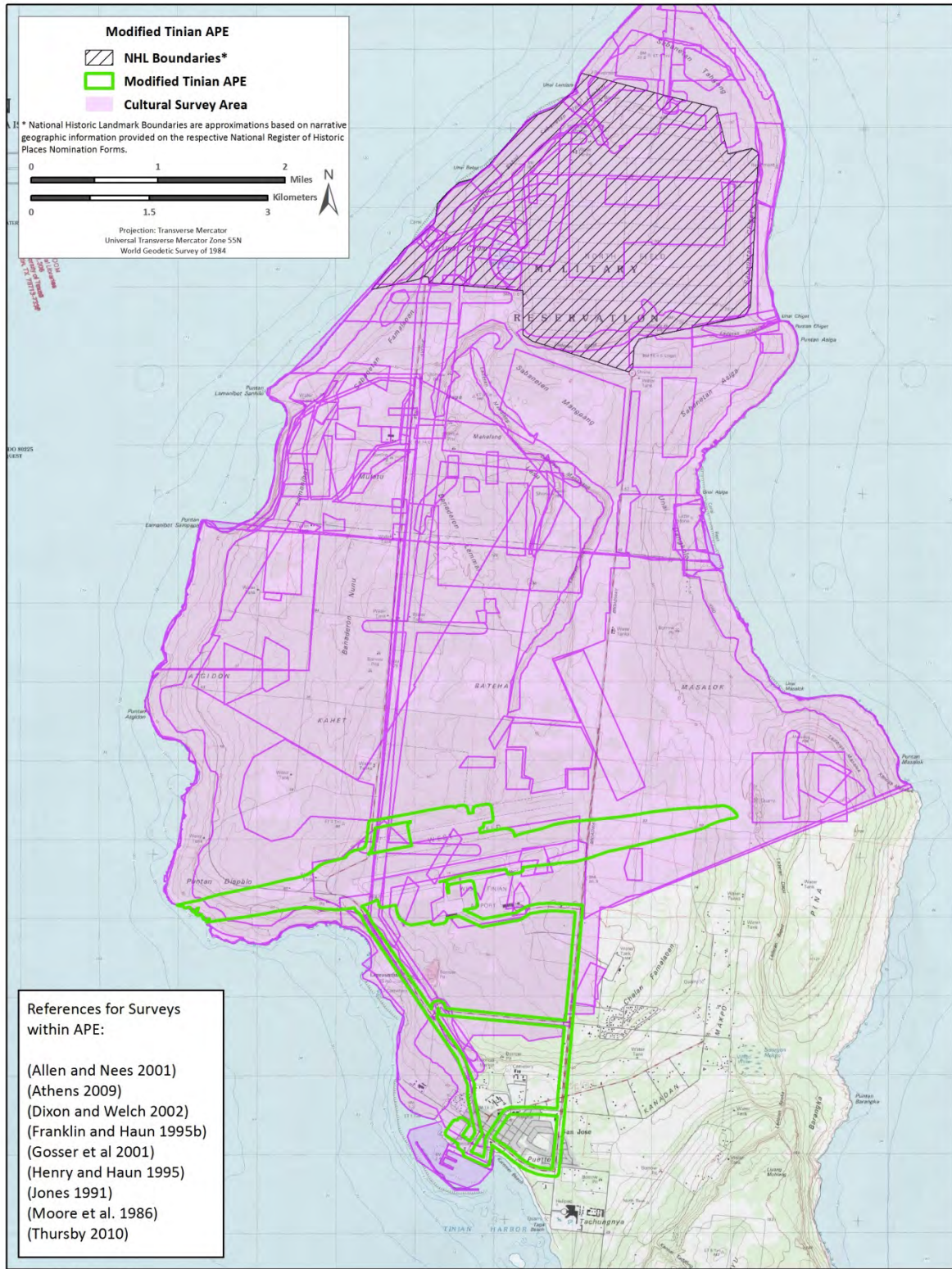


Figure 3. Previous Survey Coverage Map for Modified Tinian Alternative

Section 106 (NHPA) Finding of Effects
EIS for Divert Activities and Exercises, Commonwealth of the Northern Mariana Islands, August 2015



APPENDIX E

Air Quality Calculations and Modeling



Summary	Summarizes total emissions by calendar year for Modified Alternative 1 - Construction Phase (Saipan).
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Haul Truck On-Road	Estimates emissions from hauling construction materials to the project site.

Summary of Air Quality Emissions from Divert EIS - Modified Alternative 1 - Construction Phase (Saipan)

	NO_x (ton)	VOC (ton)	CO (ton)	SO₂ (ton)	PM₁₀ (ton)	PM_{2.5} (ton)	CO₂ (ton)
Construction Combustion	6.39	0.94	2.75	0.41	0.44	0.43	738.47
Construction Fugitive Dust	-	-	-	-	48.52	3.88	-
Construction Commuter	4.33	4.78	44.22	0.08	0.67	0.43	7,933.88
Haul Truck On-Road	13.36	1.24	7.14	0.04	0.43	0.41	3,464.53
TOTAL	24.08	6.96	54.11	0.53	50.06	5.15	12,136.88

Annual Summary of Air Quality Emissions from Divert EIS - Modified Alternative 1 - Construction Phase (Saipan)*

	Point and Area Sources Combined						
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	CO₂ (metric tons)
CY 01	8.03	2.32	18.04	0.18	16.69	1.72	3,670.13
CY 02	8.03	2.32	18.04	0.18	16.69	1.72	3,670.13
CY 03	8.03	2.32	18.04	0.18	16.69	1.72	3,670.13

* Construction duration is estimated to be 36 months and the emissions are assumed to be distributed evenly over the construction period.

Combustion Emissions - Modified Alternative 1 - Construction Phase (Saipan)Combustion Emissions of VOC, NO_x, SO₂, CO, PM_{2.5}, PM₁₀, and CO₂ due to Construction**Assumptions**

When multiple options exist under the general construction activities the most conservative value will be used to quantify air emission.

General Construction Activities**Area Disturbed (ft²)**

Construct Maintenance Facility	6,100 ft ²
Construct Airport/Seaport Fuel Storage (operational, Bulk and at the Port of Saipan)	324,958 ft ²
Construct Fuel Hydrant System	161,172 ft ²
Construct Hazardous Cargo Pad	250,470 ft ²
Construct Parking Apron	502,682 ft ²

Total General Construction Area: 1,245,382 ft²
28.6 acres

Total Demolition Area: 0 ft²
0.0 acres

Total Pavement Area: 502,682 ft²
11.5 acres

Total Disturbed Area: 1,245,382 ft²
28.6 acres

Construction Duration: 36 months

1 Yr Project Construction Activity: 240 days/yr

Assume 12 months, 4 weeks per month, 5 days per week.

Emission Factors Used for Construction Equipment

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0

Emission factors are taken from the NONROAD model and were provided to e²M by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.

Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Grading

Equipment	No. Req'd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Req'd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Req'd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment ^d	No. Req'd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Architectural Coatings

Equipment	No. Req'd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO₂ emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO _x	VOC	CO	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	3	124.924	7.731	47.130	2.498	7.637	7.407	14824.579
Paving Equipment	1	45.367	2.606	18.578	0.907	2.776	2.693	5623.957
Demolition Equipment	1	31.808	1.886	12.584	0.636	1.923	1.865	3703.074
Building Construction	1	39.396	3.130	17.382	3.116	2.829	2.744	4464.512
Air Compressor for Architectural Coating	1	3.574	0.373	1.565	0.251	0.309	0.300	359.773
Architectural Coating**			46.893					

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 acre)*(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days	
Grading:	1,245,382	28.59	6	(from "Grading" worksheet)
Paving:	502,682	11.54	55	
Demolition:	0	0.00	0	
Building Construction:	331,058	7.60	240	
Architectural Coating	331,058	7.60	20	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Total Project Emissions by Activity (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	749.54	46.39	282.78	14.99	45.82	44.44	88,947
Paving	2,495.20	143.31	1,021.81	49.90	152.69	148.10	309,318
Demolition	-	-	-	-	-	-	0
Building Construction	9,455.12	751.15	4,171.75	747.92	678.97	658.60	1,071,483
Architectural Coatings	71.48	945.33	31.31	5.02	6.19	6.00	7,195
Total Emissions (lbs):	12,771.34	1,886.18	5,507.65	817.84	883.66	857.15	1,476,943

Results: Total Project Annual Emission Rates

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Total Project Emissions (lbs)	12,771.34	1,886.18	5,507.65	817.84	883.66	857.15	1,476,943
Total Project Emissions (tons)	6.39	0.94	2.75	0.41	0.44	0.43	738.47

Construction Fugitive Dust Emissions - Proposed Action [Modified Alternative 1 - Construction Phase (Saipan)]

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19	ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42	ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006
PM_{2.5} Emissions			
PM _{2.5} Multiplier	0.10	(10% of PM ₁₀ emissions assumed to be PM _{2.5})	EPA 2001; EPA 2006
Control Efficiency	0.50	(assume 50% control efficiency for PM ₁₀ and PM _{2.5} emissions)	EPA 2001; EPA 2006

Project Assumptions

New Roadway Construction (0.42 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	11.5 acres

General Construction Activities (0.19 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	17.1 acres

	Project Emissions (tons/year)			
	PM ₁₀ uncontrolled	PM ₁₀ controlled	PM _{2.5} uncontrolled	PM _{2.5} controlled
New Roadway Construction	58.16	29.08	5.82	2.91
General Construction Activities	38.87	19.44	1.94	0.97
Total	97.04	48.52	7.76	3.88

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM₁₀/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM₁₀/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM₁₀/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM₁₀/acre-month) and 75% of the average emission factor (0.11 ton PM₁₀/acre-month). The 0.19 ton PM₁₀/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM₁₀/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM₁₀/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM₁₀/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM_{2.5} Multiplier

0.10

PM_{2.5} emissions are estimated by applying a particle size multiplier of 0.10 to PM₁₀ emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM₁₀ and PM_{2.5}

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Grading Schedule - Proposed Action [Modified Alternative 1 - Construction Phase (Saipan)]

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 28.6 acres/yr (from Combustion Worksheet)
Qty Equipment: 9.0 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions

Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project- specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	28.59	3.57
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	28.59	13.98
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	14.30	14.41
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	14.30	5.91
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	28.59	10.03
TOTAL								47.91

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 47.91
Qty Equipment: 9.00
Grading days/yr: 5.32

Construction/Staff Commuter Emissions - Modified Alternative 1 - Construction Phase (Saipan)

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors from the South Coast Air Quality Management District (SCAQMD) EMFAC 2007 (v 2.3) Model (on-road) were used. These emission factors are available online at [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)).

Assumptions:

Passenger vehicle emission factors for scenario year 2015 are used.

The average roundtrip commute for a construction/staff worker = 40 miles
Number of construction days = 240 days
Number of construction/Staff workers (daily) = 1500 people

Note: None

Passenger Vehicle Emission Factors for Year 2015 (lbs/mile)

NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
0.00060188	0.00066355	0.00614108	0.00001070	0.00009259	0.00006015	1.10192837

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Available online:

<[http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road))>. Accessed 18 August 2015.

Notes:

The SMAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC.

Construction Commuter Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	8667.025	9555.088	88431.513	154.140	1333.268	866.155	15867768.595
tons	4.334	4.778	44.216	0.0771	0.6666	0.4331	7933.884

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

No Statistical Area Available for GSN

				Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	Tier-1	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO	NOx	PM ₁₀	PM _{2.5}	SO ₂	VOC
No Data Available															
Grand Total				0	0	0	0	0	0	0	0	0	0	0	0

SOURCE:

<http://www.epa.gov/ttn/chief/eiinformation.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2002)

Site visited on 02 February 2012.

No Air Quality Control Region Identified

CNMI
CNMI DEQ

CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
0	0	0	0	0	0
0	0	0	0	0	0

Construction/Haul Truck Emissions - Modified Alternative 1 - Construction Phase (Saipan)

Emissions from hauling construction supplies, demolition debris, fill, and excavated material are estimated in this spreadsheet.

Emission Estimation Method: AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Concrete Mixing and Dump Truck Assumptions:

Dump trucks carry 11 cubic yards of material per trip.

Concrete mixing trucks carry 10 cubic yards of material per trip.

The average distance from the port to Commercial Concrete Supply Company is 7 miles; therefore, dump trucks will travel 14 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2 miles; therefore, concrete trucks will travel 4 miles round trip.

Fill Materials Assumptions:

Haul trucks carry 20 cubic yards of material per trip.

The average distance from the project site to the materials source is 20 miles; therefore, building material haul trucks will travel 40 miles round trip.

Estimated number of trips required by haul trucks = total amount of material/20 cubic yards per truck

Amount of demolition debris =	0 cubic yards	No Demolition in the Proposed Action
Amount of cement transported from port to CCSC =	1,122 cubic yards	
Amount of concrete transported from CCSC to project site =	17,980 cubic yards	
Amount of Excavation Materials for New Buildings =	553,503 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Building Materials =	415,127 cubic yards	Construction area multiplied by 9 feet.
Number of dump trucks required (port to CCSC) =	102 heavy duty diesel haul truck trips, Cells rounded up	
Number of concrete mixing trucks required (CCSC to project site) =	1798 heavy duty diesel haul truck trips, Cells rounded up	
Number of trucks required (Building Materials) =	48,432 heavy duty diesel haul truck trips	
Miles per trip (port to CCSC) =	14 miles	
Miles per trip (CCSC to project site) =	4 miles	
Miles per trip (Building Materials) =	40 miles	

Low Altitude Heavy Duty Diesel Vehicle 8b (HDDV8b) Average Emission Factors (grams/mile)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
HDDV8b	6.23	0.58	3.33	0.02	0.2	0.19	1615

Notes:

Emission factors for all pollutants are from Appendix A - On-Road Vehicle Emission Factors within AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Emission factors from calendar year 2015 were used assuming the average vehicle model year is 2005.

HDDV8b Haul Truck Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	26,726.10	2,488.14	14,285.38	85.80	857.98	815.08	6,929,051.32
tons	13.36	1.24	7.14	0.04	0.43	0.41	3,464.53

Example Calculation: NO_x emissions (lbs) = 40 miles per trip * 48,432 trips * NO_x emission factor (g/mile) * lb/453.6 g

Summary	Summarizes total emissions by calendar year for Modified Alternative 1 - Implementation Phase (Saipan).
Airfield Operations	Airfield operations consist of taxi, take-off and landings (sorties/LTOs), touch-and-go operations (TGOs), and low flybys (LFB) by aircraft.
Fuel Truck and Commuter Vehicle Emissions	Estimates emissions for workers and operational vehicles commuting to the site of the Proposed Action.
Fuel Transfer Emissions	Fuel loading operations under the Proposed Action involves the loading of fuel into tanker trucks and aircraft.
Internal Combustion Engine (ICE) Emissions	Estimates Emissions from Internal Combustion Engines (e.g Generators)
Fuel Storage Tanks	Estimates emissions from Above Ground Storage Tanks.

Criteria Pollutant and VOC Emissions Summary for Modified Alternative 1 - Implementation Phase (Saipan) (tons/year)

Source Category	PM10	PM2.5	CO	NOx	SOx	VOCs
Airfield Operations	0.055	0.053	18.672	6.771	0.982	1.246
Fuel Truck and Commuter Vehicle Emissions	0.023	0.019	0.279	0.536	0.001	0.048
Fuel Transfer	N/A	N/A	N/A	N/A	N/A	0.339
Fuel Storage Tanks	N/A	N/A	N/A	N/A	N/A	1.332
Total Criteria and VOC Pollutant Emissions (tons/year)	0.08	0.07	18.95	7.31	0.98	2.96

Greenhouse Gas (GHG) Emissions Summary for Modified Alternative 1 - Implementation Phase (Saipan) (metric tonnes/year)

Source Category	CO ₂ -equivalent (lb/year)	CO ₂ -equivalent (kg/year)	CO ₂ -equivalent (metric tonne/year)
Airfield Operations*	366,634,444	166,305,384	166,305
Fuel Truck and Commuter Vehicle Emissions	292,969	132,891	133
Fuel Transfer	0	0	0
Fuel Storage Tanks	0	0	0
Total GHG Emissions	366,927,413	166,438,275	166,438

DATA - Airfield Operations for Modified Alternative 1 - Implementation Phase (Saipan)

Aircraft exercises under this alternative are based on assuming 2 to 4 KC-135R aircraft operating up to 8 weeks per year for a maximum of 720 KC-135R operations per year. Each operation is equivalent to one landing or one take-off (1 LTO Cycle = 2 operations).

Landing and Takeoff (LTO) Cycles

Description	Quantity
# of KC-135R LTO's per year	360

Legend

Airfield Activity Data (Worst Case Scenario)

Aircraft Model	Aircraft Model Used to Match to Available Emission Factors	Engine Model	# Engines	APU Model	# APUs	Notes	LTO Cycles
KC-135R	KC-135-R	F108-CF-201	4	No data on APUs	See below		360
Note: F108-CF-201 is the military designation of the CFM56-2B-1 engine.							

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 1 - Implementation Phase (Saipan)

Aircraft Criteria Pollutant Emission Factors

						Emission Factors in lb Pollutant per 1000 lb Fuel Burned						
Aircraft Model	Engine Model	# Engines	Reference Thrust Mode	LTO/TGO Thrust Mode	Fuel Flow (lb/hr)	PM10	PM2.5	CO	NO _x	SO ₂	VOCs	TIM
KC-135R	F108-CF-201	4	Idle	Idle	1016	0.06	0.06	30.70	4.00	1.06	2.10	47.7
KC-135R	F108-CF-201	4	Approach	Approach	2468	0.06	0.05	4.20	8.20	1.06	0.09	5.2
KC-135R	F108-CF-201	4	Climbout	Climbout	6500	0.05	0.05	0.90	16.00	1.06	0.06	1.6
KC-135R	F108-CF-201	4	Takeoff	Takeoff	7818	0.07	0.06	0.90	18.05	1.06	0.05	0.7

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-8

APU Emission Factors

		APU Emission Factors in lb Pollutant per hour							APU (hr)
Aircraft Model	APU	APU Model	PM10	PM2.5	CO	NO _x	SO ₂	VOCs	
KC-135R	See below	No Data Available.							

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 1 - Implementation Phase (Saipan)

Default Time-in-Mode		Typical Duration by Mode (minutes)				
Aircraft Type	Taxi/Idle-out	Takeoff	Climbout	Approach	Taxi/Idle-in	Total
KC-135R	32.8	0.7	1.6	5.2	14.9	55.2

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-4

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 1 - Implementation Phase (Saipan)

Greenhouse Gas Emission Factors

Units	CO ₂	CH ₄	N ₂ O
kg/gal fuel	9.80	---	---
g/gal fuel	---	0.27	0.31

Reference: Footnote 2, from Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 1 - Implementation Phase (Saipan)

Criteria Pollutant and VOC Emissions per LTO by Aircraft Type

Calculated as the sum of the products of [(minutes) * (fuel flow/minute) * (lbs pollutant/lb fuel)] for each of the thrust modes.

Reported Aircraft Model	C a a	Emission in lb Pollutant per LTO							APU
		Fuel (lb)	PM10 (lb)	PM2.5 (lb)	CO (lb)	NOx (lb)	SOx (lb)	VOCs (lb)	
KC - 135R	0	5144.6	0.3	0.3	103.7	37.6	5.5	6.9	0

Total Criteria Pollutant and VOC Emissions for maximum LTO's by Aircraft Type

Reported Aircraft Model	C a a	Total LTO's	Fuel (lb)	PM10 (tons)	PM2.5 (tons)	CO (tons)	NOx (tons)	SOx (tons)	VOCs (tons)	APU
KC - 135R	0	360	1,852,065.6	0.05	0.05	18.67	6.77	0.98	1.25	0
Worst Case Scenario			1,852,065.60	0.05	0.05	18.67	6.77	0.98	1.25	0

Total gallons of fuel used for LTOs (277,671 gal.) is based on the 6.67 lb/gal density of JP-8 as provided in footnote 2. of Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 1 - Implementation Phase (Saipan)

Greenhouse Gas Emissions

Assume aircraft will use 300,000 gallons of fuel per day for 56 days.

Quantity (gallons)	Fuel Type	CH ₄ (kg)	N ₂ O (kg)	CO ₂ (kg)	CO ₂ -equivalent (kg)	CO ₂ -equivalent (metric tonne)
16,800,000	JP-8	4536	5208	164,640,000	166,305,384	166,305

The CH₄ and N₂O Global Warming Potential multipliers are 25 and 298, respectively from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014.

DATA - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Given: Six 10,000 gal Fuel Trucks will take 14 days at 10hrs/day to provide initial fill from Saipan port to Saipan International Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 42 days after the initial fill.

Under the commercial lodging option six busses will transport a total of 256 personnel 4 roundtrips/day for a total of 24 roundtrips/day for 8 weeks.

Assumptions: A Gross Vehicle Weight (GVW) of 36,200 lbs will be used, based off of an 84 passenger Blue Bird bus.

Assume fuel truck GVW > 60,000 lbs since fuel load alone is 83,400 lbs.

Assume fuel trucks travel at 55 miles per hour

Assume 40 miles per roundtrip for busses.

Vehicle Weight Classes for Which Emission Factors are Published

Vehicle Category	Description	SCC
LDGV	Light-Duty Gasoline Vehicles (i.e., passenger cars) does not include SUVs, vans or pickups	A2201001000
LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs GVW - includes pickup trucks, sport utility vehicles and vans)	A2201020000
LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVW - includes pickup trucks, sport utility vehicles and vans)	A2201040000
HDGV2B	Class 2b Heavy-Duty Gasoline Vehicles (8501-10,000 lbs GVW)	A2201070000
HDGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs GVW)	A2201070000
HDGV8A	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs GVW)	A2201070000
LDDV	Light-Duty Diesel Vehicles (Passenger Cars)	
LDDT34	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs GVW)	A2230002000
HDDV2B	Class 2b Heavy-Duty Diesel Vehicles (8501-10,000 lbs GVW - includes pickup trucks)	A2230070000
HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs GVW)	A2230070000
HDDV8A	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	A2230070000
HDDV8B	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	A2230070000
MC	Motorcycles	A2201080000

Emission Factors - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Emission Factors for Calendar Year 2015

Vehicle Class	Model Year	Emission Factors in grams per Mile ^a								
		PM ₁₀	PM _{2.5}	CO	NOx	SOx	VOCs	CO ₂	Fugitive PM ₁₀	Fugitive PM _{2.5}
HDDV8A*	2005	0.2	0.19	2.8	5.47	0.01	0.48	1544.1	0.05	0.01
HDDV8B**	2005	0.2	0.19	3.33	6.23	0.02	0.58	1615.2	0.05	0.01

* Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8a

**Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8b

a) Emission factors from Appendix A of Air Emissions Factor Guide to Air Force Mobile Sources, AFCEE, December 2009

Greenhouse Gas Emission Factors for Calendar Year 2015

Vehicle Class	CH ₄ (g/mile)	N ₂ O (g/mile)
HDDV	0.0051	0.0048

g/mile = grams per mile

CH₄ = Methane; N₂O = Nitrous Oxide

b) Emission Factors from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>).

Emission Calculations - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Miles for Commuter Emissions for 8 week training exercises

Vehicle Class	Speed Miles/hour	Miles/Trip	Total Trips/Day	Hours/Day	Total Days	Total Miles
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001- 60,000 lbs GVW)	---	40	24	---	56	53,760
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	55	---	---	10	56	30,800

Criteria and VOC Emissions for Commuters

Vehicle Class	Model Year	Annual Miles	Criteria Pollutant Emissions (tons/year)					
			PM ₁₀	PM _{2.5}	CO	NOx	SOx	VOCs
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001- 60,000 lbs GVW)	2005	53,760	0.015	0.012	0.166	0.324	0.001	0.028
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	2005	30,800	0.008	0.007	0.113	0.212	0.001	0.020
Total			0.023	0.019	0.279	0.536	0.001	0.048

Particulate emissions include exhaust, brake wear, tire wear. Assume paved road.

Greenhouse Gas Emissions for Commuters

Vehicle Class	Annual Miles	CO ₂ (lb/year)	CH ₄ (lb/year)	N ₂ O (lb/year)	CH ₄ GWP Multiplier	N ₂ O GWP Multiplier	CO ₂ Equivalent (lb/year)	CO ₂ Equivalent (metric tonnes/year)
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001- 60,000 lbs GVW)	53,760	183,004.44	0.60	0.57	25	298	183,189.08	83.09
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	30,800	109,674.07	0.35	0.33	25	298	109,779.86	49.80
Total		292,678.52	0.95	0.89	---	---	292,968.94	132.89

GWP = Global Warming Potential; 100-year GWP values obtained from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>)

Emission Calculations Method - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Calculation Method: Equation 4-1, AFCEE 2009, Mobile Emissions Guide

$$EP = VMTVehCat * EFPolVehCat * 0.002205$$

Where,

EP = Emissions of each individual pollutant (lb/yr)

VMTVehCat = Annual vehicle miles traveled by each vehicle category (LDGV, LDGT1, LDDV, etc.) (mi/yr)

EFPolVehCat = Emission factor of each pollutant for each vehicle category (g/mi)

0.002205 = Factor for converting grams to pounds (g/lb).

DATA - Fuel Loading Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Given:

Total Exercise Days (8 weeks)	56
Initial Fuel Fill Days	14
Remaining Fuel Fill Days	42
Total # of Fuel Trucks	6
Total Gallons per Fuel Truck	10,000
Trips per day per Fuel Truck	5
1 bbl conversion to gallons	42
Total Fuel (gal) during Initial Fill	4,200,000
Total Fuel (gal) during Remaining Exercise	12,600,000
Total Fuel (gal) during Exercise (8 Weeks)	16,800,000

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Flightline	Loading Aircraft from Hydrants	JP-8	16,800,000.0	Loading
Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8400000	Loading
Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8400000	Loading

Emission Factors - Fuel Loading Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

JP-8 emission factors (lb/Mgal)	Dispensing	Loading
	Splash	Bottom fill
Molecular Weight =	130	0.020
True Vapor Pressure (psia) =	0.011	
Dispensing Displacement losses =	0.0487	
Spillage =	0.7	
Total =	0.749	

AP-42 Table 7.1-2 dated 11/06
AP-42 Table 7.1-2 dated 11/06 @ 70F (annual avg.)
AP-42 Section 5.2 dated 6/08 Equation (1)
AP-42 Table 5.2-7 dated 6/08

Emission Calculations - Fuel Loading Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(ton)
Flightline	Loading Aircraft from Hydrants	JP-8	16,800,000	338.9	0	338.9	0.17
Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Total			33,600,000	678	0	678	0.34

Emission Calculations Method - Fuel Loading Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Displacement emissions for Diesel and JP-8 were estimated using Equation (1) from AP-42 Section 5.2, Transportation and Marketing of Petroleum Liquids, dated 6/08

$$L_L = 12.46 (SPM)/T$$

Where

L_L = Loading loss in lb/10³ gal

S = Saturation Factor 1.45 for splash loading, 0.6 for bottom loading

M = molecular weight,

T = temperature of bulk liquid (assume average annual ambient temperature)

DATA - Fuel Storage Tank Emissions for Modified Alternative 1 - Implementation Phase (Saipan)

Fuel storage tank emissions were estimated using the U.S. EPA TANKS storage tank emissions calculation software (Version 4.0.9d). The emissions calculations algorithms in the TANKS program are based on Chapter 7 of EPA's AP-42. Honolulu, Hawaii was used as a surrogate location for the tanks as meteorological data does not exist in TANKS for CNMI. Jet Kerosene fuel was used as the surrogate for JP-8 in the TANKS model as it is the closest in characteristics to JP-8.

Emission Calculations Summary from TANKS*

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Seaport)- 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Seaport)- 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Airport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 4 (Airport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Total		1713.68	950.24	2663.92	1.33

*See the following references for TANKS printouts. (SM11 - TANKS) & (SM12 - TANKS)

Summary	Summarizes total emissions by calendar year for Modified Alternative 2A - Construction Phase (Tinian North).
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Haul Truck On-Road	Estimates emissions from hauling construction materials to the project site.

Summary of Air Quality Emissions from Divert EIS - Modified Alternative 2A - Construction Phase (Tinian North)

	NO_x (ton)	VOC (ton)	CO (ton)	SO₂ (ton)	PM₁₀ (ton)	PM_{2.5} (ton)	CO₂ (ton)
Construction Combustion	19.668	2.119	8.316	0.956	1.306	1.266	2,329.220
Construction Fugitive Dust	-	-	-	-	230.883	21.912	-
Construction Commuter	5.778	6.370	58.954	0.1028	0.889	0.577	10,578.512
Haul Truck On-Road	9.815	0.914	5.246	0.032	0.315	0.299	2,544.627
TOTAL	35.26	9.40	72.52	1.09	233.39	24.06	15,452.36

Annual Summary of Air Quality Emissions from Divert EIS - Modified Alternative 2A - Construction Phase (Tinian North)*

	Point and Area Sources Combined						
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	CO₂ (metric tons)
CY 01	11.75	3.13	24.17	0.36	77.80	8.02	4,672.72
CY 02	11.75	3.13	24.17	0.36	77.80	8.02	4,672.72
CY 03	11.75	3.13	24.17	0.36	77.80	8.02	4,672.72

* Construction duration is estimated to be 36 months and the emissions are assumed to be distributed evenly over the construction period.

Combustion Emissions - Modified Alternative 2A - Construction Phase (Tinian North)Combustion Emissions of VOC, NO_x, SO₂, CO, PM_{2.5}, PM₁₀, and CO₂ due to Construction**Assumptions**

When multiple options exist under the general construction activities the most conservative value will be used to quantify air emission.

General Construction Activities**Area Disturbed (ft²)**

Construct Taxiway	1,385,300 ft ²
Construct Road Re-Route	40,585 ft ²
Construct New Access Roads	128,924 ft ²
Construct Maintenance Facility	7,570 ft ²
Construct Jet Fuel System and Fire Pump System (Operational, Bulk and at the Port of Tinian)	891,266 ft ²
Construct Hazardous Cargo Pad	299,754 ft ²
Construct Parking Apron	1,729,805 ft ²

Total General Construction Area:	898,836 ft ²	
	20.6 acres	
Total Demolition Area:	0 ft ²	
	0.0 acres	
Total Pavement Area:	3,584,368 ft ²	
	82.3 acres	
Total Disturbed Area:	4,483,204 ft ²	
	102.9 acres	
Construction Duration:	36 months	
1 Yr Project Construction Activity:	240 days/yr	Assume 12 months, 4 weeks per month, 5 days per week.

Emission Factors Used for Construction Equipment

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0
Emission factors are taken from the NONROAD model and were provided to e²M by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.
Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Grading

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment ^d	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Architectural Coatings

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO₂ emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO _x	VOC	CO	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	10	416.412	25.770	157.099	8.328	25.455	24.691	49415.263
Paving Equipment	8	362.938	20.846	148.627	7.259	22.209	21.543	44991.655
Demolition Equipment	1	31.808	1.886	12.584	0.636	1.923	1.865	3703.074
Building Construction	2	78.793	6.260	34.765	6.233	5.658	5.488	8929.023
Air Compressor for Architectural Coating	2	7.148	0.746	3.131	0.502	0.619	0.600	719.547
Architectural Coating**			77.268					

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 acre)/(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days	
Grading:	4,483,204	102.92	6	(from "Grading" worksheet)
Paving:	3,584,368	82.29	49	
Demolition:	0	0.00	0	
Building Construction:	898,836	20.63	240	
Architectural Coating:	898,836	20.63	20	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Total Project Emissions by Activity (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	2,498.47	154.62	942.59	49.97	152.73	148.15	296,492
Paving	17,783.98	1,021.44	7,282.74	355.68	1,088.23	1,055.58	2,204,591
Demolition	-	-	-	-	-	-	0
Building Construction	18,910.23	1,502.31	8,343.51	1,495.85	1,357.94	1,317.20	2,142,966
Architectural Coatings	142.96	1,560.28	62.62	10.05	12.37	12.00	14,391
Total Emissions (lbs):	39,335.65	4,238.65	16,631.46	1,911.54	2,611.27	2,532.94	4,658,439

Results: Total Project Annual Emission Rates

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Total Project Emissions (lbs)	39,335.65	4,238.65	16,631.46	1,911.54	2,611.27	2,532.94	4,658,439
Total Project Emissions (tons)	19.67	2.12	8.32	0.96	1.31	1.27	2,329.22

Construction Fugitive Dust Emissions - Proposed Action [Modified Alternative 2A - Construction Phase (Tinian North)]

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19 ton PM ₁₀ /acre-month		MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42 ton PM ₁₀ /acre-month		MRI 1996; EPA 2001; EPA 2006

PM_{2.5} Emissions

PM _{2.5} Multiplier	0.10	(10% of PM ₁₀ emissions assumed to be PM _{2.5})	EPA 2001; EPA 2006
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Control Efficiency

0.50	(assume 50% control efficiency for PM ₁₀ and PM _{2.5} emissions)	EPA 2001; EPA 2006
------	--	--------------------

Project Assumptions

New Roadway Construction (0.42 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	82.3 acres

General Construction Activities (0.19 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	20.6 acres

	Project Emissions (tons/year)			
	PM ₁₀ uncontrolled	PM ₁₀ controlled	PM _{2.5} uncontrolled	PM _{2.5} controlled
New Roadway Construction	414.72	207.36	41.47	20.74
General Construction Activities	47.05	23.52	2.35	1.18
Total	461.77	230.88	43.82	21.91

General Construction Activities Emission Factor

0.19 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM₁₀/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM₁₀/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM₁₀/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM₁₀/acre-month) and 75% of the average emission factor (0.11 ton PM₁₀/acre-month). The 0.19 ton PM₁₀/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM₁₀/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM₁₀/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM₁₀/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM_{2.5} Multiplier

0.10

PM_{2.5} emissions are estimated by applying a particle size multiplier of 0.10 to PM₁₀ emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM₁₀ and PM_{2.5}

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Grading Schedule - Proposed Action [Modified Alternative 2A - Construction Phase (Tinian North)]

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 102.9 acres/yr (from Combustion Worksheet)
 Qty Equipment: 31.0 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions.

Terrain is mostly flat.
 An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
 200 hp bulldozers are used for site clearing.
 300 hp bulldozers are used for stripping, excavation, and backfill.
 Vibratory drum rollers are used for compacting.
 Stripping, Excavation, Backfill and Compaction require an average of two passes each.
 Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	102.92	12.87
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	102.92	50.32
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	51.46	51.89
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	51.46	21.29
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	102.92	36.10
TOTAL								172.45

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 172.45
 Qty Equipment: 31.00
 Grading days/yr: 5.56

Construction/Staff Commuter Emissions - Modified Alternative 2A - Construction Phase (Tinian North)

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors from the South Coast Air Quality Management District (SCAQMD) EMFAC 2007 (v 2.3) Model (on-road) were used. These emission factors are available online at [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)).

Assumptions:

Passenger vehicle emission factors for scenario year 2015 are used.

The average roundtrip commute for a construction/staff worker = 40 miles
Number of construction days = 240 days
Number of construction/Staff workers (daily) = 2000 people

Note: None

Passenger Vehicle Emission Factors for Year 2015 (lbs/mile)

NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
0.00060188	0.00066355	0.00614108	0.00001070	0.00009259	0.00006015	1.10192837

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Available online: <[http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road))>. Accessed 18 August 2015.

Notes:

The SCAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC.

Construction Commuter Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	11,556.034	12,740.118	117,908.683	205.519	1,777.691	1,154.873	21,157,024.793
tons	5.778	6.370	58.954	0.103	0.889	0.577	10,578.512

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

No Statistical Area Available for TNI

				Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	Tier-1	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO	NOx	PM ₁₀	PM _{2.5}	SO ₂	VOC
No Data Available															

SOURCE:

<http://www.epa.gov/ttn/chief/eiinformation.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2002)

Site visited on 02 February 2012.

No Air Quality Control Region Identified

CNMI

CNMI DEQ

CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
0	0	0	0	0	0
0	0	0	0	0	0

Construction/Haul Truck Emissions - Modified Alternative 2A - Construction Phase (Tinian North)

Emissions from hauling construction supplies, demolition debris, fill, and excavated material are estimated in this spreadsheet.

Emission Estimation Method: AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Concrete Mixing and Dump Truck Assumptions:

Dump trucks carry 11 cubic yards of material per trip.

Concrete mixing trucks carry 10 cubic yards of material per trip.

The average distance from the port to Commercial Concrete Supply Company is 1.7 miles; therefore, dump trucks will travel 3.4 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2.3 miles; therefore, concrete trucks will travel 4.6 miles round trip.

Fill Materials Assumptions:

Haul trucks carry 20 cubic yards of material per trip.

The average distance from the project site to the materials source is 20 miles; therefore, building material haul trucks will travel 40 miles round trip.

Estimated number of trips required by haul trucks = total amount of material/20 cubic yards per truck

Amount of demolition debris =	0 cubic yards	No Demolition in the Proposed Action
Amount of cement transported from port to CCSC =	4,004 cubic yards	
Amount of concrete transported from CCSC to project site =	64,780 cubic yards	
Amount of Excavation Materials for New Structures/Buildings =	399,483 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Building/Structure Materials =	299,612 cubic yards	Construction area multiplied by 9 feet.
Number of dump trucks required (port to CCSC) =	364 heavy duty diesel haul truck trips, Cells rounded up	
Number of concrete mixing trucks required (CCSC to project site) =	6478 heavy duty diesel haul truck trips, Cells rounded up	
Number of trucks required (Building Materials) =	34,955 heavy duty diesel haul truck trips	
Miles per trip (port to CCSC) =	3.4 miles	
Miles per trip (CCSC to project site) =	4.6 miles	
Miles per trip (Building Materials) =	40.0 miles	

Low Altitude Heavy Duty Diesel Vehicle 8b (HDDV8b) Average Emission Factors (grams/mile)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
HDDV8b	6.23	0.58	3.33	0.02	0.20	0.19	1615

Notes:

Emission factors for all pollutants are from Appendix A - On-Road Vehicle Emission Factors within AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Emission factors from calendar year 2015 were used assuming the average vehicle model year is 2005.

HDDV8b Haul Truck Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	19,629.80	1,827.49	10,492.33	63.02	630.17	598.66	5,089,253.54
tons	9.81	0.91	5.25	0.03	0.32	0.30	2,544.63

Example Calculation: NO_x emissions (lbs) = 40 miles per trip * 34,955 trips * NO_x emission factor (g/mile) * lb/453.6 g

DATA - Fuel Storage Tank Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Fuel storage tank emissions were estimated using the U.S. EPA TANKS storage tank emissions calculation software (Version 4.0.9d). The emissions calculations algorithms in the TANKS program are based on Chapter 7 of EPA's AP-42. Honolulu, Hawaii was used as a surrogate location for the tanks as meteorological data does not exist in TANKS for CNMI. Jet Kerosene fuel was used as the surrogate for JP-8 in the TANKS model as it is the closest in characteristics to JP-8.

Emission Calculations Summary from TANKS*

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Airport) - 60,000 bbl, cut and cover or AST	4,581,818	210.07	714.88	924.95	0.46
Tank 4 (Airport) - 60,000 bbl, cut and cover or AST	4,581,818	210.07	714.88	924.95	0.46
Tank 5 (Airport) - 100,000 bbl, cut and cover or AST	7,636,364	350.11	1172.01	1522.12	0.76
Total		1,627.09	3,076.89	4,703.98	2.35

*See the following references for TANKS printouts. (SM12 - TANKS) & (SM13 - TANKS)

Summary	Summarizes total emissions by calendar year for Modified Alternative 2a - Implementation Phase (Tinian North).
Airfield Operations	Aircraft operations consist of taxi, take-off and landings (sorties or LTOs), touch-and-go operations (TGOs), and low flybys (LFB) by base aircraft.
Fuel Truck and Commuter Vehicle Emissions	Estimates emissions for workers and operational vehicles commuting to the site of the Proposed Action.
Fuel Transfer Emissions	Fuel loading operations under the Proposed Action involves the loading of fuel into tanker trucks and aircraft.
Internal Combustion Engine (ICE) Emissions	Estimates Emissions from Internal Combustion Engines (e.g Generators)
Fuel Storage Tanks	Estimates emissions from Above Ground Storage Tanks.

Criteria Pollutant and VOC Emissions Summary for Modified Alternative 2a - Implementation Phase (Tinian North) (tons/year)

Source Category	PM10	PM2.5	CO	NOx	SOx	VOCs
Airfield Operations	0.05	0.05	18.67	6.77	0.98	1.25
Fuel Truck and Commuter Vehicle Emissions	0.02	0.02	0.28	0.54	0.00	0.05
Fuel Transfer	N/A	N/A	N/A	N/A	N/A	0.34
Fuel Storage Tanks	N/A	N/A	N/A	N/A	N/A	2.35
Total Criteria and VOC Pollutant Emissions (tons/year)	0.08	0.07	18.95	7.31	0.98	3.98

Greenhouse Gas (GHG) Emissions Summary for Modified Alternative 2a - Implementation Phase (Tinian North) (metric tonnes/year)

Source Category	CO ₂ -equivalent (lb/year)	CO ₂ -equivalent (kg/year)	CO ₂ -equivalent (metric tonne/year)
Airfield Operations*	366,634,444	166,305,384	166,305
Fuel Truck and Commuter Vehicle Emissions	292,969	132,891	133
Fuel Transfer	0	0	0
Fuel Storage Tanks	0	0	0
Total GHG Emissions	366,927,413	166,438,275	166,438

DATA - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Aircraft exercises under this alternative are based on assuming 2 to 4 KC-135R aircraft operating up to 8 weeks per year for a maximum of 720 KC-135R operations per year. Each operation is equivalent to one landing or one take-off (1 LTO Cycle = 2 operations).

Landing and Takeoff (LTO) Cycles

Description	Quantity
# of KC-135R LTO's per year	360

Legend

Airfield Activity Data (Worst Case Scenario)

Aircraft Model	Aircraft Model Used to Match to Available Emission Factors	Engine Model	# Engines	APU Model	# APUs	Notes	LTO Cycles
KC-135R	KC-135-R	F108-CF-201	4	No data on APUs	See below		360

Note: F108-CF-201 is the military designation of the CFM56-2B-1 engine.

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Aircraft Criteria Pollutant Emission Factors

Aircraft Model	Engine Model	# Engines	Reference Thrust Mode	LTO/GO Thrust Mode	Fuel Flow (lb/hr)	Emission Factors in lb Pollutant per 1000 lb Fuel Burned						
						PM10	PM2.5	CO	NO _x	SO ₂	VOCs	TIM
KC-135R	F108-CF-201	4	Idle	Idle	1016	0.06	0.06	30.70	4.00	1.06	2.10	47.7
KC-135R	F108-CF-201	4	Approach	Approach	2468	0.06	0.05	4.20	8.20	1.06	0.09	5.2
KC-135R	F108-CF-201	4	Climbout	Climbout	6500	0.05	0.05	0.90	16.00	1.06	0.06	1.6
KC-135R	F108-CF-201	4	Takeoff	Takeoff	7818	0.07	0.06	0.90	18.05	1.06	0.05	0.7

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-8

APU Emission Factors

APU Emission Factors									
Aircraft Model	# APU	APU Model	APU Emission Factors in lb Pollutant per hour						APU (hr)
			PM10	PM2.5	CO	NO _x	SO ₂	VOCs	
			No Data Available.						
KC-135R									

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Default Time-In-Mode

Aircraft Type	Typical Duration by Mode (minutes)					
	Taxi/Idle	Takeoff	Climbout	Approach	Taxi/Idle-in	Total
KC-135R	32.8	0.7	1.6	5.2	14.9	55.2

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-4

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Greenhouse Gas Emission Factors

Units	CO ₂	CH ₄	N ₂ O
kg/gal fuel	9.80	---	---
g/gal fuel	---	0.27	0.31

Reference: Footnote 2, from Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)
Criteria Pollutant and VOC Emissions per LTO by Aircraft Type
Calculated as the sum of the products of [(minutes) * (fuel flow/minute) * (lbs pollutant/lb fuel)] for each of the thrust modes.

Reported Aircraft Model	APU	Emission in lb Pollutant per LTO							APU
		Fuel (lb)	PM10 (lb)	PM2.5 (lb)	CO (lb)	NOx (lb)	SOx (lb)	VOCs (lb)	
KC-135R	0	5144.6	0.3	0.3	103.7	37.6	5.5	6.9	0

Total Criteria Pollutant and VOC Emissions for maximum LTO's by Aircraft Type

Reported Aircraft Model	APU	Total LTO's	Fuel (lb)	PM10 (tons)	PM2.5 (tons)	CO (tons)	NOx (tons)	SOx (tons)	VOCs (tons)	APU
KC-135R	0	360	1,852,065.6	0.05	0.05	18.67	6.77	0.98	1.25	0
Worst Case Scenario			1,852,065.60	0.05	0.05	18.67	6.77	0.98	1.25	0

Total gallons of fuel used for LTOs (277,671 gal.) is based on the 6.67 lb/gal density of JP-8 as provided in footnote 2. of Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Greenhouse Gas Emissions

Assume aircraft will use 300,000 gallons of fuel per day for 56 days.

Quantity (gallons)	Fuel Type	CH ₄ (kg)	N ₂ O (kg)	CO ₂ (kg)	CO ₂ -equivalent (kg)	CO ₂ -equivalent (metric tonne)
16,800,000	JP-8	4536	5208	164,640,000	166,305,384	166,305

The CH₄ and N₂O Global Warming Potential multipliers are 25 and 298, respectively from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014.

DATA - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Given: Six 10,000 gal Fuel Trucks will take 30 days at 10hrs/day to provide initial fill from Tinian seaport to Tinian Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 26 days after the initial fill.

Under the commercial lodging option six busses will transport a total of 256 personnel 4 roundtrips/day for a total of 24 roundtrips/day for 8 weeks.

Assumptions: A Gross Vehicle Weight (GVW) of 36,200 lbs will be used, based off of an 84 passenger Blue Bird bus.

Assume fuel truck GVW > 60,000 lbs since fuel load alone is 83,400 lbs.

Assume fuel trucks travel at 55 miles per hour

Assume 40 miles per roundtrip for busses.

Vehicle Weight Classes for Which Emission Factors are Published

Vehicle Category	Description	SCC
LDGV	Light-Duty Gasoline Vehicles (i.e., passenger cars) does not include SUVs, vans or pickups	A2201001000
LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs GVW - includes pickup trucks, sport utility vehicles and vans)	A2201020000
LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVW - includes pickup trucks, sport utility vehicles and vans)	A2201040000
HDBGV2B	Class 2b Heavy-Duty Gasoline Vehicles (8501-10,000 lbs GVW)	A2201070000
HDBGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs GVW)	A2201070000
HDBGV8A	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs GVW)	A2201070000
LDGV	Light-Duty Diesel Vehicles (Passenger Cars)	
LDDT34	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs GVW)	A2230002000
HDDV2B	Class 2b Heavy-Duty Diesel Vehicles (8501-10,000 lbs GVW - includes pickup trucks)	A2230070000
HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs GVW)	A2230070000
HDDV8A	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	A2230070000
HDDV8B	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	A2230070000
MC	Motorcycles	A2201080000

Emission Factors - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Emission Factors for Calendar Year 2015

Vehicle Class	Model Year	Emission Factors in grams per Mile ^a								
		PM ₁₀	PM _{2.5}	CO	NO _x	SO _x	VOC _s	CO ₂	Fugitive PM ₁₀	Fugitive PM _{2.5}
HDDV8A*	2005	0.2	0.19	2.8	5.47	0.01	0.48	1544.1	0.05	0.01
HDDV8B**	2005	0.2	0.19	3.33	6.23	0.02	0.58	1615.2	0.05	0.01

* Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8a

**Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8b

a) Emission factors from Appendix A of Air Emissions Factor Guide to Air Force Mobile Sources, AFCEE, December 2009

Greenhouse Gas Emission Factors for Calendar Year 2015

Vehicle Class	CH ₄ (g/mile)	N ₂ O (g/mile)
HDDV	0.0051	0.0048

g/mile = grams per mile

CH₄ = Methane; N₂O = Nitrous Oxide

b) Emission Factors from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>).

Emission Calculations - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Miles for Commuter Emissions for 8 week training exercises

Vehicle Class	Speed Miles/hour	Miles/Trip	Total Trips/Day	Hours/Day	Total Days	Total Miles
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)		40	24		56	53,760
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	55			10	56	30,800

Criteria and VOC Emissions for Commuters

Vehicle Class	Model Year	Annual Miles	Criteria Pollutant Emissions (tons/year)					
			PM ₁₀	PM _{2.5}	CO	NOx	SOx	VOCs
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	2005	53,760	0.015	0.012	0.166	0.324	0.001	0.028
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	2005	30,800	0.008	0.007	0.113	0.212	0.001	0.020
Total			0.023	0.019	0.279	0.536	0.001	0.048

Particulate emissions include exhaust, brake wear, tire wear. Assume paved road.

Greenhouse Gas Emissions for Commuters

Vehicle Class	Annual Miles	CO ₂ (lb/year)	CH ₄ (lb/year)	N ₂ O (lb/year)	CH ₄ GWP Multiplier	N ₂ O GWP Multiplier	CO ₂ Equivalent (lb/year)	CO ₂ Equivalent (metric tonnes/year)
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	53,760	183,004.44	0.60	0.57	25	298	183,189.08	83.09
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	30,800	109,674.07	0.35	0.33	25	298	109,779.86	49.80
Total		292,678.52	0.95	0.89	---	---	292,968.94	132.89

GWP = Global Warming Potential; 100-year GWP values obtained from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>)

Emission Calculations Method - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Calculation Method: Equation 4-1, AFCEE 2009, Mobile Emissions Guide

$$EP = VMTVehCat * EFPolVehCat * 0.002205$$

Where,

EP = Emissions of each individual pollutant (lb/yr)

VMTVehCat = Annual vehicle miles traveled by each vehicle category (LDGV, LDGT1, LDDV, etc.) (mi/yr)

EFPolVehCat = Emission factor of each pollutant for each vehicle category (g/mi)

0.002205 = Factor for converting grams to pounds (g/lb).

DATA - Fuel Loading Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Given:

Total Exercise Days (8 weeks)	56
Initial Fuel Fill Days	30
Remaining Fuel Fill Days	26
Total # of Fuel Trucks	6
Total Gallons per Fuel Truck	10,000
Trips per day per Fuel Truck	5
1 bbl conversion to gallons	42
Total Fuel (gal) during Initial Fill	9,000,000
Total Fuel (gal) during Remaining Exercise	7,800,000
Total Fuel (gal) during Exercise (8 Weeks)	16,800,000

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	Loading
Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	Loading
Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	Loading

Emission Factors - Fuel Loading Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

JP-8 emission factors (lb/Mgal)	Dispensing	Loading
	Splash	Bottom fill
Molecular Weight =	130	0.020
True Vapor Pressure (psia) =	0.011	
Dispensing Displacement losses =	0.0487	
Spillage =	0.7	
Total =	0.749	

AP-42 Table 7.1-2 dated 11/06
AP-42 Table 7.1-2 dated 11/06 @ 70F (annual avg.)
AP-42 Section 5.2 dated 6/08 Equation (1)
AP-42 Table 5.2-7 dated 6/08

Emission Calculations - Fuel Loading Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(tons)
Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	338.9	0	338.9	0.169
Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.085
Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.085
Total			33,600,000	678	0	677.75	0.34

Emission Calculations Method - Fuel Loading Emissions for Modified Alternative 2a - Implementation Phase (Tinian North)

Displacement emissions for Diesel and JP-8 were estimated using Equation (1) from AP-42 Section 5.2, Transportation and Marketing of Petroleum Liquids, dated 6/08

$$L_L = 12.46 \text{ (SPM)/T}$$

Where

L_L = Loading loss in lb/10³ gal

S = Saturation Factor 1.45 for splash loading, 0.6 for bottom loading

M = molecular weight,

T = temperature of bulk liquid (assume average annual ambient temperature)

Summary	Summarizes total emissions by calendar year for Modified Alternative 2B - Construction Phase (Tinian South).
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Haul Truck On-Road	Estimates emissions from hauling construction materials to the project site.

Summary of Air Quality Emissions from Divert EIS - Modified Alternative 2B - Construction Phase (Tinian South)

	NO_x (ton)	VOC (ton)	CO (ton)	SO₂ (ton)	PM₁₀ (ton)	PM_{2.5} (ton)	CO₂ (ton)
Construction Combustion	13.236	1.755	5.702	0.827	0.912	0.885	1,535.230
Construction Fugitive Dust	-	-	-	-	95.708	8.371	-
Construction Commuter	5.778	6.370	58.954	0.1028	0.889	0.577	10,578.512
Haul Truck On-Road	9.929	0.924	5.307	0.032	0.319	0.303	2,574.326
TOTAL	28.94	9.05	69.96	0.96	97.83	10.14	14,688.07

Annual Summary of Air Quality Emissions from Divert EIS - Modified Alternative 2B - Construction Phase (Tinian South)*

	Point and Area Sources Combined						
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	CO₂ (metric tons)
CY 01	9.65	3.02	23.32	0.32	32.61	3.38	4,441.60
CY 02	9.65	3.02	23.32	0.32	32.61	3.38	4,441.60
CY 03	9.65	3.02	23.32	0.32	32.61	3.38	4,441.60

* Construction duration is estimated to be 36 months and the emissions are assumed to be distributed evenly over the construction period.

Combustion Emissions - Modified Alternative 2B - Construction Phase (Tinian South)Combustion Emissions of VOC, NO_x, SO₂, CO, PM_{2.5}, PM₁₀, and CO₂ due to Construction**Assumptions**

When multiple options exist under the general construction activities the most conservative value will be used to quantify air emissions.

General Construction Activities**Area Disturbed (ft²)**

Construct New Access Roads	177,294 ft ²
Construct Maintenance Facility	7,972 ft ²
Construct Jet Fuel System and Fire Pump System (Operational, Bulk and at the Port of Tinian)	908,933 ft ²
Construct Hazardous Cargo Pad	230,165 ft ²
Construct Parking Apron	832,128 ft ²

Total General Construction Area:	916,905 ft ²	
	21.0 acres	
Total Demolition Area:	0 ft ²	
	0.0 acres	
Total Pavement Area:	1,239,587 ft ²	
	28.5 acres	
Total Disturbed Area:	2,156,492 ft ²	
	49.5 acres	
Construction Duration:	36 months	
1 Yr Project Construction Activity:	240 days/yr	Assume 12 months, 4 weeks per month, 5 days per week.

Emission Factors Used for Construction Equipment

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0
Emission factors are taken from the NONROAD model and were provided to eM by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.
Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Grading

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment ^d	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Architectural Coatings

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO₂ emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO _x	VOC	CO	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	5	208.206	12.885	78.549	4.164	12.728	12.346	24707.632
Paving Equipment	3	136.102	7.817	55.735	2.722	8.328	8.078	16871.871
Demolition Equipment	1	31.808	1.886	12.584	0.636	1.923	1.865	3703.074
Building Construction	2	78.793	6.260	34.765	6.233	5.658	5.488	8929.023
Air Compressor for Architectural Coating	2	7.148	0.746	3.131	0.502	0.619	0.600	719.547
Architectural Coating**			78.040					

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 acre)/(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days	
Grading:	2,156,492	49.51	6	(from "Grading" worksheet)
Paving:	1,239,587	28.46	45	
Demolition:	0	0.00	0	
Building Construction:	916,905	21.05	240	
Architectural Coating:	916,905	21.05	20	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Total Project Emissions by Activity (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	1,249.24	77.31	471.30	24.98	76.37	74.07	148,246
Paving	6,169.95	354.38	2,526.67	123.40	377.55	366.22	764,858
Demolition	-	-	-	-	-	-	0
Building Construction	18,910.23	1,502.31	8,343.51	1,495.85	1,357.94	1,317.20	2,142,966
Architectural Coatings	142.96	1,575.74	62.62	10.05	12.37	12.00	14,391
Total Emissions (lbs):	26,472.38	3,509.73	11,404.09	1,654.28	1,824.23	1,769.50	3,070,460

Results: Total Project Annual Emission Rates

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Total Project Emissions (lbs)	26,472.38	3,509.73	11,404.09	1,654.28	1,824.23	1,769.50	3,070,460
Total Project Emissions (tons)	13.24	1.75	5.70	0.83	0.91	0.88	1,535.23

Construction Fugitive Dust Emissions - Proposed Action [Modified Alternative 2B - Construction Phase (Tinian South)]

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19 ton PM ₁₀ /acre-month		MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42 ton PM ₁₀ /acre-month		MRI 1996; EPA 2001; EPA 2006

PM_{2.5} Emissions

PM _{2.5} Multiplier	0.10	(10% of PM ₁₀ emissions assumed to be PM _{2.5})	EPA 2001; EPA 2006
------------------------------	------	--	--------------------

Control Efficiency

0.50	(assume 50% control efficiency for PM ₁₀ and PM _{2.5} emissions)	EPA 2001; EPA 2006
------	--	--------------------

Project Assumptions

New Roadway Construction (0.42 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	28.5 acres

General Construction Activities (0.19 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	21.0 acres

	Project Emissions (tons/year)			
	PM₁₀ uncontrolled	PM₁₀ controlled	PM_{2.5} uncontrolled	PM_{2.5} controlled
New Roadway Construction	143.42	71.71	14.34	7.17
General Construction Activities	47.99	24.00	2.40	1.20
Total	191.42	95.71	16.74	8.37

General Construction Activities Emission Factor

0.19 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM₁₀/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM₁₀/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM₁₀/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM₁₀/acre-month) and 75% of the average emission factor (0.11 ton PM₁₀/acre-month). The 0.19 ton PM₁₀/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM₁₀/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM₁₀/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM₁₀/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM_{2.5} Multiplier

0.10

PM_{2.5} emissions are estimated by applying a particle size multiplier of 0.10 to PM₁₀ emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM₁₀ and PM_{2.5}

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Grading Schedule - Proposed Action [Modified Alternative 2B - Construction Phase (Tinian South)]

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 49.5 acres/yr (from Combustion Worksheet)
Qty Equipment: 15.0 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions.

Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	49.51	6.19
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	49.51	24.20
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	24.75	24.96
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	24.75	10.24
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	49.51	17.36
TOTAL								82.95

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 82.95
Qty Equipment: 15.00
Grading days/yr: 5.53

Construction/Staff Commuter Emissions - Modified Alternative 2B - Construction Phase (Tinian South)

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors from the South Coast Air Quality Management District (SCAQMD) EMFAC 2007 (v 2.3) Model (on-road) were used. These emission factors are available online at [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)).

Assumptions:

Passenger vehicle emission factors for scenario year 2015 are used.

The average roundtrip commute for a construction/staff worker = 40 miles
 Number of construction days = 240 days
 Number of construction/Staff workers (daily) = 2000 people

Note: None

Passenger Vehicle Emission Factors for Year 2015 (lbs/mile)

NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
0.00060188	0.00066355	0.00614108	0.00001070	0.00009259	0.00006015	1.10192837

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Available online: <[http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road))>. Accessed 18 August 2015.

Notes:

The SCAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC.

Construction Commuter Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	11,556.034	12,740.118	117,908.683	205.519	1,777.691	1,154.873	21,157,024.793
tons	5.778	6.370	58.954	0.103	0.889	0.577	10,578.512

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

No Statistical Area Available for TNI

				Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	Tier-1	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO	NOx	PM ₁₀	PM _{2.5}	SO ₂	VOC
No Data Available															
	</														

SOURCE:

<http://www.epa.gov/ttn/chief/eiinformation.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2002)

Site visited on 02 February 2012.

No Air Quality Control Region Identified

	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
CNMI	0	0	0	0	0	0
CNMI DEQ	0	0	0	0	0	0

Construction/Haul Truck Emissions - Modified Alternative 2B - Construction Phase (Tinian South)

Emissions from hauling construction supplies, demolition debris, fill, and excavated material are estimated in this spreadsheet.

Emission Estimation Method: United States Air Force (USAF) Institute for Environment, Safety and Occupational Health Risk Analysis (IERA) Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations (Revised December 2003).

Concrete Mixing and Dump Truck Assumptions:

Dump trucks carry 11 cubic yards of material per trip.

Concrete mixing trucks carry 10 cubic yards of material per trip.

The average distance from the port to Commercial Concrete Supply Company is 1.7 miles; therefore, dump trucks will travel 3.4 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2.3 miles; therefore, concrete trucks will travel 4.6 miles round trip.

Fill Materials Assumptions:

Haul trucks carry 20 cubic yards of material per trip.

The average distance from the project site to the materials source is 20 miles; therefore, building material haul trucks will travel 40 miles round trip.

Estimated number of trips required by haul trucks = total amount of material/20 cubic yards per truck

Amount of demolition debris =	0 cubic yards	No Demolition in the Proposed Action
Amount of cement transported from port to CCSC =	2,530 cubic yards	
Amount of concrete transported from CCSC to project site =	40,930 cubic yards	
Amount of Excavation Materials for New Structures/Buildings =	407,513 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Building/Structure Materials =	305,635 cubic yards	Construction area multiplied by 9 feet.

Number of dump trucks required (port to CCSC) =	230 heavy duty diesel haul truck trips, Cells rounded up
Number of concrete mixing trucks required (CCSC to project site) =	4093 heavy duty diesel haul truck trips, Cells rounded up
Number of trucks required (Building Materials) =	35,657 heavy duty diesel haul truck trips
Miles per trip (port to CCSC) =	3.4 miles
Miles per trip (CCSC to project site) =	4.6 miles
Miles per trip (Building Materials) =	40.0 miles

Low Altitude Heavy Duty Diesel Vehicle 8b (HDDV8b) Average Emission Factors (grams/mile)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
HDDV8b	6.23	0.58	3.33	0.02	0.20	0.19	1615

Notes:

Emission factors for all pollutants are from Appendix A - On-Road Vehicle Emission Factors within AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Emission factors from calendar year 2015 were used assuming the average vehicle model year is 2005.

HDDV8b Haul Truck Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	19,858.90	1,848.82	10,614.79	63.75	637.52	605.65	5,148,651.07
tons	9.93	0.92	5.31	0.03	0.32	0.30	2,574.33

Example Calculation: NO_x emissions (lbs) = 40 miles per trip * 35,657 trips * NO_x emission factor (g/mile) * lb/453.6 g

Summary	Summarizes total emissions by calendar year for Modified Alternative 2b - Implementation Phase (Tinian South).
Airfield Operations	Aircraft operations consist of taxi, take-off and landings (sorties or LTOs), touch-and-go operations (TGOs), and low flybys (LFB) by base aircraft.
Fuel Truck and Commuter Vehicle Emissions	Estimates emissions for workers and operational vehicles commuting to the site of the Proposed Action.
Fuel Transfer Emissions	Fuel loading operations under the Proposed Action involves the loading of fuel into tanker trucks and aircraft.
Internal Combustion Engine (ICE) Emissions	Estimates Emissions from Internal Combustion Engines (e.g Generators)
Fuel Storage Tanks	Estimates emissions from Above Ground Storage Tanks.

Criteria Pollutant and VOC Emissions Summary for Modified Alternative 2b - Implementation Phase (Tinian South) (tons/year)						
Source Category	PM10	PM2.5	CO	NOx	SOx	VOCs
Airfield Operations	0.05	0.05	18.67	6.77	0.98	1.25
Fuel Truck and Commuter Vehicle Emissions	0.02	0.02	0.28	0.54	0.00	0.05
Fuel Transfer	N/A	N/A	N/A	N/A	N/A	0.34
Fuel Storage Tanks	N/A	N/A	N/A	N/A	N/A	2.35
Total Criteria and VOC Pollutant Emissions (tons/year)	0.08	0.07	18.95	7.31	0.98	3.98

Greenhouse Gas (GHG) Emissions Summary for Modified Alternative 2b - Implementation Phase (Tinian South) (metric tonnes/year)			
Source Category	CO ₂ -equivalent (lb/year)	CO ₂ -equivalent (kg/year)	CO ₂ -equivalent (metric tonne/year)
Airfield Operations*	366,634,444	166,305,384	166,305
Fuel Truck and Commuter Vehicle Emissions	292,969	132,891	133
Fuel Transfer	0	0	0
Fuel Storage Tanks	0	0	0
Total GHG Emissions	366,927,413	166,438,275	166,438

DATA - Airfield Operations for Modified Alternative 2b - Implementation Phase (Tinian South)

Aircraft exercises under this alternative are based on assuming 2 to 4 KC-135R aircraft operating up to 8 weeks per year for a maximum of 720 KC-135R operations per year. Each operation is equivalent to one landing or one take-off (1 LTO cycle = 2 operations).

Landing and Takeoff (LTO) Cycles

Description	Quantity
# of KC-135R LTO's per year	360

Legend

Airfield Activity Data (Worst Case Scenario)

Aircraft Model	Aircraft Model Used to Match to Available Emission Factors	Engine Model	# Engines	APU Model	# APUs	Notes	LTO Cycles
KC-135R	KC-135-R	F108-CF-201	4	No data on APUs	See below		360

Note: F108-CF-201 is the military designation of the CFM56-2B-1 engine.

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 2b - Implementation Phase (Tinian South)

Aircraft Criteria Pollutant Emission Factors

Aircraft Model	Engine Model	# Engines	Reference Thrust Mode	LTO/IGO Thrust Mode	Fuel Flow (lb/hr)	Emission Factors in lb Pollutant per 1000 lb Fuel Burned						
						PM10	PM2.5	CO	NO _x	SO ₂	VOCs	TIM
KC-135R	F108-CF-201	4	Idle	Idle	1016	0.06	0.06	30.70	4.00	1.06	2.10	47.7
KC-135R	F108-CF-201	4	Approach	Approach	2468	0.06	0.05	4.20	8.20	1.06	0.09	5.2
KC-135R	F108-CF-201	4	Climbout	Climbout	6500	0.05	0.05	0.90	16.00	1.06	0.06	1.6
KC-135R	F108-CF-201	4	Takeoff	Takeoff	7818	0.07	0.06	0.90	18.05	1.06	0.05	0.7

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-8

APU Emission Factors

APU Emission Factors									
Aircraft Model	# APU	APU Model	APU Emission Factors in lb Pollutant per hour						APU (hr)
			PM10	PM2.5	CO	NO _x	SO ₂	VOCs	
			No Data Available.						
KC-135R									

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 2b - Implementation Phase (Tinian South)

Default Time-In-Mode

Aircraft Type	Typical Duration by Mode (minutes)					
	Taxi/Idle	Takeoff	Climbout	Approach	Taxi/Idle-in	Total
KC-135R	32.8	0.7	1.6	5.2	14.9	55.2

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-4

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 2b - Implementation Phase (Tinian South)

Greenhouse Gas Emission Factors

Units	CO ₂	CH ₄	N ₂ O
kg/gal fuel	9.80	---	---
g/gal fuel	---	0.27	0.31

Reference: Footnote 2, from Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Criteria Pollutant and VOC Emissions per LTO by Aircraft Type

Calculated as the sum of the products of [(minutes) * (fuel flow/minute) * (lbs pollutant/lb fuel)] for each of the thrust modes.

Reported Aircraft Model	APU	Emission in lb Pollutant per LTO							APU
		Fuel (lb)	PM10 (lb)	PM2.5 (lb)	CO (lb)	NOx (lb)	SOx (lb)	VOCs (lb)	
KC - 135R	0	5144.6	0.3	0.3	103.7	37.6	5.5	6.9	0

Total Criteria Pollutant and VOC Emissions for maximum LTO's by Aircraft Type

Reported Aircraft Model	APU	Total LTO's	Fuel (lb)	PM10 (tons)	PM2.5 (tons)	CO (tons)	NOx (tons)	SOx (tons)	VOCs (tons)	APU
KC-135R	0	360	1,852,065.6	0.05	0.05	18.67	6.77	0.98	1.25	0
Worst Case Scenario			1,852,065.60	0.05	0.05	18.67	6.77	0.98	1.25	0

Total gallons of fuel used for LTOs (277,671 gal.) is based on the 6.67 lb/gal density of JP-8 as provided in footnote 2. of Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Greenhouse Gas Emissions

Assume aircraft will use 300,000 gallons of fuel per day for 56 days.

Quantity (gallons)	Fuel Type	CH ₄ (kg)	N ₂ O (kg)	CO ₂ (kg)	CO ₂ -equivalent (kg)	CO ₂ -equivalent (metric tonne)
16,800,000	JP-8	4536	5208	164,640,000	166,305,384	166,305

The CH₄ and N₂O Global Warming Potential multipliers are 25 and 298, respectively from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014.

DATA - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Given: Six 10,000 gal Fuel Trucks will take 30 days at 10hrs/day to provide initial fill from Tinian seaport to Tinian Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 26 days after the initial fill.

Under the commercial lodging option six busses will transport a total of 256 personnel 4 roundtrips/day for a total of 24 roundtrips/day for 8 weeks.

Assumptions: A Gross Vehicle Weight (GVW) of 36,200 lbs will be used, based off of an 84 passenger Blue Bird bus.

Assume fuel truck GVW > 60,000 lbs since fuel load alone is 83,400 lbs.

Assume fuel trucks travel at 55 miles per hour

Assume 40 miles per roundtrip for busses.

Vehicle Weight Classes for Which Emission Factors are Published		
Vehicle Category	Description	SCC
LDGV	Light-Duty Gasoline Vehicles (i.e., passenger cars) does not include SUVs, vans or pickups	A2201001000
LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs GVW - includes pickup trucks, sport utility vehicles and vans)	A2201020000
LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVW - includes pickup trucks, sport utility vehicles and vans)	A2201040000
HDBGV2B	Class 2b Heavy-Duty Gasoline Vehicles (8501-10,000 lbs GVW)	A2201070000
HDBGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs GVW)	A2201070000
HDBGV8A	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs GVW)	A2201070000
LDGV	Light-Duty Diesel Vehicles (Passenger Cars)	
LDDT34	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs GVW)	A2230002000
HDDV2B	Class 2b Heavy-Duty Diesel Vehicles (8501-10,000 lbs GVW - includes pickup trucks)	A2230070000
HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs GVW)	A2230070000
HDDV8A	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	A2230070000
HDDV8B	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	A2230070000
MC	Motorcycles	A2201080000

Emission Factors - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Emission Factors for Calendar Year 2015

Vehicle Class	Model Year	Emission Factors in grams per Mile ^a								
		PM ₁₀	PM _{2.5}	CO	NO _x	SO _x	VOCs	CO ₂	Fugitive PM ₁₀	Fugitive PM _{2.5}
HDDV8A*	2005	0.2	0.19	2.8	5.47	0.01	0.48	1544.1	0.05	0.01
HDDV8B**	2005	0.2	0.19	3.33	6.23	0.02	0.58	1615.2	0.05	0.01

* Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8a

**Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8b

a) Emission factors from Appendix A of Air Emissions Factor Guide to Air Force Mobile Sources, AFCEE, December 2009

Greenhouse Gas Emission Factors for Calendar Year 2015

Vehicle Class	CH ₄ (g/mile)	N ₂ O (g/mile)
HDDV	0.0051	0.0048

g/mile = grams per mile

CH₄ = Methane; N₂O = Nitrous Oxide

b) Emission Factors from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>).

Emission Calculations - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Miles for Commuter Emissions for 8 week training exercises

Vehicle Class	Speed Miles/hour	Miles/Trip	Total Trips/Day	Hours/Day	Total Days	Total Miles
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)		40	24		56	53,760
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	55			10	56	30,800

Criteria and VOC Emissions for Commuters

Vehicle Class	Model Year	Annual Miles	Criteria Pollutant Emissions (tons/year)					
			PM ₁₀	PM _{2.5}	CO	NOx	SOx	VOCs
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	2005	53,760	0.015	0.012	0.166	0.324	0.001	0.028
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	2005	30,800	0.008	0.007	0.113	0.212	0.001	0.020
Total			0.023	0.019	0.279	0.536	0.001	0.048

Particulate emissions include exhaust, brake wear, tire wear. Assume paved road.

Greenhouse Gas Emissions for Commuters

Vehicle Class	Annual Miles	CO ₂ (lb/year)	CH ₄ (lb/year)	N ₂ O (lb/year)	CH ₄ GWP Multiplier	N ₂ O GWP Multiplier	CO ₂ Equivalent (lb/year)	CO ₂ Equivalent (metric tonnes/year)
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	53,760	183,004.44	0.60	0.57	25	298	183,189.08	83.09
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	30,800	109,674.07	0.35	0.33	25	298	109,779.86	49.80
Total		292,678.52	0.95	0.89	---	---	292,968.94	132.89

GWP = Global Warming Potential; 100-year GWP values obtained from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>)

Emission Calculations Method - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Calculation Method: Equation 4-1, AFCEE 2009, Mobile Emissions Guide

$$EP = VMTVehCat * EFPolVehCat * 0.002205$$

Where,

EP = Emissions of each individual pollutant (lb/yr)

VMTVehCat = Annual vehicle miles traveled by each vehicle category (LDGV, LDGT1, LDDV, etc.) (mi/yr)

EFPolVehCat = Emission factor of each pollutant for each vehicle category (g/mi)

0.002205 = Factor for converting grams to pounds (g/lb).

DATA - Fuel Loading Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Given:

Total Exercise Days (8 weeks)	56
Initial Fuel Fill Days	30
Remaining Fuel Fill Days	26
Total # of Fuel Trucks	6
Total Gallons per Fuel Truck	10,000
Trips per day per Fuel Truck	5
1 bbl conversion to gallons	42
Total Fuel (gal) during Initial Fill	9,000,000
Total Fuel (gal) during Remaining Exercise	7,800,000
Total Fuel (gal) during Exercise (8 Weeks)	16,800,000

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	Loading
Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	Loading
Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	Loading

Emission Factors - Fuel Loading Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

JP-8 emission factors (lb/Mgal)	Dispensing	Loading
	Splash	Bottom fill
Molecular Weight =	130	0.020
True Vapor Pressure (psia) =	0.011	
Dispensing Displacement losses =	0.0487	
Spillage =	0.7	
Total =	0.749	

AP-42 Table 7.1-2 dated 11/06
AP-42 Table 7.1-2 dated 11/06 @ 70F (annual avg.)
AP-42 Section 5.2 dated 6/08 Equation (1)
AP-42 Table 5.2-7 dated 6/08

Emission Calculations - Fuel Loading Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(tons)
Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	338.9	0	338.9	0.17
Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Total			33,600,000	678	0	677.75	0.34

Emission Calculations Method - Fuel Loading Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Displacement emissions for Diesel and JP-8 were estimated using Equation (1) from AP-42 Section 5.2, Transportation and Marketing of Petroleum Liquids, dated 6/08

$$L_L = 12.46 \text{ (SPM)/T}$$

Where

L_L = Loading loss in lb/10³ gal

S = Saturation Factor 1.45 for splash loading, 0.6 for bottom loading

M = molecular weight,

T = temperature of bulk liquid (assume average annual ambient temperature)

DATA - Fuel Storage Tank Emissions for Modified Alternative 2b - Implementation Phase (Tinian South)

Fuel storage tank emissions were estimated using the U.S. EPA TANKS storage tank emissions calculation software (Version 4.0.9d). The emissions calculations algorithms in the TANKS program are based on Chapter 7 of EPA's AP-42. Honolulu, Hawaii was used as a surrogate location for the tanks as meteorological data does not exist in TANKS for CNMI. Jet Kerosene fuel was used as the surrogate for JP-8 in the TANKS model as it is the closest in characteristics to JP-8.

Emission Calculations Summary from TANKS*

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Airport) - 60,000 bbl, cut and cover or AST	4,581,818	210.07	714.88	924.95	0.46
Tank 4 (Airport) - 60,000 bbl, cut and cover or AST	4,581,818	210.07	714.88	924.95	0.46
Tank 5 (Airport) - 100,000 bbl, cut and cover or AST	7,636,364	350.11	1172.01	1522.12	0.76
Total		1,627.09	3,076.89	4,703.98	2.35

*See the following references for TANKS printouts. (SM12 - TANKS) & (SM13 - TANKS)

Construction/Haul Truck Emissions - Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)

Emissions from hauling construction supplies, demolition debris, fill, and excavated material are estimated in this spreadsheet.

Emission Estimation Method: AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Concrete Mixing and Dump Truck Assumptions:

Dump trucks carry 11 cubic yards of material per trip.

Concrete mixing trucks carry 10 cubic yards of material per trip.

Saipan

The average distance from the port to Commercial Concrete Supply Company is 7 miles; therefore, dump trucks will travel 14 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2 miles; therefore, concrete trucks will travel 4 miles round trip.

Tinian N.

The average distance from the port to Commercial Concrete Supply Company is 1.7 miles; therefore, dump trucks will travel 3.4 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2.3 miles; therefore, concrete trucks will travel 4.6 miles round trip.

Building Materials Assumptions:

Haul trucks carry 20 cubic yards of material per trip.

The average distance from the project site to the materials source is 20 miles; therefore, building material haul trucks will travel 40 miles round trip.

Estimated number of trips required by haul trucks = total amount of material/20 cubic yards per truck

Amount of demolition debris =	0 cubic yards	No Demolition in the Proposed Action
Amount of cement transported from port to CCSC (Saipan)=	396 cubic yards	
Amount of cement transported from port to CCSC (Tinian N.)=	3,190 cubic yards	
Amount of concrete transported from CCSC to project site (Saipan) =	5,610 cubic yards	
Amount of concrete transported from CCSC to project site (Tinian N.) =	51,580 cubic yards	
Amount of Excavation Materials for New Structures/Buildings (Saipan) =	61,372 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Excavation Materials for New Structures/Buildings (Tinian N.) =	306,257 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Building/Structure Materials (Saipan) =	46,029 cubic yards	Construction area multiplied by 9 feet.
Amount of Building/Structure Materials (Tinian N.) =	229,693 cubic yards	Construction area multiplied by 9 feet.
Number of dump trucks required (port to CCSC) (Saipan) =	36 heavy duty diesel haul truck trips, Cells rounded up	
Number of dump trucks required (port to CCSC) (Tinian N.) =	290 heavy duty diesel haul truck trips, Cells rounded up	
Number of concrete mixing trucks required (CCSC to project site) (Saipan) =	561 heavy duty diesel haul truck trips, Cells rounded up	
Number of concrete mixing trucks required (CCSC to project site) (Tinian N.) =	5158 heavy duty diesel haul truck trips, Cells rounded up	
Number of trucks required (Building Materials) (Saipan) =	5,370 heavy duty diesel haul truck trips	
Number of trucks required (Building Materials) (Tinian N.) =	26,798 heavy duty diesel haul truck trips	
Miles per roundtrip (port to CCSC) (Saipan) =	14 miles	
Miles per roundtrip (port to CCSC) (Tinian N.) =	3.4 miles	
Miles per roundtrip (CCSC to project site) (Saipan) =	4 miles	
Miles per roundtrip (CCSC to project site) (Tinian N.) =	4.6 miles	
Miles per roundtrip (Building Materials) (Saipan) =	40.0 miles	
Miles per roundtrip (Building Materials) (Tinian N.) =	40.0 miles	

Low Altitude Heavy Duty Diesel Vehicle 8b (HDDV8b) Average Emission Factors (grams/mile)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
HDDV8b	6.23	0.58	3.33	0.02	0.20	0.19	1615

Notes:

Emission factors for all pollutants are from Appendix A - On-Road Vehicle Emission Factors within AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Emission factors from calendar year 2015 were used assuming the average vehicle model year is 2005.

HDDV8b Haul Truck Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	18,049.47	1,680.31	9,647.30	57.94	579.42	550.45	4,679,374.22
tons	9.02	0.84	4.82	0.03	0.29	0.28	2,339.69

Example Calculation: NO_x emissions (lbs) = 40 miles per trip * 34,955 trips * NO_x emission factor (g/mile) * lb/453.6 g

Summary	Summarizes total emissions by calendar year for Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North).
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Haul Truck On-Road	Estimates emissions from hauling construction materials to the project site.

Summary of Air Quality Emissions from Divert EIS - Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)

	NO_x (ton)	VOC (ton)	CO (ton)	SO₂ (ton)	PM₁₀ (ton)	PM_{2.5} (ton)	CO₂ (ton)
Construction Combustion	18.431	2.016	7.813	0.931	1.230	1.193	2,176.608
Construction Fugitive Dust	-	-	-	-	202.801	19.198	-
Construction Commuter	5.778	6.370	58.954	0.1028	0.889	0.577	10,578.512
Haul Truck On-Road	9.025	0.840	4.824	0.029	0.290	0.275	2,339.687
TOTAL	33.23	9.23	71.59	1.06	205.21	21.24	15,094.81

Annual Summary of Air Quality Emissions from Divert EIS - Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)*

	Point and Area Sources Combined						
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	CO₂ (metric tons)
CY 01	11.08	3.08	23.86	0.35	68.40	7.08	4,564.59
CY 02	11.08	3.08	23.86	0.35	68.40	7.08	4,564.59
CY 03	11.08	3.08	23.86	0.35	68.40	7.08	4,564.59

* Construction duration is estimated to be 36 months and the emissions are assumed to be distributed evenly over the construction period.

Combustion Emissions - Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)Combustion Emissions of VOC, NO_x, SO₂, CO, PM_{2.5}, PM₁₀, and CO₂ due to Construction**Assumptions**

When multiple options exist under the general construction activities the most conservative value will be used to quantify air emission.

General Construction Activities**Area Disturbed (ft²)**

Construct Taxiway (Tinian N.)	1,385,300 ft ²
Construct Road Re-Route (Tinian N.)	40,585 ft ²
Construct New Access Roads (Tinian N.)	128,924 ft ²
Construct Maintenance Facility (Saipan)	6,100 ft ²
Construct Maintenance Facility (Tinian N.)	7,570 ft ²
Construct Jet Fuel System and Fire Pump System (Operational, Bulk and at the Port of Tinian) (Saipan/Tinian N.)	813,496 ft ²
Construct Hazardous Cargo Pad (Saipan)	250,470 ft ²
Construct Hazardous Cargo Pad (Tinian N.)	299,754 ft ²
Construct Parking Apron (Tinian N.)	1,026,340 ft ²

Total General Construction Area:	827,166 ft ²
	19.0 acres
Total Demolition Area:	0 ft ²
	0.0 acres
Total Pavement Area:	3,131,373 ft ²
	71.9 acres
Total Disturbed Area:	3,958,539 ft ²
	90.9 acres
Construction Duration:	36 months
1 Yr Project Construction Activity:	240 days/yr

Assume 12 months, 4 weeks per month, 5 days per week.

Emission Factors Used for Construction Equipment

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0
Emission factors are taken from the NONROAD model and were provided to e*M by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.
Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Grading

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment ^d	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Architectural Coatings

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO₂ emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO _x	VOC	CO	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	9	374.771	23.193	141.389	7.495	22.910	22.222	44473.737
Paving Equipment	7	317.571	18.240	130.049	6.351	19.433	18.850	39367.698
Demolition Equipment	1	31.808	1.886	12.584	0.636	1.923	1.865	3703.074
Building Construction	2	78.793	6.260	34.765	6.233	5.658	5.488	8929.023
Air Compressor for Architectural Coating	2	7.148	0.746	3.131	0.502	0.619	0.600	719.547
Architectural Coating**			74.123					

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 acre)/(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days	
Grading:	3,958,539	90.88	6	(from "Grading" worksheet)
Paving:	3,131,373	71.89	49	
Demolition:	0	0.00	0	
Building Construction:	827,166	18.99	240	
Architectural Coating:	827,166	18.99	20	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Total Project Emissions by Activity (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	2,248.63	139.16	848.33	44.97	137.46	133.33	266,842
Paving	15,560.98	893.76	6,372.40	311.22	952.20	923.63	1,929,017
Demolition	-	-	-	-	-	-	0
Building Construction	18,910.23	1,502.31	8,343.51	1,495.85	1,357.94	1,317.20	2,142,966
Architectural Coatings	142.96	1,497.39	62.62	10.05	12.37	12.00	14,391
Total Emissions (lbs):	36,862.80	4,032.62	15,626.86	1,862.09	2,459.97	2,386.17	4,353,216

Results: Total Project Annual Emission Rates

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Total Project Emissions (lbs)	36,862.80	4,032.62	15,626.86	1,862.09	2,459.97	2,386.17	4,353,216
Total Project Emissions (tons)	18.43	2.02	7.81	0.93	1.23	1.19	2,176.61

Construction Fugitive Dust Emissions - Proposed Action [Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)]

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19	ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42	ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006

PM_{2.5} Emissions

PM _{2.5} Multiplier	0.10	(10% of PM ₁₀ emissions assumed to be PM _{2.5})	EPA 2001; EPA 2006
------------------------------	------	--	--------------------

Control Efficiency

0.50	(assume 50% control efficiency for PM ₁₀ and PM _{2.5} emissions)	EPA 2001; EPA 2006
------	--	--------------------

Project Assumptions

New Roadway Construction (0.42 ton PM₁₀/acre-month)

Duration of Construction Project	12	months
Area	71.9	acres

General Construction Activities (0.19 ton PM₁₀/acre-month)

Duration of Construction Project	12	months
Area	19.0	acres

	Project Emissions (tons/year)			
	PM ₁₀ uncontrolled	PM ₁₀ controlled	PM _{2.5} uncontrolled	PM _{2.5} controlled
New Roadway Construction	362.31	181.15	36.23	18.12
General Construction Activities	43.30	21.65	2.16	1.08
Total	405.60	202.80	38.40	19.20

General Construction Activities Emission Factor

0.19 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM₁₀/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM₁₀/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM₁₀/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM₁₀/acre-month) and 75% of the average emission factor (0.11 ton PM₁₀/acre-month). The 0.19 ton PM₁₀/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM₁₀/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM₁₀/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM₁₀/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM_{2.5} Multiplier

0.10

PM_{2.5} emissions are estimated by applying a particle size multiplier of 0.10 to PM₁₀ emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM₁₀ and PM_{2.5}

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Grading Schedule - Proposed Action [Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)]

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 90.9 acres/yr (from Combustion Worksheet)
Qty Equipment: 28.0 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions.

Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	90.88	11.36
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	90.88	44.43
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	45.44	45.82
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	45.44	18.80
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	90.88	31.87
TOTAL								152.27

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 152.27
Qty Equipment: 28.00
Grading days/yr: 5.44

Construction/Staff Commuter Emissions - Modified Alternative 3A - Construction Phase (Hybrid Saipan/Tinian North)

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors from the South Coast Air Quality Management District (SCAQMD) EMFAC 2007 (v 2.3) Model (on-road) were used. These emission factors are available online at [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)).

Assumptions:

Passenger vehicle emission factors for scenario year 2015 are used.

The average roundtrip commute for a construction/staff worker = 40 miles
Number of construction days = 240 days
Number of construction/Staff workers (daily) = 2000 people

Note: None

Passenger Vehicle Emission Factors for Year 2015 (lbs/mile)

NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
0.00060188	0.00066355	0.00614108	0.00001070	0.00009259	0.00006015	1.10192837

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Available online: <[http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road))>. Accessed 18 August 2015.

Notes:

The SCAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC.

Construction Commuter Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	11,556.034	12,740.118	117,908.683	205.519	1,777.691	1,154.873	21,157,024.793
tons	5.778	6.370	58.954	0.103	0.889	0.577	10,578.512

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

No Statistical Area Available for TNI

				Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	Tier-1	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO	NOx	PM ₁₀	PM _{2.5}	SO ₂	VOC
No Data Available															
			</												

SOURCE:

<http://www.epa.gov/ttn/chief/eiinformation.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2002)

Site visited on 02 February 2012.

No Air Quality Control Region Identified

	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
CNMI	0	0	0	0	0	0
CNMI DEQ	0	0	0	0	0	0

DATA - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Given:

Saipan

Six 10,000 gal Fuel Trucks will take 14 days at 10hrs/day to provide initial fill from Saipan seaport to Saipan Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 42 days after the initial fill.

Tinian North

Six 10,000 gal Fuel Trucks will take 17 days at 10hrs/day to provide initial fill from Tinian seaport to Tinian Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 39 days after the initial fill.

Under the commercial lodging option at Saipan, six busses will transport a total of 256 personnel 4 roundtrips/day for a total of 24 roundtrips/day for 8 weeks. This same number of personnel, busses, and roundtrips could alternatively occur at Tinian.

Assumptions:

A Gross Vehicle Weight (GVW) of 36,200 lbs will be used, based off of an 84 passenger Blue Bird bus.

Assume fuel truck GVW > 60,000 lbs since fuel load alone is 83,400 lbs.

Assume fuel trucks travel at 55 miles per hour

Assume 40 miles per roundtrip for busses.

Vehicle Weight Classes for Which Emission Factors are Published		
Vehicle Category	Description	SCC
LDGV	Light-Duty Gasoline Vehicles (i.e., passenger cars) does not include SUVs, vans or pickups	A2201001000
LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs GVW - includes pickup trucks, sport utility vehicles and vans)	A2201020000
LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVW - includes pickup trucks, sport utility vehicles and vans)	A2201040000
HDBGV2B	Class 2b Heavy-Duty Gasoline Vehicles (8501-10,000 lbs GVW)	A2201070000
HDBGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs GVW)	A2201070000
	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs GVW)	A2201070000
HDBGV8A		
LDDV	Light-Duty Diesel Vehicles (Passenger Cars)	
LDDT34	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs GVW)	A2230002000
HDDV2B	Class 2b Heavy-Duty Diesel Vehicles (8501-10,000 lbs GVW - includes pickup trucks)	A2230070000
HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs GVW)	A2230070000
HDDV8A	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	A2230070000
HDDV8B	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	A2230070000
MC	Motorcycles	A2201080000

Emission Factors for Calendar Year 2015

Vehicle Class	Model Year	Emission Factors in grams per Mile ^a							
		PM ₁₀	PM _{2.5}	CO	NOx	SOx	NOCs	CO2	Fugitive PM ₁₀
HDDV8A*	2005	0.2	0.19	2.8	5.47	0.01	0.48	1544.1	0.05
HDDV8B**	2005	0.2	0.19	3.33	6.23	0.02	0.58	1615.2	0.05

* Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8a

**Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8b

a) Emission factors from Appendix A of Air Emissions Factor Guide to Air Force Mobile Sources, AFCEE, December 2009

Greenhouse Gas Emission Factors for Calendar Year 2015

Vehicle Class	CH ₄ (g/mile)	N ₂ O (g/mile)
HDDV	0.0051	0.0048

g/mile = grams per mile

CH₄ = Methane; N₂O = Nitrous Oxide

b) Emission Factors from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>).

Emission Calculations - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Miles for Commuter Emissions for 8 week training exercises

Vehicle Class	Speed Miles/hour	Miles/Trip	Total Trips/Day	Hours/Day	Total Days	Total Miles
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)		40	24		56	53,760
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	55			10	56	30,800

Criteria and VOC Emissions for Commuters

Vehicle Class	Model Year	Annual Miles	Criteria Pollutant Emissions (tons/year)					
			PM ₁₀	PM _{2.5}	CO	NOx	SOx	VOCs
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	2005	53,760	0.015	0.012	0.166	0.324	0.001	0.028
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	2005	30,800	0.008	0.007	0.113	0.212	0.001	0.020
Total			0.023	0.019	0.279	0.536	0.001	0.048

Particulate emissions include exhaust, brake wear, tire wear. Assume paved road.

Greenhouse Gas Emissions for Commuters

Vehicle Class	Annual Miles	CO ₂ (lb/year)	CH ₄ (lb/year)	N ₂ O (lb/year)	CH ₄ GWP Multiplier	N ₂ O GWP Multiplier	CO ₂ Equivalent (lb/year)	CO ₂ Equivalent (metric tonnes/year)
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	53,760	183,004.44	0.60	0.57	25	298	183,189.08	83.09
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	30,800	109,674.07	0.35	0.33	25	298	109,779.86	49.80
Total		292,678.52	0.95	0.89	---	---	292,968.94	132.89

GWP = Global Warming Potential; 100-year GWP values obtained from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>)

Emission Calculations Method - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Calculation Method: Equation 4-1, AFCEE 2009, Mobile Emissions Guide

$$EP = VMTVehCat * EFPolVehCat * 0.002205$$

Where,

EP = Emissions of each individual pollutant (lb/yr)

VMTVehCat = Annual vehicle miles traveled by each vehicle category (LDGV, LDGT1, LDDV, etc.) (mi/yr)

EFPolVehCat = Emission factor of each pollutant for each vehicle category (g/mi)

0.002205 = Factor for converting grams to pounds (g/lb).

Summary	Summarizes total emissions by calendar year for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North).
Airfield Operations	Aircraft operations consist of taxi, take-off and landings (sorties or LTOs), touch-and-go operations (TGOs), and low flybys (LFB) by base aircraft.
Fuel Truck and Commuter Vehicle Emissions	Estimates emissions for workers and operational vehicles commuting to the site of the Proposed Action.
Fuel Transfer Emissions	Fuel loading operations under the Proposed Action involves the loading of fuel into tanker trucks and aircraft.
Internal Combustion Engine (ICE) Emissions	Estimates Emissions from Internal Combustion Engines (e.g Generators)
Fuel Storage Tanks	Estimates emissions from Above Ground Storage Tanks.

Criteria Pollutant and VOC Emissions Summary for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North) (tons/year)

Source Category	PM10	PM2.5	CO	NOx	SOx	VOCs
Airfield Operations	0.05	0.05	18.67	6.77	0.98	1.25
Fuel Truck and Commuter Vehicle Emissions	0.02	0.02	0.28	0.54	0.00	0.05
Fuel Transfer	N/A	N/A	N/A	N/A	N/A	0.34
Fuel Storage Tanks	N/A	N/A	N/A	N/A	N/A	1.77
Total Criteria and VOC Pollutant Emissions (tons/year)	0.08	0.07	18.95	7.31	0.98	3.40

Greenhouse Gas (GHG) Emissions Summary for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North) (metric tonnes/year)

Source Category	CO ₂ -equivalent (lb/year)	CO ₂ -equivalent (kg/year)	CO ₂ -equivalent (metric tonne/year)
Airfield Operations*	366,634,444	166,305,384	166,305
Fuel Truck and Commuter Vehicle Emissions	292,969	132,891	133
Fuel Transfer	0	0	0
Fuel Storage Tanks	0	0	0
Total GHG Emissions	366,927,413	166,438,275	166,438

DATA - Airfield Operations for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Aircraft exercises under this alternative are based on assuming 2 to 4 KC-135R aircraft operating up to 8 weeks per year for a maximum of 720 KC-135R operations per year. Each operation is equivalent to one landing or one take-off (1 LTO Cycle = 2 operations). These 720 total operations could occur at either Saipan or Tinian North.

Landing and Takeoff (LTO) Cycles

Description	Quantity
# of KC-135R LTO's per year	360

Legend

Airfield Activity Data (Worst Case Scenario)

Aircraft Model	Aircraft Model Used to Match to Available Emission Factors	Engine Model	# Engines	APU Model	# APUs	Notes	LTO Cycles
KC-135R	KC-135-R	F108-CF-201	4	No data on APUs		See below	360

Note: F108-CF-201 is the military designation of the CFM56-2B-1 engine.

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Aircraft Criteria Pollutant Emission Factors

Aircraft Model	Engine Model	# Engines	Reference Thrust Mode	LTO/GO Thrust Mode	Fuel Flow (lb/hr)	Emission Factors in lb Pollutant per 1000 lb Fuel Burned						
						PM10	PM2.5	CO	NO _x	SO ₂	VOCs	TIM
KC-135R	F108-CF-201	4	Idle	Idle	1016	0.06	0.06	30.70	4.00	1.06	2.10	47.7
KC-135R	F108-CF-201	4	Approach	Approach	2468	0.06	0.05	4.20	8.20	1.06	0.09	5.2
KC-135R	F108-CF-201	4	Climbout	Climbout	6500	0.05	0.05	0.90	16.00	1.06	0.06	1.6
KC-135R	F108-CF-201	4	Takeoff	Takeoff	7818	0.07	0.06	0.90	18.05	1.06	0.05	0.7

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-8

APU Emission Factors

Aircraft Model	# APU	APU Model	APU Emission Factors in lb Pollutant per hour						APU (hr)
			PM10	PM2.5	CO	NO _x	SO ₂	VOCs	
KC-135R			No Data Available						

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Default Time-In-Mode

Aircraft Type	Typical Duration by Mode (minutes)					
	Taxi/Idle	Takeoff	Climbout	Approach	Taxi/Idle-in	Total
KC-135R	32.8	0.7	1.6	5.2	14.9	55.2

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-4

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Greenhouse Gas Emission Factors

Units	CO ₂	CH ₄	N ₂ O
kg/gal fuel	9.80	---	---
g/gal fuel	---	0.27	0.31

Reference: Footnote 2, from Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)
Criteria Pollutant and VOC Emissions per LTO by Aircraft Type
Calculated as the sum of the products of [(minutes) * (fuel flow/minute) * (lbs pollutant/lb fuel)] for each of the thrust modes.

Reported Aircraft Model	APU	Emission in lb Pollutant per LTO							APU
		Fuel (lb)	PM10 (lb)	PM2.5 (lb)	CO (lb)	NOx (lb)	SOx (lb)	VOCs (lb)	
KC-135R	0	5144.6	0.3	0.3	103.7	37.6	5.5	6.9	0

Total Criteria Pollutant and VOC Emissions for maximum LTO's by Aircraft Type

Reported Aircraft Model	APU	Total LTO's	Fuel (lb)	PM10 (tons)	PM2.5 (tons)	CO (tons)	NOx (tons)	SOx (tons)	VOCs (tons)	APU
KC-135R	0	360	1,852,065.6	0.05	0.05	18.67	6.77	0.98	1.25	0
Worst Case Scenario			1,852,065.60	0.05	0.05	18.67	6.77	0.98	1.25	0

Total gallons of fuel used for LTOs (555,342 gal.) is based on the 6.67 lb/gal density of JP-8 as provided in footnote 2. of Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Greenhouse Gas Emissions

Assume aircraft will use 300,000 gallons of fuel per day for 56 days at either Saipan or Tinian.

Quantity (gallons)	Fuel Type	CH ₄ (kg)	N ₂ O (kg)	CO ₂ (kg)	CO ₂ -equivalent (kg)	CO ₂ -equivalent (metric tonne)
16,800,000	JP-8	4536	5208	164,640,000	166,305,384	166,305

The CH₄ and N₂O Global Warming Potential multipliers are 25 and 298, respectively from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014.

DATA - Fuel Loading Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Given:		Saipan	
Total Exercise Days (8 weeks)		56	
Initial Fuel Fill Days		14	
Remaining Fuel Fill Days		42	
Total # of Fuel Trucks		6	
Total Gallons per Fuel Truck		10,000	
Trips per day per Fuel Truck		5	
1 bbl conversion to gallons		42	
Total Fuel (gal) during Initial Fill		4,200,000	
Total Fuel (gal) during Remaining Exercise		12,600,000	
Total Fuel (gal) during Exercise (8 Weeks)		16,800,000	

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Saipan Airport Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	Loading
Saipan Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	Loading
Saipan Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	Loading

Given:		Tinian North	
Total Exercise Days (8 weeks)		56	
Initial Fuel Fill Days		17	
Remaining Fuel Fill Days		39	
Total # of Fuel Trucks		6	
Total Gallons per Fuel Truck		10,000	
Trips per day per Fuel Truck		5	
1 bbl conversion to gallons		42	
Total Fuel (gal) during Initial Fill		5,100,000	
Total Fuel (gal) during Remaining Exercise		11,700,000	
Total Fuel (gal) during Exercise (8 Weeks)		16,800,000	

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Tinian North Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	Loading
Tinian Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	Loading
Tinian Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	Loading

Emission Factors - Fuel Loading Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

JP-8 emission factors (lb/Mgal)	Dispensing	Loading
	Splash	Bottom fill
Molecular Weight =	130	0.020
True Vapor Pressure (psia) =	0.011	
Dispensing Displacement losses =	0.0487	
Spillage =	0.7	
Total =	0.749	

AP-42 Table 7.1-2 dated 11/06
AP-42 Table 7.1-2 dated 11/06 @ 70F (annual avg.)
AP-42 Section 5.2 dated 6/08 Equation (1)
AP-42 Table 5.2-7 dated 6/08

Emission Calculations - Fuel Loading Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)
Saipan

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(tons)
Saipan Airport Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	338.9	0	338.9	0.17
Saipan Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Saipan Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Total			33,600,000	678	0	677.75	0.34

Tinian

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(tons)
Tinian North Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	338.9	0	338.9	0.17
Tinian Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Tinian Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Total			33,600,000	678	0	677.75	0.34

Maximum Emissions **677.75** **0.34**

Emission Calculations Method - Fuel Loading Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Displacement emissions for Diesel and JP-8 were estimated using Equation (1) from AP-42 Section

5.2, Transportation and Marketing of Petroleum Liquids, dated 6/08

$$L_v = 12.46 \text{ (SPM)/T}$$

Where

L_v = Loading loss in lb/10³ gal

S = Saturation Factor 1.45 for splash loading, 0.6 for bottom loading

M = molecular weight,

T = temperature of bulk liquid (assume average annual ambient temperature)

DATA - Fuel Storage Tank Emissions for Modified Alternative 3a - Implementation Phase (Hybrid Saipan/Tinian North)

Fuel storage tank emissions were estimated using the U.S. EPA TANKS storage tank emissions calculation software (Version 4.0.9d). The emissions calculations algorithms in the TANKS program are based on Chapter 7 of EPA's AP-42. Honolulu, Hawaii was used as a surrogate location for the tanks as meteorological data does not exist in TANKS for CNMI. Jet Kerosene fuel was used as the surrogate for JP-8 in the TANKS model as it is the closest in characteristics to JP-8.

Emission Calculations Summary from TANKS* - Saipan

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Saipan Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Saipan Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Saipan Airport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 4 (Saipan Airport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Total		1,713.68	950.24	2,663.92	1.33

*See the following references for TANKS printouts. (SM12 - TANKS) & (SM13 - TANKS)

Emission Calculations Summary from TANKS* - Tinian North

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Tinian Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Tinian Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Tinian Airport) - 60,000 bbl, cut and cover or AST	8,400,000	385.12	714.88	1100	0.55
Tank 4 (Tinian Airport) - 60,000 bbl, cut and cover or AST	8,400,000	385.12	714.88	1100	0.55
Total		1,627.08	1,904.88	3,531.96	1.77

*See the following references for TANKS printouts. (SM12 - TANKS) & (SM13 - TANKS)

Maximum Emissions	3,531.96	1.77
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Summary	Summarizes total emissions by calendar year for Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South).
Combustion	Estimates emissions from non-road equipment exhaust.
Fugitive	Estimates particulate emissions from construction activities including earthmoving, vehicle traffic, and windblown dust.
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
Construction Commuter	Estimates emissions for construction workers commuting to the site.
Haul Truck On-Road	Estimates emissions from hauling construction materials to the project site.

Summary of Air Quality Emissions from Divert EIS - Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)

	NO_x (ton)	VOC (ton)	CO (ton)	SO₂ (ton)	PM₁₀ (ton)	PM_{2.5} (ton)	CO₂ (ton)
Construction Combustion	15.777	1.866	6.735	0.878	1.068	1.036	1,848.889
Construction Fugitive Dust	-	-	-	-	147.150	13.623	-
Construction Commuter	5.778	6.370	58.954	0.1028	0.889	0.577	10,578.512
Haul Truck On-Road	9.023	0.840	4.823	0.029	0.290	0.275	2,339.226
TOTAL	30.58	9.08	70.51	1.01	149.40	15.51	14,766.63

Annual Summary of Air Quality Emissions from Divert EIS - Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)*

	Point and Area Sources Combined						
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	CO₂ (metric tons)
CY 01	10.19	3.03	23.50	0.34	49.80	5.17	4,465.35
CY 02	10.19	3.03	23.50	0.34	49.80	5.17	4,465.35
CY 03	10.19	3.03	23.50	0.34	49.80	5.17	4,465.35

* Construction duration is estimated to be 36 months and the emissions are assumed to be distributed evenly over the construction period.

Combustion Emissions - Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)Combustion Emissions of VOC, NO_x, SO₂, CO, PM_{2.5}, PM₁₀, and CO₂ due to Construction**Assumptions**

When multiple options exist under the general construction activities the most conservative value will be used to quantify air emissions.

General Construction Activities**Area Disturbed (ft²)**

Construct New Access Roads (Tinian South)	177,294 ft ²
Construct Maintenance Facility (Saipan)	6,100 ft ²
Construct Maintenance Facility (Tinian South)	7,972 ft ²
Construct Jet Fuel System and Fire Pump System (Operational, Bulk and at the Port of Tinian) (Saipan/Tinian South)	820,200 ft ²
Construct Hazardous Cargo Pad (Saipan)	250,470 ft ²
Construct Hazardous Cargo Pad (Tinian South)	230,165 ft ²
Construct Parking Apron (Tinian South)	1,508,251 ft ²

Total General Construction Area:	834,272 ft ²	
	19.2 acres	
Total Demolition Area:	0 ft ²	
	0.0 acres	
Total Pavement Area:	2,166,180 ft ²	
	49.7 acres	
Total Disturbed Area:	3,000,452 ft ²	
	68.9 acres	
Construction Duration:	36 months	
1 Yr Project Construction Activity:	240 days/yr	Assume 12 months, 4 weeks per month, 5 days per week.

Emission Factors Used for Construction Equipment

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0

Emission factors are taken from the NONROAD model and were provided to eM by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.

Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Grading

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment ^d	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Architectural Coatings

Equipment	No. Reqd. ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO₂ emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO _x	VOC	CO	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	7	291.489	18.039	109.969	5.830	17.819	17.284	34590.684
Paving Equipment	5	226.836	13.029	92.892	4.537	13.880	13.464	28119.784
Demolition Equipment	1	31.808	1.886	12.584	0.636	1.923	1.865	3703.074
Building Construction	2	78.793	6.260	34.765	6.233	5.658	5.488	8929.023
Air Compressor for Architectural Coating	2	7.148	0.746	3.131	0.502	0.619	0.600	719.547
Architectural Coating**			74.441					

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 acre)/(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days	
Grading:	3,000,452	68.88	6	(from "Grading" worksheet)
Paving:	2,166,180	49.73	47	
Demolition:	0	0.00	0	
Building Construction:	834,272	19.15	240	
Architectural Coating	834,272	19.15	20	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Total Project Emissions by Activity (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	1,748.93	108.23	659.82	34.98	106.91	103.70	207,544
Paving	10,752.05	617.56	4,403.09	215.04	657.93	638.20	1,332,878
Demolition	-	-	-	-	-	-	0
Building Construction	18,910.23	1,502.31	8,343.51	1,495.85	1,357.94	1,317.20	2,142,966
Architectural Coatings	142.96	1,503.74	62.62	10.05	12.37	12.00	14,391
Total Emissions (lbs):	31,554.17	3,731.84	13,469.03	1,755.91	2,135.16	2,071.11	3,697,778

Results: Total Project Annual Emission Rates

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Total Project Emissions (lbs)	31,554.17	3,731.84	13,469.03	1,755.91	2,135.16	2,071.11	3,697,778
Total Project Emissions (tons)	15.78	1.87	6.73	0.88	1.07	1.04	1,848.89

Construction Fugitive Dust Emissions - Proposed Action [Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)]

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19	ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42	ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006

PM_{2.5} Emissions

PM _{2.5} Multiplier	0.10	(10% of PM ₁₀ emissions assumed to be PM _{2.5})	EPA 2001; EPA 2006
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Control Efficiency

0.50	(assume 50% control efficiency for PM ₁₀ and PM _{2.5} emissions)	EPA 2001; EPA 2006
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Project Assumptions

New Roadway Construction (0.42 ton PM₁₀/acre-month)

Duration of Construction Project	12	months
Area	49.7	acres

General Construction Activities (0.19 ton PM₁₀/acre-month)

Duration of Construction Project	12	months
Area	19.2	acres

	Project Emissions (tons/year)			
	PM ₁₀ uncontrolled	PM ₁₀ controlled	PM _{2.5} uncontrolled	PM _{2.5} controlled
New Roadway Construction	250.63	125.32	25.06	12.53
General Construction Activities	43.67	21.83	2.18	1.09
Total	294.30	147.15	27.25	13.62

General Construction Activities Emission Factor

0.19 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM₁₀/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM₁₀/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM₁₀/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM₁₀/acre-month) and 75% of the average emission factor (0.11 ton PM₁₀/acre-month). The 0.19 ton PM₁₀/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM₁₀/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas.

New Road Construction Emission Factor

0.42 ton PM₁₀/acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM₁₀/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM₁₀/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

PM_{2.5} Multiplier

0.10

PM_{2.5} emissions are estimated by applying a particle size multiplier of 0.10 to PM₁₀ emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM₁₀ and PM_{2.5}

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM₁₀ and PM_{2.5} in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Grading Schedule - Proposed Action [Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)]

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 68.9 acres/yr (from Combustion Worksheet)
Qty Equipment: 21.0 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions

Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	68.88	8.61
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	68.88	33.68
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	34.44	34.73
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	34.44	14.25
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	68.88	24.16
TOTAL								115.42

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 115.42
Qty Equipment: 21.00
Grading days/yr: 5.50

Construction/Staff Commuter Emissions - Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors from the South Coast Air Quality Management District (SCAQMD) EMFAC 2007 (v 2.3) Model (on-road) were used. These emission factors are available online at [http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)).

Assumptions:

Passenger vehicle emission factors for scenario year 2015 are used.

The average roundtrip commute for a construction/staff worker = 40 miles
 Number of construction days = 240 days
 Number of construction/Staff workers (daily) = 2000 people

Note: None

Passenger Vehicle Emission Factors for Year 2015 (lbs/mile)

NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
0.00060188	0.00066355	0.00614108	0.00001070	0.00009259	0.00006015	1.10192837

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Available online: <[http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-\(v2-3\)-emission-factors-\(on-road\)](http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road))>. Accessed 18 August 2015.

Notes:

The SMAQMD 2007 reference lists emission factors for reactive organic gas (ROG). For purposes of this worksheet ROG = VOC.

Construction Commuter Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	11,556.034	12,740.118	117,908.683	205.519	1,777.691	1,154.873	21,157,024.793
tons	5.778	6.370	58.954	0.103	0.889	0.577	10,578.512

Example Calculation: NO_x emissions (lbs) = 60 miles/day * NO_x emission factor (lb/mile) * number of construction days * number of workers

No Statistical Area Available for TNI

				Point Source Emissions						Area Source Emissions (Non-Point and Mobile Sources)					
Row #	State	County	Tier-1	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC	CO	NOx	PM ₁₀	PM _{2.5}	SO ₂	VOC
No Data Available															
	</														

SOURCE:

<http://www.epa.gov/ttn/chief/eiinformation.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2002)

Site visited on 02 February 2012.

No Air Quality Control Region Identified

	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
CNMI	0	0	0	0	0	0
CNMI DEQ	0	0	0	0	0	0

Construction/Haul Truck Emissions - Modified Alternative 3B - Construction Phase (Hybrid Saipan/Tinian South)

Emissions from hauling construction supplies, demolition debris, fill, and excavated material are estimated in this spreadsheet.

Emission Estimation Method: AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Concrete Mixing and Dump Truck Assumptions:

Dump trucks carry 11 cubic yards of material per trip.

Concrete mixing trucks carry 10 cubic yards of material per trip.

Saipan

The average distance from the port to Commercial Concrete Supply Company is 7 miles; therefore, dump trucks will travel 14 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2 miles; therefore, concrete trucks will travel 4 miles round trip.

Tinian N.

The average distance from the port to Commercial Concrete Supply Company is 1.7 miles; therefore, dump trucks will travel 3.4 miles round trip.

The average distance from the Commercial Concrete Supply Company (CCSC) to the project site is 2.3 miles; therefore, concrete trucks will travel 4.6 miles round trip.

Building Materials Assumptions:

Haul trucks carry 20 cubic yards of material per trip.

The average distance from the project site to the materials source is 20 miles; therefore, building material haul trucks will travel 40 miles round trip.

Estimated number of trips required by haul trucks = total amount of material/20 cubic yards per truck

Amount of demolition debris =	0 cubic yards	No Demolition in the Proposed Action
Amount of cement transported from port to CCSC (Saipan)=	396 cubic yards	
Amount of cement transported from port to CCSC (Tinian N.)=	1,727 cubic yards	
Amount of concrete transported from CCSC to project site (Saipan) =	5,610 cubic yards	
Amount of concrete transported from CCSC to project site (Tinian N.) =	27,970 cubic yards	
Amount of Excavation Materials for New Structures/Buildings (Saipan) =	61,372 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Excavation Materials for New Structures/Buildings (Tinian N.) =	309,416 cubic yards	Construction area multiplied by depth of disturbance which is assumed to be 12 feet.
Amount of Building/Structure Materials (Saipan) =	46,029 cubic yards	Construction area multiplied by 9 feet.
Amount of Building/Structure Materials (Tinian N.) =	232,062 cubic yards	Construction area multiplied by 9 feet.
Number of dump trucks required (port to CCSC) (Saipan) =	36 heavy duty diesel haul truck trips, Cells rounded up	
Number of dump trucks required (port to CCSC) (Tinian N.) =	157 heavy duty diesel haul truck trips, Cells rounded up	
Number of concrete mixing trucks required (CCSC to project site) (Saipan) =	561 heavy duty diesel haul truck trips, Cells rounded up	
Number of concrete mixing trucks required (CCSC to project site) (Tinian N.) =	2797 heavy duty diesel haul truck trips, Cells rounded up	
Number of trucks required (Building Materials) (Saipan) =	5,370 heavy duty diesel haul truck trips	
Number of trucks required (Building Materials) (Tinian N.) =	27,074 heavy duty diesel haul truck trips	
Miles per roundtrip (port to CCSC) (Saipan) =	14 miles	
Miles per roundtrip (port to CCSC) (Tinian N.) =	3.4 miles	
Miles per roundtrip (CCSC to project site) (Saipan) =	4 miles	
Miles per roundtrip (CCSC to project site) (Tinian N.) =	4.6 miles	
Miles per roundtrip (Building Materials) (Saipan) =	40.0 miles	
Miles per roundtrip (Building Materials) (Tinian N.) =	40.0 miles	

Low Altitude Heavy Duty Diesel Vehicle 8b (HDDV8b) Average Emission Factors (grams/mile)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
HDDV8b	6.23	0.58	3.33	0.02	0.20	0.19	1615

Notes:

Emission factors for all pollutants are from Appendix A - On-Road Vehicle Emission Factors within AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Dec. 2009.

Emission factors from calendar year 2015 were used assuming the average vehicle model year is 2005.

HDDV8b Haul Truck Emissions

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
lbs	18,045.91	1,679.98	9,645.40	57.93	579.30	550.34	4,678,451.88
tons	9.02	0.84	4.82	0.03	0.29	0.28	2,339.23

Example Calculation: NO_x emissions (lbs) = 40 miles per trip * 27,074 trips * NO_x emission factor (g/mile) * lb/453.6 g

Summary	Summarizes total emissions by calendar year for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South).
Airfield Operations	Aircraft operations consist of taxi, take-off and landings (sorties or LTOs), touch-and-go operations (TGOs), and low flybys (LFB) by base aircraft.
Fuel Truck and Commuter Vehicle Emissions	Estimates emissions for workers and operational vehicles commuting to the site of the Proposed Action.
Fuel Transfer Emissions	Fuel loading operations under the Proposed Action involves the loading of fuel into tanker trucks and aircraft.
Internal Combustion Engine (ICE) Emissions	Estimates Emissions from Internal Combustion Engines (e.g Generators)
Fuel Storage Tanks	Estimates emissions from Above Ground Storage Tanks.

Criteria Pollutant and VOC Emissions Summary for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South) (tons/year)

Source Category	PM10	PM2.5	CO	NOx	SOx	VOCs
Airfield Operations	0.05	0.05	18.67	6.77	0.98	1.25
Fuel Truck and Commuter Vehicle Emissions	0.02	0.02	0.28	0.54	0.00	0.05
Fuel Transfer	N/A	N/A	N/A	N/A	N/A	0.34
Fuel Storage Tanks	N/A	N/A	N/A	N/A	N/A	1.77
Total Criteria and VOC Pollutant Emissions (tons/year)	0.08	0.07	18.95	7.31	0.98	3.40

Greenhouse Gas (GHG) Emissions Summary for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South) (metric tonnes/year)

Source Category	CO ₂ -equivalent (lb/year)	CO ₂ -equivalent (kg/year)	CO ₂ -equivalent (metric tonne/year)
Airfield Operations*	366,634,444	166,305,384	166,305
Fuel Truck and Commuter Vehicle Emissions	292,969	132,891	133
Fuel Transfer	0	0	0
Fuel Storage Tanks	0	0	0
Total GHG Emissions	366,927,413	166,438,275	166,438

DATA - Airfield Operations for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Aircraft exercises under this alternative are based on assuming 2 to 4 KC-135R aircraft operating up to 8 weeks per year for a maximum of 720 KC-135R operations per year. Each operation is equivalent to one landing or one take-off (1 LTO Cycle = 2 operations). These 720 operations could occur at either Saipan or Tinian.

Landing and Takeoff (LTO) Cycles

Description	Quantity
# of KC-135R LTO's per year	360

Legend

Airfield Activity Data (Worst Case Scenario)

Aircraft Model	Aircraft Model Used to Match to Available Emission Factors	Engine Model	# Engines	APU Model	# APUs	Notes	LTO Cycles
KC-135R	KC-135-R	F108-CF-201	4	No data on APUs	See below		360

Note: F108-CF-201 is the military designation of the CFM56-2B-1 engine.

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Aircraft Criteria Pollutant Emission Factors

Aircraft Model	Engine Model	# Engines	Reference Thrust Mode	LTO/GO Thrust Mode	Fuel Flow (lb/hr)	Emission Factors in lb Pollutant per 1000 lb Fuel Burned						
						PM10	PM2.5	CO	NO _x	SO ₂	VOCs	TIM
KC-135R	F108-CF-201	4	Idle	Idle	1016	0.06	0.06	30.70	4.00	1.06	2.10	47.7
KC-135R	F108-CF-201	4	Approach	Approach	2468	0.06	0.05	4.20	8.20	1.06	0.09	5.2
KC-135R	F108-CF-201	4	Climbout	Climbout	6500	0.05	0.05	0.90	16.00	1.06	0.06	1.6
KC-135R	F108-CF-201	4	Takeoff	Takeoff	7818	0.07	0.06	0.90	18.05	1.06	0.05	0.7

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-8

APU Emission Factors

APU Emission Factors									
Aircraft Model	# APU	APU Model	APU Emission Factors in lb Pollutant per hour						APU (hr)
			PM10	PM2.5	CO	NO _x	SO ₂	VOCs	
			No Data Available.						
KC-135R									

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Default Time-in-Mode

Aircraft Type	Typical Duration by Mode (minutes)					
	Taxi/Idle	Takeoff	Climbout	Approach	Taxi/Idle-in	Total
KC-135R	32.8	0.7	1.6	5.2	14.9	55.2

Emission factors from AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources, Table 2-4

Emission Factors (EFs) and Constants - Airfield Operations for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Greenhouse Gas Emission Factors

Units	CO ₂	CH ₄	N ₂ O
kg/gal fuel	9.80	---	---
g/gal fuel	---	0.27	0.31

Reference: Footnote 2, from Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)
Criteria Pollutant and VOC Emissions per LTO by Aircraft Type
Calculated as the sum of the products of [(minutes) * (fuel flow/minute) * (lbs pollutant/lb fuel)] for each of the thrust modes.

Reported Aircraft Model	APU	Emission in lb Pollutant per LTO							APU
		Fuel (lb)	PM10 (lb)	PM2.5 (lb)	CO (lb)	NOx (lb)	SOx (lb)	VOCs (lb)	
KC-135R	0	5144.6	0.3	0.3	103.7	37.6	5.5	6.9	0

Total Criteria Pollutant and VOC Emissions for maximum LTO's by Aircraft Type

Reported Aircraft Model	APU	Total LTO's	Fuel (lb)	PM10 (tons)	PM2.5 (tons)	CO (tons)	NOx (tons)	SOx (tons)	VOCs (tons)	APU
KC-135R	0	360	1,852,065.6	0.05	0.05	18.67	6.77	0.98	1.25	0
Worst Case Scenario			1,852,065.60	0.05	0.05	18.67	6.77	0.98	1.25	0

Total gallons of fuel used for LTOs (555,342 gal.) is based on the 6.67 lb/gal density of JP-8 as provided in footnote 2. of Table 2-8 of the AFCEC August 2013 Air Emissions Guide for Air Force Mobile Sources.

Calculations - Airfield Operations for Modified Alternative 2a - Implementation Phase (Tinian North)

Greenhouse Gas Emissions

Assume aircraft will use 300,000 gallons of fuel per day for 56 days at either Saipan or Tinian.

Quantity (gallons)	Fuel Type	CH ₄ (kg)	N ₂ O (kg)	CO ₂ (kg)	CO ₂ -equivalent (kg)	CO ₂ -equivalent (metric tonne)
16,800,000	JP-8	4536	5208	164,640,000	166,305,384	166,305

The CH₄ and N₂O Global Warming Potential multipliers are 25 and 298, respectively from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014.

DATA - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Given:

Saipan

Six 10,000 gal Fuel Trucks will take 14 days at 10hrs/day to provide initial fill from Saipan seaport to Saipan Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 42 days after the initial fill.

Tinian North

Six 10,000 gal Fuel Trucks will take 17 days at 10hrs/day to provide initial fill from Tinian seaport to Tinian Airport (Site of Proposed Action). The six 10,000 gallon Fuel trucks will operate 10hrs/day for the duration of the exercises. The total exercise time is 8 weeks (56 days), therefore the fuel trucks will operate an additional 39 days after the initial fill.

Under the commercial lodging option at Saipan, six busses will transport a total of 256 personnel 4 roundtrips/day for a total of 24 roundtrips/day for 8 weeks. This same number of personnel, busses, and roundtrips could also occur at Tinian.

Assumptions:

A Gross Vehicle Weight (GVW) of 36,200 lbs will be used, based off of an 84 passenger Blue Bird bus.

Assume fuel truck GVW > 60,000 lbs since fuel load alone is 83,400 lbs.

Assume fuel trucks travel at 55 miles per hour

Assume 40 miles per roundtrip for busses.

Vehicle Weight Classes for Which Emission Factors are Published

Vehicle Category	Description	SCC
LDGV	Light-Duty Gasoline Vehicles (i.e., passenger cars) does not include SUVs, vans or pickups	A2201001000
LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs GVW - includes pickup trucks, sport utility vehicles and vans)	A2201020000
LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVW - includes pickup trucks, sport utility vehicles and vans)	A2201040000
HDBGV2B	Class 2b Heavy-Duty Gasoline Vehicles (8501-10,000 lbs GVW)	A2201070000
HDBGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs GVW)	A2201070000
HDBGV8A	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs GVW)	A2201070000
LDDV	Light-Duty Diesel Vehicles (Passenger Cars)	
LDDT34	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs GVW)	A2230002000
HDDV2B	Class 2b Heavy-Duty Diesel Vehicles (8501-10,000 lbs GVW - includes pickup trucks)	A2230070000
HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs GVW)	A2230070000
HDDV8A	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	A2230070000
HDDV8B	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	A2230070000
MC	Motorcycles	A2201080000

Emission Factors for Calendar Year 2015

Vehicle Class	Model Year	Emission Factors in grams per Mile ^a							Fugitive PM ₁₀	Fugitive PM _{2.5}
		PM ₁₀	PM _{2.5}	CO	NOx	SOx	NOCs	CO ₂		
HDDV8A*	2005	0.2	0.19	2.8	5.47	0.01	0.48	1544.1	0.05	0.01
HDDV8B**	2005	0.2	0.19	3.33	6.23	0.02	0.58	1615.2	0.05	0.01

* Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8a

**Low Altitude Emission Factors for Heavy Duty Diesel Vehicles Class 8b

a) Emission factors from Appendix A of Air Emissions Factor Guide to Air Force Mobile Sources, AFCEE, December 2009

Greenhouse Gas Emission Factors for Calendar Year 2015

Vehicle Class	CH ₄ (g/mile)	N ₂ O (g/mile)
HDDV	0.0051	0.0048

g/mile = grams per mile

CH₄ = Methane; N₂O = Nitrous Oxide

b) Emission Factors from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>).

Emission Calculations - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Miles for Commuter Emissions for 8 week training exercises

Vehicle Class	Speed Miles/hour	Miles/Trip	Total Trips/Day	Hours/Day	Total Days	Total Miles
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)		40	24		56	53,760
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	55			10	56	30,800

Criteria and VOC Emissions for Commuters

Vehicle Class	Model Year	Annual Miles	Criteria Pollutant Emissions (tons/year)					
			PM ₁₀	PM _{2.5}	CO	NOx	SOx	VOCs
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	2005	53,760	0.015	0.012	0.166	0.324	0.001	0.028
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	2005	30,800	0.008	0.007	0.113	0.212	0.001	0.020
Total			0.023	0.019	0.279	0.536	0.001	0.048

Particulate emissions include exhaust, brake wear, tire wear. Assume paved road.

Greenhouse Gas Emissions for Commuters

Vehicle Class	Annual Miles	CO ₂ (lb/year)	CH ₄ (lb/year)	N ₂ O (lb/year)	CH ₄ GWP Multiplier	N ₂ O GWP Multiplier	CO ₂ Equivalent (lb/year)	CO ₂ Equivalent (metric tonnes/year)
HDDV8A - Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs GVW)	53,760	183,004.44	0.60	0.57	25	298	183,189.08	83.09
HDDV8B - Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs GVW)	30,800	109,674.07	0.35	0.33	25	298	109,779.86	49.80
Total		292,678.52	0.95	0.89	---	---	292,968.94	132.89

GWP = Global Warming Potential; 100-year GWP values obtained from EPA's Climate Leadership, Emission Factors for Greenhouse Gas Inventories, Last Modified 4 April 2014 (<http://www.epa.gov/climateleadership/documents/emission-factors.pdf>)

Emission Calculations Method - Fuel Truck and Commuter Vehicle Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Calculation Method: Equation 4-1, AFCEE 2009, Mobile Emissions Guide

$$EP = VMTVehCat * EFPolVehCat * 0.002205$$

Where,

EP = Emissions of each individual pollutant (lb/yr)

VMTVehCat = Annual vehicle miles traveled by each vehicle category (LDGV, LDGT1, LDDV, etc.) (mi/yr)

EFPolVehCat = Emission factor of each pollutant for each vehicle category (g/mi)

0.002205 = Factor for converting grams to pounds (g/lb).

DATA - Fuel Loading Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Given:	Saipan
Total Exercise Days (8 weeks)	56
Initial Fuel Fill Days	14
Remaining Fuel Fill Days	42
Total # of Fuel Trucks	6
Total Gallons per Fuel Truck	10,000
Trips per day per Fuel Truck	5
1 bbl conversion to gallons	42
Total Fuel (gal) during Initial Fill	4,200,000
Total Fuel (gal) during Remaining Exercise	12,600,000
Total Fuel (gal) during Exercise (8 Weeks)	16,800,000

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Saipan Airport Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	Loading
Saipan Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	Loading
Saipan Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	Loading

Given:	Tinian North
Total Exercise Days (8 weeks)	56
Initial Fuel Fill Days	17
Remaining Fuel Fill Days	39
Total # of Fuel Trucks	6
Total Gallons per Fuel Truck	10,000
Trips per day per Fuel Truck	5
1 bbl conversion to gallons	42
Total Fuel (gal) during Initial Fill	5,100,000
Total Fuel (gal) during Remaining Exercise	11,700,000
Total Fuel (gal) during Exercise (8 Weeks)	16,800,000

Proposed Action Fuel Loading Operations

Location	Description	Fuel Type	Fuel Transferred (gal)	Category
Tinian North Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	Loading
Tinian Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	Loading
Tinian Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	Loading

Emission Factors - Fuel Loading Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

JP-8 emission factors (lb/Mgal)	Dispensing	Loading
	Splash	Bottom fill
Molecular Weight =	130	0.020
True Vapor Pressure (psia) =	0.011	
Dispensing Displacement losses =	0.0487	
Spillage =	0.7	
Total =	0.749	

AP-42 Table 7.1-2 dated 11/06
AP-42 Table 7.1-2 dated 11/06 @ 70F (annual avg.)
AP-42 Section 5.2 dated 6/08 Equation (1)
AP-42 Table 5.2-7 dated 6/08

Emission Calculations - Fuel Loading Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Saipan

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(tons)
Saipan Airport Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	338.9	0	338.9	0.17
Saipan Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Saipan Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Total			33,600,000	678	0	677.75	0.34

Tinian

Location	Description	Fuel Type	Fuel Transferred	Displaced Vapor	Spillage	Total VOC	Total VOC
			(gal)	(lb)	(lb)	(lb)	(tons)
Tinian North Flightline	Loading Aircraft from Truck Fill Stands	JP-8	16,800,000	338.9	0	338.9	0.17
Tinian Seaport, Loading Racks (50,000 bbl tank 1)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Tinian Seaport, Loading Racks (50,000 bbl tank 2)	Loading Refueler Trucks	JP-8	8,400,000	169.4	0	169.4	0.08
Total			33,600,000	678	0	677.75	0.34

Maximum Emissions **677.75** **0.34**

Emission Calculations Method - Fuel Loading Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Displacement emissions for Diesel and JP-8 were estimated using Equation (1) from AP-42 Section

5.2, Transportation and Marketing of Petroleum Liquids, dated 6/08

$$L_L = 12.46 \text{ (SPM)/T}$$

Where

L_L = Loading loss in lb/10³ gal

S = Saturation Factor 1.45 for splash loading, 0.6 for bottom loading

M = molecular weight,

T = temperature of bulk liquid (assume average annual ambient temperature)

DATA - Fuel Storage Tank Emissions for Modified Alternative 3b - Implementation Phase (Hybrid Saipan/Tinian South)

Fuel storage tank emissions were estimated using the U.S. EPA TANKS storage tank emissions calculation software (Version 4.0.9d). The emissions calculations algorithms in the TANKS program are based on Chapter 7 of EPA's AP-42. Honolulu, Hawaii was used as a surrogate location for the tanks as meteorological data does not exist in TANKS for CNMI. Jet Kerosene fuel was used as the surrogate for JP-8 in the TANKS model as it is the closest in characteristics to JP-8.

Emission Calculations Summary from TANKS* - Saipan

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Saipan Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Saipan Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Saipan Airport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 4 (Saipan Airport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Total		1,713.68	950.24	2,663.92	1.33

*See the following references for TANKS printouts. (SM12 - TANKS) & (SM13 - TANKS)

Emission Calculations Summary from TANKS* - Tinian North

Tank Type	Throughput (gal.)	Working Loss (lbs)	Breathing Loss (lbs)	VOC Total (lbs)	VOC Total (tons)
Tank 1 (Tinian Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 2 (Tinian Seaport) - 50,000 bbl, cut and cover or AST	8,400,000	428.42	237.56	665.98	0.33
Tank 3 (Tinian Airport) - 60,000 bbl, cut and cover or AST	8,400,000	385.12	714.88	1100	0.55
Tank 4 (Tinian Airport) - 60,000 bbl, cut and cover or AST	8,400,000	385.12	714.88	1100	0.55
Total		1,627.08	1,904.88	3,531.96	1.77

*See the following references for TANKS printouts. (SM12 - TANKS) & (SM13 - TANKS)

Maximum Emissions	3,531.96	1.77
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APPENDIX F

Aeronautical Study in the Commonwealth
of the Northern Mariana Islands (Placeholder)



Aeronautical Study

The USAF is revising the Aeronautical Study in accordance with the Modified Alternatives presented in this Revised Draft EIS. The Revised Aeronautical Study will be completed before the Final EIS is published.

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APPENDIX G

Public Involvement and Comments



APPENDIX G

PUBLIC INVOLVEMENT AND COMMENTS

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NOTICE OF INTENT



59664

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more beneficiary countries. This preferential treatment is also available for apparel articles assembled in one or more lesser-developed beneficiary sub-Saharan African countries, regardless of the country of origin of the fabric used to make such articles, subject to quantitative limitation. Title VI of the TRHCA 2006 extended this special rule for lesser-developed countries through September 30, 2012.

The AGOA Acceleration Act of 2004 provides that the quantitative limitation for the twelve-month period beginning October 1, 2011 will be an amount not to exceed 7 percent of the aggregate square meter equivalents of all apparel articles imported into the United States in the preceding 12-month period for which data are available. See Section 112(b)(3)(A)(ii)(I) of TDA 2000, as amended by Section 7(b)(2)(B) of the AGOA Acceleration Act of 2004. Of this overall amount, apparel imported under the special rule for lesser-developed countries is limited to an amount not to exceed 3.5 percent of all apparel articles imported into the United States in the preceding 12-month period. See Section 112(b)(3)(B)(ii)(II) of TDA 2000, as amended by Section 6002(a) of TRHCA 2006. Presidential Proclamation 7350 of October 2, 2000 directed CITA to publish the aggregate quantity of imports allowed during each 12-month period in the **Federal Register**.

For the one-year period, beginning on October 1, 2011, and extending through September 30, 2012 the aggregate quantity of imports eligible for preferential treatment under these provisions is 1,877,430,342 square meters equivalent. Of this amount, 938,715,171 square meters equivalent is available to apparel articles imported under the special rule for lesser-developed countries. Apparel articles entered in excess of these quantities will be subject to otherwise applicable tariffs.

These quantities are calculated using the aggregate square meter equivalents of all apparel articles imported into the United States, derived from the set of Harmonized System lines listed in the Annex to the World Trade Organization Agreement on Textiles and Clothing (ATC), and the conversion factors for units of measure into square meter equivalents used by the United States in implementing the ATC.

Kimberly Glas,

Chairman, Committee for the Implementation of Textile Agreements.

[FR Doc. 2011-24853 Filed 9-26-11; 8:45 am]

BILLING CODE 3410-DS-P

DEPARTMENT OF DEFENSE

Office of the Secretary

Membership of the Defense Contract Audit Agency Senior Executive Service Performance Review Boards

AGENCY: Defense Contract Audit Agency, Department of Defense (DoD).

ACTION: Notice of Membership of the Defense Contract Audit Agency Senior Executive Service Performance Review Boards.

SUMMARY: This notice announces the appointment of members to the Defense Contract Audit Agency (DCAA) Performance Review Boards. The Performance Review Boards provide fair and impartial review of Senior Executive Service (SES) performance appraisals and make recommendations to the Director, DCAA, regarding final performance ratings and performance awards for DCAA SES members.

DATES: *Effective Date:* Upon publication of this notice.

FOR FURTHER INFORMATION CONTACT:

Sandra L. Burrell, Chief, Human Resources Management Division, Defense Contract Audit Agency, 8725 John J. Kingman Road, Suite 2133, Fort Belvoir, Virginia 22060-6219, (703) 767-1039.

SUPPLEMENTARY INFORMATION: In accordance with 5 U.S.C. 4314(c)(4), the following are the names and titles of DCAA career executives appointed to serve as members of the DCAA Performance Review Boards. Appointees will serve one-year terms, effective upon publication of this notice.

Headquarters Performance Review Board:

Ms. Karen Cash, Assistant Director, Operations, DCAA; chairperson.
Mr. Kenneth Saccoccia, Assistant Director, Policy and Plans, DCAA; member.

Mr. Donald McKenzie, Assistant Director, Integrity & Quality Assurance, DCAA; member.

Regional Performance Review Board:

Mr. David Eck, Regional Director, Mid-Atlantic, DCAA; chairperson.
Mr. Ronald Mullinax, Regional Director, Western, DCAA; member.
Mr. Ronald Meldonian, Regional Director, Northeastern, DCAA; member.

Dated: September 22, 2011.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2011-24789 Filed 9-26-11; 8:45 am]

BILLING CODE 5001-06-P

DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Intent To Prepare an Environmental Impact Statement For Divert Activities and Exercises, Guam and Commonwealth of The Northern Mariana Islands

AGENCY: Headquarters Pacific Air Forces, United States Air Force, DoD.

ACTION: Notice of Intent.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321, *et seq.*), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500-1508), and U.S. Air Force (USAF) Environmental Impact Analysis Process (32 CFR part 989), the USAF is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands.

The proposed divert activities and exercises would involve airfield improvements designed to provide additional divert capability for various military aircraft operating as part of joint training exercises, humanitarian assistance activities, and disaster relief operations for northeast Asia. The proposed action would include the development and construction of facilities and infrastructure designed to support up to one tanker squadron of 12 KC-135 aircraft and its approximately 500 support personnel. This proposed action includes divert activities and exercises involving a tanker squadron, as well as USAF, U.S. Navy, or other military aircraft operating in the region, and ideally would require a 10,000-foot runway. Components of the proposal include a cargo pad; an expanded runway area; new taxiways, aprons, and shoulders; 6,000-square foot maintenance facility; jet fuel receiving, storage, and delivery capability; and associated pavement markings, lighting, security, and other related infrastructure.

The possible alternatives for the divert airfield capability include the international airports on Saipan, Tinian, Rota, or other reasonable alternatives developed during the scoping process. Guam International Airport, as an existing divert location, will be considered in this EIS, as part of the no action alternative.

The Air Force is in the process of inviting potential Cooperating Agencies to participate in aspects of the EIS development as appropriate or required.

NOTICE OF AVAILABILITY



Federal Register / Vol. 77, No. 111 / Friday, June 8, 2012 / Notices

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consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the OEI Docket in the EPA Headquarters Docket Center.

FOR FURTHER INFORMATION CONTACT: For information on the federal docket, contact the Office of Environmental Information Docket; telephone: 202-566-1752; facsimile: 202-566-9744; or email: ORD.Docket@epa.gov.

For information on the public listening session, please contact Christine Ross, IRIS Staff, National Center for Environmental Assessment, (8601P), U.S. EPA, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone: 703-347-8592; facsimile: 703-347-8689; or email: IRISListeningSession@epa.gov.

If you have questions about the document, contact Audrey Galizia, National Center for Environmental Assessment (NCEA); telephone: 732-906-6887; facsimile: 732-452-6429; or email: FRN_Questions@epa.gov.

Dated: May 24, 2012.

Darrell A. Winner,
Acting Director, National Center for
Environmental Assessment.

[FR Doc. 2012-13825 Filed 6-7-12; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-9003-4]

Environmental Impacts Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7146 or <http://www.epa.gov/compliance/nepa/>.

Weekly receipt of Environmental Impact Statements

Filed 05/29/2012 Through 06/01/2012
Pursuant to 40 CFR 1506.9.

Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: <http://www.epa.gov/compliance/nepa/eisdata.html>.

SUPPLEMENTARY INFORMATION: EPA is seeking agencies to participate in its e-NEPA electronic EIS submission pilot. Participating agencies can fulfill all requirements for EIS filing, eliminating the need to submit paper copies to EPA Headquarters, by filing documents online and providing feedback on the process. To participate in the pilot, register at: <https://cdx.epa.gov>.

EIS No. 20120172, Final EIS, BLM, WV, East Lynn Lake Coal Lease Project, To Offer Federal Coal in the Coalburg/Winifrede Seam for Competitive Leasing, Wayne County, WV, *Review Period Ends:* 07/09/2012, *Contact:* Chris Carusona 414-297-4463.

EIS No. 20120173, Draft EIS, FHWA, TX, South Padre Island Second Access Project, State Highway 100, Across the Laguna Madre, To Park Road 100, Construction of a New Location Highway Facility, USACE Section 10 and 404 Permits, Cameron County, TX, *Comment Period Ends:* 08/15/2012, *Contact:* Gregory Punske 512-536-5960.

EIS No. 20120174, Final EIS, FHWA, MD, US 50 Crossing Study, Transportation Improvement from MD-611 to MD 378; and 3rd Street to Somerset Street, Funding, USACE Section 10 and 404 Permits, Worcester County, MD, *Review Period Ends:* 07/09/2012, *Contact:* Nicholas Blendy 302-734-2966.

EIS No. 20120175, Draft EIS, USFWS, DE, Prime Hook National Wildlife Refuge, Development of a Comprehensive Conservation Plan, Implementation, Sussex County, DE, *Comment Period Ends:* 08/06/2012, *Contact:* Thomas Bonetti 413-253-8307.

EIS No. 20120176, Second Final Supplement, USN, 00, Surveillance Towed Array Sensor System Low Frequency Active (SURTASS LFA) Sonar Systems, Updated and Additional Information on Employment of Four SURTASS LFA Sonar Systems for Routine Training, Testing, and Military Operation, Implementation, *Review Period Ends:* 07/09/2012, *Contact:* CDR R.A. Dempsey 703-695-8266.

EIS No. 20120177, Draft EIS, USAF, 00, Divert Activities and Exercises, Guam Commonwealth of the Northern Mariana Islands (CNMI), To Improve existing Airport(s) and Associated Infrastructure in the Mariana Islands and To Achieve Divert Capabilities in Western Pacific, Mariana Islands Region, *Comment Period Ends:* 07/23/2012, *Contact:* Jay Nash 703-693-4001.

EIS No. 20120178, Final EIS, APHIS, 00, Glyphosate-Tolerant H7-1 Sugar Beet, Request for Nonregulated Status, United States, *Review Period Ends:* 07/09/2012, *Contact:* Rebecca Stankiewicz Gabel 301-851-3927.

EIS No. 20120179, Final EIS, DOE, CA, Energia Sierra Juarez U.S. Transmission Line Project, Construction, Operation, Maintenance, and Connection of Either 230-Kilovolt or a 500-Kilovolt Electric Transmission Line Crossing U.S.-Mexico Border, Presidential Permit Approval, San Diego County, CA, *Review Period Ends:* 07/09/2012, *Contact:* Brian Mills 202-586-8267.

EIS No. 20120180, Final EIS, USN, HI, Basing of MV-22 and H-1 Aircraft in Support of III Marine Expeditionary Force (MEF) Elements, Construction and Renovation of Facilities to Accommodate and Maintain the Squadrons, HI, *Review Period Ends:* 07/16/2012, *Contact:* 808-472-1196.

EIS No. 20120181, Final EIS, WAPA, AZ, Grapevine Canyon Wind Project, Proposal to Develop a Wind Energy Generating Facility up to 500 Megawatts; (2) a 345 Kilovolt (kV) Electrical Transmission Tie-Line; and (3) a 345-kV Electrical Interconnection Switchyard, Coconino County, AZ, *Review Period Ends:* 07/09/2012, *Contact:* Matt Blevins 800-336-7288.

NEWSPAPER ADVERTISEMENT

NOTICE OF AVAILABILITY

NOTICE OF PUBLIC HEARING

DRAFT EIS FOR DIVERT ACTIVITIES AND EXERCISES, GUAM AND COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

The U.S. Air Force (USAF) announces the availability of the Draft Environmental Impact Statement (EIS) for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (CNMI) for public review. The Draft EIS is available for download on the project website address listed below.

The USAF requests comments on the Draft EIS and will host open public hearings on the islands of Saipan and Tinian. The proposed action analyzed in the Draft EIS is to improve an existing airport or airports and associated infrastructure in the Mariana Islands region in support of expanding mission requirements and to achieve divert capabilities in the western Pacific. The proposed airfield and infrastructure improvements would be designed to support a combination of cargo, fighter, and tanker aircraft and associated support personnel for divert landings, periodic exercises, and humanitarian assistance and disaster relief activities. Proposed facilities would be used on an as-needed basis and would not be used as a permanent full-time beddown or installation location. Saipan International Airport and Tinian International Airport are considered alternative locations for the proposed action. In accordance with the National Environmental Policy Act, the USAF has prepared a Draft EIS and is providing this documentation to the public for review.

In addition to electronic files that can be downloaded at the project website address listed below, printed copies of the Draft EIS will be available for review until July 23, 2012 at:

- Guam- University of Guam Robert F. Kennedy Memorial Library; Nieves M. Flores Memorial Library; Andersen Air Force Base Library
- Saipan- Saipan Office of the Mayor; Joeten-Kiyu Public Library
- Tinian- Tinian Office of the Mayor; Tinian Public Library
- Rota- Rota Office of the Mayor; Antonio Camacho Atalig Memorial Library.

The public is encouraged to attend the Draft EIS public hearings, which will be held at the following dates, times, and locations:

1. June 25, 2012 - Saipan Multi-Purpose Center, Beach Road, Susupe Village, Saipan, 5:00 p.m.-8:00 p.m.
2. June 26, 2012 - Tinian Elementary School, San Jose Village, Tinian, 5:00 p.m.-8:00 p.m.

Federal agencies, government of CNMI agencies, the public, and other interested parties are encouraged to provide verbal and/or written comments to the USAF for consideration in the Final EIS. Verbal and/or written comments may be submitted at the public hearings or via postal mail. All comments must be submitted or postmarked no later than July 23, 2012.

Mail comments to:

Capt Rebecca Heyse, PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam, HI 96853
ATTN: PACAF Divert Marianas EIS

In addition, comments on the Draft EIS will be accepted via telephone voice recording system by dialing 1-855-200-6734, and via the project website at:

www.PACAFDivertMarianasEIS.com



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COMMENTS RECEIVED ON THE DRAFT EIS

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 26, 2012

Captain Rebecca Heyse
PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam, HI 96853

Subject: Draft Environmental Impact Statement (DEIS), Divert Activities and Exercises, Guam
and the Commonwealth of the Northern Mariana Islands (CNMI) (CEQ # 20120177)

Dear Captain Heyse:

The U.S. Environmental Protection Agency (EPA) has reviewed the subject document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed.

According to the DEIS, the Air Force proposes to improve an existing airport to support a combination of cargo, fighter, and tanker aircraft and support personnel for use in divert landings, periodic military training exercises, and humanitarian assistance. Alternative 1 evaluates the use of Saipan International Airport and Alternative 2 evaluates the use of Tinian International Airport. Alternative 1 is identified as the Preferred Alternative.

Based on our review, we have rated the DEIS's Preferred Alternative as Environmental Objections – Insufficient Information (EO-2) (see enclosed “Summary of Rating Definitions”). The noise impacts predicted to occur to residents on Saipan for 8 weeks per year are severe¹, with some residents exposed to levels that could put them at risk for potential hearing loss. Despite these findings, the noise impact assessment is minimal, and does not provide supplemental noise analysis (metrics other than the minimum Day-Night Average Sound Level or DNL), nor does it evaluate potential for hearing loss for populations exposed to DNL 80 decibels and above. This appears inconsistent with an applicable DoD internal directive that requires hearing loss risk be estimated for these populations.

The DEIS predicts that 11,095 residents would be periodically exposed to noise levels between DNL 65 and 80 dBA (A-weighted decibels). Land use compatibility guidelines published by the Federal Interagency Committee on Urban Noise (FICUN), an interagency committee – of which Department of Defense was a member – formed to develop Federal policy and guidance on noise, concluded that residential land use is incompatible with noise levels above DNL 65 dB unless measures are taken to achieve additional Noise Level Reduction (NLR). DoD's own policy² regarding DoD air installations echoes these guidelines when it states that residential use is discouraged in areas exposed to DNL 65-69 dB and strongly discouraged in areas exposed to DNL 70-74 dB. The fact that the noise impacts would

¹ According to Table 1 of the *Guidelines for Considering Noise in Land Use Planning and Control*, Federal Interagency Committee on Urban Noise, 1980, the noise exposure class for noise levels above DNL 75 dB are classified as “severe exposure”.

² <http://www.dtic.mil/whs/directives/corres/pdf/416557p.pdf>

only occur for 8 weeks per year does not eliminate this land use incompatibility. The Preferred Alternative predicts that a sizable portion of Dandan would receive noise levels at DNL 75 dB or above. The DEIS also acknowledges that this noise will disproportionately affect minority and low-income populations, yet there is no evidence that outreach to these communities has occurred. We are also concerned that three schools will receive impacts greater than DNL 70 dB. The DEIS does not discuss noise mitigation, and suggests that it is not clear that noise mitigation is necessary. EPA does not believe that such a conclusion is supported by the DEIS, and recommends that the Air Force reconsider this matter and evaluate possible changes to the preferred alternative or a new alternative that could reduce the noise impacts.

A16

A17

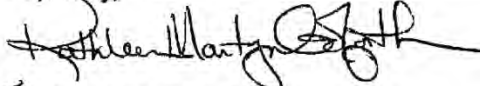
A22

The DEIS implies that a design capability less than that proposed, i.e., operation of the same number of aircraft at a reduced load capacity, would meet the purpose and need for the proposed project. EPA recommends, in addition to an improved noise analysis, that alternatives be explored that would improve the airport to a comparable design capability by reducing the number of planes rather than the load capacity of each plane. We also request an evaluation as to whether an alternative that would operate under only the "low scenario" (no fighter jets) would meet the purpose and need. In all cases, noise mitigation measures should be incorporated into the Proposed Action.

A27

EPA appreciates the opportunity to review this DEIS and would like to work with the Air Force to explore ways to meet the the purpose and need for the action while adequately protecting the health and well-being of the residents of Saipan. We will contact you to discuss plans for completing the NEPA process. In the meantime, if you have any questions, please call me at (415) 972-3843 or have your staff contact Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,


for Enrique Manzanilla, Director
Communities and Ecosystems Division

Enclosure: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Gordon Wong, Federal Aviation Administration
Edward M. Deleon Guerrero, Commonwealth Ports Authority
Frank M. Rabauliman, CNMI Division of Environmental Quality
Alan Fletcher, Commonwealth Utilities Corporation

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

A4

ADEQUACY OF THE IMPACT STATEMENT

Category "1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category "2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category "3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR DIVERT ACTIVITIES AND EXERCISES, GUAM AND THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (CNMI), JULY 26, 2012

Project Description/Alternatives Analysis

The project description and rationale for the alternatives are not clear. The DEIS states that the KC-135 Stratotanker aircraft is being used as the design aircraft for cargo and tanker aircraft in the EIS and that the KC-135 dimensions will be used to develop space requirements for airport facilities and infrastructure under the Proposed Action (p. 2-2). The Proposed Action, whether taking place at Saipan International Airport (GSN)(Alternative 1) or Tinian International Airport (Alternative 2), was devised to accommodate 12 KC-135 aircraft “to meet the purpose and need of the Proposed Action”; however the DEIS does not state why 12 aircraft were chosen or how this number was determined. This number is important because it is used to scale the number of fighter jets that would be used during training (a size ratio of 1 to 2 was assumed for cargo planes to fighter jets, therefore the Proposed Action includes the use of 24 fighter jets) and it is these that are the source of significant noise impacts.

A24

For the analysis of the implementation phase, the DEIS assumes that any mix of joint fighter, cargo, and tanker aircraft, not to exceed the design capabilities of the airport, could be diverted to or exercised from the airport selected. Representative scenarios of possible aircraft mixes are used to analyze potential environmental consequences. The “low scenario” consists of 12 KC-135’s, the “medium scenario” of 6 KC-135’s and 12 fighter jets, and the “high scenario” consists of 24 fighter jets.

The DEIS also includes 3 runway options for the 2 alternative airport sites: Runway Option A - a runway extension to 10,000 ft (the optimum runway length for the KC-135); Runway Option B - a runway extension less than 10,000 ft; and Runway Option C - no runway extension. The DEIS states that a shorter runway (i.e., no extension) can accommodate KC-135’s and “the location could still support divert, exercise, and humanitarian relief activities” but each KC-135 would need to operate at a reduced load capacity (p. 2-2). Thus, according to the DEIS, operating at a reduced load capacity would meet the purpose and need for the project.

A25

Recommendation: The FEIS should explain why 12 KC-135s are needed to meet the purpose and need of the Proposed Action and how this was determined. Discuss the nature of the different scenarios for the reader. For example, explain situations that would require both military training and humanitarian assistance simultaneously at a divert airport (medium scenario).

A24

Since the DEIS indicates that 12 KC-135’s operating at a reduced capacity on a shorter runway would meet the purpose and need for the proposed project, it is reasonable to consider whether some lesser number of KC-135s operating at full capacity on a longer runway would also meet the purpose and need. If it would, an alternative with a design capability for fewer KC-135’s (and, consequently, fewer fighter jets) should be evaluated in the FEIS. If it would not, the FEIS should explain why.

A25

Additionally, we recommend that the Air Force assess whether an alternative that would not utilize the medium and/or high scenario at Saipan International Airport would meet the purpose and need.

Noise Impacts

Noise analysis

We have significant concerns regarding the noise impacts to residents in Saipan under Preferred Alternative 1, especially under the medium and high scenarios evaluated. The noise analysis under the high scenario indicates that, for an average busy day during the military exercises 8 weeks per year, 11,095 residents would be periodically exposed to noise levels within the 65 to 80 dBA (A-weighted decibels) DNL (Day-Night Average Sound Level) noise contours (p. 4-12). The DEIS states that, according to the U.S. Air Force, Federal Aviation Administration (FAA), and Housing and Urban Development (HUD) criteria, noise-sensitive land uses at or above the 65 dBA DNL contour are considered to be within "areas of high noise exposure" (p. 4-4). EPA believes that it is also important to disclose that, according to Federal Interagency Committee on Urban Noise (FICUN)³ Guidelines for Considering Noise in Land Use Planning and Control (1980), which were developed by the same agencies as above, noise exposures greater than DNL 65 dB are generally not considered compatible with residential land use⁴. The FICUN Guidelines treat areas above DNL 65 dB as marginally compatible to incompatible with residential land use, depending on the degree of noise level reduction (NLR) provided in affected structures. The FICUN land use compatibility guidelines for noise exposure between DNL 65-70 dB call for building codes to require at least 25 dB outdoor to indoor NLR; and, for exposures between DNL 70-75 dB, at least 30 dB NLR is recommended. FICUN considered noise exposure above DNL 75 dB to be "incompatible" with all residential uses except transient lodging with NLR of at least 35 dB. The DEIS does not discuss the housing structures present on Saipan in relation to noise attenuation potential and whether the current buildings are capable of achieving NLR levels specified above for the indicated noise exposures.

A18

Based on Figure 4.1-4, it appears that, of the over 11,000 residents that would be impacted by 65+ dBA DNL, a large percentage would fall above the 70 dBA DNL noise contour, and some above the 75 and 80 dBA DNL. This is a wide range, and the analysis does not provide a breakdown of population exposed for each noise contour.

Despite the high noise levels predicted, no supplemental noise analysis was performed. Supplemental metrics are useful in characterizing specific events and conveying a clearer understanding of the effects impacted communities can expect on their living and working environments as a result of the Proposed Action. For example, single event analysis is useful in evaluating sleep disturbances. Since, for this project, it is assumed that 30% of the flights will occur at night (p. 4-3, 6, 9), this would be an appropriate noise metric to use. No single event noise levels were identified for the Preferred Alternative 1⁵. Similarly, metrics expressing noise impacts in terms of speech interference are also useful for public disclosure. The analysis in the Marine Corps' West Coast Basing of the F-35B EIS⁶ presented data for both indoor speech interference and indoor sleep disturbance for representative

³ FICUN formed to develop Federal policy and guidance on noise. The committee's membership included the Environmental Protection Agency (EPA), the FAA, the Federal Highway Administration, and the Departments of Defense (DOD), Housing and Urban Development (HUD), and Veterans Affairs (VA).

⁴ The FICUN Guidelines note that HUD, DOT and EPA recognize DNL 55 dB as a goal for outdoor noise levels in residential areas for the protection of public health and welfare with an adequate margin of safety.

⁵ For Alt 2 on Tinian, the DEIS discloses that the maximum single-event level is estimated to reach 95 dBA SEL at the closest community of Marpo Heights (p. 4-24), which would experience close to the 65 dB DNL noise contour, but no single-event measures for the closest community on Saipan, lying in the DNL 80 dB contour are disclosed.

⁶ See http://www.usmcjswest.com/Resources/Documents/Final_Volume_1.pdf

residences with windows open and windows closed. The F-35B EIS also identified the number of housing units affected in each noise contour above DNL 65 dB, which is useful for disclosing impacts and expressing the mitigation burden for the soundproofing of dwellings.

↑
A18

The DEIS predicts noise exposures at and above DNL 75 dB, with some above DNL 80 dB, yet there was no analysis to assess the potential for hearing loss. We believe that when noise-sensitive receptors are identified in the 75 dB+ noise contour, risk of hearing loss should be evaluated. DoD policy in "Methodology for Assessing Hearing Loss Risk and Impacts in DoD Environmental Impact Analysis" applies whenever the 80 dB DNL contour extends into populated areas off base and requires that hearing risk loss be estimated for this population.

↑
A19

Recommendations: The noise analysis in the FEIS should be improved. We recommend that the following be included:

Provide a breakdown of the population that would be exposed in each noise contour.
Quantify the number of residents that would be "highly annoyed" as defined in Table 4.1-1 (Feingold data);

Conduct supplemental noise analysis to disclose indoor speech interference and indoor sleep disturbance⁷ for the 8 week training period, such as was performed in the Marine Corps' West Coast Basing of the F-35B EIS. Discuss sleep disturbance results with reference to the World Health Organization's guidance that equivalent sound pressure level should not exceed 30 dBA indoors for continuous noise, and 45 dB SEL for single events if negative effects on sleep are to be avoided⁸;

↑
A18

Estimate potential for hearing loss for noise exposures at DNL 75 dB and above. Provide single event analysis (e.g. SEL metrics) for Alternative 1, as is provided for Alternative 2, and include this information in the hearing loss analysis. Discuss results in terms of the World Health Organization's 120 dB guideline threshold for hearing impairment in children⁹. It may be helpful to discuss the frequency of expected noise from the project in terms of hearing loss. Noise-induced hearing impairment occurs predominantly in the higher frequency range of 3,000–6,000 Hz, with the largest effect at 4,000 Hz¹⁰.

↑
A19

Quantify the number of dwellings that would fall under each noise contour. Disclose that noise levels above 65 dB are normally considered incompatible with residential land use;

Discuss the construction materials and methods of housing structures on Saipan in relation to noise attenuation potential and indicate the probable noise level reduction these structures would be capable of achieving.

⁷ The Federal Interagency Committee on Aviation Noise (FICAN) recommends the use of ANSI Standard ANSI S12.9-2008 to Predict Awakenings from Aircraft Noise. See S12.9-2008, *Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes*, 2008

⁸ World Health Organization. 1999. *Guidelines for Community Noise*. Available: <http://www.who.int/docstore/peh/noise/guidelines2.html>

⁹ *ibid*

¹⁰ *ibid*

Health Impacts from Noise

The DEIS does not discuss the potential health effects from noise. There is increasing evidence that noise impacts have non-auditory health effects. A 2007 review article¹¹ that summarizes studies from the National Library of Medicine database on the adverse health effects of noise concludes that “*the potential health effects of noise pollution are numerous, pervasive, persistent, and medically and socially significant. Noise produces direct and cumulative adverse effects that impair health and that degrade residential, social, working, and learning environments with corresponding real (economic) and intangible (well-being) losses*”. Long-term physical health effects have been linked to noise effects related to sleep disturbances, stress, cardiovascular response, and increased blood pressure. The mental health effects that noise is suspected to cause or contribute to include anxiety, emotional instability, mood changes, increase in social conflicts, neurosis, and psychosis.

Recommendation: Disclose the physical and mental health impacts that have been linked to the project noise levels identified in the FEIS.

A8

Impacts to Children and Schools

Pursuant to Executive Order 13045 - Protection of Children from Environmental Health Risks and Safety Risks, the DEIS concludes that the Proposed Action would not result in disproportionate risks to children from environmental health risks or safety risks; however, because there is no discussion of noise impacts on children’s health and learning, this conclusion is not supported.

The DEIS identifies 3 schools that fall into the 70 dB noise contour under the medium and high scenarios for Preferred Alternative 1 (p. 4-7, 4-12). Under baseline conditions, none of these land uses are within the 65 dBA DNL noise contour (p. 3-4). Dandan Elementary School noise would increase from 46 dBA to over 70 dBA, Koblerville Elementary School from 50 dBA to over 70 dBA, and Saipan Southern High School from 49 dBA to over 70 dBA. These are substantial noise increases - decibels are on a logarithmic scale, and an increase of 10 dBs represents a subjective doubling of loudness¹². Elevated noise levels at schools are of concern because research on the effects of aircraft noise on student learning indicates interference with reading, motivation, language and speech, and memory¹³. These represent acoustical barriers to learning, especially for young children since they are more susceptible than adults to the effects of background noise on spoken communication¹⁴.

A9

Goines and Hagler (2007), in their review article cited above, concluded that children are particularly vulnerable to the effects from noise interference with spoken communication. The inability to comprehend normal speech may lead to a number of personal disabilities, handicaps, and behavioral changes. Children who live in noisy environments have been found to have heightened sympathetic arousal indicated by increased levels of stress-related hormones and elevated resting blood pressure. Noise is assumed to accelerate and intensify the development of latent mental disorders and children may be particularly vulnerable to these effects because they may lack adequate coping mechanisms. The review article concludes that because children are particularly vulnerable to noise induced

¹¹ Goines, Lisa RN and Hagler, Louis MD. 2007. "Noise Pollution: A Modern Plague", *Southern Medical Journal*: Volume 100 - Issue 3 - pp 287-294.

¹² Federal Interagency Committee on Noise (FICON), August 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. Available: <http://www.fican.org/pdf/nai-8-92.pdf>

¹³ http://www.fican.org/pdf/Effects_aircraft.pdf

¹⁴ ANSI S12.60-2002 American National Standard, *Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools*

abnormalities, they need special protection, and the evidence is strong enough to warrant monitoring programs in schools and elsewhere to protect children from noise exposure.

The DEIS does not identify these impacts to children's health and learning, nor are any mitigation measures identified, as required by 40 CFR 1502.16(h).

Recommendations: Disclose impacts to children including potential health impacts and impacts to learning. Identify possible mitigation measures, including retrofitting impacted schools with appropriate measures to achieve the classroom acoustics standard of the American National Standards Institute (ANSI)¹⁵. This could include adding insulation, adding a second window pane or replacing windows with better sound attenuation, sealing gaps or leaks in windows and doors, installing baffles in vents and improving the exterior roofing, consistent with radon safety. Indicate whether noise insulation at these schools could achieve the ANSI acoustical performance criteria with the noise levels predicted from the Proposed Action, specifically the requirement that the one-hour average background noise level not exceed 35 dBA in core learning spaces smaller than 20,000 cubic feet and 40 dBA in larger spaces. Identify possible funding sources for this mitigation and the likelihood that mitigation would occur. See comment below on noise mitigation.

A9

Noise mitigation

As mentioned, no mitigation measures for noise are identified despite the very high increases in noise that would occur during 2 months of the year. We understand that there is no existing Department of Defense program that permits appropriated funding for off-base sound attenuation; however, since GSN is a civilian airport, it is eligible to apply for financial assistance from the FAA Part 150 program for noise mitigation. This would require updating the Noise Exposure Maps and the Noise Compatibility Plan, as well as matching funds from the airport. According to the DEIS, the Department of Defense will need to negotiate space for military improvements with the authority running the airport, and any additional costs for construction and ongoing maintenance to the operating authority would be addressed in the mutual use agreement (p. 1-14).

A23

Recommendations: Identify mitigation measures for noise impacts in the FEIS per 40 CFR 1502.16(h). We recommend that the Air Force work with the airport authority to ensure that the mutual use agreement includes sufficient financial contributions from DoD for ongoing maintenance so the authority can afford to pursue FAA Part 150 program funding.

Cumulative Noise Impacts Not Evaluated

The DEIS acknowledges that noise impacts on noise-sensitive receptors during implementation of the preferred alternative would be significant (p. ES-12); however, it does not acknowledge cumulative noise impacts. Table ES-3 on p. ES-22 does not address cumulative noise impacts from implementation of the preferred alternative¹⁶ nor does the text on page 5-9 address cumulative operational noise impacts. Instead, the DEIS states that no cumulative impacts would be expected on the noise environment due to air operations, because the air training operations were analyzed in the MIRC EIS, for which a Record

A21

¹⁵ ANSI/ASA S12.60-2002 (R2009) American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools.

¹⁶ A summary bullet is listed only for the construction phase for Saipan, although a summary bullet is included for both construction and implementation for the Tinian alternative.

of Decision was issued. The MIRC EIS, however, did not include training use of the Saipan International Airport, so the impact assessment for the aircraft operations in the MIRC EIS was for noise receptors on Guam. Noise impact assessments are necessarily localized and must involve the actual receptors that would be impacted under the Proposed Action. Cumulative noise impact assessments evaluate project impacts to these receptors in combination with noise from other past, present and reasonably foreseeable future actions.

A21

Recommendation: Conduct an impact assessment for noise impacts that occur incrementally from the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).

Noise Impacts and Environmental Justice

The DEIS reveals that Saipan has disproportionately high minority populations and disproportionately high low-income populations in some areas, and that noise impacts would represent “a disproportionate impact on disproportionately high minority populations within District 10” (p. 4-114). It also states that “the USAF will conduct outreach to the potentially impacted communities to ensure they are engaged in the NEPA process and are part of the mitigation development process, if it is determined that mitigation is required” (p. 4-114). It is not clear what criteria the Air Force is using to determine when mitigation is required; nor is it clear whether or not the impacted community has yet been engaged. For outreach to be meaningful, especially to environmental justice communities, it should occur early in the NEPA process.

A1

The DEIS concludes that while disproportionate impacts would occur to minority and low-income populations, this impact would not be significant because it would occur intermittently up to 8 weeks per year. (p. 4-114). This is confusing since the DEIS acknowledges significant noise impacts on page ES-12. Additionally, Council on Environmental Quality’s (CEQ) NEPA Regulations state that “significance cannot be avoided by terming an action temporary” (40 CFR 1508.27(b)7). The noise levels predicted in the DEIS are very high and much higher than the significance threshold of DNL 65 dB identified by FICON, in which the Air Force was a member (see footnote #9).

A2

The DEIS identifies “quality of life” in the discussion of sociocultural issues and states that “quality of life relates to the ability of Saipan and Tinian to adequately support the Proposed Action, including how the island’s general tranquility, family and community relations, cultural identity, infrastructure, social services, and standards of living could be affected” (p. 3-109). The DEIS does not discuss the impact of noise on the island’s general tranquility in its discussion of sociocultural impacts. Based on the noise levels predicted, adverse sociocultural issues may not be negligible as stated in the DEIS (p. 4-113).

A3

Recommendations:

If outreach to the community on Saipan has not yet occurred, it should occur as soon as possible, with commenting opportunities provided, before the FEIS is published. Information on noise impacts should be provided in a clear way that is meaningful and understandable to the public. Materials should be translated as appropriate. The FEIS should clarify what criteria the Air Force is using to determine when mitigation is required. The FEIS should acknowledge that noise impacts are significant, in general, and, therefore, significant to the environmental justice community.

A1-A3

The FEIS should reassess the sociocultural impacts of the proposed project, including impacts on the island's general tranquility.

Infrastructure

Water Supply

The description in the DEIS of the water supply quantity and quality conditions on Saipan is largely accurate with regard to water shortages, the lack of a 24-hour water supply for residents, and high chlorides (saltiness) of the existing groundwater supply. The DEIS states, however, that "it is assumed that both capacity and quality of water at GSN are sufficient to support personnel under both the construction phase and the implementation of the Proposed Action" (p. 3-90). It also characterizes impacts as minor and adverse, noting that they would occur on an already strained system (p. 4-100). Even though the water demand from the project is relatively small, if the BEAR site option is used for billeting and water withdrawal is concentrated in one area (in the vicinity of the intersection of Flame Tree Road and Airport Access Road, p. 2-26), the increase in demand for the 8 weeks per year could have significant localized impacts on the water distribution system in that area. In addition, because of the noted water quality problems, water is deemed too salty for drinking and most residents on Saipan purchase bottled water or groundwater treated by reverse osmosis for drinking.

A10

The DEIS states that a 2-inch water supply line would be required for the proposed hangar, maintenance facility, and billeting areas (p. 4-96). A water line of this size may not be consistent with local codes and could be insufficient to provide flows needed for fire-fighting.

A11

The DEIS estimates the daily increased water demand at approximately 68,000 gpm when the facilities are in use. This is roughly equivalent to one or two of the existing Commonwealth Utility Corporation (CUC) groundwater wells.

A12

Recommendation: The FEIS should evaluate localized impacts to the water supply system for the 8 weeks during which exercises would occur. The Air Force should consider the existing deteriorated system in determining significance of these impacts. We recommend working with the CUC to determine the intake locations that would minimize localized impacts, and whether any additional facilities (additional source capacity and/or storage) are warranted. The commercial lodging option appears likely to reduce localized impacts to the water supply system since it is less centralized. If the BEAR Site is used for billeting, the FEIS should note the probable need for bottled drinking water or treatment of some water via reverse osmosis.

A10

The FEIS should indicate whether a 2-inch water line is consistent with local codes and with military codes. Coordinate with CUC to ensure sizing is sufficient for all water needs.

A11-A12

Wastewater Treatment

The DEIS accurately describes the conditions of the existing wastewater and sewer systems on Saipan, noting that they are not in compliance with their EPA National Pollutant Discharge Elimination System (NPDES) Permit requirements and the Clean Water Act. While capacity at the wastewater treatment plants is not an issue, the flows, although minor, could exacerbate the noncompliant condition. CUC is currently undergoing a Master Planning process which details the necessary upgrades that are needed to bring the plants into compliance.

A13

Recommendation: We recommend coordinating with CUC to determine how the Air Force can utilize the wastewater and sewer system in a manner that is consistent with the proposed draft master plan for Saipan and that will not contribute to noncompliance.

↑
A13

Biological Resources

Biosecurity is a concern for the Preferred Alternative 1 as well as Alternative 2 on Tinian. Increased aircraft activities will increase the potential for the introduction of invasive species, including the brown tree snake, which the DEIS indicates has already been detected on Saipan (p. 4-60). The DEIS states that the U.S. Air Force will commit to implementing 100 percent inspection of all outgoing aircraft from Guam for the brown tree snake, and that redundant inspections “will be” conducted on Saipan (p. 4-60, line 37). On page 4-61, the DEIS states that redundant inspection “could be” conducted on Saipan during project development and training activities (line 37). The DEIS does not discuss the potential for other invasive species to be introduced on Saipan or Tinian from the project. According to the U.S. Fish and Wildlife Service (USFWS), other invasive species of concern in the CNMI are the little fire ant, the greenhouse frog, and the coconut rhinoceros beetle.

↑
A14

Preferred Alternative 1 would remove 14.3 acres of forest, primarily for the east parking apron and ramp and the bulk fuel storage (p. 4-59). The maintenance facility will result in removal of just under an acre. Based on Figure 2.3-6, if commercial lodging is utilized for billeting and the BEAR site is not needed, space may be available for the fuel tanks and hydrant system at this location to avoid removal of up to 5 acres of forest. Additionally, based on Figure 2.3-5, it appears there could be non-forested space across the road from the proposed maintenance facility that could be utilized for this structure.

↑
A26

Recommendation: Clarify in the FEIS whether the Air Force will commit to redundant inspections on Saipan during project development and training activities, and identify whether there is sufficient capacity and infrastructure to perform these inspections or whether additional capacity is needed. Work with USFWS to obtain their concurrence on the biosecurity program.

↑
A14

Explore and discuss in the FEIS whether forest removal has been minimized by site planning, including the possible adjustments to facility locations mentioned above.

↑
A26

Additional Comments

The DEIS states that portions of the Marianas Trench Marine National Monument are not within the Study Area but are to the north and south of the Study Area (p. 1-3, line 32). However, the DEIS also states that “the Mariana Islands Range Complex (MIRC) and the [Divert Activities] Study Area are the same geographical areas” (p. 1-10, line 30). We note that the MIRC FEIS states that “the MIRC and the [MIRC] Study Area are the same geographical areas” (MIRC FEIS, p. ES-1) and that “portions of the Marianas Trench Marine National Monument lie within the [MIRC] Study Area” (MIRC FEIS, p. ES-2). Clarify this discrepancy in the FEIS.

↑
A5

The DEIS mentions “demolition activities” that would occur for Alternative 1 (p. 4-31) but demolition was not identified in the project description, and p. 4-88 states that Alternative 1 does not entail building demolition. Clarify this discrepancy in the FEIS.

↑
A6

Table 1.5-1 states that no permit will be needed under the Clean Water Act, but that a stormwater general permit will be needed for construction activities. Such permits are issued pursuant to the Clean Water Act.

↑
A7



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric
Administration

NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
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JUL 18 2012

Captain Rebecca Heyse
Pacific Air Forces
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam, HI 96853

Dear Captain Heyse:

This letter provides comments from the NOAA National Marine Fisheries Service (NMFS) Pacific Islands Regional Office's Protected Resources Division regarding the Draft Environmental Impact Statement (DEIS) for the Divert Activities and Exercises for Guam and the Commonwealth of the Northern Mariana Islands.

Our agency is responsible for the implementation of the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) for marine species within the Pacific Islands Region, which includes the U.S. Territories of Guam and the Commonwealth of the Northern Mariana Islands. The DEIS states in Section 3.7, Marine Biological Resources, that both humpback whales and sperm whales have been sighted off of Saipan, and that humpback whales may migrate to waters off of Saipan for breeding purposes. It also notes that sperm whales have been sighted near the island of Tinian (DEIS pg. 3-61). ESA-listed species under NMFS jurisdiction that are known or expected to occur in waters of the Mariana Archipelago include green sea turtles (*Chelonia mydas*), hawksbill sea turtles (*Eretmochelys imbricata*), leatherback sea turtles (*Dermochelys coriacea*), and olive ridley sea turtles (*Lepidochelys olivacea*), as well as blue whales (*Balaenoptera musculus*), fin whales (*Balaenoptera physalus*), humpback whales (*Megaptera novaeangliae*), sei whales (*Balaenoptera borealis*), and sperm whales (*Physeter macrocephalus*). Numerous other marine mammals also occur within the archipelago and are protected under the MMPA (see attached list).

B27

The DEIS states that fuel would be shipped to the harbors to support the proposed increase in military air traffic; however, it does not include an analysis of the impacts of increased vessel traffic (to supply fuel or any other supplies) on protected marine species or their habitats. Instead, the effects section of the DEIS focuses on construction and operations at the airfields. The EIS should consider the potential impacts of increased shipping to the selected island to supply the construction and to provide the extra fuel and military supplies that would be required in support of the proposed action, as well as any other expected marine activities.

B28

The DEIS states Tinian Harbor supports limited shipping of shallow draft vessels and has a limited capability to accept fuel shipments (Section 2.2.2.3 pg. 2-10). Based on this statement it appears that harbor improvements would be required to accommodate the expected shipping of shallow draft vessels. As such, the Tinian alternative should include an assessment of any required harbor work.



Additionally, the cumulative effects analysis (DEIS Chapter 5) lacks sufficient consideration of the impacts to the marine environment, such as increased shipping traffic within the action areas (Sections 5.3.7.1 and 5.3.7.2).

We recognize that your agency has made a preliminary determination in the DEIS that the proposed action may affect, but is not likely to adversely affect, protected marine species (DEIS pg. 4-68 lines 9 and 21; pg. 4-69 lines 5 and 16). However, the DEIS is currently insufficient to justify that determination, and we're recommending that consideration be made to the additional points described above to insure a full assessment on the potential impacts of the project regarding sea turtles and marine mammals. If you require technical assistance regarding your effects determination, or have questions regarding what is necessary to fulfill your ESA section 7 obligations, please contact Donald Hubner at (808) 944-2233 or at donald.hubner@noaa.gov.

B30

If you should have any questions regarding these comments, please contact Jayne LeFors on my staff at (858) 546-5653 or at the e-mail address jayne.lefors@noaa.gov.

Sincerely,



Alecia VanAtta
Assistant Regional Administrator
for Protected Resources

MARINE PROTECTED SPECIES of the MARIANA ISLANDS

National Marine Fisheries Service, Pacific Islands Regional Office

MARINE MAMMALS

All marine mammals are protected under the Marine Mammal Protection Act. Those identified under the ESA Listing are also protected under the Endangered Species Act.

<u>Common Name</u>	<u>Scientific Name</u>	<u>ESA Listing</u>
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Blainville's Beaked Whale	<i>Mesoplodon densirostris</i>	
Bryde's Whale	<i>Balaenoptera edeni</i>	
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>	
Dwarf Sperm Whale	<i>Kogia simus</i>	
False Killer Whale	<i>Pseudorca crassidens</i>	
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered
Killer Whale	<i>Orcinus orca</i>	
Long-Finned Pilot Whale	<i>Globicephala melaena</i>	
Longman's Beaked Whale	<i>Indopacetus pacificus</i>	
Melon-Headed Whale	<i>Peponocephala electra</i>	
Minke Whale	<i>Balaenoptera acutorostrata</i>	
Pygmy Killer Whale	<i>Feresa attenuata</i>	
Pygmy Sperm Whale	<i>Kogia breviceps</i>	
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Short-Finned Pilot Whale	<i>Globicephala macrorhynchus</i>	
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Bottlenose Dolphin	<i>Tursiops truncatus</i>	
Common Dolphin	<i>Delphinus delphis</i>	
Fraser's Dolphin	<i>Lagenodelphis hosei</i>	
Pantropical Spotted Dolphin	<i>Stenella attenuata</i>	
Risso's Dolphin	<i>Grampus griseus</i>	
Rough-toothed Dolphin	<i>Steno bredanensis</i>	
Spinner Dolphin	<i>Stenella longirostris</i>	
Striped Dolphin	<i>Stenella coeruleoalba</i>	
Dugong*	<i>Dugong dugon</i>	Endangered
Northern Elephant Seal	<i>Mirounga angustirostris</i>	

SEA TURTLES

All sea turtles are protected under the Endangered Species Act.

<u>Common Name</u>	<u>Scientific Name</u>	<u>ESA Listing</u>
Green Turtle	<i>Chelonia mydas</i>	Threatened
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	Endangered
Leatherback Turtle	<i>Dermochelys coriacea</i>	Endangered
Olive Ridley Turtle	<i>Lepidochelys olivacea</i>	Threatened

* Dugongs are under the jurisdiction of the US Fish and Wildlife Service.



U.S. DEPARTMENT OF COMMERCE
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July 17, 2012

Capt Rebecca Hayes
PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam, HI 96853
Attn: PACAF Divert Marianas EIS

Dear Capt Hayes,

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) Pacific Islands Regional Office, Habitat Conservation Division (PIRO HCD) has reviewed the "Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and the Commonwealth of the Northern Mariana Islands" prepared for United States Air Force, Headquarters, Pacific Air Forces (USAF) in June 2012. We offer the following comments in accordance with the Essential Fish Habitat (EFH) provision of the Magnuson-Stevens Fishery Conservation and Management Act (MSA 50 C.F.R. § 600.905 – 930), also the National Environmental Policy Act (NEPA 42 U.S.C. 4321 et seq.), the Fish and Wildlife Coordination Act (FWCA 16 U.S.C. § 662(a)), the Coral Reef Executive Order 13089, and the Clean Water Act (CWA 33 U.S.C. §1251 et seq.)

The USAF proposes to construct facilities and infrastructure at an existing airport or airports in the Mariana Islands to support a combination of aircraft and associated support personnel for divert landings, periodic exercises, and humanitarian assistance and disaster relief. The Proposed Action will establish additional divert capabilities to support and conduct current, emerging, and future training activities, while ensuring the capability to meet mission requirements in the event that access to Andersen Air Force Base (AFB) or other western Pacific locations is limited or denied.

The draft Environmental Impact Statement (DEIS) describes three potential alternatives:

- *Alternative 1 - GSN:* the creation of divert capabilities at the Francisco C. Ada Saipan International Airport (GSN) (preferred)
- *Alternative 2 – TNI:* the creation of divert capabilities at the Tinian International Airport (TNI)
- *Alternative 3: No Action*

The DEIS evaluates impacts from both the Construction Phase and the Implementation Phase. The Construction Phase includes the potential extension of airport runways and creation of a parking apron, temporary munitions storage area, hazardous cargo pad and arm/disarm pad, aircraft hangar,



maintenance facility, jet fuel infrastructure, and billeting facilities for up to 500 personnel. The Implementation Phase includes activities related to divert landings, humanitarian airlift staging, military exercises, jet fuel receiving, storage, and distribution, and billeting.

According to the DEIS, the GSN Alternative will increase impervious surfaces by up to 2,392,200 square feet and the TNI Alternative will increase impervious surfaces by up to 4,090,800 square feet. Both alternatives are located within the coastal zone, in close proximity to nearshore marine resources, including Essential Fish Habitat (EFH). Previous large scale clearing and grading projects in the Mariana Islands have resulted in significant impacts to surface and nearshore water quality, EFH, and coral reefs. The DEIS states that: "With proper sediment and erosion controls and storm water management BMPs in place, it is assumed that storm water runoff during construction activities would result in short-term, indirect, minor, adverse impacts on water quality in down gradient surface water bodies and nearshore waters." (p. 4-54 lines 13-16) However, the DEIS provides limited analysis on BMP implementation, maintenance and effectiveness and does not evaluate the potential impacts of these activities on EFH in the affected nearshore waters.

B31

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), (16 USC § 1855(b)(2)) requires federal agencies to consult with NMFS on "any action authorized, funded, or undertaken, or proposed to be authorized, funded or undertaken, by such agency that may adversely affect any essential fish habitat identified under the Act." Further, NMFS is required to provide conservation recommendations for actions that would adversely affect EFH. 50 CFR 600.905 outlines the general EFH consultation procedure. We recommend that the USAF evaluate potential impacts to EFH associated with this proposed action to determine whether consultation under MSA is necessary for this project.

Impacts to water quality may also affect corals petitioned for listing under the Endangered Species Act (ESA). Forty of the eighty-two candidate species are found in the Mariana Islands (see attached list). A number of these species have been observed in close proximity to the airports and harbors in both Saipan and Tinian. A decision on listing is expected in late 2012. Listing of the corals under the ESA might necessitate a Section 7 consultation for corals. More information on this process is available at: http://www.fpir.noaa.gov/PRD/prd_coral.html

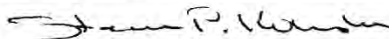
B32

During the scoping meetings, it was noted that significant harbor improvements may be required to support the development, enhancement, and operations of a divert airfield location. Should the USAF require upgrades at either Saipan Harbor or Tinian Harbor to accommodate the delivery and handling of jet fuel or other supplies, the USAF may need to initiate consultation with NMFS under the Fish and Wildlife Coordination Act and MSA.

B33

Thank you for the opportunity to provide input during the scoping process for this proposed action. Should you have any questions, please contact Valerie Brown in our Guam Field Office valerie.brown@noaa.gov or 671-646-1904.

Sincerely,



for
Gerald W. Davis
Assistant Regional Administrator
Habitat Conservation Division

CC via e-mail:

U.S. Fish and Wildlife Service
US EPA Region 9
CNMI Coastal Resources Management Office
CNMI Department of Environmental Quality
CNMI Division of Fish and Wildlife



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
333 Bush Street, Suite 500
San Francisco, California 94104-2828



IN REPLY REFER TO
L7619 (PWR-PP)
ER 12\0420

31 JUL 2012

Capt. Rebecca Heyse, PACAF/PA
ATTN: PACAF Divert Marianas EIS
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam, Hawaii 96853-4512

Dear Captain Heyse,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for Divert Activities (ER 12\0420). The National Park Service (NPS) has some general comments on the proposed project as well as specific comments regarding information in the DEIS.

Natural Resources

The NPS is concerned that increased flights from Guam and other areas can introduce invasive species to Saipan (or Tinian), especially the brown tree snake. Additional inspection resources, quarantine areas, personnel, training, and detection dogs will all be needed. The ability to have 100% inspection and control over all Divert traffic landing on Saipan will be necessary and the EIS should address how the Divert procedures will conform to regional Biosecurity Plans and requirements.

C31

Cultural Resources

The NPS represents the Secretary of the Interior in matters relating to National Historic Landmarks (NHLs). This authority is granted by the National Historic Preservation Act (NHPA) and authorizes the NPS to act on behalf of an NHL that a federal undertaking may adversely affect :

Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.¹

¹ NHPA Section 110(f) and 36 CFR 800 Section 800.10. [16 U.S.C. 470h-2(f) — Federal undertakings affecting National Historic Landmarks]



Section 106 of the NHPA, as set forth in 36 CFR Sections 800.6 and 800.10, requires that an agency identify the presence of NHLs and other historic properties within the undertaking's area of potential effect and assess whether implementation of undertaking will have an adverse effect on such properties. If it is determined that an undertaking may affect an NHL, the Agency is required to notify the Secretary of the Department of the Interior of any consultation involving an NHL, and formally invite the Secretary to participate in Section 106 consultation when there may be an adverse effect to an NHL.

We have noted the potential for adverse effects to the Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark District (NHL) on Saipan, specifically the Aslito/Isley Field Historic District section of the NHL. On June 17, 2012, NPS staff visited the proposed area for the Saipan alternative with HDR Environmental, Operations and Construction, Inc. (HDR) archeological staff. This field visit was prompted by a draft Phase I Cultural Resources Survey Report (April 2012) prepared by HDR for the Saipan alternative for the proposed project. This field visit was very informative and we enjoyed the opportunity to discuss the details of the cultural field work.

During the field visit, we discussed the locations within the project area that were investigated for cultural resources during the survey and what resources were identified. We visited a Japanese bunker that had not been previously identified. HDR had sent a letter to the Historic Preservation Officer (HPO) of the Commonwealth of the Northern Mariana Islands (CNMI) and NPS asking for "concurrence" on the determinations of eligibility to the National Register of Historic Places (NRHP) that was included in the Phase I report. This included the recommendation that some features within the NHL are ineligible for the NRHP. There was some confusion as to what HDR was asking for in regards to concurrence. We explained that the only way an NHL designation can be modified is through the NHL amendment process which includes a review and acceptance by the National Historic Landmarks Committee of the National Park System Advisory Board. Please refer to our detailed comments in the letter dated June 25, 2012 from Dr. David Louter to Mr. William Grannis (see Attachment).

C32

On June 22, 2012, a team of HDR and Air Force representatives provided the NPS with a presentation about the DEIS. From that discussion, we understand the analyses required under the National Environmental Protection Act (NEPA) and NHPA are being combined. We would like to reiterate the need to invite all interested parties to participate in meetings that are clearly advertised as Section 106 consultation.

In general, the Section 106 process should be followed to determine the effects, if any, to historic properties within the project area. To date, it appears that a letter initiating Section 106 was sent to the CNMI HPO, the NPS and the Advisory Council on Historic Preservation (ACHP) (February 2012). Additionally, a draft Phase I cultural resources survey was prepared for the Aslito/Isley Field area. This report identified cultural resources within proposed areas of ground disturbance within the project area for Alternative 1 in the DEIS.

In addition, the National Park Service offers the following comments specific to the DEIS:

Chapter 3, Affected Environment, page 3-62, lines 10-11 – The description of the study area for cultural resources needs to be better defined. The Area of Potential Effect (APE) as defined in

C33

36 CFR 800.16(d) “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” should be included. The NPS suggests the inclusion of a map showing the APE for the proposed project.	C33
Page 3-68, line 14 (and line 17) –These sentences reference an “APE”. The APE has not been previously defined in the DEIS. The Area of Potential Effect for each alternative should be defined in the Affected Environment section of the DEIS; and if there is variance between the alternatives, then individual APE maps should be included.	C34
Chapter 4, Environmental Consequences, page 4-69, 4.8 Cultural Resources, paragraph 2 This paragraph does not adequately define the Section 106 process requirements as outlined in 36 CFR 800. For example, it states that consultation will only be done if adverse effects to cultural resources are determined. Through the Section 106 process, effects to resources are determined through the consultation process.	C35
4.8.1 Alternative 1 – GSN – There is no mention of the Phase I Cultural Resources Survey (2012) that was prepared by HDR for the Aslito/Isley Field alternative. Suggest referencing the findings from the report.	C36
4.8.1 Alternative 1 – GSN – The area of the proposed associated fuel tanks located at the Port of Saipan is not addressed and should be.	C37
4.8.1 Alternative 1 – GSN – If possible, the Section 106 finding of effect should be included with the NEPA impact determination. For example, a long-term major impact would be significant under NEPA as well as an adverse effect under Section 106.	C38
4.8.1 Alternative 1 – GSN, line 32 – While the adverse impacts could impact the historic fabric, a better way to state this would be that there could be adverse impacts to the National Historic Landmark historic properties.	C39
4.8.1 Alternative 1 – GSN, Line 33 – Section 106 consultation as outlined in 36 CFR 800.2 needs to be done with all interested parties – not just the HPO and NPS. Additionally, because the proposed project area is within a National Historic Landmark the ACHP needs to be consulted.	C40
4.8.1 Alternative 1 – GSN, Line 34 – Likewise, the determination of impacts to resources and identification of appropriate mitigations should also be done in consultation with all interested parties.	C41
4.8.1.1. Construction Phase, paragraph 1 – Replace the term historic fabric with historic property(ies) where appropriate.	C42
4.8.2 Alternative 2 – TNI, line 37 – Section 106 consultation needs to be conducted with all interested parties to identify the APE, resources within the APE and potential impacts to those resources from project implementation. Likewise, the determination of impacts to resources and	C43

identification of appropriate mitigations should also be done in consultation with all interested parties.

4.8.2 Alternative 2 TNI -- If possible, the Section 106 finding of effect should be included with the NEPA impact determination. For example, a long-term major impact would be significant under NEPA as well as an adverse effect under Section 106.] C44

Chapter 5, Cumulative and Other Effects, 5.3.8 Cultural Resources In general, the impact assessment to cultural resources from cumulative impacts is lacking a discussion on past, present and reasonably foreseeable future actions when added to the proposed action. The discussion in the DEIS seems to further address impacts to cultural resources from the proposed action only.] C45

5.3.8 Cultural Resources, line 21 The long term impacts should be defined using NEPA terminology long-term, direct/indirect, adverse, etc. As much as possible these should be factually described rather than qualitatively labeled.] C46

5.3.8 Cultural Resources, Line 22 Historic fabric should be changed to historic properties.] C47

5.6 Irreversible and Irretrievable Commitments of Resources Given that both Alternatives 1 and 2 had moderate to major adverse impacts to historic properties, the NPS suggests that some cultural resources may have irreversible impacts or be lost.] C48

Mitigation Because there would be adverse impacts to cultural resources there will need to be a discussion of mitigation measures to avoid or minimize these impacts.] C49

The National Park Service looks forward to the continued consultation associated with this project. If you have any questions regarding our comments, please contact Barbara Alberti, Superintendent, American Memorial Park and War in the Pacific National Historical Park at 671-477-7278, extension 1003, or by email (barbara_alberti@nps.gov).

Sincerely ,

Christine S. Lehnertz
Regional Director, Pacific West Region

Atch:1

Cc w atch:
PWR-CR



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
909 First Avenue, Fifth Floor
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H3417 (PWR-CR)

June 25, 2012

William Grannis, Environmental Program Manager
Department of the Air Force
HQ PACAF/A7AV
25 E Street, Suite B-206
Joint Base Pearl Harbor-Hickam, HI 96853-5420

RE: Request for NPS Review of Draft Phase I Cultural Resources Survey Supporting the
Environmental Impact Statement for Divert Activities and Exercises on Saipan
Commonwealth of the Northern Mariana Islands

Dear Mr. Grannis:

Thank you for the invitation to review the Draft Phase I Cultural Resources Survey Supporting the Environmental Impact Statement for Divert Activities and Exercises on Saipan Commonwealth of the Northern Mariana (the Survey).

The National Park Service (NPS) is delegated monitoring and technical assistance responsibilities by Congress to ensure that National Historic Landmarks (NHL) retain the highest level of integrity. Our responsibilities include review and formal comment on individual proposed actions within National Historic Landmarks as well as the cumulative effect of changes through time on NHL properties. The NPS also prepares, reviews, and provides technical assistance in the preparation NHL nominations. It is our understanding that your request for NPS review is not part of a NHPA Section 106 consultation; rather it is a request for technical assistance prior to your development of alternatives under NEPA and prior to your assessment of effects. It is in the capacity of providing technical assistance that we have reviewed and are offering comments on the Survey. Specifically, the Air Force has requested NPS to evaluate and provide comments on the findings of eligibility presented in Chapter 9 of the Survey.

To best address the findings of the Survey, NPS comments are focused on a broader discussion about the Landing Beaches Aslito/Isley Field, Marpi Point National Historic Landmark District (NHLD), as well as the method and process for identifying additional contributors and for determining when previously identified contributors no longer contribute to a NHLD. We believe this discussion will prove beneficial for this and other projects involving NHLs.



As noted in May 25, 2012 cover letter and in the Survey, the study area for the proposed undertaking is located within the boundary of the Aslito/Isley Field portion of the NHL. It appears that in the field survey individual properties located within the NHL boundary were identified and the eligibility of each resource assessed individually for listing in the National Register of Historic Places, which serves one aspect of identification and evaluation; however, it does not adequately address these same resources as contributors to the NHL. Within the Aslito/Isley Field portion of the NHL, the NHL nomination specifically identifies two large sites, a Japanese building and other Japanese concrete structures as part of the NHL; only one building and two vehicular/aircraft parking areas were identified as noncontributing. The following excerpt from the NHL nomination provides more specific information:

Recommended as part of a national historic landmark is the general area formerly known as Aslito Field and Isley Field to include: the site of the two B-29 runways, taxiways, and hardstands; the site of the Seventy-third Bombardment Wing's administrative area; the Japanese blockhouse on the beach at Unai Opyan; and the concrete Japanese structures associated with Aslito Field. Exempted are the modern air terminal, its vehicle parking lot, and its concrete aircraft parking area in front.

An assessment of whether these properties still contribute to the NHL would require an evaluation of the integrity relative to the state of the properties at the time of designation. If the assessment were that contributors had lost a significant degree of integrity since designation, they would not become non contributors unless an update to the NHL nomination was prepared and accepted. The process for changing the boundary, period of significance or deeming contributors as non contributors starts with the NHL program. Based upon an update to the NHL nomination, the NHL program would make a recommendation to the NHL Committee of the NPS Advisory Board, which in turn would make a recommendation to the full Board followed by a recommendation to the Secretary of the Interior. Those determinations are not made by the SHPO. It is also important to note that the integrity of a historic site as a category of historic property is assessed slightly differently than that of a historic building or structure. Reference pages 40-41 of the National Register of Historic Places Bulletin, "How to Prepare a NHL Nomination" for additional information about sites.

As our comments indicate, assessing the eligibility of resources within a NHL requires a different process than employed in the Survey. However, the information provided in the Survey, specifically the identification of features and structures within the NHL, could serve as a good start to a much needed update to the NHL nomination for Landing Beaches Aslito/Isley Field, Marpi Point National Historic Landmark District. If you have further questions, please do not hesitate to call or email Dr. Elaine Jackson-Retondo at 415 623 2368 or elaine_jackson-retondo@nps.gov.

Sincerely,



David Louter,
Chief, Cultural Resources Program
Pacific West Region



Edward J.B. Calvo
Governor

Raymond S. Tenorio
Lt. Governor

Department of Agriculture Dipattamenton Agrikottura

163 Dairy Road, Mangilao, Guam 96913

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Animal Health	734-3940
<u>Aquatic & Wildlife Resources</u>	<u>735-3955/56; Fax 734-6570</u>
Forestry & Soil Resources	735-3949/50; Fax 734-0111
Plant Nursery	734-3949
Plant Inspection Facility	472-1426; 475-1427; Fax 477-9487



Mariquita F. Taitague
Director

Manuel Q. Cruz
Deputy Director

Capt. Rebecca Heyse
PACAFIPA
25 E Street, Suite G-I 08
Joint Base Pearl Harbor-Hickam
HI 96853

July 16, 2012

Re: PACAF Divert Marianas Draft Environmental Impact Statement (EIS)
Dear Capt. Heyse:

The Department of Agriculture's Division of Aquatic and Wildlife Resources (DA WR) received the Draft Environmental Impact Statement (EIS) for the proposed Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (CNMI) for review and comments. The letter acknowledged by Maj. Gen. Russell J. Handy, Director of Operations, Plans, Requirements and Programs, did not state when comments are due.

D50

The Draft EIS studies the potential impacts of the Proposed Action of developing divert capabilities within CNMI in the event that access to Joint Region Marianas- Andersen or other Western Pacific locations is limited or denied. The Preferred Alternative, Alternative 1, for the proposed action is Saipan International Airport (GSN). The Draft EIS also analyzed the findings for Alternative 2, Tinian International Airport. The Alternatives will require additional space to meet the needs proposed by the U.S. Air Force in an event that access to Andersen Air Force Base and other Western Pacific locations is limited or denied. The Draft EIS addressed environmental issues as required through the NEPA process. However, prior to the release of the Draft EIS, the Nightingale reed warbler (*Acrocephalus luscini*) study was not completed. The analysis of the reed warbler study is very important to be able to provide more constructive comments regarding the protection of this endangered species. Please find attached our comments pertaining to the Draft EIS. We look forward to the Final EIS and the incorporation of our concerns in the final comment.

D51

Sincerely,
MARIQUITA F. TAITAGUE

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Page 1

No.	Title	Page	Line	Column	Subject	Satement	Comment	commentor
1	Noise	3-3	3		Existing Conditions	The noise analysis contained in the Draft EIS is based upon readily available background information and data that were current at the time of the analysis. Refinement of the noise analysis is an ongoing process and will be finalized based on Draft EIS comments prior to the Final EIS.	Noise analysis should include impacts to migratory birds and endangered species in the area. Noise impacts on protected species should be determined and mitigated to avoid any 'harm, harassment, or alteration' to the protected species behavior.	JQ
2	Geological and Soil Resources	3-25	1-2		Existing Conditions	Limestones and calcareous deposits compose about 90 percent of the surficial geology on Saipan, with volcanic rocks exposed on 10 percent of the land surface (from erosion and weathering).	Mitigation to control and prevent further erosion at the proposed site must be implemented in duration of the project and thereafter. Methods should not be restricted or limited to silt curtains, other methods should be employed and managed accordingly for effectiveness.	JQ
3	Geological and Soil Resources	3-25	8-13		Existing Conditions	Limestones in Saipan are also highly permeable, which indicates the connectivity of pores within the rock. A rock with a higher permeability has a greater ability to transmit the flow of groundwater. Volcanic rocks on Saipan typically are poorly sorted and have undergone secondary alteration that inhibits the flow of groundwater. However, faults transect the island in a north-northeast direction, complicating the sequence and porosities/permeabilities of rock units (DON 2010b). Porosity, permeability, and groundwater are further...	Contractors and the Military (AF) must develop and implement mitigation to prevent any petroleum fuel leakage to exposed limestone surface in duration of the project construction and duration of military activities.	JQ

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4	Terrestrial Biological Resources	3-39	12	Table 3.6-1. Vegetation communities associated with the new areas, as part of the proposed action	Table 3.6-1	Vegetation community within the proposed action are communities important to seasonal migratory birds protected under the MBTA (mowed fields). Tangantangan forest are important habitat for foraging and nesting like the yellow bittern and Endangered reed warbler. Mitigation actions must be developed and implemented to avoid harm to nesting, foraging, perching birds protected under the MBTA and ESA.	JQ	M159
5	Terrestrial Biological Resources	3-48	4-8	Black Noddy breeding colonies.	Noddies frequently travel along the airfield perimeter as they move between nesting and feeding sites. This activity was most pronounced during summer months. Transiting noddies were observed crossing Runway 07/23 several times during point counts. During the 2012 nightingale reed warbler surveys, a black noddy rookery, consisting of approximately 60 nests, was observed at GSN.	Mitigation to minimize or avoid alteration to the normal behavior for the black noddies, a protected species under the MBTA, must be developed and implemented. Nesting birds should be monitored in duration of construction and military training and activities.	JQ	M160
6	Terrestrial Biological Resources	3-48	11-14	Lake Susupe	Lake Susupe is the largest permanent freshwater body on Saipan, located about 1.5 miles northwest of GSN. Although the lake is used by some waterfowl and wading birds, it is a relatively deep and open water body that provides limited habitat for most migrant and wintering species on Saipan.	The lake and ponds within the proposed project site (Golf course ponds) is known to attract the endangered Mariana common moorhen. Mitigation must be developed and implemented to avoid and minimize impacts to the protected species. Moorhens are known to move about during the evening hours from site to site, therefore, mitigation must address time of day activities for the species.	JQ	M161
7	Terrestrial Biological Resources	3-48	18-19	Golf courses	There is limited information available on Lesser plover movements around Saipan, but it is likely that the plover flocks that frequent Laulau Bay Golf Course also use GSN.	Lesser plover and moorhen movements around Saipan should be known to define mitigation actions for the proposed activity in GSN. Mitigation to avoid harm and harassment and changes to normal behavior to protected species must be addressed as required under the MBTA and ESA.	JQ	M162

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8	Terrestrial Biological Resources	3-48	32-33	Reptiles and Amphibians	Focused reptile surveys were not conducted and it is likely that additional native and nonnative gecko and skink species might be present in the area.	Native skink and gecko species are known at the preferred Alternative sites. Surveys must be conducted to determine absence/presence and mitigation should be developed and implemented in duration of construction activity at the preferred Alternative site.	JQ	M151
9	Terrestrial Biological Resources	3-49	5-7	Threatened and Endangered Species: (Mariana swiftlet)	Due to the absence of mature forest habitat, lack of roosting or foraging trees, and distance from roosting caves, it is unlikely that the Mariana fruit bat, Mariana swiftlet, and Micronesian megapode are present in the Project Area (Saipan).	The Mariana swiftlet is known to forage in areas abundant with insects, and does not restrict its foraging territories to 'mature forest habitats'. It is known that the swiftlet forages in variety of habitat types. What may not be known is, the distance away from roosting caves to the foraging territories?	JQ	M152
10	Terrestrial Biological Resources	3-49	5-7	Threatened and Endangered Species: (Mariana fruitbat)	Due to the absence of mature forest habitat, lack of roosting or foraging trees, and distance from roosting caves, it is unlikely that the Mariana fruit bat, Mariana swiftlet, and Micronesian megapode are present in the Project Area.	On page 3-39, lines 15-18, describes the canopy vegetation in the Tangiang forest. The trees identified include: Premna, Ficus, Aldia, Morinda, Carica, and Albizia. Abundance of these tree species may not be abundant, although are present, but minimal. They serve as roosting and foraging trees for the fruit bat and should still be considered. The Final EIS must identify that these Tangiang forest with minimal presence of the trees mentioned earlier has the potential for fruit bat habitat, and should not be 'ruled-out'.	JQ	M153
11	Terrestrial Biological Resources	3-49	8-12	Threatened and Endangered Species: (Mariana common moorhen and Nightingale reed warblers)	Additionally, there are no wetlands (moorhen habitat) at GSN; therefore, it is unlikely that moorhens are present in the Project Area. However, there are areas of standing water in the project area to which moorhens could be attracted. Based on the potential habitat for nightingale reed warblers and Mariana common moorhens in the Project Area, surveys were conducted to determine the presence of individuals over the course of 10 weeks from January through March, 2012.	Due to the potential of standing water in the project area, moorhens may be attracted. For the purpose of NEPA, the chances of moorhens being present at the project site is not truly known, not much is known what time of the day the 10 weeks of surveys were; it is known that moorhens move about in the evening and they are attracted to freshwater habitats (including standing water after a heavy down pour). Mitigation actions must be developed and implemented to address moorhens and all other protected species that 'may be attracted' at the project site.	JQ	M154

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12	Marine Biological Resources	3-60 / 61	4.1-4.3 / 1-10	3.7.2	Sea turtles	(see text)	The sea turtle section references a Kolinski 1999 survey/study, published in 2001, 11 years ago. Recent information regarding sea turtles in Saipan should be included in the Final EIS. Sea turtle movements and behavior around Saipan, especially within the project area is needed information to determine 'specific' mitigation. Upgrading GSN, requires more lighting and removal of a 'natural' barrier, existing forest, may have an impact on sea turtles.	JQ	M147
13	Environmental Consequences	4-3	23-38	4.1.1.2	Aircraft Operations- Noise	DEIS describes Alternative 1 Scenarios (Low, Medium, and High). Implementation is 7 a.m. -10p.m. and 10 p.m to 7 a.m., 8 weeks per year, with 4 operations per day.	DEIS does not indicate the preferred option for Alternative 1 (low, medium, or high scenario). Nor does the DEIS indicate what exact month implementation (use of GSN) will take place. As described in Ch. 3, Biological resources, protected species are known to nest at certain times of the year. Mitigation to avoid disturbance of nesting activity must be developed and implemented.	JQ	M168
14	Environmental Consequences	4-30	27-28	4.2.1.1	Construction Phase- Air Quality (Dust)	Appropriate fugitive dust-control measures would be employed during construction activities to suppress emissions.	A black noddy rookery, with 60 active nests, was discovered approximately 675 feet from the proposed project sites for construction. Mitigation to prevent dust from impacting nesting activities must be implemented in duration of the construction phase.	JQ	M163
15	Environmental Consequences	4-59	20-21	4.6.1.1	Construction Phase- Noise	No loss of active breeding habitat would be expected and no effects on the rookery would be expected during construction activities due to its distance from proposed activities.	Noise from construction will impact breeding activities for birds in the area. Mitigation should include monitoring of nesting activities during construction phase.	JQ	M164

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16	Environmental Consequences	4-60	1-11	4.6.1.1	Construction Phase- Noise	More intense impacts would include behavioral change, disorientation, or hearing loss. Wildlife could be permanently displaced from the areas where the habitat is cleared and temporarily dispersed from areas adjacent to the project areas during construction periods. Increased mortality of less-mobile species would be expected as the result of unavoidable direct impacts associated with construction activities. Impacts on wildlife would be minor.	Not too sure how USAF determines that behavioral change, disorientation, hearing loss, displacement, increased mortality as the result of unavoidable direct impacts associated with construction activities would be minor. Majority of the bird species identified within or adjacent to the proposed project site are special-status species, protected under the MBTA and the ESA. USAF must mitigate on impacts to wildlife. There must be a fine balance to meet the requirements of the military mission and nature.	JQ	-M165
17	Environmental Consequences	4-62	41-42	4.6.1.2	Implementation Phase- Noise (Wildlife)	The impacts of noise are considered minor because the wildlife in this area is already subjected to these impacts from the GSN. Behavioral responses reflect a variety of states, from indifference to extreme panic. To some extent, responses are species-specific.	5.9 increase of air operations is expected at GSN. Wildlife may be 'accustomed' to existing conditions, but may respond differently with the expected increase. Increase air traffic could result to disturbance on nesting birds resulting nest abandonment, or neonates falling off the nest. Biologists must be present to monitor nesting activities during exercises and/or during use of GSN.	JQ	-M166
18	Environmental Consequences	4-63	18-19	4.6.1.2	Implementation Phase- Noise (Threatened and Endangered Species)	The impacts of noise are considered minor because the birds in this area are already subjected to these impacts from the GSN.	T & E species that occur at the proposed project site, or adjacent to, are accustomed with the existing conditions present at GSN. With an expected increase of 5.9 aircraft operations, noise (and overflight shadows) may cause disturbance to the protected species. For example: opening of North runway at AAFB, fruitbat colony numbers declined after North runway was open and used periodically. 40+ bats were observed prior to the opening of the runway and slowly declined at the colony soon after the North runway was opened.	JQ	-M155

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10. Environmental Consequences	4-63	22-23	4.0.1.2	Implementation Phase- Noise (Wetlands)	Based on the site investigations there are no wetlands in the project area. No impacts on wetlands would be expected due to activities associated with the implementation phase.	As stated earlier in the DEIS (Ch.3), there is no 'permanent' wetland at the proposed project site, however there is standing water accumulated after a rainfall. The DEIS also indicated that there is the 'potential' that this area may attract migratory birds, the moorhen, and megapode. The presence of standing water that may attract species to the area must be addressed to prevent any protected species in the area that may be harmed by the construction and/or implementation of the proposed action.	JQ	- M156
20. Environmental Consequences	4-63	24	4.6.2	Alternative 2 (TNI)		Comments addressed under Alternative 1 (GSN; the preferred alternative) applies to Alternative 2 (TNI).	JQ	- M157
21. Environmental Consequences	4-67	25-26	4.7.1.1	Marine Resources- Alternative 1	No impacts on marine biological resources would occur as a result of the construction phase of Alternative 1.	the proposed project requires clearing and grading as result soil will be loosened and may run-off during a heavy rains or continuous rain. Mitigation to control erosion or run-off will need to be addressed during construction and implementation phase.	JQ	
22. Environmental Consequences	4-68	3-8	4.7.1.2	Sea turtles- Noise impacts	Because sea turtles might also rely on visual cues, they might not respond to aircraft overflights based on noise alone. Sea turtles exposed to aircraft overflights might exhibit no response or behavioral reactions such as quick diving. Any behavioral avoidance reaction would be short-term and periodic and would not permanently displace sea turtles or result in physical harm. Noise from take-offs and landings would not result chronic stress because it is unlikely that individual sea turtles would be repeatedly exposed to low-altitude overflights.	Aside from noise impacts, visual cues may impact sea turtles. Visuals such as lighting may have an impact on sea turtles behavior. Lighting devices at GSN, especially near the coast, must be 'turtle friendly' lighting.	JQ	- M149

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23	Environmental Consequences	5-2	I	5.2.1	Table 5.2-1	List of Past, Present, and Reasonably Foreseeable Future Actions	Table 5.2-1 does not show the amount of habitat being removed for all the projects listed. The amount of habitat altered and/or cleared should be included in the Table to show cumulative impacts to wildlife habitat.	JQ	M141
24	Cumulative and Other Effects	5-14	7-8	5.3.4.1	Geological resources and soils- Alternative I, BMPs.	Implementation of erosion- and sediment-control BMPs would be expected to limit potentially adverse, cumulative impacts.	BMPs should be implemented in duration of construction and post-construction phase and soil monitoring should be implemented to assess and manage any potential impacts to adjacent sites, such as erosion during a heavy rain storm.	JQ	M142
25	Cumulative and Other Effects	5-14	11	5.3.4.1	Geological resources and soils- Alternative I, Soil surveys for contamination	Soil surveys should be conducted prior to any ground-disturbing activities.	Soil surveys should also be conducted on at least quarterly, post construction phase, after project is completed and training occurs. This will help determine if soils are contaminated which allows remediation efforts to take place.	JQ	M146
26	Cumulative and Other Effects	5-14	33-35	5.3.5.1	Water resources	Implementation of soil erosion and sedimentation controls and storm water pollution prevention at construction sites would minimize the potential for adverse impacts from individual construction sites and, therefore, reduce potential cumulative impacts on water resources.	Continuous implementation of erosion and sedimentation controls and storm water pollution prevention at the construction sites during and when construction is completed is necessary to prevent or minimize potential cumulative impacts on water resources nearby. Control devices implemented must be monitored in duration of the construction period.	JQ	M143
27	Cumulative and Other Effects	5-16	13-21	5.3.7.1	Sea turtles	Intermittent, short-term, negligible, adverse cumulative impacts on sea turtles would occur under Alternative I. Some of the DOD redevelopment projects in the region could result in increases in noise... result in an increase in noise over the nearshore waters and beaches of Saipan, this impact is expected to be negligible.	The section describes impact to sea turtles from the expected increase noise during a DoD redevelopment project and from low-flying aircrafts. Of concern, that needs to be addressed is the impact on sea turtles from the lights associated to the proposed project. The extension of the runway and new additions of buildings will require some lighting, increasing the exposure of lighting pollution to sea turtles that may be present off shore of GSN. The FEIS should mention impacts caused by lighting. Nests should be monitored during activities.	JQ	M150

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Page 8

28 Cumulative and Other Effects	5-16	22-28	5.3.7.1	Marine Mammals	Intermittent, short-term, negligible, adverse cumulative impacts on marine mammals would occur under Alternative 1. Some of the DOD redevelopment projects in the region could result in increases in noise from low-flying aircraft or other training activities. These include activities associated with MIRC, operation of ISR/Strike Capability, and MTT activities. While these activities have the potential to result in an increase in noise over the nearshore waters Saipan, this impact is expected to be negligible. It is extremely unlikely that individual animals would be repeatedly exposed to low-altitude overflights. As such, Alternative 1 would have a negligible contribution on cumulative impacts.	Beside Noise, the FEIS will need to identify all possible threats or impacts, to the wildlife and their habitats of Saipan and Tinian. In addition, the FEIS will need to reference studies determining whether marine mammals, sea turtles, or other marine organisms are 'extremely unlikely to be repeatedly exposed to low-altitude overflights'. The expected 'overuse' of GSN due to meet the mission for the USAF for the MIRC, MTT, ISR/STIRKE activities, will happen. Exposure to the additional noise, fighting, burning jet fuels will have a cumulative impact to the wildlife present on land and nearshore.	JQ
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M158



July 20, 2012

Captain Rebecca Heyse
PACAF / PA
25 E. Street, Suite G-108
Joint Base Pearl Harbor-
Hickam, HI 96853
ATTN: PACAF Divert Marianas EIS

Dear Captain Heyse,

The Commonwealth of the Northern Mariana Islands (CNMI) extends our appreciation to the United States Air Force for evaluating and considering Saipan and Tinian; for affording us the opportunity to express our thoughts on this critical action; and for the CNMI to provide the location for the Divert Activities and Exercises initiative. We will continue to support and serve our Nation and the Department of Defense. The CNMI has a date with destiny and is ready to respond as the focus shifts to the Asia Pacific region.

E60

The CNMI has been and will continue to provide support for all military initiatives as the Nation and Department of Defense pivot toward the Pacific. The islands of Saipan and Tinian played major roles during World War II and Tinian in specific had the world's busiest airport during the war. The CNMI is extremely supportive of the military and openly endorses a robust military presence throughout the Commonwealth. Many joint training exercises have been conducted on Tinian and throughout the CNMI over the past 30 years.

E61

The Military Integration Management Committee (MIMC) is composed of the Governor, Lt. Governor, Senate President, Speaker of the House, and Mayor's from Saipan, Tinian, Rota and the Northern Islands. As acting chairman of the MIMC, I would like to submit the attached document which includes comments and the Governors White Paper defining our stance as the official comments of the Office of the Governor and Lt. Governor, and the MIMC on the Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands.

Sincerely,



Lt. Governor Eloy S. Inos

Draft EIS Divert Activities and Exercises Guam and CNMI –

Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: General Comments

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment	
1	General	123, 339, 371, 472	Loss of revenue from commercial airline operations due to a closure of the airport associated with a DoD event is not addressed in the DEIS. Mitigation measures need to be identified to address this loss of revenue during times the airport is closed due to DoD activities.	Please address the issue of loss of revenue from commercial airline operations due to a closure of the airport associated with a DoD event is not addressed in the FEIS. Also, address and identify mitigation measures need to address this loss of revenue from commercial operations during times the airport is closed due to DoD activities.	- E77
2	General	270	The DEIS states that there will be no more than a total of 8 weeks of divert exercises per year. The DEIS also states "this adaptive management approach ensures that any increase or changes in quality or quantity of exercises is fully analyzed on a continuing basis." The definition of an adaptive management approach does NOT guarantee that there shall NOT be more than 8 weeks of exercises per year.	Please note in the ROD the following: If the DoD desires to increase the divert activities and exercises more than 8 weeks per year it requires the trigger to start a new NEPA process that includes public involvement/participation.	- E62
3	General	NA	The DEIS does not address what would happen if there is a termination of the divert activities and exercises mission from the CNMI. There needs to be an assurance that the DoD shall properly clean-up the land and facilities to greenfield standards.	Please address in the FEIS how the DoD would clean-up the Divert facilities and land if the mission is terminated. CNMI respectfully requests that the FEIS recommend that the ROD states that the DoD shall properly clean-up the land and facilities to greenfield standards.	- E63

General - 1

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Noise

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment	
1	Noise	NA	The off-airport area of land that is subject to increased noise levels for Alternative 1 (Saipan) is three times greater than that of Alternative 2 (Tinian); however, the overall impacts are identified as being equivalent for both alternatives. Area of Noise Impact statistic comparison includes: Alternative 1 (Saipan) – 11,052 people and 4 schools are impacted by noise Alternative 2 (Tinian) – 523 people and no schools are impacted by noise This analysis is NOT accurate given the disproportionate are of land and people subject to increased noise levels for Alternative 1 (Saipan).	We strongly recommend that the DoD select Alternative 2 (Tinian) as the Final Preferred Alternative since there are minimal noise impacts associated with this alternative. If the DoD does not select Alternative 2 (Tinian) as the Final Preferred Alternative, please explain the DoD's justification on why they would select Alternative 1 (Saipan) that has a HIGH Noise impact on the community over an alternative that has Minimal to No Noise Impact. In addition, please explain in detail what other regulatory and non-regulatory decision making items went into the decision to select Alternative 1 (Saipan).	E94
2	Noise	NA	Noise sensitive land uses (Kohlerville Elementary School, San Antonio Elementary School, Vicente Elementary School and Southern High School) currently exist within the 650BA DNL or larger footprints in the Preferred Alternative 1 (Saipan). Schools that are currently located within the 650BA DNL noise levels and higher are limited to using their air conditioning to a few hours a day and thus it is necessary to conduct classroom activities with the windows open. Classroom activities will be highly impacted by the noise generated by divert activities during the time that the windows are open. Mitigation measures to reduce noise impacts are NOT adequately addressed in the DEIS. Detailed mitigation measure should be included in the document.	Please confirm that the Record of Decision (ROD) will include language stating that the DoD shall coordinate the schedule of all Divert Activities and Exercises with Government of CNMI and CNMI's Public School System in order to de-conflict any potential compatibility issues associated with noise generated by the divert activities. If the ROD will not include language to this affect is not in the ROD please explain how the DoD will guarantee that coordination for scheduling divert activities will occur with these agencies. Recommend that the DoD sound attenuate the schools if de-confliction of noise impacts are not guaranteed through scheduling.	E95
3	Noise and Environmental Justice	NA	Per the DEIS an estimate of 11,052 people live within the 650BA DNL or larger footprint within the Preferred Alternative 1 (Saipan). This is approximately 25% of the Island of Saipan's population and equates to approximately 2,758 low income housing units that are located within the area and are highly impacted by noise from the divert activities. It is critical that this issue be well mitigated if the Saipan Alternative is selected as the location for the divert activities.	If the Preferred Alternative 1 (Saipan) is selected, highly recommend that the ROD include language that states that the DoD shall pay for sound attenuation for housing units and schools within the impacted area and/or coordinate and advocate with the FAA to fund an FAA Sound Attenuation Grant that will sound attenuate the low income housing units within the noise footprint. Recommend that this occurs within the first year that the divert activities are bedded down. Recommend that DoD assist CNMI in coordinating and preparing the FAA Sound Attenuation Grant. If the above language is not part of the ROD, please explain in detail how the DoD plans on mitigating this issue.	E73
4	Noise	Page 4-6 Lines 6 - 7	The analysis of the High Scenario of Alternative 1 states "under the Medium Scenario, approximately 37,115 acres consists of non-airport property."	This should be corrected to "under the High Scenario, ..."	E96

Noise -1

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Noise

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment
5	Noise and Socio Economic	NA	The DEIS does not adequately address and is very vague regarding the number of tourists that will be impacted by noise, the loss of revenue associated with tourism within this area and how this impact would be mitigated for Alternative 1 (Salpan). The following tourism areas that are highly impacted by noise for this alternative include the Pacific Island Club (PIC) Resort, Corral Ocean Point Resort, Lao Lao Bay Golf and Resort, Ladder Beach and Obyan Beach.	Explain in detail the total impact on tourism from noise impacts and how the DoD will mitigate the loss of revenue associated with this impact.

- E74

Noise -2

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Air Quality Comments

#	Subject/Section	Page Number / Line(s)	Observation/ Issue	Comment	
1	Air Quality	NA	Impacts on air quality are not adequately addressed to the level of analysis required by federal and local regulations. The impacts resulting from both Alternative 1 and 2 are identified as being equivalent; however, the Existing Conditions of each are identified as being unclassifiable.	Address and consider in more detail in the FEIS the level of analysis required by federal and local air quality regulations for each alternative.	E52
2	Air Quality	NA	The EIS states that CNMI DEQ requires all air permit applications to include dispersion modeling for comparison against NAAQS for compliance. The analysis does not appear to include air quality of pollutant dispersion modeling, thus does not adequately analyze and address the concern of localized air quality impacts.	Address and consider in more detail air quality of pollutant dispersion modeling required by NAAQS in the FEIS.	E53
3	Air Quality	NA	The proximity of the nearest residential population should be taken into consideration as a result of the potential for impaired local air quality and its effect on economically disadvantaged or health impaired communities. The DEIS inadequately addresses this issue.	Prior to finalizing the EIS and making a determination of the preferred alternative, a more thorough technical evaluation and air quality modeling is needed to understand the localized impacts due to proposed operations as well as fuel storage. Please document the results in the FEIS.	E54

Air Quality - 1

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Geological Resources Comments

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment	
1	Geological Resources	NA	The evaluation of proposed alternatives does not consider proper mitigation of farmland. The evaluation does not consider the value of prime farmland in the CNMI region as it affects the overall economy and quality of life.	Address and consider the value and mitigation required for farmland impacts for each alternative in the FEIS.	E64
2	Geological Resources	Page 4-51 Lines 39-45	The development proposed is located in Seismic Zone 3, which would require structures to be designed and built in conformance with Uniform Building Code for this area. The action states that this "should occur" and does not express a clear commitment to building safety.	The FEIS shall state that the DoD shall build all divert facilities in accordance with Seismic Zone 3 Uniform Building Code.	E66
3	Geological Resources	Page 4-52 Lines 21-23	The divert activities will have an increased impact to the Philippine Sea and other nearby water bodies. This is of great concern to CNMI.	Address in the FEIS this issue and level of impacts to the Philippine Sea and other nearby water bodies.	E67
4	Geological Resources	Page 4-52 Page 4-53	The EIS states that the potential impacts of Alternative 2 (Tinian) are anticipated to be similar to, but greater than, those described for alternative 1 (Saipan) as a result of the introduction of a greater level of impervious surface. Mitigation measures for the use of alternative materials should be considered to reduce impacts from impervious surfaces resulting from both alternatives should be considered.	Address and consider in the FEIS the level of technology and best practices that would the impacts associated with impervious surface issues.	E68

Geological Resources - I

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Water Resources Comments

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment
1	Water Resources	4.5.1 4.5.2	The overall impacts for both alternatives do not take into consideration the use of improved materials and technologies that would allow for reduced impacts (runoff and sedimentation) to water bodies.	- E84
2	Water Resources	4.55 Line 20-21	The proposed actions do not consider the alteration of flood zones as a result of regarding and changes to ground levels.	- E85
3	Water Resources	4.54 4.55	Impacts resulting from Alternative 1 are identified as degradation with a broad range of pollutants affecting highly permeable surfaces that could be highly susceptible to contamination. The commitment to reducing potential impacts hinges on that the infiltration features "should not" be located in close proximity to wellhead protection areas of GSN (Isley Field) in order to ensure protection of a safe drinking water supply.	- E86
4	Water Resources	Overall	The impacts resulting from Alternative 2 are identified as long term whereas the impacts resulting from Alternative 1 are identified as short term. The rationale behind the duration of impacts is not clear and requires further evaluation and clarification.	- E87
5	Water Resources	4.5.1 4.5.2	The assessment of Alternative 2 is based upon the extent of impervious surface introduced and does not consider alternative methodologies to reduce these surfaces or the imperviousness of these surfaces.	- E88
6	Water Resources	NA	The analysis states "without proper site design, the implementation of Alternative 1 could lead to a depletion of groundwater resources and increased salt water intrusion to drinking water wells."	- E89
7	Water Resources	4.54	The EIS states that "designs could incorporate structural storm water management methods such as storm water retention ponds, shallow infiltration basins, and infiltration trenches, to collect storm water from the new impervious surfaces and allow water to infiltrate the ground to help restore or enhance "recharge rates"	- E90

Water Resources - 1

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Water Resources Comments

#	Subject/ Section	Page Number/ Line(s)	Observation/ Issue	Comment	
8	Water Resources	NA	Potential major adverse impact as a result of storm water sheet runoff or especially accidental petroleum spills.	An enhance SPCC program and controls need to be assessed in both alternatives.	E91
9	Water Resources	NA	The increase in impervious surfaces has a greater effect on Saipan due to the recharge of the water aquifer and impact to the Waste Water Treatment Demands Alternative 1: total increase in impervious surface area of 2,392,200 sf Alternative 2: total increase in impervious surface area of 4,050,800 sf	The impact of the increased WTF demands needs to be determined.	E92
10	Water Resources	NA	There is a need for consideration of alternative materials such as permeable surfaces that would reduce runoff and infiltration rates that would affect water resources, where practicable. The evaluation and assessment of Alternative 2 identifies potential impacts as being slightly greater than alternative 1.	The use of improved technologies and surface materials should be considered to mitigate impacts that could have the potential to result in insignificant impacts.	E93

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Terrestrial Biological Resources Comments

#	Subject/Section	Page Number / Line(s)	Observation/ Issue	Comment	
1	Terrestrial Biological Resources	NA	The nightingale reed warbler is listed as a T&E species. This species is typically found in Tangantangan forest on Saipan.	Address the removal of Tangantangan forest is identified as insignificant and does not consider its overall effect on species that depend on it for habitat in the FEIS.	- E69
2	Terrestrial Biological Resources	NA	Migratory bird populations and threatened and endangered species are identified as being significantly impacted for Alternative 1 on Saipan. Potential major adverse impact on vegetation (nightingale reed warbler) surrounding Saipan airport are present and could result in reduction and destruction of habitat.	The value placed on these species is not consistent with federal protection and value. Address the level of analysis and concern for T&E species such as the nightingale reed warbler in detail and per the federal protection and value and consider their importance and history associated with its habitat on CNMI, particularly Saipan.	- E70
3	Terrestrial Biological Resources	NA	On Tinian, there are no endangered species within the proposed divert base footprint that would require mitigation, whereas divert activities in Saipan proposed divert base footprint would likely necessitate a minimum of \$600K in the mitigation bank.	Address this issue in more detail within the FEIS and take this issue into more consideration when determining the Final Preferred Alternative.	- E71
4	Terrestrial Biological Resources	NA	Tangantangan forest was intentionally aerially seeded by the US Navy after World War II and has served as a critical habitat for the Nightingale reed warbler on Saipan.	Consider and address in the FEIS the effects of eliminating portions of this species' habitat and address their natural resource and cultural resource affects as part of the cumulative impacts analysis.	- E72
5	Terrestrial Biological Resources	NA	Impacts: It is important that the EIS consider and address, at an overall planning level, the integrated use of lands within CNMI, especially Saipan and Tinian related to the Record of Decision for the Military Buildup for the US Marines and the use of Tinian, use of Tinian as part of the MPRC and the proposed Divert Activities.		- E73

Terrestrial Biological Resources - I

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Cultural Resources Comments

#	Subject/Section	Page Number / Line(s)	Observation/Issue	Comment
1	Cultural	NA	The proposed action for Alternative 1 (Seipen) would result in major adverse effects on Seipen International Airport, which is a National Historic Landmark. The DEIS states that the Section 106 consultation is ongoing. The identification of mitigation "if any" is needed to provide a full understanding of potential impacts on these important cultural resources on Seipen.	E55
2	Cultural	NA	The Section 106 consultation should be completed prior to determination of final EIS preferred alternative selection. The full effects of both alternatives cannot be determined prior to completion of NEPA consultation which requires further evaluation and clarification.	E56
3	Cultural	5-17	The proposed parking actions along the north side of GSM runways and the proposed B-EAR-40 site at the existing airport, located between Runway 13 and Airport Road. The Impacted Resources are concrete air raid bunkers associated with the Japanese military built-up before World War II and defense during World War II. Six such structures lie in very close proximity to the proposed parking aprons with two lie at one edge of the proposed B-EAR-40 site. While direct avoidance is planned, the structures are susceptible to secondary impacts from vibration-related deterioration due to heavy traffic. In addition, the B-EAR-40 could face an increased risk of vandalism from military and civilian personnel.	E57
4	Cultural	3-60	The Isay Field Historic District contains historic artifacts and features associated with the construction of Japanese Helio Field beginning in 1904.	E58
5	Cultural	4-71	Possible major, direct, adverse impacts on cultural resources during implementation include those resulting from increased traffic, partial destruction or vandalism, both, and other effects resulting from increased use of the area. Such impacts could diminish or destroy the historic integrity of these resources by affecting design, materials, or workmanship of structures and the location of archaeological materials in the event of looting. Large encroachments of personnel or storage of material on aprons and runways would have detrimental effects on safety, feeling, and association.	E59

Cultural Resources - 1

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Recreation Comments

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment
1	Recreation	NA	The proposed parking aprons along the north side of GSN runways and the proposed BEAR-kt site at the existing soccer field between Flame Tree and Airport Roads	The soccer field is often used by numerous high schools and recreational league sports teams. Please indicate how the scheduled training exercises will be coordinated and communicated to the community to avoid scheduling conflicts.
2	Recreation	NA	The noise impacts will have a significant effect on the following sites: Lao Lao Bay Golf Course, Coral Ocean Point Golf Course, Obayan Beach, Ladder Beach, Forbidden Island, and the Pacific Islands Club Resort and Waterpark.	Please address in the FEIS: In addition to the residents affected, the number of tourist affected by noise who will be using these recreational facilities should be taken into account.

- E75

- E76

Recreation - I

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Land Use Comments

#	Subject/Section	Page Number / Line(s)	Observation/ Issue	Comment:	
1	Land Use	NA	The use of land on island communities has significant impact on the local people and their culture due to the limited and scarcity of land for competing uses and needs.	The value of scarcity of island land is not addressed in the FEIS. Please assess this issue in the FEIS and consider it in determining the Final Preferred Alternative.	- E82
2	Land Use	NA	Reconsider acquiring an additional 40+ acres associated with Alternative 1 (Saipan) vs. the use of the extensive amount of land already under lease by the DOD on Tinian. This issue needs special consideration. The Covenant DOD leased lands on Tinian are adjacent to the Tinian International Airport and are currently designated for DoD operations.	Please explain the rationale for why DoD is asking for an additional 40+ acres of land on Saipan for Alternative 1 when they have approximately 13,000 acres of existing DoD leased lands located adjacent to the Tinian International Airport which currently are minimally used for DoD operations. In the spirit of the Covenant, please reconsider the Covenant lands on Tinian for the Divert Activities and Exercises.	- E78
3	Land Use	NA	Approximately 17,799 acres of land on Tinian and 177 acres of land on Saipan are part of the Covenant. The Covenant, an agreement between the US and CNMI was codified at 48 U.S.C. § 1801. Section 803 Use of the leased lands on Tinian would provide a beneficial impact to the DoD operation and its commitment to Tinian.	Please include in the DEIS an overall assessment of land use per the letter and spirit of Section 803 of the Covenant that established the Commonwealth of the Northern Mariana Islands.	- E79
4	Land Use	NA	Cumulative Impacts: It is important that the DEIS consider and address at an overall planning level the integrated use of lands within CNMI, especially Saipan and Tinian related to the Record of Decision for the Military Buildup for the US Marines and the use of Tinian, use of Tinian as part of the MERC and the proposed Divert Activities.	Please address in the FEIS the positive benefits associated with collocating DoD joint operations on Tinian.	- E81

Land Use - I

Draft EIS Divert Activities and Exercises Guam and CNMI –
Government of CNMI's Official Public Review Observations / Comments

Document Reference ID: Socioeconomics and Environmental Justice (EJ) Comments

#	Subject/ Section	Page Number / Line(s)	Observation/ Issue	Comment	
1	Socioeconomic & EJ	NA	Alternative 1 (Saipan) has the greatest negative impact (noise) on the lowest economic group of citizens in comparison to the positive effect on the community and citizens on Tinian. According to Alternative 2 (Tinian), Alternative 2 (Tinian) would eliminate the potential for any environmental justice concerns, by reducing or eliminating the noise and associate impacts on the population in the villages of Kobleville, Dan Dan, and San Antonio.	We strongly recommend that the DoD select Alternative 2 (Tinian) as the Final Preferred Alternative since it eliminates any potential socioeconomic and environmental justice impacts.	E80
2	Socioeconomic & EJ	NA	The Initial Tinian investment would be slightly higher if viewed as a standalone action. However, as an initial component to a long term strategic initiative, this delta in costs are insignificant and are easily off-set by long term return on investment for CNMI. Investing in the Tinian alternative is in concert with and reinforces DOD's needs in the Pacific Region. The DEIS lacks in defining and quantifying the economic benefit and is too vague to determine a valid assessment between the alternatives.	The value of the potential economic benefits be clearly defined and quantified in the Final EIS to communicate the economic value of the one-time capital investment (construction) as well as the potential annual revenue (generated from the divert activities usage).	E83
3	Socioeconomic & EJ	NA	The development of the port in Tinian can underpin the potential economic development for the economy of Tinian. Although the value of the investment will benefit CNMI with either alternative, the greatest long term economic impact will be realized with alternative 2 (Tinian) being the divert installation.	The EIS needs to take this issue into consideration when developing the FEIS.	E97

Socioeconomics and Environmental Justice - I



Ramon M. Dela Cruz
Mayor

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July 23, 2012

Captain Rebecca Heyse
PACAF / PA
25 E. Street, Suite G-108
Joint Base Pearl Harbor-
Hickam, HI 96853

ATTN: PACAF Divert Marianas EIS

Dear Captain Heyse,

As the mayor of the Municipality of Tinian and Aguiguan, I am submitting the attached three documents for your review. They include comments from Governor of the CNMI Benigno Fitial and his White Paper defining the Military Integrated Management Committee's stance on the Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands; a resolution from the CNMI Senate; and our comments on the draft EIS from the Tinian Joint Leadership. All three share two common perspectives. First, they all support the construction of an Air Force Divert Base on either Tinian or Saipan. And, second, they all agree that Tinian is the best location for the Divert Base.

F98

The people of Tinian have strong feelings about the Divert Base being constructed on Tinian, for several good reasons. Tinian was the world's busiest airport during World War II. Many joint training exercises have been successfully conducted on Tinian over the past 30 years, with the recent Marine Air Group 12 operations on both West Field and North Field being the best example of potential air operations on Tinian. Additional land would not need to be acquired if the base to be built on Tinian. Finally, and perhaps most important, the people of Tinian have been waiting patiently for the promised military development of their island since they agreed to lease two-thirds of their island to the United States Department of Defense in 1975.

F99

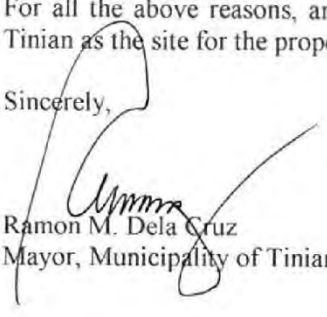
Although it might be true that it would be easier to establish the Divert Base on Saipan at this time, it would be in the best long-term interest of both the United States and the Commonwealth of the Northern Mariana Islands to have the base built on Tinian. If built on Tinian, the Air Force could obtain 100% operational resiliency. If a true national emergency were to arise, the Divert Base on Tinian could be expanded onto adjacent lands already leased by the Department of Defense.

F100

Construction of the Divert Base on Tinian would spark the economic development of this island and facilitate the development of other military activities on Tinian's military leased lands. } F101

For all the above reasons, and those listed in Tinian's position paper, we urge you to choose Tinian as the site for the proposed Divert Base.

Sincerely,



Ramon M. Dela Cruz
Mayor, Municipality of Tinian and Aguiguan

SEVENTEENTH NORTHERN MARIANAS COMMONWEALTH LEGISLATURE

SEVENTH SPECIALSESSION, 2012

S.J.R. NO. 17-20

A SENATE JOINT RESOLUTION

Supporting the use of the Tinian International Airport, Tinian, as the preferred site for the United States Air Force's proposed action to expand US strategic interests and meet Department of Defense mission requirements in the western Pacific region.

1 **WHEREAS**, the United States Air Force (USAF) is currently seeking to improve
2 an existing airport or airports in the Commonwealth of the Northern Mariana Islands
3 (CNMI) in support of expanding US strategic interests and Department of Defense
4 (DOD) mission requirements in the western Pacific region; and

5 **WHEREAS**, the USAF's proposed action to improve and utilize an existing
6 airport or airports in the CNMI will be a welcome addition to both the Commonwealth
7 and its economy; and

8 **WHEREAS**, in June 2012, the USAF published a Draft Environmental Impact
9 Statement for Divert Activities and Exercises for Guam and Commonwealth of the
10 Northern Mariana Islands, expressing its specific need to have an existing divert or
11 contingency airfield on US territory in the western Pacific designed and designated to
12 provide strategic operational and exercise capabilities for US forces when needed, and
13 humanitarian airlift and disaster relief in times of natural or man-made disasters as
14 mandated by Title 10 USC § 8062; and

15 **WHEREAS**, the USAF Draft Environmental Impact Statement for Divert
16 Activities and Exercises for Guam and Commonwealth of the Northern Mariana Islands
17 chose the Saipan International Airport on the island of Saipan as its preferred alternative
18 for its proposed action; and

SENATE JOINT RESOLUTION 17- 20

1 **WHEREAS**, the Saipan International Airport would require an additional 40
2 acres of land to be leased from the Commonwealth, and the operational resiliency to the
3 United States Air Force to be reduced to 87%; and

4 **WHEREAS**, the Saipan International Airport would also require ammunition to
5 be transported several miles through heavily populated residential and commercial areas
6 to the base; and

7 **WHEREAS**, as noted in the draft Environmental Impact Statement, utilizing the
8 Saipan International Airport would be of minor importance to Saipan's economy, while
9 utilizing the Tinian International Airport would provide a significant stimulus to the
10 general economic development of this underdeveloped land and decrease the need for
11 federal subsidies; and

12 **WHEREAS**, the island of Tinian has readily available land near the Tinian
13 International Airport for any needed expansion, including Runway Two of the World War
14 II West Field, already leased by the US Government for defense responsibilities and of no
15 additional cost to the United States of America; and

16 **WHEREAS**, the Tinian International Airport runway could be extended to
17 provide 100% resiliency to the U.S. Air Force needs; and

18 **WHEREAS**, the Tinian International Airport's location is ideal for the Air
19 Force's training and exercises, as it is far from any residential areas and cultural
20 landmarks; and

21 **WHEREAS**, improving the Tinian International Airport would greatly assist
22 Tinian's local economy by allowing for the possibility of international flights, and the
23 export of fresh and frozen produce and meats; and

24 **WHEREAS**, the completion of the Divert Base would also stimulate Army, Army
25 Reserve, National Guard, Navy, and its Marine Corps, to take better advantage of training
26 opportunities on Tinian; and

27 **WHEREAS**, the Tinian International Airport meets all United States Air Force
28 criteria and its use would ensure that the Air Force's mission mandated by Title 10 USC §
29 8062 is met; and

SENATE JOINT RESOLUTION 17- 20

1 **WHEREAS**, on October 20, 2011, the Tinian Delegation submitted a letter of
2 support for the United States Air Force's use of the Tinian International Airport and the
3 island of Tinian; and

4 **WHEREAS**, the people of Tinian are also in support of the use of their airport
5 and any related developments required by the US Air Force in order to maintain its
6 operations, training, and humanitarian relief;

7 **NOW, THEREFORE, BE IT RESOLVED**, by the Senate of the Seventeenth
8 Northern Marianas Commonwealth Legislature, the House concurring, hereby supports
9 the island of Tinian as the United States Air Force's preferred alternative for its proposed
10 action, and the Tinian International Airport as the Commonwealth of the Northern
11 Mariana airport for the United States Air Force to improve in support of expanding US
12 strategic interests and Department of Defense mission requirements in the western Pacific
13 region; and

14 **BE IT FURTHER RESOLVED**, that the President of the Senate and the
15 Speaker of the House of Representatives shall certify, and the Senate Legislative
16 Secretary and the House Clerk shall attest to the adoption of this joint resolution, and
17 thereafter the Senate Clerk shall transmit certified copies to: the Honorable Barack
18 Obama, President of the United States of America; the Honorable Leon Panetta,
19 Secretary of Defense; the Honorable Michael B. Donley, Secretary of the Air Force;
20 Senator Carl Levin, Chairman, the United States Senate Armed Forces Committee;
21 Honorable Gregorio "Kili" Camacho Sablan, CNMI Delegate to the United States
22 Congress; the Honorable Madeleine Bordallo, Guam Delegate to the United States
23 Congress, the Honorable Benigno R. Fitial, Governor of the Commonwealth of the
24 Northern Mariana Islands; and the Honorable Eliceo "Eli" D. Cabrera, Speaker of the
25 House.

Date: 07/16/12

Introduced By: /s/
Sen. Jude U. Hofschneider

June 26, 2012

Testimony on Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and the Commonwealth of the Northern Mariana Islands by Don A. Farrell, P.O. Box 5, Tinian MP 96952.

First and foremost, the establishment of an Air Force Divert Base in the CNMI is a welcome addition to the economy of the islands, whether it is constructed on Saipan where better housing and recreational opportunities are currently available for Air Force personnel, or on Tinian where the United States Air Force can obtain 100% of its operational resiliency in case of need, albeit with a lesser number of high end hotels, restaurants and golf courses.

G102

However, higher echelon Air Force decision makers should be aware that the draft EIS for a Divert Base in the Northern Mariana Islands is flawed both fundamentally and technically with regard to the Tinian option. There are significant costs that have not been clearly identified in either the EIS or the Executive Summary and there are significant recent developments on Tinian that have not been identified.

Fundamentally, the EIS fails to recognize either the letter or the spirit of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, codified at 48 U.S.C. § 1801 .

Section 803 of the Covenant provides for the joint use of Tinian Harbor and Tinian West Field International Airport. When developed in the early 1970s it provided sufficient land for ground, sea and air training exercises to support air training and maneuvers, and an ammunition storage area. To this date, these lands have not been utilized and remain available to the Department of Defense. Operations on Tinian, therefore, are free to the military services, whereas they will have to pay to land aircraft at Saipan.

Most important, Section 806 (a) of the Covenant provides that the United States will continue to recognize and respect the scarcity and special importance of land in the Northern Marianas. If the United States must acquire any interest in real property which it does not obtain under the Covenant, the United States will only seek to acquire such land if the public enterprise cannot be accomplished with a lesser interest. The lesser interest, in this case, would be taking advantage of the lands already under lease on Tinian. Essentially, this precludes the lease of additional lands on Saipan for a purpose that can be fulfilled on Tinian leased lands.

G103

The Covenant is also said to be the general United States policy with respect to land acquisition in the Northern Mariana Islands. It provides significant protections against the arbitrary or improper use of the authority of the United States to acquire property in the Commonwealth. This is especially so in view of the fact that Subsection (b) provides that no interest in real property will be acquired by the United States unless the acquisition has been duly authorized by the Congress and appropriations are available to pay the landowner just compensation. It is difficult to speculate on the cost of a long-term lease on 40 acres of prime land at Saipan International Airport, however, it would certainly be in the millions of dollars - far more than the cost of repairs to the breakwater at Tinian Harbor, for instance.

The draft Air Force EIS also flies in the face of the Congressional mandate to streamline the DoD by establishing inter-service operations. This September there will be a joint Army-Navy training operation on North Field. At about the same time the III MEF will conduct a joint Navy-Marine Corps training operation on North Field. Most significantly, the recent Marine Air Group - 12 exercise on both West Field, establishing restraining wires for F-18 hot refueling operations, and on North Field, establishing an expeditionary airfield, demonstrated the island's ability to support major air operations. Despite all this joint inter-service activity on the part of the Army, Navy and Marine Corps, the Air Force-created draft EIS for a Divert Base purports to separate Air Force operations from the other services currently taking advantage of the joint-use opportunities available on existing Tinian leased lands.

G110

Technically, the draft EIS is out of date. It fails to take into account several developments on Tinian in the last 2 years. The Record of Decision issued by the US Marine Corps in September 2010 created live fire rifle ranges on Tinian, primarily for the use of the US Marine Corps, yet available to all other federal agencies with a need to maintain small arms certification. Furthermore, Tinian was visited by high ranking representatives of the Japanese Self-Defense Force (JSDF), which co-funded the recent MAG -12 operations on Tinian. They are now considering joint USMC-JSDF training exercises on Tinian. Having a fully operational air base on Tinian with refueling capabilities will support the Marine Corps effort on Tinian as well as joint training operations with other US and JSDF teams.

G111

Although it is true that Saipan has more high end hotels than Tinian, the Tinian Dynasty Hotel and Casino has 412 rooms with a total capacity of well over 700, more than enough to support the personnel recommended in the EIS. Furthermore, if the Divert Base is constructed on Tinian, the refueling system would make the airport fully capable of receiving foreign jet aircraft. This would undoubtedly stimulate investors who have already purchased casino licenses to begin construction on their hotel complex.

G106

Just this month, Matua Bay resort broke ground on a new golf course to be located along beautiful Nassarino Beach on Southwestern coast of Tinian,

The draft EIS goes to lengths to discuss the "dilapidated condition of the Tinian Harbor and the Tinian Dump. Currently, the fuel dock at Tinian Harbor is receiving extensive repairs, including a new sea wall, bollards and fenders. Recently, the Tinian joint leadership has concluded negotiations with the CPA and OIA to repair the two finger piers at the dock. This expenditure of CNMI CIP funds will undoubtedly lead to funding to repair the Breakwater.

G107

New equipment is being purchased to maintain the existing Tinian Dump, and design work is already at 30% completion for a new solid waste transfer station and a new landfill. Together, they will be more than adequate to handle all solid and liquid wastes produced by the Divert Base.

The stated primary justification for building the Divert Base is to give resiliency to the Air Force's primary mission in the Pacific by assuring a fall back base in case Andersen Air Force Base is compromised or if a natural or man-made disaster elsewhere mandates humanitarian relief. By utilizing Tinian, the United States Air Force could accomplish its mission 100%, whereas if the facility is established on Saipan they would lose 17% operational opportunity. The runway at Tinian's West Field International Airport could easily be extended to provide the runway necessary for the largest cargo and aerial refueling aircraft in the Air Force inventory.

G108

On Tinian, there are no endangered species within the proposed divert base area that would require mitigation, whereas construction in Saipan would likely necessitate a \$600,000 deposit in the mitigation bank.

G112

The population of Tinian is not 5,000 people, as stated in the EIS. It is barely 3,000. Utilizing Tinian for the planned 8 weeks per year for training exercises will interfere less with local air traffic control than on Saipan, cause less effective noise pollution for the local community, and, because of the Covenant, the Air Force will not have to pay landing fees on Tinian. During the recent MAG - 12 operation at West Field International Airport, F-18 Hornets practiced rotating hot-refueling operations throughout the day for a full week with no appreciable distress to the community. Landing KC-135s as well as fighter jets at Saipan International Airport would cause considerable distress to the local population, and particularly to Kobler Elementary School and Southern High School, both of which are in the flight pattern.

G113

Furthermore, as noted in the draft EIS, while the construction of the Divert Base on Saipan will be of relatively minor importance to that economy, utilizing Tinian will provide a significant stimulus to the general economic development of this underdeveloped island, therefore decreasing the need for federal subsidies; building the Divert Base on Tinian will mean the completion of the West Field International Airport and the arrival of international commercial aircraft, allowing not only the importation of tourists, but the export of fresh and frozen produce and meats; completion of the Divert Base will stimulate the Army, Army Reserve, National Guard, Navy, and its Marine Corps, to take better advantage of training opportunities on Tinian.

G114

Finally, and most important to the people of Tinian, building the Divert Base on Tinian will begin to fulfill a 40-year-old pledge to the people of Tinian. Before the 1975 plebiscite to ratify the Covenant, representatives of the United States of America., both military and civilian, led the people of Tinian to believe that if they voted in favor of the Covenant - including the technical agreement to lease two-thirds of their island for a hundred years - the United States would build a large multi-service training base on Tinian and the people of Tinian would benefit from the economic development. Other than few a few scattered training exercises, no significant military development has occurred on Tinian. The port of Tinian, built by Navy Seabees during World War II has been neglected, as have the access roads on the military leased lands. Building the Divert Base on Tinian will begin to allay the concerns of some Tinian residents who are now questioning the wisdom of their 1975 decision.

G104

[[signed Don Ferrell 06-26-23]]



SENATOR JUDITH P. GUTHERTZ DPA

CHAIRPERSON, COMMITTEE ON THE GUAM MILITARY BUILDUP & HOMELAND SECURITY
31st Guam Legislature • *I Mina'trentai Unu na Liheslaturan Guahan*
155 Hesler Place, Hagåtña, Guam 96910 • (671)472-1UD1 (5834) • Fax: (671)472-3547 • judiguthertz@pticom.com

VICE CHAIRPERSON

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AFFAIRS, AND
HUMAN & NATURAL
RESOURCES

• COMMITTEE ON
EDUCATION AND
PUBLIC LIBRARIES
(WITH OVERSIGHT
OVER THE
UNIVERSITY OF
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AND PUBLIC
BROADCASTING

July 19, 2012

Capt. Rebecca Heyse, PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam,
Honolulu, HI 96853

ATTN: PACAF Divert Marianas EIS

Dear Captain Heyse:

Thank you very much for this opportunity to comment up the "Draft Environmental Impact Study (DEIS) for Divert Activities and Exercises in Guam and Commonwealth of the Northern Mariana Islands (CNMI)."

The mission is to improve an existing airport and associated infrastructures in the Mariana Islands to achieve divert capabilities in the western Pacific. A divert capability for Andersen Air Force Base is needed in the event access to Andersen AFB or other western Pacific airfields is limited or denied. I applaud the drafters of this DEIS for it being very thorough and comprehensive.

I concur with the proposed actions of either Saipan International Airport in Saipan or Tinian International Airport in Tinian. A. B. Won Pat International Airport in Guam is not considered a feasible alternative location since it is too close to Andersen AFB. If a typhoon impacts on Andersen AFB, it will also impact on the A.B. Won Pat International Airport, only about twelve miles south of Andersen AFB.

H115

Under the proposed actions, "The USAF proposes to construct facilities and infrastructure ...to support a combination of cargo, fighter, and tanker aircraft and associated support personnel for divert landings, periodic exercises, and humanitarian assistance and disaster relief." (DEIS p. ES-5).

I support any program by our military to enhance its presence in the Mariana Islands. The people in Guam and the CNMI are very supportive of our military and very patriotic. In addition, any economic investment in the islands is critically needed at this time. The economy of the CNMI is very weak and any boost will be of major positive economic impact for this community of American citizens.

Capt. Rebecca Heyse, PACAF/PA
July 19, 2012
Page Two

The people of the CNMI actually voted in a plebiscite to become American citizens. They had to choose to remain non-American citizens, but they voted on June 17, 1975, (78.8 percent voting "yes") to become Americans. This was the first acquisition of American soil since the 1917 purchase of the Virgin Islands.

At that time, the United States Government stated that it intended to invest economically by developing a harbor area in Saipan and an Air Base in Tinian. The United States, in the political agreement, called (The Commonwealth Covenant) leased the northern two-thirds of Tinian for ninety-nine (99) years for about \$21 Million Dollars. This was supposed to be a fall-back for Clark AFB in the Philippines.

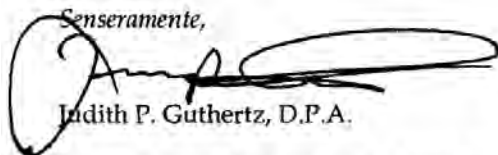
In 1990, when Mount Pinatubo near Clark AFB blew, the Air Force shut down Clark, but did not move those assets to Tinian, but scattered them around the Western States, Hawaii, and Guam. This was the time when the Soviet Union was collapsing and the end of the Cold War was in sight.

Therefore, the anticipated development of an Air Force base in Tinian with its accompanied harbor facility in Saipan never came about. The United States can rightfully be seen as falling short on its commitments made in the run up to the critical plebiscite in 1975. We welcomed the population into our American political family, but have not reciprocated with the economic development envisioned at the time. H116

For these reasons, I cheer the USAF desires to invest in the CNMI. I have been in touch with the CNMI Governor's and Tinian Mayor's staffs on this DEIS and have received word from them that any USAF investment will be welcomed, whether it is in Saipan or Tinian.

If all of the technical studies indicate that both Saipan and Tinian are feasible locations, I would then choose Tinian. Additional land would not need to be acquired, and the people there have been waiting patiently for the promised military development of their island. I support the CNMI Governor and the Tinian Mayor and I understand that my recommendation above is their position. They welcome any military investment and presence, anywhere in the CNMI, while favoring Tinian if that location is feasible. If it is not feasible, then they would support Saipan as the choice.

Senseramente,



Judith P. Guthertz, D.P.A.

cc: Honorable Benigno R. Fitial, Governor, CNMI
Honorable Ramon M. Dela Cruz, Mayor, Tinian & Aguiguan
Mr. Roger M. Natsuhara, Principal Deputy Assistant Secretary of the Navy

Captain Rebecca Heyse, *PACAF/PA*
25 E Street, Suite G-I 08
Joint Base Pearl Harbor-Hickam, HI 96853
ATTN: PACAF Divert Marianas EIS
Re: Guam and CNMI Divert Activities and Exercises EIS

Dear Captain Heyse:

I write to comment on the Draft Environmental Impact Statement (EIS) for Divert Activities and Exercises in Guam and the Commonwealth of the Northern Mariana Islands issued by Headquarters, Pacific Air Forces, in June 2012. The EIS examines a Proposed Action to improve existing airport and associated infrastructure to increase operational and divert capabilities in support of expanding mission requirements in the Western Pacific region.

I appreciate the efforts to date of the U.S. Air Force and the Department of Defense to explore all aspects of the Proposed Action and to consider all relevant public comments, especially from those who would be most impacted, the people of Tinian and Saipan. Also, I am grateful that both alternatives for the Proposed Action include improvements to existing airports in the Northern Marianas. This investment would be welcome to the islands' ailing economy and would provide much-needed jobs.

I123

Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons:

1. Noise pollution would be less of a factor on Tinian than on Saipan. There are multiple residential villages adjacent to the Saipan airport that would be heavily impacted by increased noise levels both from the construction and from the subsequent operational activities related to the Proposed Action. These villages include Koblerville, Afetnas, San Vicente, San Antonio, As Lito, and Dandan, all of which have considerable residential populations, schools, recreational areas, and tourist sites.

I122

Increased noise levels at the Tinian airport, on the other hand, would have minimal impact on the residents of Tinian. The closest residential development area is over one and a half miles away. There are no schools, recreational areas, or tourist sites in the vicinity of the airport. All of the land north of the airport is currently leased by the U.S. for military use, and recent training exercises held on Tinian have demonstrated that residential areas south of the airport are exposed to very low noise levels from military construction and aircraft operations there.

2. The Tinian airport alternative would reduce potential conflicts between commercial and military activities. The Saipan International Airport is the gateway for the tourist economy of the Northern Marianas. There were in 2011 an average of 140 aircraft operations daily at the Saipan airport, including jet, single engine, and turbo prop international and inter-island flights. By contrast, there were 113 aircraft operations daily on average at Tinian airport in 2011, but these all involved small, single-engine aircraft and no international flights. So the Tinian Airport has greater capacity for the proposed increased use by the military.

I117

In addition, it has been demonstrated that military use can disrupt the commercial flights at Saipan Airport, which are essential to the overall economy of the islands. On February 21, 2012, an Air Force F-16 Falcon made an emergency landing at Saipan International Airport. This single incident

forced the runway to be shut down for 18 hours, causing delays and cancellations of domestic and international flights to the detriment of tourist travel. The Proposed Action estimates eight weeks per year of joint military exercises and divert and humanitarian airlift staging training, so the potential for disruption of commercial activities at the Saipan Airport would be significant. The Tinian alternative would reduce this potential for conflict and avoid detriment to the flight-dependent tourist economy, as well as loss of revenues to the Commonwealth Ports Authority from decreased landing and other fees from an interruption in commercial flights.

I117

3. Tinian airport's runway could more easily be expanded to the requisite length. The Proposed Action would require that the Saipan airport runway be extended from the current 8,700 feet length to 10,075 feet. This would require that additional land be leased from the government of the Northern Mariana Islands at a cost to the Department of Defense. This Saipan extension would also require prior approval by the Federal Aviation Administration for a non-standard runway.

I118

By contrast, expansion of Tinian's airport runway from its current 8,600 feet to a requisite 10,000 feet would not require that additional land be leased from the local government. Rather the additional land needed for the runway extension is in the area already leased and paid for by the U.S.

4. Adverse impacts on the endangered nightingale reed-warbler could be expected on Saipan. Areas surrounding the Saipan airport have been identified as critical habitat for the nightingale reed-warbler, a species listed as endangered under the Endangered Species Act. The three years of construction activities that the Saipan alternative would require, as well as the subsequent implementation of the divert operations and annual eight-week training, are likely to have an adverse impact on that habitat and require mitigation measures.

I121

With the Tinian alternative, no threatened or endangered species are anticipated to be significantly affected in either the construction or the implementation phase. Therefore, no mitigation efforts are likely to be needed on Tinian and these costs can be avoided.

5. Development of the Tinian alternative could have synergistic benefit for other military activities on Tinian. A number of joint, combined, and unit-level military training activities and exercises, described and analyzed in the Mariana Islands Range Complex EIS and subsequent Record of Decision, are scheduled for Tinian. Four live firing ranges are to be constructed there. These activities would benefit from renovation of the Tinian harbor to allow for safe, efficient, and reliable transportation of equipment, fuel, and military personnel. Developing the Tinian alternative for divert activities and exercises would strengthen the rationale for investment in harbor renovation and make Tinian an even more attractive location for joint-service and joint international training exercises.

I120

6. Tinian has the necessary lodging options to support temporary personnel. Billeting for up to 700 personnel is required to support aircraft operations during a divert landing, humanitarian airlift, or military exercise event. The under-utilized Tinian Dynasty Hotel and Casino has 412 rooms capable of housing 824 temporary support personnel. Tinian also has several smaller scale hotels. While there are fewer commercial lodging options in total than on Saipan, there is sufficient capacity on Tinian; and the cost and concentration of these facilities may make Tinian a preferable alternative from the point of view of billeting.

I119

The people of the Northern Mariana Islands will benefit from and welcome the development of either the Saipan or Tinian alternative for the divert capabilities, humanitarian airlift, and training exercises proposed in the Draft Environmental Impact Statement. For the reasons I have stated, however, the

Tinian alternative offers a number of advantages, which I ask be given full consideration in development of the Final EIS and, ultimately, the Record of Decision.

Thank you for your consideration of my comments. Please feel free to contact me with any questions or concerns.

Sincerely,

GREGORIO KILILI CAMACHO SABLAN
Member of Congress

7-3-12, 2012

Comments on Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and the Commonwealth of the Northern Mariana Islands, Tinian Joint Leadership.

First and foremost, in the spirit of Governor Fitial's Military Integrated Management Council, we wish to state that the establishment of an Air Force Divert Base in the CNMI is a welcome addition to the economy of the Commonwealth of the Northern Mariana Islands, whether it is constructed on Saipan where an additional 40-some acres of land would have to be leased from the Commonwealth and provide only 87% operational resiliency to the United States Air Force, or on Tinian where military leased lands are already available at no additional cost to the United States of America and where the Air Force can obtain 100% of its operational resiliency in case of need. Pointedly, we are in full support of the constructing the Divert Base in the Commonwealth of the Northern Mariana Islands.

J126

However, the United States Congress and higher echelon United States Air Force decision makers should be aware that the draft EIS for a Divert Base in the Northern Mariana Islands is flawed both fundamentally and technically with regard to the Tinian option. There are significant costs that have not been clearly identified in either the EIS or the Executive Summary, and there are significant recent capital improvement developments on Tinian that have not been identified.

J125

Fundamentally, the EIS fails to recognize either the letter or the spirit of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, codified at 48 U.S.C. § 1801, despite comments to this effect made in the first scoping meeting held on Tinian. The history of the Covenant and its impact on economic development in the CNMI is mentioned (Sec. 3-pps 97-100), but fails to discuss the impact of Section 803 of the Covenant on the use of CNMI Leased Lands. The term Covenant does not even appear in the index to the EIS (Sec. 8-p6), and the relevant sections are not reproduced in the appendix for the information of high level decision makers.

Section 803 of the Covenant provides for the joint use of Tinian Harbor and Tinian West Field International Airport. When developed in the early 1970s, it provided sufficient land for ground, sea and air training exercises to support air training and maneuvers, and an ammunition storage area. To this date, these lands have not been utilized and remain available to the Department of Defense. Operations on Tinian, therefore, are free to the military services, whereas they will have to pay to land aircraft at Saipan.

The EIS did not give sufficient importance to the transportation of ammunition from Tanapag Harbor in northern Saipan to Saipan International Airport on the very southern end of Saipan. Bombs would have to be transported through the heavily populated commercial and residential

J139

districts of western Saipan before reaching the airport. On the other hand, transporting ammunition from Tinian Harbor to West Field International Airport would pass through a very lightly populated area to nearby West Field at a much shorter distance approximately 1.5 miles.

J139

Most important, Section 806 (a) of the Covenant provides that the United States will continue to recognize and respect the scarcity and special importance of land in the Northern Marianas. If the United States must acquire any interest in real property which it does not obtain under the Covenant, the United States will only seek to acquire such land if the public enterprise cannot be accomplished with a lesser interest. The lesser interest, in this case, would be taking advantage of the lands already under lease on Tinian. Essentially, this precludes the lease of additional lands on Saipan for a purpose that can be fulfilled on Tinian leased lands.

J127

The Covenant is also said to be the general United States policy with respect to land acquisition in the Northern Mariana Islands. It provides significant protections against the arbitrary or improper use of the authority of the United States to acquire property in the Commonwealth. This is especially so in view of the fact that Subsection (b) provides that no interest in real property will be acquired by the United States unless the acquisition has been duly authorized by the Congress and appropriations are available to pay the landowner just compensation. It is difficult to speculate on the cost of a long-term lease on 40 acres of prime land at Saipan International Airport, however, it would certainly be in the millions of dollars – far more than the cost of repairs to the breakwater at Tinian Harbor, for instance.

J128

It is surprising that top priority in identifying the appropriate first alternative was not giving the United States Air Force the maximum long-term capability to "establish additional divert capabilities to support and conduct current, emerging, and future training activities, while ensure the capability to meet mission requirements in the event that access to Andersen Air Force Base (AFB) or other western Pacific locations is limited or denied (Cover Sheet to Draft EIS). Utilizing existing Tinian Leased Lands can give the United States Air Force 100% resiliency in case access to Andersen Air Force Base is limited or denied. Even by leasing additional land on Saipan, the United States Air Force would automatically lose 17% operational resiliency. The runway at Tinian's West Field International Airport could easily be extended to provide the runway necessary to accommodate the largest cargo and aerial refueling aircraft in the Air Force inventory. Even at great expense to the American tax payer, this goal could not be achieved on Saipan.

J130

The draft Air Force EIS also flies in the face of the Congressional mandate to streamline the DoD by establishing inter-service operations. This September there will be a joint Army-Navy training operation on North Field. At about the same time the III MEF will conduct a joint Navy-Marine Corps training operation on North Field. Most significantly, the recent Marine Air Group - 12 exercise on both West Field, establishing restraining wires for F-18 hot refueling operations, and on North Field, establishing an expeditionary air field, demonstrated the island's ability to support major air operations. Despite all this joint inter-service activity on the part of the Army, Navy and Marine Corps, the Air Force-created draft EIS for a Divert Base purports to

J133

separate Air Force operations from the other services currently taking advantage of the joint-use opportunities available on existing Tinian leased lands.

J133

Technically, the draft EIS is out of date. It fails to take into account several developments on Tinian in the last 2 years. The Record of Decision issued by the US Marine Corps in September 2010 created live fire rifle ranges on Tinian, primarily for the use of the US Marine Corps, yet available to all other federal agencies with a need to maintain small arms certification.

Furthermore, Tinian was visited by high ranking representatives of the Japanese Self-Defense Force (JSDF), which co-funded the recent MAG -12 operations on Tinian. They are now considering joint USMC-JSDF training exercises on Tinian. Having a fully operational air base on Tinian with refueling capabilities will support the Marine Corps effort on Tinian, as well as joint training operations with other US and JSDF teams.

J134

[Although it is true that Saipan has more high-end hotels than Tinian, the Tinian Dynasty Hotel and Casino has 412 rooms with a total capacity of well over 824, more than enough to support the personnel recommended in the EIS.] Furthermore, if the Divert Base is constructed on Tinian, the refueling system would make the airport fully capable of receiving foreign jet aircraft. This would undoubtedly stimulate investors who have already purchased casino licenses to begin construction on their hotel complex.]

J131

J138

Just this month, Matua Bay Resort broke ground on a new golf course to be located along beautiful Nassarino Beach on Southwestern coast of Tinian.

The draft EIS goes to lengths to discuss the "dilapidated" condition of the Tinian Harbor and the Tinian Dump. Currently, the fuel dock at Tinian Harbor is receiving extensive repairs, including a new sea wall, bollards and fenders. Recently, the Tinian joint leadership has concluded negotiations with the CPA and OIA to repair the two finger piers at the dock. This expenditure of CNMI CIP funds will undoubtedly lead to funding to repair the Breakwater.

J132

New equipment is being purchased to maintain the existing Tinian Dump, and design work is already at 30% completion for a new solid waste transfer station and a new landfill. Together, they will be more than adequate to handle all solid and liquid wastes produced by the Divert Base.

On Tinian, there are no endangered species within the proposed divert base area that would require mitigation, whereas construction in Saipan would likely necessitate a \$600,000 deposit in the mitigation bank.

J135

The population of Tinian is not 5,000 people, as stated in the EIS. It is barely 3,000. Utilizing Tinian for the planned 8 weeks per year for training exercises will interfere less with local air traffic control than on Saipan, cause less effective noise pollution for the local community, and, because of the Covenant, the Air Force will not have to pay landing fees on Tinian. During the recent MAG - 12 operations at West Field International Airport, F-18 Hornets practiced rotating

J136

hot-refueling operations throughout the day for a full week with no appreciable distress to the community. Landing KC-135s as well as fighter jets at Saipan International Airport would cause considerable distress to the local population, and particularly to Kobler Elementary School, San Antonio Elementary School, San Vicente Elementary School and Southern High School, all of which are in the flight pattern.

J136

Furthermore, as noted in the draft EIS, while the construction of the Divert Base on Saipan will be of relatively minor importance to that economy, utilizing Tinian will provide a significant stimulus to the general economic development of this underdeveloped island, therefore decreasing the need for federal subsidies; building the Divert Base on Tinian will mean the completion of the West Field International Airport and the arrival of international commercial aircraft, allowing not only the importation of tourists, but the export of fresh and frozen produce and meats; completion of the Divert Base will stimulate the Army, Army Reserve, National Guard, Navy, and its Marine Corps, to take better advantage of training opportunities on Tinian.

J137

Finally, and most important to the people of Tinian, building the Divert Base on Tinian will begin to fulfill a 37-year-old pledge to the people of Tinian. Before the 1975 plebiscite to ratify the Covenant, representatives of the United States of America, both military and civilian, led the people of Tinian to believe that if they voted in favor of the Covenant -- including the technical agreement to lease two-thirds of their island for a hundred years -- the United States would build a large multi-service training base on Tinian and the people of Tinian would benefit from the economic development. Other than for a few scattered training exercises, no significant military development has occurred on Tinian. No permanent military facilities have been built. The port of Tinian, built by Navy Seabees during World War II has been neglected, as have the access roads on the military leased lands. Building the Divert Base on Tinian will begin to allay the concerns of some Tinian residents who are now questioning the wisdom of their 1975 decision.

J129

We encourage you to re-think the real purpose behind the construction of the Divert Base and recognize that utilizing the existing military land lease on Tinian gives the United States Air Force the best opportunity to fulfill its mission, now and in the future.

J124



Commonwealth of the Northern Mariana Islands
OFFICE OF THE GOVERNOR
Division of Environmental Quality

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July 11, 2012

Capt. Kimberly Bender, PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-
Hickam, HI 96853
ATTN: PACAF Divert Marianas EIS

Subject: Environmental Impact Statement for Divert Activities and Exercises

Dear Captain Bender:

On June 23, 2012, DEQ attended the public hearing for the proposed divert activities and received a copy of the Draft Environmental Impact Statement ("EIS") for the project. Based on the information obtained at the public hearing and our review of the draft EIS, we have no significant concerns about the project at this time and believe the EIS to be sufficient.

} K139

Thank you for the opportunity to comment on this proposal.

Sincerely,

David B. Rosario
Acting Director, Division of Environmental Quality

Lawrence Duponcheel

If Tinian is selected as the site for the alternate Airfield, a good number of cattle ranches (ranching families) will be affected. The people of Tinian rely on these ranches as the one and only source of fresh meats and sometimes produce for family consumption. Our ranches provide work, income, and food security for island residents. That being said, any plans for expanding the airstrips or boundaries of any type that might affect these ranches should provide consideration and support where appropriate. If at all possible, grazing areas should be incorporated into the planned facility, just as they are on other bases which allow farming and ranching within their limits. Thank you...Law

L140



COMMONWEALTH PORTS AUTHORITY

Main Office: FRANCISCO C. ADA/SAIPAN INTERNATIONAL AIRPORT
P.O. BOX 501055, SAIPAN, MP 96950-1055
Phone: (670) 237-6500/1 • Fax: (670) 234-5962
E-mail Address: cpa.admin@pticom.com
Website: www.cpa.gov.mp

Official Comments and Position on the

DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR

DIVERT ACTIVITIES AND EXERCISES

GUAM AND

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Edward M. Deleon Guerrero
Executive Director
July 23, 2012

SAIPAN INTERNATIONAL AIRPORT/SEAPORT
P.O. BOX 501055, Saipan, MP 96950

ROTA INTERNATIONAL AIRPORT/SEAPORT
P.O. BOX 561, Rota, MP 96951

TINIAN INTERNATIONAL AIRPORT/SEAPORT
P.O. BOX 235, Tinian, MP 96952

BACKGROUND

The Commonwealth Ports Authority (CPA) was created in 1981 by CNMI Public Law 2-48 and is tasked with managing and operating all the airports and seaports throughout the Northern Marianas. CPA affairs are governed by a seven-member Board of Directors appointed by the Governor, with the advice and consent of the Senate of the Commonwealth Legislature. The Board appoints the Executive Director to carry out the goals and objectives of the Authority and to oversee its day-to-day operations and management.

The Saipan International Airport is a 1,400 acre facility, serving the aviation needs of Saipan and the CNMI. Saipan International Airport (SIA) is contained in the U.S. National Plan of Integrated Airport Systems and is classified as a Primary/Small Hub airport as defined by FAA. The SIA runway, designated as 7/25, is of asphalt construction and is 8,700 feet long and 200 feet wide.

The Tinian International Airport (TIA) is an FAA certified facility which accommodates single engine aircrafts and Shorts 360 aircrafts with 36 passenger capacity. The Tinian runway is 8,600 feet in length and 150 feet wide with a parallel taxiway and two connecting taxiways at each runway end.

The CNMI is located relatively close to Asia. Saipan is approximately 1,300 nautical miles south of Tokyo, Japan, 1,800 miles east of Hong Kong and 1,500 miles east of Taiwan and Manila. Due to its close proximity to Asian markets, tourism is the leading economic sector in the CNMI.

STATEMENT OF SUPPORT

CPA supports Pacific Air Force (PACAF)'s mission to provide ready air and space power to promote U.S. interests in the Asia Pacific Region. Specifically, CPA supports the establishment of an Air Force Divert Base on the island of Tinian. CPA understands that PACAF's first preference for divert activities and exercises is Saipan. However, CPA agrees with CNMI Governor Benigno R. Fitial and Tinian Mayor Ramon M. Dela Cruz that any divert activities in the CNMI should be located on Tinian.

N174

CPA's comments are meant to constructively point out possible consequences caused by PACAF's proposed action in this draft environmental impact statement and to offer solutions in the process. CPA trusts that its comments and concerns will be taken into consideration.

The Best Alternative: Alternative 2 TNI

While CPA recognizes that the CNMI will continue to play a critically important role in U.S. military efforts in the Asia Pacific region, we must remind you that the Divert Activities and Exercise program as proposed, with its first alternative being Saipan and its second alternative being Tinian, will impact our environment and create a myriad of financial, social, and cultural burdens for the people of the Commonwealth. CPA understands that there are possible mitigation proposals to deal with the various impacts, including best management practices and

N170

design concepts to avoid adverse impacts. However those specific measures have not been identified in the DEIS. N170

CPA is mindful that the proposed action will not only consist of Air Force Divert Landings and Exercises and humanitarian airlift staging, but will also consist of joint military exercises with U.S. Navy, U.S. Marine Corps, and military from other countries to meet U.S. national security interests. CPA wants to ensure that any negative socio-economic impacts associated with the proposed action are at a minimum mitigated through federal efforts or in the alternative outweighed by the economic benefits the proposed action will bring to the CNMI. Therefore, given the potential impacts the proposed action will have on the CNMI as a whole, CPA recommends that Alternative 2 TNI be selected as we feel that Tinian is the best alternative for all stakeholders. N172

CPA makes the following comments:

A. Impact of Cultural Resources at GSN and TNI

The Saipan International Airport sits on what was once Aslito/Isley Field and is designated as a historic landmark under the National Park Service. Along with the air fields, there are several Japanese bunkers, buildings and other structures that were eventually used by U.S. forces during World War II. The historic and cultural significance of the former Aslito/Isley Field and its surrounding buildings and structures is profound. In the nine month period between November 1944 and Japan's unconditional surrender in August 1945, Army Air Force B-29s conducted long-range raids against Japanese industrial and urban targets from Saipan thereby contributing to the eventual end of World War II. Section 5.3.8.1 specifically states that the historic structures are susceptible to secondary impacts from vibrating related deterioration due to heavy aircraft traffic at the parking aprons and increased vehicle traffic and personnel presence. CPA is understandably concerned that the proposed action will threaten the historic and cultural resources at Aslito/Isley Field. Moreover, it is unclear what mitigation efforts would be used by PACAF to minimize any potential deterioration of such resources. N173

Although there will be potential cumulative impacts on Tinian historic and cultural sites as a result of the proposed action, those sites are not located on TNI. Therefore, there would be less of a burden on Tinian historic/cultural sites than to GSN which sits on an actual historical landmark.

B. Impact of Noise Environment at GSN and TNI

Although the DEIS distinguishes between three possible noise level scenarios (Low, Medium and High), CPA feels that any scenario will negatively affect the noise environment of Saipan thereby affecting its residents, visitors, and CPA employees. CPA therefore feels it is prudent to comment on the High Scenario. Under the High Scenario, periodic, direct, moderate to major, adverse impacts on the noise environment would be expected (page 4-9). The DEIS estimates that there would be four operations per day for N171

twelve F-16 and F-22 aircrafts. This would total to 48 operations per day. Although the DEIS states that the Divert Activity and Exercises would only be for 8 weeks and the majority of the operations would be completed from 7:00 a.m. to 10 p.m., such operation would still severely impact Saipan's noise environment. Even though a majority of the operation would be conducted before 10:00 p.m., thirty percent of the operation would still be conducted from 10:00 p.m. to 7:00 a.m. All totaled, Saipan residents and visitors would have to endure fourteen F-16 and F-22 operations from 10:00 p.m. and 7:00 a.m.

Saipan's main industry is tourism. Tourists flock to Saipan to enjoy its clean beaches and peaceful environment. Surrounding tourist facilities include Coral Ocean Point and Lao Loa Bay Resort. It is CPA's position that both resorts will inevitably be negatively impacted by the high noise level resulting from the proposed action. Moreover, residents in surrounding residential areas such as Dandan, Koblerville, Aslito and Kagman will also be victims of the high level of noise. It is important to note that the first three aforementioned areas are all within the High Scenario Noise Contours at GSN. See Figure 4.1-3, page 4-11.

Alternatively, TNI is located away from the concentrated populations of San Jose Village, Marpo Heights, and Carolinas Heights. Noise impact will be concentrated on the northern end of Tinian, away from the main residential areas. CPA believes that there should nonetheless be noise mitigation. This could be accomplished by requiring that all aircrafts approaching TNI avoid flying over San Jose Village.

C. Availability of Land on Tinian

Section 803 of the Covenant provides for joint use of the Tinian International Airport. To date, the U.S. Armed Forces have failed to fully utilize TNI to its fullest potential. Section 2.2.1 states that selection standards required for the airfield must include existing land and infrastructure with expansion capabilities and it must be located within the MIRC training area. Tinian fits that bill. Although there is no current fuel farm located on Tinian, any added cost of constructing a fuel farm on Tinian will be outweighed by the benefit of concentrating all proposed military activities on Tinian as there is sufficient land to accomplish its goals and objectives in Tinian.

D. Airspace Surrounding GSN and TNI

Private charter and commercial aircrafts regularly fly in and out of GSN. CPA is concerned that the establishment of a divert airbase at GSN will impede commercial aircrafts into GSN thereby negatively affecting the CNMI economy. The DEIS also does not offer information on any mitigation to such airspace during the monthly training schedules. Therefore it would be more beneficial to PACAF and the CNMI to limit the proposed action to Tinian.

Even if TNI is selected as the alternative site, PACAF should nonetheless be mindful of the air taxi services between TNI and GSN. There are approximately 150 air taxi flights per day. CPA would request that any proposed activity conducted at TNI be

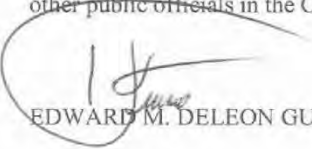
accomplished with minimal disruption to the on-going air taxi service between TNI and GSN. Moreover, although TNI operates without an air control tower, all pilots approaching and departing Tinian do maintain contact with the FAA control tower in Saipan. It is imperative that PACAF provide approach and departure information to the GSN ATC when conducting exercises at TNI.

E. PACAF must work closely with FAA

Given the several requirements for the set-up of the runway, lightings, markings, munitions, etc., it is extremely important that PACAF work closely with FAA to ensure compliance with all FAA rules and regulations. PACAF must know that any attempt to alter or replace any mechanism at GSN or TNI will require FAA approval.

N175

In conclusion, CPA believes that there will be negative socio economic impacts associated with the proposed action and recommends that PACAF establish a divert air base on Tinian. CPA respectfully requests PACAF to seriously consider all the DEIS comments made herein and from other public officials in the CNMI.



EDWARD M. DELEON GUERRERO

UNITED STATES AIR FORCE DIVERT ACTIVITIES AND
EXERCISE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING

SAIPAN

Susupe, Saipan

June 25, 2012

PREPARED BY: GEORGE B. CASTRO
DEPO RESOURCES
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**UNITED STATES AIR FORCE DIVERT ACTIVITIES AND
EXERCISE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING**

Public hearing on the United States Air Force Divert Activities and Exercise Environmental Impact Statement, was taken on Tuesday, June 25, 2012, on the island of Saipan, before an Officer of Depo Resources.

WELCOMING & INSTRUCTIONS

COLONEL BILL ORR p. 4

EIS BRIEFINGS

MAJOR PETER TOVES p. 8

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Court Reporter

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PUBLIC COMMENTS

BY MR. ROSIKY CAMACHO	p. 19
BY RUTH TIGHE	p. 26
BY MS. TERESA ARRIOLA	p. 27
BY MR. JAMES ARRIOLA	p. 29
BY MR. ROSIKY CAMACHO	p. 29

(End Public Comments)

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1 SUSUPE, SAIPAN: TUESDAY, JUNE 25, 2012, 7:00 P.M.

2
3 UNITED STATES AIR FORCE DIVERT ACTIVITIES AND
4 EXERCISE ENVIRONMENTAL IMPACT STATEMENT
5 PUBLIC HEARING
6

7 COLONEL ORR: I want to begin by
8 thanking you all for coming out tonight in this
9 public hearing for the United States Air Force
10 Divert Activities and Exercises Environmental
11 Impact Statement, which is called or refer to
12 as the EIS.

13 I am Colonel Bill Orr and I am the
14 Chief Judge of the United States Air Force
15 Court of Criminal Appeal. I normally preside
16 over the appeal of the military members who are
17 tried in a trial by a court martial. However,
18 tonight I've been requested to preside over
19 these hearings to support the public review and
20 involvement process.

21 I do not work for anyone in the Pacific
22 Air Forces, which is the major command
23 responsible for the proposed action. I'm not
24 involved in any way in the development of this
25 Draft EIS, and I don't act as a legal adviser

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1 to the Air Force representative working on this
2 proposal. In other words, I will not make any
3 recommendations or decision on whether which
4 EIS or how this EIS should -- whether the
5 proposal should be continued, modified, or
6 abandoned or how this EIS should be prepared.

7 My role in this hearing tonight is
8 simply to act as an impartial moderator and to
9 ensure that we have a fair, orderly, and
10 impartial hearing, and where you have the
11 opportunity to make comments on the proposal.
12 We're here tonight because the Air Force is
13 analyzing the environmental impact of the
14 proposed divert activities and exercises.

15 This hearing is held in accordance with
16 the provisions of the National Environmental
17 Policy Act & Regulations published by the
18 Council of Environmental Quality and the Air
19 Force.

20 The purpose of this hearing is to
21 receive your comments on the Draft EIS. But
22 tonight's hearing is just one of several
23 opportunities for public comment. Please keep
24 in mind that this hearing is not a debate and
25 it's not a vote on the Draft EIS; and it's not

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1 a question and answer session. The hearing is
2 an opportunity we give, to express your views
3 and concerns about the adequacy of the
4 environmental analysis and the potential
5 environmental impact associated with the
6 proposal.

7 Comments about other unrelated issues
8 won't assist in the decision-making process.
9 If you'd like to make a comment during the
10 hearing, please put your name on the sign-up
11 sheet and submit your comments, on the comments
12 section.

13 During the first part of the hearing,
14 Air Force representatives will provide you with
15 information on the divert activities and
16 exercise EIS as well as the description of the
17 project in the environmental impact analysis
18 process.

19 We will have representatives involved
20 in the project from Headquarters Pacific Air
21 Forces, Joint Base, Pearl Harbor, Hickam, in
22 Hawaii. We have Major Chief Peter Toves and
23 Colonel Dwayne Thomas, Mission Support Group
24 Commander here, from Andersen Air Force Base,
25 and they will be representing the point of

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1 view.

2 Individual representatives from Pacific
3 Air Force tonight are Ms. Carol -- Mr. Mark
4 Peterson, and Mr. --. Transcribing this
5 hearing tonight is Ms. Sullivan.

6 To begin this night's hearing, we will
7 hear from Major Toves who will give you a
8 briefing on the proposed action and the
9 alternatives. He will also preside with the
10 overview of the National Environmental Policy
11 Act which you here refer to as NEPA. And he
12 will summarize the potential environmental
13 consequences of the proposal.

14 After the presentation, I will open up
15 the floor for your comments if you would like
16 to make a statement on the record here tonight.
17 Your comments will provide the decision-makers
18 for the divert activities and exercise proposal
19 the benefit of your knowledge in the local area
20 and your concerns about the environmental
21 analysis.

22 If you would like to provide written
23 comments rather than speak here tonight, or if
24 you'd like to do both, written comments sheets
25 are available at the how-to submit comments

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1 table. You can hand your comments in tonight
2 at the table after the hearing or you can mail
3 them in later. You can also provide comments
4 on the project website or by leaving a message
5 on the project voicemail. If you mail your
6 comments, please send them to the address
7 printed on the facts sheets in comment forms.
8 The Air Force will consider comments received
9 throughout the Environmental Impact Analysis
10 process. But to make sure your comments are
11 considered and documented in the final EIS,
12 please submit your comments by July 23rd, 2012.

13 I'll now go ahead and move in to the
14 briefings by Pacific Air Force. During the
15 briefings, if it looks like we are reading to
16 you, it's because we are. I apologize for
17 that; but the briefings are written out to make
18 sure that each speaker covers all the
19 information for that.

20 Now, I'll turn the mic over to Major
21 Toves. He'll give you the briefing at this
22 time.

23
24
25

ENVIRONMENTAL IMPACT STATEMENT BRIEFINGS

DEPO RESOURCES

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Court Reporter

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1 MAJOR TOVES: Good evening everyone.
2 The following topics will be discussed during
3 this brief presentation to familiarize you with
4 the Air Force and proposed action in the EIS.
5 Following this presentation, we will have the
6 public hearing portion of this meeting where
7 you'd be able to make verbal comments on the
8 EIS.

9 Pacific Air Force's primary mission is
10 to provide ready air and space power to promote
11 U.S. interests in the Asia Pacific region
12 during peacetime through crisis and in war.
13 The Pacific Air Force's area of responsibility
14 extends from the west coast of the United
15 States to the east coast of Africa, and from
16 the Arctic to the Antarctic, more than
17 100,000,000 million square miles. This project
18 is intended to support overall PACAF mission by
19 developing a divert airfield in the Marianas
20 region. Next slide.

21 Under existing capabilities, there's no
22 divert or contingency airfield on U.S.
23 territory or in the western pacific that is
24 designed and designated to provide strategic
25 operational and exercise capabilities for U.S.

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1 Forces when needed in humanitarian airlift and
2 disaster relief in times of natural or man-made
3 disasters.

4 The purpose of the proposed action is
5 to establish additional divert capabilities to
6 conduct divert landings in support of current
7 emerging and future exercises on ensuring the
8 capability to meet mission requirements in the
9 event that access to Andersen Air Force Base or
10 other western pacific locations is limited or
11 denied. For example, during the 2011
12 earthquake and tsunami in Japan, the need for
13 disaster response and humanitarian assistance
14 arose suddenly without warning. If this had
15 occurred during scheduled training exercises at
16 Andersen Air Force Base, in either training or
17 response efforts, might have been delayed or
18 impeded.

19 Additionally, similar natural or man-
20 made disasters could also impact Andersen Air
21 Force Base's missions requiring reliance on the
22 alternate design and designated divert
23 airfield. Specifically, there are four
24 operational requirements that are necessary to
25 successfully support the PACAF mission driving

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1 a need for a divert airfield in the Marianas.
2 They are: ensure airfield accessibility and
3 access to Andersen Air Force Base or other
4 western pacific airfields is limited or denied,
5 provide for contingency operations to include
6 humanitarian relief efforts, accommodate future
7 increases in operational tempo and associated
8 training and achieve and sustain readiness.
9 Next slide.

10 For the purposes of this EIS, the study
11 area includes the Marianas region, existing
12 seaports and surrounding areas including
13 easements or routes needed to transport
14 petroleum products. Because of the proximity
15 to four deployed forces in the western pacific,
16 Marianas provides the best economic alternative
17 for deployed U.S. Forces to train on U.S. lands
18 and to develop the proposed additional
19 capabilities. Next slide.

20 The proposed action analyzed in the EIS
21 is to develop critical enhancements to existing
22 airport or airfield and associated
23 infrastructure in the Marianas to increase
24 operational and divert capabilities needed by
25 the U.S. Air Force especially humanitarian

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1 relief in disaster and joint exercises.

2 The design for the proposed action is
3 based on a twelve KC-135's which is a wide-body
4 tanker aircraft. However, the divert airfield
5 could support any combination of cargo and
6 fighter, tanker and other aircraft. The
7 combination of plane types will not exceed the
8 capabilities of the airport design under the
9 proposed action. The 700 support personnel
10 would accompany the squadron and tanker
11 aircraft. Next slide.

12 Specific components of the proposed
13 action include improving or constructing
14 airfield operational infrastructure which
15 includes an expanded runway area, parking
16 apron, associated pavement markings, lighting,
17 security, and other related infrastructure,
18 temporary munitions storage area, as is cargo
19 pad and arm/disarm pad, aircraft hanger,
20 maintenance facility, and jet refuel receiving
21 storage and delivery capability.

22 These improvements are considered
23 construction phase of the proposed action.
24 Implementation phase of the proposed action
25 will utilize an infrastructure improved and

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1 developed during the construction phase.
2 Elements of the implementation phase include
3 unplanned emergency landings if the locations
4 in the western pacific are unavailable for
5 landing; periodic joint and unit level military
6 exercises, humanitarian airlift staging in the
7 event of an emergency or disaster, and ability
8 to support up to 700 temporary personnel during
9 any of the events just described. Next slide.

10 To meet the purpose and need to
11 establish additional divert capabilities; the
12 divert activities and exercises, Draft EIS
13 analyzes two alternatives. For those of you
14 who participated in the public scoping, you may
15 remember we originally discussed three
16 alternatives. In response to public scoping
17 and after further evaluation of potential
18 alternatives, the Air Force has analyzed two of
19 the original three alternatives in the proposed
20 action.

21 The development and specifications that
22 require facilities and infrastructure varies
23 depending on the existing conditions at each
24 alternative location. Saipan International
25 Airport and Tinian International Airport are

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1 being considered as potential alternative
2 locations for airfield improvements.

3 The Draft EIS also includes a no-action
4 alternative under which the U.S. Air Force
5 would not develop or construct facilities and
6 infrastructure at an existing airport or
7 airports, and PACAF'S ability to achieve and
8 maintain military readiness or remain as is.
9 For purposes of this EIS, the no-action
10 alternative serves as the baseline level of
11 current facilities in operations. As we
12 discuss the alternative, please remember this
13 is a no-change alternative. The purpose of
14 including a no-action alternative in the
15 Environmental Impact Analysis is to ensure that
16 agencies compare the potential impacts of the
17 proposed major federal action to the known
18 impacts of maintaining existing conditions.
19 Next slide.

20 The Saipan alternative is the preferred
21 alternative of the EIS because the analysis
22 shows it's more consistent with U.S. Air Force
23 operational requirements. Under the Saipan
24 alternative, the U.S. Air Force will develop
25 and construct facilities and infrastructure at

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1 Francisco C. Ada Saipan International Airport
2 consistent with the facilities and
3 infrastructure described under the proposed
4 action.

5 The improved facilities and
6 infrastructure would support a combination of
7 cargo, fighter, and tanker aircraft, and
8 associated support personnel for periodic
9 exercises, unplanned divert landings,
10 humanitarian assistance, disaster relief in the
11 western pacific. Next slide.

12 Under the Saipan alternative, the U.S.
13 Air Force would also construct a two-boat
14 floating storage tanks at the Saipan Harbor to
15 store fuel and aircraft operations. Next
16 slide.

17 Under the Tinian alternative, the U.S.
18 Air Force will develop and construct facilities
19 and infrastructure at Tinian International
20 Airport, also known as West Tinian Airport,
21 consistent with the facilities and
22 infrastructure described under the proposed
23 action.

24 The improved facilities and
25 infrastructure will support a combination of

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1 cargo, fighter, and tanker aircraft, and
2 associated support personnel for periodic
3 exercises, unplanned divert landings, and
4 humanitarian assistance and disaster relief in
5 the western pacific. Tanker aircraft are the
6 more likely used in the immediate future. Next
7 slide.

8 Under the Tinian alternative, U.S. Air
9 Force would also construct a boat fuel storage
10 tank at the Tinian Harbor to store fuel for
11 aircraft operations. Next slide.

12 The analysis of the EIS indicates that
13 there are only a few environmental resources or
14 subjects that could potentially experience
15 major adverse impacts as a result of the
16 implementation of the proposed action. These
17 resources and subjects include noise, water
18 resources, biological resources, cultural
19 resources, and minority and low-income
20 populations. Next slide.

21 Potential mitigation. In the
22 development of the final EIS, U.S. Air Force
23 will identify best management practices,
24 mitigation measures, and design concepts that
25 could help avoid any of these major adverse

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1 impacts to the extent practicable. U.S. Air
2 Force is committed to the unique environment,
3 culture, and people of the Mariana Islands and
4 would continue to conduct several environmental
5 stewardship programs to protect the environment
6 of the Mariana Islands. Next slide.

7 Rules of the EIS. What we've given you
8 is just a very brief summary of the Draft EIS
9 and a listing of the associated impact areas
10 and a description of mitigation. The
11 development of management actions and
12 mitigations is an ongoing process. And our
13 primary reason for being here tonight is to
14 record your concerns and allow us to continue
15 developing these actions.

16 I emphasize the fact that this is only
17 a draft document at this time. And we need
18 your assistance to continue refining the
19 material. The Draft EIS was prepared by the
20 U.S. Air Force to comply with the National
21 Environmental Policy Act or NEPA.

22 The Draft EIS represents compliance
23 with the NEPA and is an important part of the
24 U.S. Air Force's overall commitment to an
25 environmental stewardship.

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1 The EIS also helps the U.S. Air Force
2 comply with other applicable federal and local
3 regulations, requirements and permits. To
4 date, government agencies, elected officials,
5 community and environmental organizations, and
6 individuals have all submitted comments at the
7 scoping meetings, or provided written comments
8 during the scoping period. The comments
9 received were considered in the revisions to
10 proposals and the preparation of the Draft EIS.

11 This Draft EIS is the result of
12 extensive analyses in consideration of public
13 and agency comments received during scoping
14 period. Your inputs here tonight can only help
15 to make it better. But this is not your only
16 opportunity to get involved in the process.
17 Next slide.

18 The U.S. Air Force is committed to
19 keeping citizens informed throughout the NEPA
20 process. In addition to holding these public
21 hearings, U.S. Air Force has established a
22 website www.pacafdivertmarianaseis.com to make
23 it easy for you to find and review
24 environmental documents. The Draft EIS is
25 posted on the website as well as additional

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1 information and the fact sheets available here
2 tonight. You may also review a hard copy of
3 the draft EIS by visiting one of the nine
4 public libraries or major offices listed here.
5 Next slide.

6 At this time, the U.S. Air Force is at
7 the fourth stage in this list of the project
8 schedule providing the Draft EIS for public
9 review and comments. This phase is an
10 essential part of the NEPA process because it
11 allows the public to review Draft EIS and
12 comment on the U.S. Air Force's analysis of
13 potential environmental effects.

14 We encourage you to provide your input
15 here tonight or by July 23rd, 2012 so that it
16 can be considered in developing the analysis in
17 the final EIS and in the decision-making
18 process. Your input will be incorporated into
19 the final EIS.

20 Comments on the Draft EIS may be
21 provided orally or in writing here tonight or
22 by internet or voicemail or mailing in written
23 comments. Comments on the Draft EIS will be
24 considered equally and responded to during the
25 preparation of the final EIS. The final EIS is

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1 scheduled to be released on November 2012, and
2 the record of decision is scheduled to be
3 signed in December of 2012. Next slide.

4 COLONEL ORR: Thank you, Major Toves.
5 We'll now move into the public comment part of
6 the hearing. And that's -- and here's how that
7 will work. I will use the speaker sign-up
8 sheet that those of you who had filled out, who
9 wanted to speak, filled out, and call the folks
10 up to the microphone. If you'd like to make an
11 oral comment here tonight and haven't signed up
12 yet, could you just raise your hand and some
13 folks will come around and take your
14 information?

15 Well, all right. Currently, we have it
16 set up so that the procedure gives each person
17 three minutes to speak. So, when I call your
18 name, come on down and we'll start the clock
19 when you're ready. To help the court reporter,
20 please begin by stating your name, and could
21 you spell out your last name, the name of any
22 organization, if any, that you represent.

23 Now, please don't provide any personal
24 information like your home address or phone
25 number. And again, your comments are being

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1 recorded verbatim. They'll be used to develop
2 a transcript and a permanent record of this
3 meeting and they will be published in the final
4 EIS. Your name will be included along with
5 your comments in the transcript. But personal
6 home addresses and phone numbers would not be
7 published in the final EIS.

8 Of course, you don't have to speak for
9 the full three minutes; but to help you keep
10 track of the time, the card -- let's see, where
11 is it? Okay. The yellow card will let you
12 know when you have 30 seconds left to speak.
13 The red card will let you know when your three
14 minutes is up. Now, you don't have to yield
15 the remaining time to someone else. We'll just
16 move on to the next person.

17 Now, tonight's hearing is scheduled to
18 end at 8:00. And if everyone who has signed up
19 has had to speak -- had a chance to speak
20 before that time, I'll then ask any speaker who
21 would like an additional three minutes to
22 expand on your comments if you want to do that;
23 just let me know and we'll put another three
24 minutes on the clock.

25 Now, if you want to add something later

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1 to your oral comments, or if you'd rather not
2 speak tonight, once again, you can submit your
3 written comments. There is no page limit on
4 your written comments. And the Air Force will
5 give you equal weight to oral or written
6 comments, and both will become part of the
7 official record and are included in the final
8 EIS.

9 Now, just a few reminders before we get
10 started. Please limit your comments to the
11 Draft EIS because that's the purpose of this
12 public hearing. Second, if you agree with the
13 previous speaker on something, you can
14 certainly say that but you don't need to use up
15 your time repeating it since it's already on
16 the record.

17 Finally, as I mentioned earlier, this
18 is not a question and answer session, it's an
19 opportunity for you to put on the record your
20 views and concerns about the proposal that you
21 want the decision-makers to consider.

22 Now, any questions that you pose during
23 your comments will become part of the record
24 and will be considered in developing the EIS in
25 making a decision on the proposal. After we're

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1 done with the formal part of this, Air Force
2 representatives will be available to continue
3 to discuss things with you.

4 Are there any questions about the
5 procedures before we begin? All right. Our
6 first speaker for tonight is Mr. Rosiky
7 Camacho; is he here? Where are you at?

8

9 PUBLIC COMMENTS BY ROSIKY CAMACHO

10

11 MR. CAMACHO: You know, I speak
12 earlier but I don't remember. But this is my
13 concern.

14 COLONEL ORR: Okay. Before you give
15 your concern --

16 MR. CAMACHO: Yeah, I know --

17 COLONEL ORR: -- can I ask you to --

18 MR. CAMACHO: Yeah.

19 COLONEL ORR: -- spell your name?

20 MR. CAMACHO: Rosiky is my name.

21 COLONEL ORR: All right.

22 MR. CAMACHO: I need to spell my first
23 name; R-O-K-I-S-Y.

24 COLONEL ORR: Okay.

25 MR. CAMACHO: And my last name is

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1 Camacho.

2 COLONEL ORR: All right.

3 MR. CAMACHO: C-A-M-A-C-H-O. My
4 biggest concern is I live in two areas in the
5 south, over in Aslito. And in Kobeler, I am
6 actually further away from the airport. But
7 the noise in Kobeler is practically higher in
8 terms of vibration, so. When I move to Aslito,
9 which is about two minutes walk, I don't have
10 that vibration. Looking at your results on
11 your decibels, my problem is this, is the
12 consequences. Let's say for example, my tenant
13 that is in Kobeler so decided that, you know,
14 your base is not good in this area. So, they
15 left. Now I end up with no tenant. And if the
16 tenant so decided that -- she decided, they
17 decided, because of that noise level is just
18 bothering them, what action can I take? That's
19 my concern.

O181

20 The other concern is, I've been
21 listening, and that's about, you know, that
22 building up there that is unfinished? The
23 hotel? There is a surrounding there that
24 there's some habitats. And I hope that they
25 don't move to where I live. But -- because I

O180

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1 live about four blocks. And I hope that if
2 those habitats, those birds, native species
3 move to my place, now I become endangered, and
4 what consequences can I take? And that's the
5 concern.

O180

6 The other biggest concern is I looked
7 at your contour and it seems that the level of
8 decibels is kind of 65 dba; right? And if you
9 look at the mass land area, it's about half of
10 the population of Saipan. And what I'm saying
11 is it seems half population of Saipan is
12 affected. It makes more sense to protect the
13 human.

O183

14 The last concern is, probably Tinian is
15 the best place based on the report of the Air
16 Force, saying that there's no such big events
17 or biological or anything affected. And I know
18 -- I know, that's how much -- he's going to
19 give me his time.

O187

20 Anyway, let me give one last one. Now,
21 I need to find in my own heart if -- is there
22 any action that I can take? What action can I
23 take to protect my consumer enemies or commerce
24 enemies? Thank you, sir.

25 COLONEL ORR: All right. Thank you.

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1 Our next speaker for the evening is Mr.
2 Kindlehicks. Okay. All right. And the next
3 speaker is Ms. Ruth Tighe.

4
5 PUBLIC COMMENTS BY RUTH TIGHE

6
7 MS. TIGHE: Thank you. My name is Ruth
8 Tighe, spelled R-U-T-H, last name is spelled T
9 as in Thomas, I-G-H-E. I know this isn't
10 supposed to be a question and answer session.
11 But I did have a question as to what the
12 timeframe -- what timeframe has been
13 established for the construction? We know
14 what's going to happen to the action. But no
15 one has spelled out when the construction will
16 start and how long and how slow. I wanted to
17 note that I appreciate receiving a hard copy of
18 the EIS in time to review it before the
19 hearing. It was very helpful to me. I found
20 it comprehensive -- comprehensive and readable
21 with less charting than many other EIS reports
22 I've seen. I may be putting my foot in my
23 mouth but I support the implementation of the
24 project and I support the implementation of it
25 on Saipan because I believe that it would

O185

O177

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1 provide some much needed boost to our economy.
2 And I wanted to get that on the record. I hope
3 that the Air Force holds up to its promise to
4 use best management practices, especially with
5 science and compliance with like NEPA and
6 historic preservation. Thank you.

↑ O177

↑ O178

7 COLONEL ORR: Thank you. All right.
8 Now, ladies and gentlemen, those are all the
9 folks that have signed up to make comments
10 tonight. Is there anyone here that hasn't
11 signed up that would like to make some comments
12 at this time? Yes, ma'am?

13

14 PUBLIC COMMENTS BY TERESA ARRIOLA

15

16 MS. ARRIOLA: My name is Teresa
17 Arriola, A-R-R-I-O-L-A. My concern is that
18 really that I'd like a little more clarity on
19 the overall connection, or lack thereof, of the
20 proposed actions being discussed tonight and
21 the overall military buildup or marine
22 relocation and the MIRC in the CNMI. I'm
23 unsure how this connects or not with broader
24 projects the U.S. military is conducting in the
25 region.

↑ O175

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1 Secondly, I have a concern for how
2 mitigating efforts by the military will be
3 completed after the EIS comes out with the
4 final version, or the ROD. For example, if
5 somebody has a concern about something that's
6 happening because of a proposed impact, what
7 can they do; can they say anything and how will
8 it be included within the thing that the
9 military does to mitigate? And also, I guess
10 just a general comment about this type of forum
11 is that it's quite intimidating to get up in
12 front of everybody and to speak.

O179

13 So, I just feel like in terms of being
14 a little more people-friendly especially for
15 the local people here, I'd just like to express
16 my disappointment with the way -- I don't
17 believe this is extremely easy for someone to
18 just get up especially if you have an opinion
19 that doesn't necessarily agree with what's
20 being expressed; to come up here and speak in
21 front of everyone. That's extremely important.
22 I guess if it's -- if things are being put on
23 the record tonight, I think it's also important
24 to recognize that on the record it should be
25 known that not everybody -- unlike Ms. Tighe

O186

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1 here, I noticed that you did support -- you do
2 express your support. I think it's important
3 to recognize the -- that there are people on
4 the island that may not even be here tonight
5 that don't support many of the activities that
6 the military are conducting in the area. So,
7 for me, these are the comments that I would
8 like to be put on the record. Thank you.

9 COLONEL ORR: Thank you. Is there
10 anyone else that had not spoken tonight that
11 would like to provide comments for the record?

12

13 PUBLIC COMMENTS BY JAMES ARRIOLA

14

15 MR. ARRIOLA: Good evening.

16 COLONEL ORR: All right.

17 MR. ARRIOLA: First of all, I'd like to
18 thank you for the opportunity for us to have a
19 public forum.

20 COLONEL ORR: Your name.

21 MR. ARRIOLA: Oh, my name is James
22 Arriola, A-R-R-I-O-L-A.

23 COLONEL ORR: Okay.

24 MR. ARRIOLA: Good evening.

25 COLONEL ORR: That's okay.

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1 MR. ARRIOLA: Again, thank you for the
2 opportunity for us to come and speak here this
3 evening. I believe it's important that our
4 voices should be included in the process.
5 However, I have heard on several occasions to
6 enquire on the proposed project that all of the
7 items that are going to be conducted --
8 conducted are in line with the laws and
9 policies and procedures of other entities aside
10 from those people who are living here.

11 And my comment and my concern would be
12 that although perhaps the items may have been
13 translated into the opinion of someone from the
14 United States as rudimentary, the majority of
15 our population does not -- might not have the
16 access or understanding of the terminology
17 utilized in such a -- such an -- impacting item
18 such as this in our country in the
19 Commonwealth. And so therefore, my largest
20 concern will be that although you may have
21 complied with the law, to be considerate
22 perhaps in the future of other alternatives
23 that are in line with the indigenous people or
24 local residents of this island, particularly in
25 those who are not English speakers, inclusive

O184

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1 of the form, which is also not very culturally
2 competent in a manner in which is conducted.
3 So, if this item does pass, my concern is the
4 vast majority of the indigenous people's
5 voices, although the law was complied with,
6 would not be fair on how it impact us here in
7 the Commonwealth. Thank you.

O184

8 COLONEL ORR: Thank you. All right.
9 Is there anyone else that has not spoken that
10 would like an opportunity to provide comments
11 at this time? All right. Are there any folks
12 that have provided comments earlier that would
13 like to expand on their comments? And we'll
14 take Mr. Camacho first since he signed up.

15
16 PUBLIC COMMENTS BY ROSIKY CAMACHO
17

18 MR. CAMACHO: Sir, I think it's not
19 very clear on the -- the airport. I'd like to
20 comment that, you know, the share activities
21 that is going on, has been slightly been
22 mentioned, I'd like that to be written in more
23 formal and what good it comes out, out of that
24 share activities existing if you use Saipan.
25 Second is, I'd like to emphasize the

O176

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1 surrounding areas especially the schools and
 2 southern high school -- then you have the
 3 elementary. And just to brief comment --
 4 actually we brought this up in a coffee shop
 5 and a lot of people said that there is
 6 commerce, the money is coming in due to this
 7 activities that the Air Force is coming in to
 8 use the airport. And I hope that is true.

O176

9 But my biggest concern is consequences
 10 and the impact that this activity that is going
 11 on. Just to brief, even the island of Guam
 12 from 75 to 79 Toto/Mongmong; and back then I
 13 have experienced those noise. And then I move
 14 on to Saipan in '84 and I have experience those
 15 noise. And I hope that those noise doesn't
 16 affect the environment. And my biggest
 17 question now is -- and I think it brought up
 18 tonight; is that what remedies that the Air
 19 Force or the military can assist us in case
 20 something really happen? I like this hearing
 21 because we can comment.

O182

22 COLONEL ORR: I would like to say that
 23 -- to address one of the concerns raised
 24 earlier that there is a Chamorro speaker
 25 translator here. So, if language is an issue,

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1 we can address that as well.

2 So, with that in mind, is there anyone
3 else that would like to make a comment at this
4 time?

5 PUBLIC: (none so indicate)

6 COLONEL ORR: Anyone else? All right.
7 Well, as I mentioned earlier, the hearing is
8 scheduled to end at 8:00. And it appears that
9 we've heard from everyone who has signed up.
10 And like I said, we have some time left so this
11 is one more opportunity to raise your hand if
12 you haven't spoken up to make your comments.
13 Anyone?

14 PUBLIC: (none so indicate)

15 COLONEL ORR: All right. Thank you for
16 your time and interest in the Divert Activities
17 and Exercises EIS Proposal. But keep in mind
18 tonight is not the end of your opportunity to
19 participate in the environmental review
20 process. Again, written comment sheets are
21 available at the registration table and you can
22 turn these sheets in tonight or you can mail
23 them in later. The mailing address is printed
24 on the fact sheets and the comments side cards.
25 The Air Force welcomes public comments in

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1 writing or via voicemail at any time during the
2 Environmental Impact Analysis process. To
3 receive timely consideration for the final EIS,
4 all comments must be submitted by July 23rd,
5 2012.

6 Now, if you'd like to comment -- if you
7 would like your own copy of the final EIS,
8 please tell the folks at the registration table
9 or send a letter or postcard asking for your
10 own copy, and the Air Force will send you a
11 final copy of the final EIS. Are there any
12 questions or concerns at this time?

13 PUBLIC: (none so indicate)

14 COLONEL ORR: All right. Please keep
15 in mind that the Air Force representatives are
16 still available, the postal charts are still up
17 along the wall here if you have any specific
18 questions about the process or the proposal.
19 And there being no interest or further comments
20 at this time, the hearing is adjourned. And
21 please have a safe trip home. Thank you.

22

23 (EIS Public Hearing concluded at 8:00 p.m.)

24 SUSUPE, SAIPAN: TUESDAY, JUNE 25, 2012.

25

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REPORTER'S CERTIFICATE

I, George B. Castro, Court Reporter, do hereby certify the foregoing 34 pages to be a true and correct transcript of the audio recording made by an Officer of Depo Resources at the time and place as set forth herein.

I do hereby certify that thereafter the transcript was prepared by me or under my supervision.

In testimony whereof, I have hereunto set my hand and seal of Court this 25th day of July, 2012.

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UNITED STATES AIR FORCE DIVERT ACTIVITIES AND
EXERCISE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING

TINIAN

San Jose, Tinian

June 26, 2012

PREPARED BY: GEORGE B. CASTRO
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**UNITED STATES AIR FORCE DIVERT ACTIVITIES AND
EXERCISE ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING**

Public hearing on the United States Air Force Divert Activities and Exercise Environmental Impact Statement, was taken on Wednesday, June 26, 2012, on the island of Tinian, before an Officer of Depo Resources.

WELCOMING & INSTRUCTIONS

COLONEL WILLIAM ORR p. 4

EIS BRIEFINGS

MAJOR PETER TOVES p. 6

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PUBLIC COMMENTS

BY MR. DON FARRELL	p. 23
BY MR. JOSEPH CRUZ	p. 25
BY MR. JOSE KİYOSHI	p. 26
BY MR. IKE QUICHOCHO	p. 28

(End Public Comments)

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1 SAN JOSE, TINIAN: WEDNESDAY, JUNE 26, 2012, 6:00 P.M.

2
3 UNITED STATES AIR FORCE DIVERT ACTIVITIES AND
4 EXERCISE ENVIRONMENTAL IMPACT STATEMENT
5 PUBLIC HEARING

6
7 COLONEL ORR: Well, the time is now
8 6:00. So, we'll go ahead and start the
9 hearing. I'd like to begin by thanking you all
10 for coming out tonight to this public hearing
11 for the United States Air Force Divert
12 Activities and Exercises Environmental Impact
13 Statements which you'll hear refer to as the
14 EIS.

15 Good evening, ladies and gentlemen.
16 I'm Colonel William Orr, and as indicated, I
17 will be the presiding officer for this public
18 hearing on the Draft Environmental Impact
19 Statement. This hearing is being held in
20 accordance with the provisions of the National
21 Environmental Act Policy Regulations that are
22 published by the Council on Environmental
23 Quality and corresponding Air Force Regulations
24 on Environmental Planning.

25 The purpose of this hearing is to

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1 receive public comments, that is, your comments
2 on the Draft Environmental Impact Statement
3 commonly referred to as the Draft EIS. Now,
4 before moving forward with the briefing, I'd
5 like to explain my role in this hearing. I am
6 the Chief Judge in the United States Air Force
7 Court of Criminal Appeals based at Andrews Air
8 Force Base in Washington D.C. I'm not assigned
9 to Headquarters Pacific Air Forces, and I am
10 not -- and I have not been involved in the
11 development of the Draft EIS.

12 I normally preside over the appeals of
13 military members who were tried in a trial by
14 court marshal. But I have been asked to serve
15 as the presiding officer in this hearing here
16 tonight. My role is to -- as presiding officer
17 is simply to ensure that we have a fair,
18 orderly, and impartial hearing, and that all
19 who wish to be heard will have a reasonable
20 opportunity to speak. In summary, it is
21 important that you understand that I will be
22 serving as an impartial moderator for this
23 hearing.

24 The hearing will be carried out in two
25 parts. First, we will have information from

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1 Headquarters Pacific Air Command and they will
2 define the proposed action and discuss the
3 Environmental Impact Analysis process including
4 what you can expect from the proposal. The
5 second part of the program is your opportunity
6 to comment on the analysis presented in the
7 Draft EIS. We will begin with the Air Force
8 presentation which will take approximately 30
9 minutes. And then we will receive your
10 comments on the Draft EIS. Major Toves, the
11 floor is yours.

12

13 ENVIRONMENTAL IMPACT STATEMENT BRIEFINGS

14

15 MAJOR TOVES: Yes, sir. All right.
16 The following topics will be discussed during
17 this brief presentation to familiarize you with
18 the Air Force and the proposed action and the
19 EIS. Following this presentation, we will have
20 the public hearing portion of this meeting
21 where you will be able to make verbal comments
22 on the EIS. Next slide, please.

23 Pacific Air Force's primary mission is
24 to provide ready air and space power to promote
25 U.S. interests in the Asia Pacific region

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1 during peacetime through crisis and in war.
2 The Pacific Air Force's area of responsibility
3 extends from the west coast of the United
4 States to the east coast of Africa, and from
5 the Arctic to the Antarctic, more than
6 100,000,000 million square miles. This project
7 is intended to support the overall PACAF
8 mission by developing a divert airfield in the
9 Marianas region. Next slide.

10 Under existing capabilities, there's no
11 divert or contingency airfield on U.S.
12 territory the western pacific that is designed
13 and designated to provide strategic operational
14 and exercise capabilities for U.S. Forces when
15 needed, and humanitarian airlift and disaster
16 relief in times of natural or man-made
17 disasters.

18 The purpose of the proposed action is
19 to establish additional divert capabilities to
20 conduct divert landings in support of current
21 emerging and future exercises on ensuring the
22 capability to meet mission requirements in the
23 event that access to Andersen Air Force Base or
24 other western pacific locations is limited or
25 denied.

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1 For example, during the 2011 earthquake
2 and tsunami in Japan, the need for disaster
3 response and humanitarian assistance arose
4 suddenly and without warning. If this had
5 occurred during scheduled training exercises at
6 Andersen Air Force Base, then neither either
7 training or response efforts might have been
8 delayed or impeded.

9 Additionally, similar natural or man-
10 made disasters could also impact Andersen Air
11 Force Base's mission requiring reliance on an
12 alternate design and designated divert
13 airfield. Specifically, there are four
14 operational requirements that are necessary to
15 successfully support the PACAF mission driving
16 a need for a divert airfield in the Marianas.
17 And they are: ensure airfield accessibility if
18 access to Andersen Air Force Base or other
19 western pacific airfields is limited or denied,
20 provide for contingency operations to include
21 humanitarian airlift efforts, accommodate
22 future increases in operational tempo and
23 associated training and achieve and sustain
24 readiness. Next slide.

25 For the purposes of this EIS, the study

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1 area includes existing airports in the Marianas
2 region, existing seaports and surrounding areas
3 including easements or routes needed to
4 transport petroleum products. Because of the
5 proximity to four deployed forces in the
6 western pacific, the Marianas provides the best
7 economic alternative for four deployed U.S.
8 Forces to train on U.S. lands and develop a
9 proposed additional and divert capabilities.
10 Next slide.

11 The Proposed Action. The proposed
12 action analyzed in the EIS is to develop
13 critical enhancements to an existing airport or
14 airports and associated infrastructure in the
15 Marianas to increase operational and divert
16 capabilities needed by the U.S. Air Force
17 especially humanitarian relief and joint
18 exercises.

19 The design for the proposed action is
20 based upon twelve KC-135's, which is a wide-
21 body tanker aircraft. However, the divert
22 airfield could support any combination of
23 cargo, fighter or tanker and other aircraft.
24 The combination of plane types would not exceed
25 the capabilities of the airport designed under

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1 the proposed action. Of the 700 support,
2 personnel would accompany the squadron of a
3 tanker aircraft. Next slide.

4 Specific components of the proposed
5 action include improving or constructing
6 airfield operational infrastructure which
7 includes an expanded runway area, parking
8 apron, associated pavement markings, lighting
9 and security, and other related infrastructure,
10 temporary munitions storage area, hazardous
11 cargo pad and arm/disarm pad, aircraft hanger
12 and maintenance facility, and jet refuel
13 receiving storage and delivery capability.
14 These improvements are considered construction
15 phase of the proposed action.

16 Implementation phase of the proposed
17 action will utilize the infrastructure improved
18 and developed during the construction phase.
19 Elements of the implementation phase include
20 unplanned emergency landings if other locations
21 in the western pacific are unavailable for
22 landing; periodic joint and unit level military
23 exercises, humanitarian airlift staging in the
24 event of an emergency or disaster, and ability
25 to support up to 700 temporary personnel during

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1 any of the events just described. Next slide.

2 To meet the purpose and need to
3 establish additional divert capabilities,
4 divert activities and exercises Draft EIS
5 analyzes two alternatives. For those of you
6 who participated in public scoping, you may
7 remember we originally discussed three
8 alternatives. In response to the public
9 scoping and after further evaluation of
10 potential alternatives, the Air Force has
11 analyzed two of the original three alternatives
12 to the proposed action. The development and
13 specifications of required facilities and
14 infrastructure varies depending on the existing
15 conditions at each alternative location.
16 Saipan International Airport and Tinian
17 International Airport are being considered as
18 potential alternative locations for airfield
19 improvements.

20 The Draft EIS also includes a no-action
21 alternative under which the U.S. Air Force
22 would not develop or construct facilities and
23 infrastructure at an existing airport or
24 airports, and PACAF's ability to achieve and
25 maintain military readiness will remain as is.

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1 For purposes of this EIS, the no-action
2 alternative serves as the baseline level of
3 current facilities in operations. As we
4 discuss the alternative, please remember this
5 is a no-change alternative.

6 The purpose of including a no-action
7 alternative in the Environmental Impact
8 Analysis is to ensure that agencies compare the
9 potential impacts of the proposed major federal
10 action to the known impacts of maintaining
11 existing conditions. Next slide.

12 The Saipan alternative is the preferred
13 alternative in the EIS because the analysis
14 shows it's more consistent with U.S. Air Force
15 operational requirements. Under the Saipan
16 alternative, the U.S. Air Force will develop
17 and construct facilities and infrastructure at
18 Francisco C. Ada Saipan International Airport
19 consistent with the facilities and
20 infrastructure described under the proposed
21 action.

22 The improved facilities and
23 infrastructure would support a combination of
24 cargo, fighter, and tanker aircraft, and
25 associated support personnel for periodic

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1 exercises, unplanned divert landings, and
2 humanitarian assistance and disaster relief in
3 the western pacific. Next slide.

4 Under the Saipan alternative, the U.S.
5 Air Force would also construct a two-boat fuel
6 storage tanks at the Saipan Harbor to store
7 fuel for aircraft operations. Next slide.

8 Under the Tinian alternative, the U.S.
9 Air Force will develop and construct facilities
10 and infrastructure at Tinian International
11 Airport, also known as West Tinian Airport,
12 consistent with the facilities and
13 infrastructure described under the proposed
14 action. The improved facilities and
15 infrastructure will support a combination of
16 cargo, fighter, and tanker aircraft, and
17 associated support personnel for periodic
18 exercises, unplanned divert landings, and
19 humanitarian assistance and disaster relief in
20 the western pacific. Tanker aircraft are the
21 more likely used in the immediate future. Next
22 slide.

23 Under the Tinian alternative, the U.S.
24 Air Force would also construct a fuel storage
25 tank at the Tinian Harbor to store fuel for

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1 aircraft operations. Next slide.

2 The analysis of the EIS indicates that
3 there are only a few environmental resources or
4 subjects that could potentially experience
5 major adverse impacts as a result of the
6 implementation of the proposed action. These
7 resources and subjects include noise, water
8 resources, biological resources, cultural
9 resources, and minority and low-income
10 populations. Next slide.

11 In the development of the final EIS,
12 the U.S. Air Force will identify best
13 management practices, mitigation efforts,
14 measures, and design concepts that could help
15 avoid any of these major adverse impacts to the
16 extent practicable. The U.S. Air Force is
17 committed to the unique environment, culture,
18 and people of the Marianas Islands and would
19 continue to conduct several environmental
20 stewardship programs to protect the environment
21 of the Mariana Islands. Next slide.

22 What we've given you is just a very
23 brief summary of the Draft EIS and a listing of
24 the associated impact areas and a description
25 of mitigation. The development of management

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1 actions and mitigations is an ongoing process.
2 And our primary reason for being here tonight
3 is to record your concerns and allow us to
4 continue developing these actions.

5 I emphasize the fact, this is only a
6 draft document at this time and we need your
7 assistance to continue refining the material.
8 The Draft EIS was prepared by the U.S. Air
9 Force to comply with the National Environmental
10 Policy Act or NEPA. The Draft EIS represents
11 compliance with NEPA and is an important part
12 of U.S. Air Force's overall commitment to
13 environmental stewardship. The EIS also helps
14 the U.S. Air Force comply with other applicable
15 federal and local regulations, requirements and
16 permits. To date, government agencies, elected
17 officials, community and environmental
18 organizations, and individuals have also
19 submitted comments at the scoping meetings or
20 provided written comments during the scoping
21 period. The comments received were considered
22 in the revisions to proposals and the
23 preparation of the Draft EIS.

24 The Draft EIS is the result of
25 extensive analyses in consideration of public

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1 and agency comments received during scoping
2 period. Your inputs here tonight can only help
3 to make it better. But this is not your only
4 opportunity to get involved in this process.
5 Next slide.

6 The U.S. Air Force is committed to
7 keeping citizens informed throughout the NEPA
8 process. In addition to holding these public
9 hearings, U.S. Air Force has established a
10 website www.pacafdivertmarianaseis.com to make
11 it easy for you to find and review
12 environmental documents. The Draft EIS is
13 posted on the website as well as additional
14 information and the fact sheets available here
15 tonight. You may also review a hard copy of
16 the draft EIS by visiting one of the nine
17 public libraries or mayors offices listed here.
18 Next slide.

19 At this time, the U.S. Air Force is at
20 the fore stage in this list of the project
21 schedule, providing the Draft EIS for public
22 review and comments. This phase is an
23 essential part of the NEPA process because it
24 allows the public to review the Draft EIS and
25 comment on the U.S. Air Force's analysis of

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1 potential environmental effects.

2 We encourage you to provide your input
3 here tonight or by July 23rd, 2012, so that it
4 can be considered in developing the analysis in
5 the final EIS and in the decision-making
6 process. Your input will be incorporated into
7 the final EIS.

8 Comments on the Draft EIS may be
9 provided orally or in writing here tonight or
10 by internet or voicemail or mailing in written
11 comments. Comments on the Draft EIS will be
12 considered equally and responded to during the
13 preparation of the final EIS. The final EIS is
14 scheduled to be released in November 2012, and
15 the record of decision is scheduled to be
16 signed in December of 2012. Next slide.

17 COLONEL ORR: Thank you, Major Toves.
18 As previously stated, we're here tonight
19 because the Air Force is analyzing the
20 environmental impact of the proposed divert
21 activities and exercises. The hearing is held
22 in accordance with the provisions of the
23 National Environmental Policy Act and
24 Regulations published by the Council on
25 Environmental Quality and the Air Force.

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1 The purpose of this hearing is to
2 receive your comments on the Draft EIS.
3 Tonight's hearing is just one of several
4 opportunities for public comments. Please keep
5 in mind that the hearing is not a debate. It
6 is not a vote on the Draft EIS, and it's not a
7 question and answer session. The hearing is an
8 opportunity for you to express your views and
9 concerns about the adequacy of the
10 environmental analysis and the potential
11 environmental impacts associated with this
12 proposal.

13 Comments about other unrelated issues
14 won't assist in the decision-making process.
15 And if you'd like to make a comment during the
16 hearing, please put your name on the sign- --
17 put your name on the sign-up sheet at the
18 submit comments poster station.

19 Now, during the first part of the
20 hearing, Air Force representatives provided you
21 with information on the divert activities and
22 exercises EIS as well as the description of the
23 project and environmental impact analysis
24 process. Tonight we have representatives
25 involved in the process -- in the project from

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1 Headquarters Pacific Air Command, Air Forces,
2 joint Base, Pearl Harbor, Hickam, in Hawaii.
3 We have Major Peter Toves, Colonel Dwayne
4 Thomas who is the Mission Support Group
5 Commander from Andersen Air Force Base, and
6 they're representing the proponent unit. We
7 also have representatives from Headquarters
8 Pacific Air Forces tonight, Ms. Carol Boudette,
9 Mr. Mark Peterson, and Ms. Julie Huang. And
10 transcribing tonight's hearing is Ms. Sullivan.

11 Now, in a moment I'll open the floor
12 for comments if you'd like to make a statement
13 on the record here tonight. Your comments will
14 provide the decision-makers, for the divert
15 activities and exercises proposal, the benefit
16 of your knowledge of the local area and your
17 concerns about the environmental analysis.

18 If you would like to provide written
19 comments rather than speak here tonight, or if
20 you would like to do both, written comments
21 sheets are available at the how-to submit
22 comments table. And you can hand your comments
23 in tonight at the table after the hearing or
24 you can mail them later. You can also provide
25 comments on the project website or by leaving a

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1 message on the project voicemail. If you mail
2 your comments, please send them to the address
3 printed on the fax sheets in comment cards.
4 The Air Force will consider comments received
5 throughout the Environmental Impact Analysis
6 process. But to make sure your comments are
7 considered and documented in the final EIS,
8 please submit your comments by July 23rd, 2012.

9 Now, if it looks like we're reading to
10 you, it's because we are. Now, I apologize for
11 that; but the briefings are written out to make
12 sure that each speaker covers all the
13 information for you.

14 Now, we'll move on to the public
15 comment part of the hearing. And this is how
16 it works. I will use this speaker sign-up
17 sheet that those of you who wish to speak
18 filled out, and call up the folks on the
19 microphone. If you'd like to make an oral
20 comment tonight and haven't signed up, could
21 you please raise your hand and we'll make sure
22 that we get your name.

23 All right. When I call your name, come
24 on down. And in order to help the
25 stenographer, please begin by stating your name

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1 and the name of the organization, if any, that
2 you represent. It will also help if you spell
3 out your last name. And please don't provide
4 any other personal information like your home
5 address or home phone number.

6 Again, comments are being recorded
7 verbatim. And they will be used to develop a
8 transcript and a permanent record of this
9 meeting, and will be published in the final
10 EIS. Your name will be included along with
11 your comments in the transcript and will be in
12 the final EIS. Personal home addresses and
13 phone numbers will not be published in the
14 final EIS.

15 We also ask that you not make any
16 electronic presentations tonight, but if you
17 would like to do so, you can certainly submit
18 them as part of your written comments later.

19 Now, this hearing is set to end at 8:00
20 tonight. And if everyone who has signed up at
21 that time has had a chance to do so, I'll ask
22 any speaker if they would like to expand on the
23 comments that you've made earlier. And if you
24 would like to do that, just let me know at that
25 time.

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1 Now, if you want to add something later
2 to your oral comments or if you would rather
3 not speak here tonight, you can submit your
4 written comments, and there is no page limit on
5 the written comments. And the Air Force gives
6 equal weight to oral and written comments.
7 Both become part of the official record and are
8 included in the final EIS. There also is a
9 Chamorro translator here tonight, and if you
10 don't feel comfortable making your remarks in
11 English, she will be glad to assist you.

12 Now, just one more reminder before we
13 get started. Please limit your comments to the
14 Draft EIS because that's the purpose of the
15 public comment period. Second, if you agree
16 with the previous speaker on something, you can
17 certainly say that. But you don't need to use
18 up your time repeating comments since it's
19 already on the record.

20 And finally, as I mentioned earlier,
21 this isn't a Q&A session; it is an opportunity
22 for you to put on the record your views and
23 your concerns about the proposal that you want
24 the decision-makers to consider. Any questions
25 that you pose during your comments will become

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1 part of the record and will be considered in
2 developing the EIS to make any final decision
3 on the proposal.

4 After we're done with the formal part
5 of this, Air Force representatives will be
6 available to continue to discuss things with
7 you. Does anybody have any questions on the
8 process of asking questions here tonight?

9 THE PUBLIC: (none so indicate)

10 COLONEL ORR: All right. Apparently
11 not. The first speaker then is Mr. Don
12 Farrell. Is he here?

13

14 PUBLIC COMMENTS BY DON FARRELL

15

16 MR. FARRELL: Thank you very much,
17 Colonel. My name is Don Farrell. I'm a 30-
18 year old resident of the Island of Tinian. I
19 find it very disappointing that the EIS has
20 identified Saipan as the number one preference
21 over the island of Tinian. For several
22 reasons. The primary reason of course is that
23 the covenant which established the Commonwealth
24 of the Northern Mariana Islands including the
25 technical agreement in Section 3 -- 803 of that

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1 Agreement, identified 2/3 of the Island of
 2 Tinian for military purposes and concluded that
 3 a -- not only have been identified for all
 4 future military uses, this included of course
 5 Farrillon and Medinesian and certainly on
 6 Saipan, and 2/3 of the island of Tinian. It
 7 also stated that should the United States ever
 8 need additional land, they would have to lease
 9 or purchase those lands from the CNMI; and that
 10 cost would be far greater than any cost that
 11 would be incurred by establishing the base here
 12 on Tinian.

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13 The second reason is, I believe that
 14 the AI's document is outdated. There are
 15 several economic development projects that are
 16 going on right now including creation of
 17 landfills, solid waste transfer station, and
 18 significant improvements to the harbor that are
 19 not listed in the EIS. I would like to suggest
 20 that the EIS meet technical work before it's
 21 submitted to the Secretary of the Air Force for
 22 consideration.

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23 The other thing is, that's simply
 24 stated, the people of Tinian sacrificed 2/3 of
 25 their island for the creation of the

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1 Commonwealth back in 1975 with the full
2 expectation that a very large multiservice
3 training base was going to be created on this
4 island for the economic development of the
5 people. And that base has never materialized.
6 By taking this opportunity to create a divert
7 base on Saipan which will have little advantage
8 economically to the people of Saipan, instead
9 placing it on Tinian, which would have
10 tremendous economic development opportunities
11 for the people of Tinian. They are doing a
12 disservice to the people of Tinian; and I
13 believe in the long run a disservice to United
14 States Air Force and to the United States of
15 America. Thank you.

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16 COLONEL ORR: All right. Thank you for
17 your comments. Our next speaker for tonight, a
18 Mr. Joseph Cruz.

19
20 PUBLIC COMMENTS BY JOSEPH CRUZ

21
22 MR. CRUZ: Thank you. I'm the vice
23 chairman for the Tinian Council. My comment
24 here is, it's been years that we've been
25 waiting for the base to be fulfilled here in

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1 Tinian. For the record, I am a son of the
2 former Senator Jose R. Cruz, he's one who
3 negotiate the CNMI to become a U.S. citizen.
4 It was President Ford at that time. And I was
5 a little boy. I remember when I went to
6 America with my dad, and spoke to the senators;
7 and I remember when he sang the "God Bless
8 America". So, here am I now, and I am so
9 honored for you guys to come and try and build
10 the base on Tinian. So, we ask you again that
11 you use Tinian. And we've been waiting for
12 America to fulfill what the promise for our
13 island of Tinian. Thank you again.

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14 COLONEL ORR: All right. Thank you.
15 All right. Our next speaker is Mr. Jose
16 Kiyoshi. If we could ask you to spell your
17 last name.

18
19 PUBLIC COMMENTS BY JOSE KIYOSHI
20

21 MR. KIYOSHI: Good evening. My name is
22 Jose Kiyoshi. My last name is spelled with a
23 K-I-Y-O-S-H-I. I'm the resident department
24 head for the Department of Commerce here in
25 Tinian. Hearing the Air Force searching for a

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1 divert airfield, we were happy. We were
2 motivated with the mayor, the cabinet members,
3 because -- that 30 years ago we gave up 2/3 of
4 our land. There were promises made and there
5 were promises broken. When we heard that the
6 Air Force were looking for a divert airfield,
7 like I said we were elated. As you guys know
8 that our mayor is not shy of bringing or
9 convincing the military to move here to Tinian;
10 because one of our biggest problems is
11 population-wise, we don't have the magnitude
12 population. And hearing from the news that
13 Saipan was preferred, we're kind of
14 disappointed. Two-thirds of our land has been
15 given away. And 30 years we're still waiting.
16 And as you guys know that just the past few
17 weeks, the Marine Corps left the island. When
18 they came, the businesses were happy, the
19 community were happy; so I hope again that the
20 folks here, gentlemen, will bring back to the
21 higher-ups and to please consider again trying
22 to make any efforts in choosing. You guys have
23 2/3, you know, military lease land; I'm hoping
24 that the Air Force will consider that
25 opportunity to be used. Thank you very much

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1 and good evening.

2 COLONEL ORR: All right. Our next
3 speaker is Mr. Ike Quichocho. Could I ask you
4 to spell your last name, please?

5

6 PUBLIC COMMENTS BY IKE QUICHOCHO

7

8 MR. QUICHOCHO: My last name is spelled
9 Q-U-I-C-H-O-C-H-O. Please allow me to welcome
10 all our visitors here to Tinian. I would like
11 to express some same similar sentiment that the
12 previous speakers shared, especially what Mr.
13 Farrell has mentioned before. People of Tinian
14 overwhelmingly support it for the leasing of
15 2/3 of the island to the military, and with
16 expectations that our small island be benefited
17 from the military coming in.

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18 However, I would like also to note that
19 -- first, I'll admit that I haven't really gone
20 through the details of the EIS and its impact.
21 And since we can't questions and so I would
22 also -- my concern about on one hand, I
23 heartily support any proposed use of our
24 island, like I said, to help our economy here.
25 And if that -- if Tinian is chosen as the

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1 divert site and the military should invest in
2 upgrading our airport, then that is even, you
3 know, there for us.

4 We also have a casino industry. And
5 I'm not sure how that will impact our gaming
6 industry. We may have only a single operating
7 casino, but I am optimistic that our industry
8 has the potential to grow; and that the Bibi
9 area, which is near the airport -- connected to
10 the airport, Tinian International Airport
11 property, is down in that area is on a prime
12 property on island that all prospective
13 investors at that time, that might have been
14 contacted, have expressed interest in investing
15 in that property.

16 So, if we build a big hotel and casino
17 with golf course, I don't know how, what impact
18 is is going to be. So -- hope this is very
19 helpful. But if I will review the details and
20 I think that it may not really affect because
21 it would be just use this on -- only on certain
22 short period of time, then I think that I would
23 welcome. And if it does not affect the
24 commercial operation side of the airport such
25 as cancelling flights, we're hoping that -- as

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1 you can see our runway has been -- there's been
2 a lot of improvement. And the purpose of that
3 is to have direct flights, international, you
4 know, flights; so we're still pursuing that.

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5 And so, you know, if -- like I said,
6 I'm not too familiar with how that will affect
7 our industry. But I'm not sure also whether
8 there's still a chance that Tinian will be
9 chosen after the EIS, when Saipan is the number
10 1 site. But if -- you know, if that can still
11 be changed, then please consider Tinian. I
12 think that -- like Mr. Farrell said and some
13 previous speakers that the people of Tinian are
14 expecting more. We have a very disadvantaged,
15 you know, situation being we're just so close
16 to Saipan, everything has to be duplicated and,
17 you know, it's a high cost of running
18 government operation, with the employees. The
19 bottom line is we want to have every
20 opportunity to develop the island or to help
21 our local economy. So, I will review the EIS
22 and see if this -- anticipate from for you to
23 submit a written comment. Thank you.

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24 COLONEL ORR: Thank you. All right.
25 Those are all the folks that have signed up for

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1 -- to speak tonight. Is there anyone else who
2 has not done so that would like to make a
3 comment at this time?

4 THE PUBLIC: (none so indicate)

5 COLONEL ORR: Is there anyone here that
6 has already spoken that would like to expand on
7 their comments?

8 THE PUBLIC: (none so indicate)

9 COLONEL ORR: All right. As I
10 mentioned earlier, the hearing is scheduled to
11 end at 8:00. And we have heard from everyone
12 who signed up to speak, and there's still time
13 to speak if you'd like to. And if you want to
14 speak, just please raise your hand and we'll
15 make sure that you have the opportunity to do
16 so.

17 All right. It appears that everyone
18 that wants to speak has done so. So, at this
19 time I'd like to thank you for your time and
20 interest in the Divert Activities and Exercises
21 EIS proposal. But keep in mind tonight is not
22 the end of your opportunity to participate in
23 the environmental review process. Again,
24 written comment sheets are available at the
25 registration table and you can turn in those

DEPO RESOURCES

George B. Castro

Court Reporter

Tel.(671)688-DEPO * Fax(671)472-3094

1 sheets in tonight or mail them later. The
2 mailing address is printed on the fax sheets in
3 the comment cards. The Air Force welcomes
4 public comments in writing, via voicemail at
5 any time during the Environmental Impact
6 Analysis process. To receive timely
7 consideration for the final EIS, all comments
8 must be submitted by July 23rd, 2012. And if
9 you'd like your own copy of the final EIS,
10 please tell one of the representatives at the
11 registration table or send a letter or postcard
12 asking for your own copy; and the Air Force
13 will send a copy of the final EIS to you. And
14 the Air Force representatives will be around
15 until around 8:00 if you have any additional
16 questions. There being no further folks to
17 speak, this hearing is adjourned. And I'd like
18 to thank you all for coming out tonight; and
19 please have a safe trip home.

20

21

22 (EIS Public Hearing concluded at 7:00 p.m.)

23 SAN JOSE, TINIAN: WEDNESDAY, JUNE 26, 2012.

24

25

DEPO RESOURCES
George B. Castro
Court Reporter
Tel.(671)688-DEPO * Fax(671)472-3094

REPORTER'S CERTIFICATE

I, **George B. Castro**, Court Reporter, do hereby certify the foregoing 32 pages to be a true and correct transcript of the audio recording made by an Officer of Depo Resources at the time and place as set forth herein.

I do hereby certify that thereafter the transcript was prepared by me or under my supervision.

In testimony whereof, I have hereunto set my hand and seal of Court this 25th day of July, 2012.

George B. Castro

DEPO RESOURCES

George B. Castro

Court Reporter

Tel.(671)688-DEPO * Fax(671)472-3094

July 3, 2012

Capt. Rebecca Heyse, PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-
Hickam, HI 96853
ATTN: PACAF Divert Marianas EIS

Dr. Justine B. de Cruz, Beach Biology
5 Osgood Ave.
New Britain, CT 06053

Re: Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and
Commonwealth of the Northern Mariana Islands

Esteemed Capt. Heyse:

Thank you for the opportunity to provide comments on the Draft Environmental Impact Statement (EIS) for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (CNMI). The clear format of the EIS, with numbered lines on each page, has simplified commenting on specific areas of the document. My remarks pertain almost exclusively to the portions of the EIS that describe and assess the effects of the proposed actions on terrestrial biological resources in the CNMI.

I was surprised that the Executive Summary, especially Tables ES 2 and 3, only mentions the impacts of the proposed alternatives on wildlife as being noise, possible displacement, and habitat loss. One of the most severe potential impacts on either Saipan or Tinian is the possibility of introduction and spread of the brown treesnake. The prospective impacts of this dreaded avian predator are well described in Section 4.6.1 and it is important that they be included in the ES as well.

Q194

Also disheartening was the lack of concrete information provided in ES 6, the Summary of Environmental Impacts. This section refers the reader to several, very long chapters in the EIS and a table, but omits any summary of environmental impacts. Less generalization and more specific information would be appreciated.

With respect to Table 3.6-2 starting on pp. 3-42, I have some questions about observations reported in the course of a couple of days of reconnaissance in Oct 2011 and during presumably more intensive surveys for Nightingale reed-warblers for the period of Feb and Mar 2012 on Saipan. First, could the rats reported as being the often urban *Rattus norvegicus* have been instead the more arboreal *R. exulans* (the Pacific rat), which is common in the forests of Saipan? How did the observers distinguish among the several *Rattus* species that might be present? I ask because without several morphological measurements one species could well be a mistaken for another. Second, the observers recorded Black drongos on Saipan? That would be note-worthy as the species is not usually present on the island (or on Tinian, as stated in Table 3.6-5). Some avian observers have confused starlings with drongos in the past and perhaps these identifications are also mistaken. The EIS surveyors reported seeing drongos frequently on both Saipan and Tinian (pp. 3-43 line 11, and pp. 3-55 line 9), which seems so unlikely that it is probably an error (either in transcription or identification) and the data should be verified. Third, although the White tern *Gygis alba* has sometimes commonly been called a fairy tern, it should not be

Q195

Q196

Q197

confused with the Fairy tern *Sternula nereis* that is mostly an Australian species. *G. alba* is common on both Saipan and Tinian while *S. nereis* is not. Did the observers actually see both species as recorded in Table 3.6-2? Was the airplane strike, noted as a fairy tern (pp. 3-46 line 37), in fact the Fairy tern, or one of the island's numerous White terns? And four, Rufous fantail is, I think, the more common spelling (as opposed to 'Roufous' in both Table 3.6-2 and 3.6-5).

Q197

To the list of wildlife attractant areas on pp. 3-47 and 3-48, it might be wise to add the dense, grassy wetlands extending southwest from Lake Susupe known as the CK Potholes. This area offers excellent habitat close to the airport for large water birds and flocking terns, many of which can be aircraft strike hazards.

Q198

On page 3-49 lines 27 and 28 (and in several other places in the document), the authors state that Section 7 consultations with the USFWS regarding impacts on endangered species, particularly the Nightingale reed-warbler and the Mariana common moorhen, are underway. Apparently the results of the consultations are not currently available and are only to be included in the final EIS. I was wondering why issuing the Draft EIS was not delayed until the consultations were completed so that the public might have a chance to comment on the proposed mitigation measures? Because "...short-term to long-term, direct and indirect, adverse impacts on threatened and endangered species would be expected from construction activities associated with the [sic] Alternative 1" (pp. 4-60 lines 42-44), would it not have been appropriate to include the supporting data for review in lieu of the opportunity to comment on the consultation results? As it stands, the Draft EIS does not give the public any information from the surveys conducted for endangered and threatened species in the proposed project area, so a critical component of the document is missing.

Q199

I believe that 'Micronesian gecko' is misspelled in Table 3.6-3 pp. 3-50. Also, Table 3.6-5 lists two types of Bridled white eyes observed during Oct reconnaissance surveys on Tinian. That is probably an error (perhaps in transcription) and should be corrected.

Q200

Unfortunately, the number of inaccuracies in the few tables reviewed makes one wonder about the veracity of the remaining information in the document. I hope this is a mistaken perception. Thank you once again for the opportunity to comment on the Draft EIS for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands. I am sending these remarks to you in both on-line and written format. I look forward to receiving a copy of the Final EIS.

Sincerely,

Dr. Justine B. de Cruz, Beach Biology



Divert Activities and Exercises Draft Environmental Impact Statement Public Review Period Comment Form



Location: Dandan CNMI Date: 6/24/12

The U.S. Air Force invites you to participate in the public review period for the Divert Activities and Exercises Draft Environmental Impact Statement (EIS).

Comments must be postmarked or received online by July 23, 2012 at midnight EST for consideration in the Final EIS and the Record of Decision. Comments may be submitted at the public meetings using this form, via the project website at www.PACAFDivertMarianasEIS.com, via voicemail by calling 1-855-200-6734, or via U.S. Postal Service at the address below.

Privacy Notice: Public comments on this Draft EIS are requested pursuant to the National Environmental Policy Act (42 U.S.C. 4321 et seq.). All comments received during the comment period will be made available to the public and considered during Final EIS preparation. The provision of private address information with your comment is voluntary. However, this information is used to compile the mailing list for Final EIS distribution, and failure to provide such information will result in your name not being included on the list. Private address information will not be released for any other purpose unless required by law.

Please Print

First Name: Reo Last Name: Arriola
Affiliation/Organization: Dandan Elem. School Title: Vice Principal
Address: PO Box 501370 CK
City: Saipan State: MP Postal Code: 96950
Primary Phone Number: 989-8007
Primary Email Address: reo.arriola@cnmips.org

Comments:

The CNMI PSS requires all schools to limit use of air-conditioning during the school day. We are allowed 4hrs per day, here at Dandan, we have it on 9-1pm.
I'm concerned about the possible noise & distraction during the times when we have our windows open (due to no aircon) here at our campus.

R201

Please continue on reverse side...

Please hand this form in or mail by July 23, 2012 to:
Capt Rebecca Heyse, PACAF/PA
25 E Street, Suite G-108
Joint Base Pearl Harbor-Hickam, HI 96853-4512
ATTN: PACAF Divert Marianas EIS

Ignacio Cabrera

I think Tinian Water Quality and Recharge of Groundwater Aquifers needed to be resampled for war world II hazardous waste contamination such as Jet fuel, Arsenic and the airplane junkyard site. } S202

12 July 2012

*Comment on Environmental Impact Statement for Divert Activities and Exercises,
Guam and Commonwealth of Northern Mariana Islands*

Comment: The Executive Agent should attempt to maximize the efficiency of this EIS while limiting the impact; this can be accomplished by linking it to other military/NEPA actions in the Mariana Islands. The EA should evaluate the alternatives of this EIS relative to potential future cantonment and training locations. One known example is the Marine Corps relocation to Guam and CNMI. The Marine Corps has expressed interest in training on Tinian so the build-up of the port and airfield facilities seems to make more sense to be focused on Tinian. This seems to be the greatest efficiency for the tax payer. At a minimum, this important fact needs to be considered in the analysis.

T203



Divert Activities and Exercises White Paper

Guam and the Commonwealth of the Northern Mariana Islands



Benigno R. Fitial, Governor

CNMI— Caller Box 10007 Saipan, MP 96950

T: 670-664-2280



Executive Summary

- ✍ The Commonwealth of the Northern Mariana Islands (CNMI) is supportive of the military and openly endorses a robust military presence in the Commonwealth
- ✍ The CNMI is especially pleased that the United States Air Force (USAF) has evaluated and considered the islands of Rota, Saipan, and Tinian for the proposed Divert Activities and Exercises initiative
- ✍ The CNMI looks forward to hosting the USAF Divert Activities proposed action within the Commonwealth
- ✍ The CNMI understands the USAF environmental analysis and the sensitivity to the financial implications and rationale on selecting Saipan as the Preferred Alternative
- ✍ The CNMI encourages the USAF to consider a more strategic and holistic approach, which leverages scarce Department of Defense resources on a joint service – joint international training complex on the island of Tinian
- ✍ Enhancing Tinian West Field supports the USAF Divert Activities mission, while also enhancing Tinian's training value
- ✍ Recent training exercises, inclusive of Marine Air Group 12 (MAG12) exemplifies the interoperability of missions in the region and justifies the need for a comprehensive integrated training venue
- ✍ Existing civilian infrastructure affords the potential of cost sharing, while the small civilian population does not generate significant compatibility challenges
- ✍ The choice of Tinian for the USAF Divert Activities is a step forward in fulfilling the intent of the long term lease between the Commonwealth and the United States
- ✍ The island of Tinian was pivotal to ending World War II and Tinian looks forward to serving the Nation once again.

U204



Background

The Commonwealth of the Northern Marianas has been and will continue to provide support for all military initiatives as the Nation and Department of Defense pivot toward the Pacific. The islands of Saipan and Tinian played major roles during World War II and Tinian in specific had the world's busiest airport during the war.

The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America defines the unique relationship between the Northern Mariana Islands and the United States, recognizing U.S. sovereignty but limiting, in some respects, applicability of federal law. On March 24, 1976, President Gerald Ford signed Public Law 94-241 (90 Stat. 263), enacting the Covenant. Some provisions became effective on that date, pursuant to Covenant Section 1003(a). Remaining provisions became effective on January 9, 1978, and November 4, 1986, the dates specified in Presidential proclamations issued pursuant to Covenant Section 1003(b)-(c). On the latter date, qualified residents of the Northern Mariana Islands became U.S. citizens.

The CNMI is extremely supportive of the military and openly endorses a robust military presence throughout the Commonwealth. The Guam Buildup EIS from 2009 and Record of Decision in 2010 indicate that Tinian would host four live fire training ranges. Many joint training exercises have been conducted on Tinian over the past 30 years.

U205

U206

Preferred Alternative

The Draft EIS has indicated that Saipan is the Preferred Alternative 1. CNMI officials understand that Saipan offers numerous advantages such as access to fuel vessels, better infrastructure, a control tower, and existing fuel storage capabilities. We also realize that any improvements made on Saipan will only enhance our islands and region for future military actions. If the USAF determines that Saipan is indeed so advantageous to this mission we will welcome the Air Force to the Commonwealth.

We realize that this study looks only at impacts the activities will have on environmental issues and weighs them accordingly. Our major concerns to the Preferred Alternative 1 are the noise impacts to the villages of Koblerville, Dan Dan and San Antonio, the requirement for additional land leases on and around Commonwealth Ports Authority (CPA) property and the Cultural Resource adverse impacts on AsLito/Isley Field National Historic Landmark.

U207

U208



Tinian

The island of Tinian was pivotal to ending World War II. The residents on the island of Tinian are willing and ready to host the Department of Defense and serve the Nation. Current training exercises, such as Operation Geiger Fury, have been extremely successful and underscore why the U.S. Government and the Government of Japan are evaluating a joint training complex, within the Commonwealth. The addition of the Divert Activities and Exercises initiative on Tinian allows DoD to leverage its scarce resources on a joint-service and joint international training complex. Tinian is well postured, having the required land to carry out the Divert Activities and Exercise mission, within the existing military lease area.

U209

The initial Tinian investment would be slightly higher if it is viewed as a stand alone action. However, as an initial component to a long term strategic initiative the delta in initial costs are insignificant and are easily off-set by long term return on investment. Investing in Tinian is in concert with and reinforces DoD's pivot to the Pacific Region.

U210

Joint Training

Strategic Long Term
Approach

100 % Operational Capacity

Closing

The CNMI extends our appreciation to the USAF for evaluating and considering Rota, Saipan and Tinian; for affording us the opportunity to express our thoughts on this critical action; and to hosting the Divert Activities and Exercises. We will continue to support and serve our Nation and the Department of Defense. The CNMI has a date with destiny and is ready to respond as the focus shifts to the Asia Pacific region.

U211

Comment Response Matrix
Public Draft Environmental Impact Statement (Public DEIS)
EIS for Proposed Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (CNMI)

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
A1	Environmental Justice Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS reveals that Saipan has disproportionately high minority populations and disproportionately high low-income populations in some areas, and that noise impacts would represent “a disproportionate impact on disproportionately high minority populations within District 10” (p. 4-114). It also states that “the USAF will conduct outreach to the potentially impacted communities to ensure they are engaged in the NEPA process and are part of the mitigation development process, if it is determined that mitigation is required” (p. 4-114). It is not clear what criteria the Air Force is using to determine when mitigation is required; nor is it clear whether or not the impacted community has yet been engaged. For outreach to be meaningful, especially to environmental justice communities, it should occur early in the NEPA process. Recommendations: • If outreach to the community on Saipan has not yet occurred, it should occur as soon as possible, with commenting opportunities provided, before the FEIS is published. Information on noise impacts should be provided in a clear way that is meaningful and understandable to the public. Materials should be translated as appropriate. • The FEIS should clarify what criteria the Air Force is using to determine when mitigation is required.	Community outreach to potentially impacted communities with high minority populations and low income populations on Saipan occurred in the form of special notices and two community outreach meetings the weekend prior to the public hearing on Saipan (June 23 and 24, 2012). Informational flyers which provided notice of these community outreach meetings were distributed by hand at local stores and other locations within the potentially affected neighborhoods. (Local convenient stores are centers for community information as they contain local community bulletin boards and are a general gathering place for the community.) A simplified fact sheet that focused on noise was developed for the meetings and meeting attendees were provided the opportunity to comment. A general informal town meeting format was used to provide the best interaction with the public. Additional commenting opportunity is provided for the Revised Draft EIS. Finally, the USAF proposes to remove fighter jets from its proposal and to reduce the number of KC-135 operations, thereby eliminating the noise concern to the potentially affected communities.	Postal Mail

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
A2	Environmental Justice Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS concludes that while disproportionate impacts would occur to minority and low-income populations, this impact would not be significant because it would occur intermittently up to 8 weeks per year (p. 4-114). This is confusing since the DEIS acknowledges significant noise impacts on page ES- 12. Additionally, Council on Environmental Quality's (CEQ) NEPA Regulations state that "significance cannot be avoided by terming an action temporary" (40 CFR 1508.27(b)7). The noise levels predicted in the DEIS are very high and much higher than the significance threshold of DNL 65 dB identified by FICON, in which the Air Force was a member (see footnote #9). Recommendation: The FEIS should acknowledge that noise impacts are significant, in general, and, therefore, significant to the environmental justice community.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
A3	Environmental Justice Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS identifies "quality of life" in the discussion of sociocultural issues and states that "quality of life relates to the ability of Saipan and Tinian to adequately support the Proposed Action, including how the island's general tranquility, family and community relations, cultural identity, infrastructure, social services, and standards of living could be affected" (p. 3-109). The DEIS does not discuss the impact of noise on the island's general tranquility in its discussion of sociocultural impacts. Based on the noise levels predicted, adverse sociocultural issues may not be negligible as stated in the DEIS (p. 4-113). Recommendation: The FEIS should reassess the sociocultural impacts of the proposed project, including impacts on the island's general tranquility.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Section 4.14 addresses sociocultural impacts.	Postal Mail
A4	General	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and	N/A	N/A	N/A	Based on our review, we have rated the DEIS's Preferred Alternative as Environmental Objections -Insufficient Information (EO-2) (see enclosed "Summary of Rating Definitions"). "EO" (Environmental Objections): The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
		Ecosystems Division				changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts. Category “2” (Insufficient Information): The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.	Mitigation and BMPs are provided in detail in the Revised Draft EIS in Section 4.16.	
A5	General	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	1-3, 1-10	N/A	N/A	The DEIS states that portions of the Marianas Trench Marine National Monument are not within the Study Area but are to the north and south of the Study Area (p. 1-3, line 32). However, the DEIS also states that “the Mariana Islands Range Complex (MIRC) and the [Divert Activities] Study Area are the same geographical areas” (p. 1-10, line 30). We note that the MIRC FEIS states that “the MIRC and the [MIRC] Study Area are the same geographical areas” (MIRC FEIS, p. ES-1) and that “portions of the Marianas Trench Marine National Monument lie within the [MIRC] Study Area” (MIRC FEIS, p. ES-2). Clarify this discrepancy in the FEIS.	The Draft EIS does not state that the MIRC and the Divert Study Area are the same geographical area. The paragraph referred to in the comment, previously on page 1-10 of the Draft EIS, is entirely dedicated to describing the MIRC EIS because it is incorporated into the Divert EIS by reference. The sentence referenced in the comment is a description of the MIRC and the MIRC Study Area, not the Divert Study Area as inferred. Text revised for clarification in the EIS.	Postal Mail
A6	General	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	4-31, 4-88	N/A	N/A	The DEIS mentions “demolition activities” that would occur for Alternative 1 (p. 4-31) but demolition was not identified in the project description, and p. 4-88 states that Alternative 1 does not entail building demolition. Clarify this discrepancy in the FEIS.	Alternative 1 does not include demolition activities. Text revised on former p 4-31 for clarification and on other pages in the EIS, as applicable.	Postal Mail
A7	General	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities	Table 1.5-1			Table 1.5-1 states that no permit will be needed under the Clean Water Act, but that a stormwater general permit will be needed for construction activities. Such permits are issued pursuant to the Clean Water Act.	Text in the table revised per comment.	Postal Mail

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
		and Ecosystems Division						
A8	Human Health and Safety Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS does not discuss the potential health effects from noise. There is increasing evidence that noise impacts have non-auditory health effects. A 2007 review article that summarizes studies from the National Library of Medicine database on the adverse health effects of noise concludes that “the potential health effects of noise pollution are numerous, pervasive, persistent, and medically and socially significant. Noise produces direct and cumulative adverse effects that impair health and that degrade residential, social, working, and learning environments with corresponding real (economic) and intangible (well-being) losses”. Long-term physical health effects have been linked to noise effects related to sleep disturbances, stress, cardiovascular response, and increased blood pressure. The mental health effects that noise is suspected to cause or contribute to include anxiety, emotional instability, mood changes, increase in social conflicts, neurosis, and psychosis. Recommendation: Disclose the physical and mental health impacts that have been linked to the project noise levels identified in the FEIS.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
A9	Human Health and Safety Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	Pursuant to Executive Order 13045 - Protection of Children from Environmental Health Risks and Safety Risks, the DEIS concludes that the Proposed Action would not result in disproportionate risks to children from environmental health risks or safety risks; however, because there is no discussion of noise impacts on children’s health and learning, this conclusion is not supported. The DEIS identifies 3 schools that fall into the 70 dB noise contour under the medium and high scenarios for Preferred Alternative 1 (p. 4-7, 4-12). Under baseline conditions, none of these land uses are within the 65 dBA DNL noise contour (p. 3-4). Dandan Elementary School noise would increase from 46 dBA to over 70 dBA, Koblerville Elementary School from 50 dBA to over 70 dBA, and Saipan Southern High School from 49 dBA to over 70 dBA. These are substantial noise increases - decibels are on a logarithmic scale, and an increase of 10 dBs represents a	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
						subjective doubling of loudness. Elevated noise levels at schools are of concern because research on the effects of aircraft noise on student learning indicates interference with reading, motivation, language and speech, and memory. These represent acoustical barriers to learning, especially for young children since they are more susceptible than adults to the effects of background noise on spoken communication. Goines and Hagler (2007), in their review article cited above, concluded that children are particularly vulnerable to the effects from noise interference with spoken communication. The inability to comprehend normal speech may lead to a number of personal disabilities, handicaps, and behavioral changes. Children who live in noisy environments have been found to have heightened sympathetic arousal indicated by increased levels of stress-related hormones and elevated resting blood pressure. Noise is assumed to accelerate and intensify the development of latent mental disorders and children may be particularly vulnerable to these effects because they may lack adequate coping mechanisms. The review article concludes that because children are particularly vulnerable to noise induced abnormalities, they need special protection, and the evidence is strong enough to warrant monitoring programs in schools and elsewhere to protect children from noise exposure. The DEIS does not identify these impacts to children's health and learning, nor are any mitigation measures identified, as required by 40 CFR 1502.16(h). Recommendations: Disclose impacts to children including potential health impacts and impacts to learning. Identify possible mitigation measures, including retrofitting impacted schools with appropriate measures to achieve the classroom acoustics standard of the American National Standards Institute (ANSI). This could include adding insulation, adding a second window pane or replacing windows with better sound attenuation, sealing gaps or leaks in windows and doors, installing baffles in vents and improving the exterior roofing, consistent with radon safety. Indicate whether noise insulation at these schools could achieve the ANSI acoustical performance criteria with the noise levels predicted from the Proposed Action, specifically the requirement that the one-hour average background noise level not exceed 35 dBA in core learning		

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
						spaces smaller than 20,000 cubic feet and 40 dBA in larger spaces. Identify possible funding sources for this mitigation and the likelihood that mitigation would occur. See comment below on noise mitigation.		
A10	Infrastructure and Utilities	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The description in the DEIS of the water supply quantity and quality conditions on Saipan is largely accurate with regard to water shortages, the lack of a 24-hour water supply for residents, and high chlorides (saltiness) of the existing groundwater supply. The DEIS states, however, that “it is assumed that both capacity and quality of water at GSN are sufficient to support personnel under both the construction phase and the implementation of the Proposed Action” (p. 3-90). It also characterizes impacts as minor and adverse, noting that they would occur on an already strained system (p. 4-100). Even though the water demand from the project is relatively small, if the BEAR site option is used for billeting and water withdrawal is concentrated in one area (in the vicinity of the intersection of Flame Tree Road and Airport Access Road, p. 2-26), the increase in demand for the 8 weeks per year could have significant localized impacts on the water distribution system in that area. In addition, because of the noted water quality problems, water is deemed too salty for drinking and most residents on Saipan purchase bottled water or groundwater treated by reverse osmosis for drinking. Recommendation: The FEIS should evaluate localized impacts to the water supply system for the 8 weeks during which exercises would occur. The Air Force should consider the existing deteriorated system in determining significance of these impacts. We recommend working with the CUC to determine the intake locations that would minimize localized impacts, and whether any additional facilities (additional source capacity and/or storage) are warranted. The commercial lodging option appears likely to reduce localized impacts to the water supply system since it is less centralized. If the BEAR Site is used for billeting, the FEIS should note the probable need for bottled drinking water or treatment of some water via reverse osmosis.	The USAF has revised its proposal based on agency and public comments on the Draft EIS. Due to the reduced scope of the revised proposal, the USAF is providing an additional opportunity to comment on the proposed action and alternatives by making a Revised Draft EIS available to agencies and the public. The EIS has been revised to state that the USAF will coordinate with CUC to avoid localized impacts.	Postal Mail
A11	Infrastructure and Utilities	Agency Stakeholder EPA Region 9	N/A	N/A	N/A	The DEIS states that a 2-inch water supply line would be required for the proposed hangar, maintenance facility, and billeting areas (p. 4-96). A water line of this size may not	Text has been revised to state he proposed maintenance facility would require permanent 6-inch water connections for the	Postal Mail

Comment Reference Number	Category	Reviewer	Page	Line	Section	Comment	Response	Comment Method
		Enrique Manzanilla, Director Communities and Ecosystems Division				be consistent with local codes and could be insufficient to provide flows needed for fire-fighting. Recommendation: The FEIS should indicate whether a 2-inch water line is consistent with local codes and with military codes.	fire water line and 1.5-inch domestic water line connections.	
A12	Infrastructure and Utilities	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS estimates the daily increased water demand at approximately 68,000 gpm when the facilities are in use. This is roughly equivalent to one or two of the existing Commonwealth Utility Corporation (CUC) groundwater wells. Recommendation: Coordinate with CUC to ensure sizing is sufficient for all water needs.	Text revised per comment in Section 4.13 to state that implementation would result in the consumption of up to 25,970 gallons per day, due to the reduction and personnel that would be on-island during exercises. Text also revised to state that the USAF would coordinate with the CUC to ensure the water supply is sufficient.	Postal Mail
A13	Infrastructure and Utilities	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS accurately describes the conditions of the existing wastewater and sewer systems on Saipan, noting that they are not in compliance with their EPA National Pollutant Discharge Elimination System (NPDES) Permit requirements and the Clean Water Act. While capacity at the wastewater treatment plants is not an issue, the flows, although minor, could exacerbate the noncompliant condition. CUC is currently undergoing a Master Planning process which details the necessary upgrades that are needed to bring the plants into compliance. Recommendation: We recommend coordinating with CUC to determine how the Air Force can utilize the wastewater and sewer system in a manner that is consistent with the proposed draft master plan for Saipan and that will not contribute to noncompliance.	Text revised per comment in Section 4.13.	Postal Mail
A14	Natural Resources	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems	4-60, 4-61	37	N/A	Biosecurity is a concern for the Preferred Alternative 1 as well as Alternative 2 on Tinian. Increased aircraft activities will increase the potential for the introduction of invasive species, including the brown tree snake, which the DEIS indicates has already been detected on Saipan (p. 4-60). The DEIS states that the U.S. Air Force will commit to implementing 100 percent inspection of all outgoing aircraft from Guam for the brown tree snake, and that redundant inspections “will be” conducted on Saipan (p. 4-60, line 37).	The text was modified to state that redundant inspections would be conducted on Saipan or Tinian as required. Impacts of other invasive species are discussed in Section 4.6. As stated in Section 4.16 and referred to in Section 4.6, the USAF will develop and implement Hazard Analysis and Critical Control Point Plans to evaluate the risks of transporting and introducing	Postal Mail

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		Division				On page 4-61, the DEIS states that redundant inspection "could be" conducted on Saipan during project development and training activities (line 37). The DEIS does not discuss the potential for other invasive species to be introduced on Saipan or Tinian from the project. According to the U.S. Fish and Wildlife Service (USFWS), other invasive species of concern in the CNMI are the little fire ant, the greenhouse frog, and the coconut rhinoceros beetle. Recommendation: Clarify in the FEIS whether the Air Force will commit to redundant inspections on Saipan during project development and training activities, and identify whether there is sufficient capacity and infrastructure to perform these inspections or whether additional capacity is needed. Work with USFWS to obtain their concurrence on the biosecurity program	invasive species. The USAF completed Section 7 consultation with USFWS and would implement invasive species control and interdiction requirements as described in the <i>Biological Opinion for Divert Activities and Exercises, at Saipan International Airport, CNMI</i> . The text of the EIS was revised in Section 4.6 to include information obtained during that consultation process. The USAF is currently undergoing Section 7 consultation for the Proposed Action on Tinian.	
A15	Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The noise impacts predicted to occur to residents on Saipan for 8 weeks per year are severe, with some residents exposed to levels that could put them at risk for potential hearing loss. Despite these findings, the noise impact assessment is minimal, and does not provide supplemental noise analysis (metrics other than minimum Day-Night Average Sound Level or DNL), nor does it evaluate potential for hearing loss for populations exposed to DNL 80 decibels and above. This appears inconsistent with an applicable DoD internal directive that requires hearing loss risk be estimated for these populations. According to Table 1 of the Guidelines for Considering Noise in Land Use Planning and Control, Federal Interagency Committee on Urban Noise, 1980, the noise exposure class for noise levels above DNL 75 dB are classified as "severe exposure".	The noise analysis in Section 4.1 was revised based on input from public and agency comments, Headquarters Air Force, AFCEC, and FAA. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
A16	Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS predicts that 11,095 residents would be periodically exposed to noise levels between DNL 65 and 80 dBA (A-weighted decibels). Land use compatibility guidelines published by the Federal Interagency Committee on Urban Noise (FICUN), an interagency committee - of which Department of Defense was a member - formed to develop Federal policy and guidance on noise, concluded that residential land use is incompatible with noise levels above DNL 65 dB unless measures are taken to achieve additional Noise Level Reduction (NLR). DoD's own policy regarding DoD air installations echoes these guidelines	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis and is presented in Section 4.10. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby	Postal Mail

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						when it states that residential use is discouraged in areas exposed to DNL 65-69 dB and strongly discouraged in areas exposed to DNL 70-74 dB. The fact that the noise impacts would only occur for 8 weeks per year does not eliminate this land use incompatibility.	eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
A17	Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The Preferred Alternative predicts that a sizable portion of Dandan would receive noise levels at DNL 75 dB or above. The DEIS also acknowledges that this noise [noise levels at DNL 75 dB or above] will disproportionately affect minority and low-income populations, yet there is no evidence that outreach to these communities has occurred. We are also concerned that three schools will receive impacts greater than DNL 70 dB.	Community outreach to potentially impacted communities with high minority populations and low income populations on Saipan has occurred in the form of special notices and two community outreach meetings the weekend prior to the public hearing on Saipan (June 23 and 24, 2012). Informational flyers which provided notice of these community outreach meetings were distributed by hand at local stores and other locations within the potentially affected neighborhoods. (Local convenient stores are centers for community information as they contain local community bulletin boards and are a general gathering place for the community.) A simplified fact sheet that focused on noise was developed for the meetings and meeting attendees were provided the opportunity to comment. A general informal town meeting format was used to provide the best interaction with the public. Additional commenting opportunity is provided for the Revised Draft EIS. Finally, the USAF proposes to remove fighter jets from its proposal and reduce the number of KC-135 operations, thereby eliminating the noise concern to the potentially affected communities.	Postal Mail
A18	Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems	N/A	N/A	4.1	We have significant concerns regarding the noise impacts to residents in Saipan under Preferred Alternative 1, especially under the medium and high scenarios evaluated. The noise analysis under the high scenario indicates that, for an average busy day during the military exercises 8 weeks per year, 11,095 residents would be periodically exposed to noise levels within the 65 to 80 dBA (A-weighted decibels) DNL (Day-Night Average Sound Level) noise contours (p. 4-12). The DEIS states that, according to the U.S. Air Force, Federal Aviation Administration (FAA), and Housing and	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility and noise impact assessment was completed based on these revisions to the noise analysis as presented in Section 4.1 and 4.10. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high	Postal Mail

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		Division				Urban Development (HUD) criteria, noise-sensitive land uses at or above the 65 dBA DNL contour are considered to be within “areas of high noise exposure” (p. 4-4). EPA believes that it is also important to disclose that, according to Federal Interagency Committee on Urban Noise (FICUN) Guidelines for Considering Noise in Land Use Planning and Control (1980), which were developed by the same agencies as above, noise exposures greater than DNL 65 dB are generally not considered compatible with residential land use. The FICUN Guidelines treat areas above DNL 65 dB as marginally compatible to incompatible with residential land use, depending on the degree of noise level reduction (NLR) provided in affected structures. The FICUN land use compatibility guidelines for noise exposure between DNL 65-70 dB call for building codes to require at least 25 dB outdoor to indoor NLR; and, for exposures between DNL 70-75 dB, at least 30 dB NLR is recommended. FICUN considered noise exposure above DNL 75 dB to be "incompatible" with all residential uses except transient lodging with NLR of at least 35 dB. The DEIS does not discuss the housing structures present on Saipan in relation to noise attenuation potential and whether the current buildings are capable of achieving NLR levels specified above for the indicated noise exposures. Based on Figure 4.1-4, it appears that, of the over 11,000 residents that would be impacted by 65+ dBA DNL, a large percentage would fall above the 70 dBA DNL noise contour, and some above the 75 and 80 dBA DNL. This is a wide range, and the analysis does not provide a breakdown of population exposed for each noise contour. Recommendation: The noise analysis in the FEIS should be improved. We recommend that the following be included: • Provide a breakdown of the population that would be exposed in each noise contour. Quantify the number of residents that would be “highly annoyed” as defined in Table 4.1- 1 (Feingold data); • Quantify the number of dwellings that would fall under each noise contour. Disclose that noise levels above 65 dB are normally considered incompatible with residential land use; • Discuss the construction materials and methods of housing	noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	

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						structures on Saipan in relation to noise attenuation potential and indicate the probable noise level reduction these structures would be capable of achieving.		
A19	Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	Despite the high noise levels predicted, no supplemental noise analysis was performed. Supplemental metrics are useful in characterizing specific events and conveying a clearer understanding of the effects impacted communities can expect on their living and working environments as a result of the Proposed Action. For example, single event analysis is useful in evaluating sleep disturbances. Since, for this project, it is assumed that 30% of the flights will occur at night (p. 4-3, 6, 9), this would be an appropriate noise metric to use. No single event noise levels were identified for the Preferred Alternative 1. Similarly, metrics expressing noise impacts in terms of speech interference are also useful for public disclosure. The analysis in the Marine Corps' West Coast Basing of the F-35B EIS presented data for both indoor speech interference and indoor sleep disturbance for representative residences with windows open and windows closed. The F-35B EIS also identified the number of housing units affected in each noise contour above DNL 65 dB, which is useful for disclosing impacts and expressing the mitigation burden for the soundproofing of dwellings. Recommendations: The noise analysis in the FEIS should be improved. We recommend that the following be included: • Conduct supplemental noise analysis to disclose indoor speech interference and indoor sleep disturbance for the 8 week training period, such as was performed in the Marine Corps' West Coast Basing of the F-35B EIS. Discuss sleep disturbance results with reference to the World Health Organization's guidance that equivalent sound pressure level should not exceed 30 dBA indoors for continuous noise, and 45 dB SEL for single events if negative effects on sleep are to be avoided.	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment including supplement noise analysis was completed based on these revisions to the noise analysis in Sections 4.1 and 4.10. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available to the public.	Postal Mail
A20	Noise	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director	N/A	N/A	N/A	The DEIS predicts noise exposures at and above DNL 75 dB, with some above DNL 80 dB, yet there was no analysis to assess the potential for hearing loss. We believe that when noise-sensitive receptors are identified in the 75 dB+ noise contour, risk of hearing loss should be evaluated. DoD policy in "Methodology for Assessing Hearing Loss Risk	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment including potential hearing loss was completed based on these revisions to the noise analysis in	Postal Mail

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		Communities and Ecosystems Division				and Impacts in DoD Environmental Impact Analysis" applies whenever the 80 dB DNL contour extends into populated areas off base and requires that hearing risk loss be estimated for this population. Recommendations: The noise analysis in the FEIS should be improved. We recommend that the following be included: Estimate potential for hearing loss for noise exposures at DNL 75 dB and above. Provide single event analysis (e.g. SEL metrics) for Alternative 1, as is provided for Alternative 2, and include this information in the hearing loss analysis. Discuss results in terms of the World Health Organization's 120 dB guideline threshold for hearing impairment in children. It may be helpful to discuss the frequency of expected noise from the project in terms of hearing loss. Noise-induced hearing impairment occurs predominantly in the higher frequency range of 3,000–6,000 Hz, with the largest effect at 4,000 Hz.	Sections 4.1 and 4.10. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
A21	Noise: Cumulative	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS acknowledges that noise impacts on noise-sensitive receptors during implementation of the preferred alternative would be significant (p. ES-12); however, it does not acknowledge cumulative noise impacts. Table ES-3 on p. ES-22 does not address cumulative noise impacts from implementation of the preferred alternative nor does the text on page 5-9 address cumulative operational noise impacts. Instead, the DEIS states that no cumulative impacts would be expected on the noise environment due to air operations, because the air training operations were analyzed in the MIRC EIS, for which a Record of Decision was issued. The MIRC EIS, however, did not include training use of the Saipan International Airport, so the impact assessment for the aircraft operations in the MIRC EIS was for noise receptors on Guam. Noise impact assessments are necessarily localized and must involve the actual receptors that would be impacted under the Proposed Action. Cumulative noise impact assessments evaluate project impacts to these receptors in combination with noise from other past, present and reasonably foreseeable future actions. Recommendation: Conduct an impact assessment for noise impacts that occur incrementally from the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency	No cumulative noise impacts at the Saipan Airport are expected because there are no past, present, or reasonably foreseeable actions with respect to additional flight operations planned for the Saipan Airport. Construction projects are planned and are analyzed in the EIS; however, at this time, many of these projects do not have definitive locations or construction dates. Additionally, The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail

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						(Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).		
A22	Noise: Mitigation	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS does not discuss noise mitigation, and suggests that it is not clear that noise mitigation is necessary. EPA does not believe that such a conclusion is supported by the DEIS, and recommends that the Air Force reconsider this matter and evaluate possible changes to the preferred alternative or a new alternative that could reduce the noise impacts.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. BMPs and mitigation measures are provided in Section 4.16 of the EIS.	Postal Mail
A23	Noise: Mitigation	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division				As mentioned, no mitigation measures for noise are identified despite the very high increases in noise that would occur during 2 months of the year. We understand that there is no existing Department of Defense program that permits appropriated funding for off-base sound attenuation; however, since GSN is a civilian airport, it is eligible to apply for financial assistance from the FAA Part 150 program for noise mitigation. This would require updating the Noise Exposure Maps and the Noise Compatibility Plan, as well as matching funds from the airport. According to the DEIS, the Department of Defense will need to negotiate space for military improvements with the authority running the airport, and any additional costs for construction and ongoing maintenance to the operating authority would be addressed in the mutual use agreement (p. 1-14). Recommendations: Identify mitigation measures for noise impacts in the FEIS per 40 CFR 1502.16(h). We recommend that the Air Force work with the airport authority to ensure that the mutual use agreement includes sufficient financial contributions from DoD for ongoing maintenance so the authority can afford to pursue FAA Part 150 program funding.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. BMPs and mitigation measures are provided in Section 4.16 of the EIS.	Postal Mail
A24	Proposed Action	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director	N/A	N/A	N/A	The project description and rationale for the alternatives are not clear. The DEIS states that the KC-135 Stratotanker aircraft is being used as the design aircraft for cargo and tanker aircraft in the EIS and that the KC-135 dimensions will be used to develop space requirements for airport facilities and infrastructure under the Proposed Action (p. 2-	12 KC-135s is an operational unit within the USAF commonly known as a squadron. USAF planners are required to plan activities using USAF operational units; therefore, under the Proposed Action, 12 tankers is a standard squadron package for	Postal Mail

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		Communities and Ecosystems Division				2). The Proposed Action, whether taking place at Saipan International Airport (GSN)(Alternative 1) or Tinian International Airport (Alternative 2), was devised to accommodate 12 KC-135 aircraft “to meet the purpose and need of the Proposed Action”; however the DEIS does not state why 12 aircraft were chosen or how this number was determined. This number is important because it is used to scale the number of fighter jets that would be used during training (a size ratio of 1 to 2 was assumed for cargo planes to fighter jets, therefore the Proposed Action includes the use of 24 fighter jets) and it is these that are the source of significant noise impacts. Recommendation: The FEIS should explain why 12 KC-135s are needed to meet the purpose and need of the Proposed Action and how this was determined. Discuss the nature of the different scenarios for the reader. For example, explain situations that would require both military training and humanitarian assistance simultaneously at a divert airport (medium scenario)	larger aircraft. Additionally, the ISR/Strike capability EIS proposed to establish 12 KC-135 aircraft in the region at Andersen AFB. Therefore, should Andersen AFB be closed for standard operations as described in the Purpose and Need, 12 KC-135s could require a divert operating location.	
A25	Proposed Action	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	For the analysis of the implementation phase, the DEIS assumes that any mix of joint fighter, cargo, and tanker aircraft, not to exceed the design capabilities of the airport, could be diverted to or exercised from the airport selected. Representative scenarios of possible aircraft mixes are used to analyze potential environmental consequences. The “low scenario” consists of 12 KC-135’s, the “medium scenario” of 6 KC-135’s and 12 fighter jets, and the “high scenario” consists of 24 fighter jets. The DEIS also includes 3 runway options for the 2 alternative airport sites: Runway Option A - a runway extension to 10,000 ft (the optimum runway length for the KC-135); Runway Option B - a runway extension less than 10,000 ft; and Runway Option C - no runway extension. The DEIS states that a shorter runway (i.e., no extension) can accommodate KC-135’s and “the location could still support divert, exercise, and humanitarian relief activities” but each KC-135 would need to operate at a reduced load capacity (p. 2-2). Thus, according to the DEIS, operating at a reduced load capacity would meet the purpose and need for the project. Recommendation: Since the DEIS indicates that 12 KC-135’s operating at a reduced capacity on a shorter runway would meet the purpose and need for the proposed project,	12 KC-135s are required under the Proposed Action because this number of tankers is a standard squadron package. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations. The USAF proposes to only operate up to 4 KC-135 aircraft during military exercises.	Postal Mail

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						it is reasonable to consider whether some lesser number of KC- 135s operating at full capacity on a longer runway would also meet the purpose and need. If it would, an alternative with a design capability for fewer KC-135's (and, consequently, fewer fighter jets) should be evaluated in the FEIS. If it would not, the FEIS should explain why. Additionally, we recommend that the Air Force assess whether an alternative that would not utilize the medium and/or high scenario at Saipan International Airport would meet the purpose and need.		
A26	Proposed Action Natural Resources	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	4-59	N/A	N/A	Preferred Alternative 1 would remove 14.3 acres of forest, primarily for the east parking apron and ramp and the bulk fuel storage (p. 4-59). The maintenance facility will result in removal of just under an acre. Based on Figure 2.3-6, if commercial lodging is utilized for billeting and the BEAR site is not needed, space may be available for the fuel tanks and hydrant system at this location to avoid removal of up to 5 acres of forest. Additionally, based on Figure 2.3-5, it appears there could be non-forested space across the road from the proposed maintenance facility that could be utilized for this structure. Recommendation: Explore and discuss in the FEIS whether forest removal has been minimized by site planning, including the possible adjustments to facility locations mentioned above.	The USAF has presented modified alternatives in the Revised DEIS to minimize impacts to vegetation and potential habitat. See Section 4.6 for revisions.	Postal Mail
A27	Proposed Action Noise: Mitigation	Agency Stakeholder EPA Region 9 Enrique Manzanilla, Director Communities and Ecosystems Division	N/A	N/A	N/A	The DEIS implies that a design capability less than that proposed, i.e., operation of the same number of aircraft at a reduced load capacity, would meet the purpose and need for the proposed project. EPA recommends, in addition to an improved noise analysis, that alternatives be explored that would improve the airport to a comparable design capability by reducing the number of planes rather than the load capacity of each plane. We also request an evaluation as to whether an alternative that would operate under only the "low scenario" (no fighter jets) would meet the purpose and need. In all cases, noise mitigation measures should be incorporated into the Proposed Action.	12 KC-135s are required under the Proposed Action because this number of tankers is a standard squadron package. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations	Postal Mail
B27	Marine Bio	Agency Stakeholder NOAA NMFS Protected	3-61		3.7	The DEIS states in Section 3.7, Marine Biological Resources, that both humpback whales and sperm whales have been sighted off of Saipan, and that humpback whales may migrate to waters off of Saipan for breeding purposes.	Text revised in Section 4.7 to be consistent with the list provided by NMFS.	Postal Mail

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		Resources Division Alecia VanAtta				It also notes that sperm whales have been sighted near the island of Tinian (DEIS pg. 3-61). ESA-listed species under NMFS jurisdiction that are known or expected to occur in waters of the Mariana Archipelago include green sea turtles (<i>Chelonia mydas</i>), hawks bill sea turtles (<i>Eretmochelys imbricata</i>), leatherback sea turtles (<i>Dermochelys coriacea</i>), and olive ridley sea turtles (<i>Lepidochelys olivacea</i>), as well as blue whales (<i>Balaenoptera musculus</i>), fin whales (<i>Balaenoptera physalus</i>), humpback whales (<i>Megaptera novaeangliae</i>), sei whales (<i>Balaenoptera borealis</i>), and sperm whales (<i>Physeter macrocephalus</i>). Numerous other marine mammals also occur within the archipelago and are protected under the MMPA (see attached list).		
B28	Marine Bio	Agency Stakeholder NOAA NMFS Protected Resources Division Alecia VanAtta	N/A	N/A	N/A	The DEIS states that fuel would be shipped to the harbors to support the proposed increase in military air traffic; however, it does not include an analysis of the impacts of increased vessel traffic (to supply fuel or any other supplies) on protected marine species or their habitats. Instead, the effects section of the DEIS focuses on construction and operations at the airfields. The EIS should consider the potential impacts of increased shipping to the selected island to supply the construction and to provide the extra fuel and military supplies that would be required in support of the proposed action, as well as any other expected marine activities.	Impacts from vessel traffic are not expected as it is anticipated that there would be minimal increase in maritime traffic beyond traditional maritime traffic levels. Recent economic downturn in the CNMI as a result of the closure of the garment industry has reduced ship movements into Saipan. In like manner, Tinian has had higher maritime traffic levels in the recent past when Tinian was used as trans-shipping port for the fishing industry. After the initial filling of the fuel storage tanks at either location, the periodic arrival of tankers for replenishment should be within existing levels of maritime traffic. The text was revised to clarify that there would be no impacts on marine species or their habitats because all fuel shipments would occur through the existing fuel supply chain. No increase beyond existing vessel traffic would occur under the Proposed Action. Text was revised in the EIS in Section 4.7 and stated in a letter to NOAA. After the Draft EIS was released, the USAF received concurrence from NMFS that the Proposed Action is not likely to adversely affect marine species.	Postal Mail
B29	Marine Bio	Agency Stakeholder	N/A	N/A	N/A	The DEIS states Tinian Harbor supports limited shipping of shallow draft vessels and has a limited capability to accept	No improvements are proposed for the Tinian harbor. The harbor can currently	Postal Mail

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		NOAA NMFS Protected Resources Division Alecia VanAtta				fuel shipments (Section 2.2.2.3 pg. 2-10). Based on this statement it appears that harbor improvements would be required to accommodate the expected shipping of shallow draft vessels. As such, the Tinian alternative should include an assessment of any required harbor work	accept shallow draft vessels and it is proposed that fuel be delivered to Tinian using the existing fuel supply chain using these shallow draft vessels. As stated in Section 2.4.2.2 "Jet fuel would be received at the current port in Tinian from a shallow draft tanker; shallow draft tankers currently dock at the Tinian port and it is assumed that no improvements to the harbor would need to be made."	
B30	Marine Bio: Cumulative	Agency Stakeholder NOAA NMFS Protected Resources Division Alecia VanAtta	4-68, 4-69	9 and 21, 5 and 16	N/A	We recognize that your agency has made a preliminary determination in the DEIS that the proposed action may affect, but is not likely to adversely affect, protected marine species (DEIS pg. 4-68 lines 9 and 21; pg. 4-69 lines 5 and 16). However, the DEIS is currently insufficient to justify that determination, and we're recommending that consideration be made to the additional points described above to insure a full assessment on the potential impacts of the project regarding sea turtles and marine mammals.	Because there will be no appreciable increase in shipping based upon the projected fuel requirements, or modifications required to harbors for this project, the EIS addresses all potential impacts on listed marine species including sea turtles and marine mammals. Any impacts on marine biology would be analyzed under the training which is covered under the MIRC letter of authorization and the MITT EIS and associated Biological Opinion completed in July 2015. Appendix B of the EIS contains the correspondence between the USAF and NMFS with regard to the Not Likely to Adversely Affect determination	Postal Mail
B31	Natural Resources	Agency Stakeholder NOAA NMFS Habitat Conservation Division Gerald W. Davis	N/A	N/A	N/A	According to the DEIS, the GSN Alternative will increase impervious surfaces by up to 2,392,200 square feet and the TNI Alternative will increase impervious surfaces by up to 4,090,800 square feet. Both alternatives are located within the coastal zone, in close proximity to nearshore marine resources, including Essential Fish Habitat (EFH). Previous large scale clearing and grading projects in the Mariana Islands have resulted in significant impacts to surface and nearshore water quality, EFH, and coral reefs. The DEIS states that: "With proper sediment and erosion controls and storm water management BMPs in place, it is assumed that storm water runoff during construction activities would result in short-term, indirect, minor, adverse impacts on water quality in down gradient surface water bodies and nearshore waters." (p. 4-54 lines 13-16) However, the DEIS	As discussed in Section 4.5, DOD policies, compliant with Federal and CNMI regulations, will be followed to minimize erosion and sedimentation and to manage storm water runoff. By implementing those policies, adverse impacts of sedimentation and runoff would be minor. Text was added to Section 4.7 (Marine Biological Resources) acknowledging that the USAF concludes that there would be no adverse effects on essential fish habitat. Additionally, text was revised to provide a reference back to the Water Resources section which also discusses this topic. Additionally, The USAF has revised its	Postal Mail

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						provides limited analysis on BMP implementation, maintenance and effectiveness and does not evaluate the potential impacts of these activities on EFH in the affected nearshore waters. The Magnuson-Stevens Fishery Conservation and Management Act (MSA), (16 USC § 1855(b)(2) requires federal agencies to consult with NMFS on "any action authorized, funded, or undertaken, or proposed to be authorized, funded or undertaken, by such agency that may adversely affect any essential fish habitat identified under the Act." Further, NMFS is required to provide conservation recommendations for actions that would adversely affect EFH. 50 CFR 600.905 outlines the general EFH consultation procedure. We recommend that the USAF evaluate potential impacts to EFH associated with this proposed action to determine whether consultation under MSA is necessary for this project.	proposal based on agency and public comments on the Draft EIS. Due to the reduced scope of the revised proposal, the USAF is providing an additional opportunity to comment on the proposed action and alternatives by making a Revised Draft EIS available to agencies and the public.	
B32	Natural Resources	Agency Stakeholder NOAA NMFS Habitat Conservation Division Gerald W. Davis	N/A	N/A	N/A	Impacts to water quality may also affect corals petitioned for listing under the Endangered Species Act (ESA). Forty of the eighty-two candidate species are found in the Mariana Islands (see attached list). A number of these species have been observed in close proximity to the airports and harbors in both Saipan and Tinian. A decision on listing is expected in late 2012. Listing of the corals under the ESA might necessitate a Section 7 consultation for corals. More information on this process is available at: http://www.fpir.noaa.gov/PRD/prd_coral.html	Text was added in Section 4.7 to clarify that the USAF concludes that construction and operations will not adversely affect coral species, including candidate species for listing under the Endangered Species Act.	Postal Mail
B33	Natural Resources	Agency Stakeholder NOAA NMFS Habitat Conservation Division Gerald W. Davis	N/A	N/A	N/A	During the scoping meetings, it was noted that significant harbor improvements may be required to support the development, enhancement, and operations of a divert airfield location. Should the USAF require upgrades at either Saipan Harbor or Tinian Harbor to accommodate the delivery and handling of jet fuel or other supplies, the USAF may need to initiate consultation with NMFS under the Fish and Wildlife Coordination Act and MSA.	No improvements are proposed for the Tinian or Saipan harbor. The harbor can currently accept shallow draft vessels and it is proposed that fuel be delivered to Tinian using the existing fuel supply chain using these shallow draft vessels. As stated in Section 2.4.2.2 "Jet fuel would be received at the current port in Tinian from a shallow draft tanker; shallow draft tankers currently dock at the Tinian port and it is assumed that no improvements to the harbor would need to be made." Text was clarified in the EIS in Section 4.7.	Postal Mail
C31	Natural Resources	Agency Stakeholder	N/A	N/A	N/A	The NPS is concerned that increased flights from Guam and other areas can introduce invasive species to Saipan (or	As described in Section 4.6, the USAF will implement invasive species control and	Postal Mail

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		NPS				Tinian), especially the brown tree snake. Additional inspection resources, quarantine areas, personnel, training, and detection dogs will all be needed. The ability to have 100% inspection and control over all Divert traffic landing on Saipan will be necessary and the EIS should address how the Divert procedures will conform to regional Biosecurity Plans and requirements.	interdiction measures. The USAF will follow the requirements outlined in the Biological Opinion contained in Appendix B of the EIS.	
C32	Cultural Resources	Agency Stakeholder NPS	N/A	N/A	N/A	We have noted the potential for adverse effects to the Landing Beaches, Aslito/Isley Field, and Marpi Point National Historic Landmark District (NHL) on Saipan, specifically the Aslito/Isley Field Historic District section of the NHL. On June 17, 2012, NPS staff visited the proposed area for the Saipan alternative with HDR Environmental, Operations and Construction, Inc. (HDR) archeological staff. This field visit was prompted by a draft Phase I Cultural Resources Survey Report (April 2012) prepared by HDR for the Saipan alternative for the proposed project. This field visit was very informative and we enjoyed the opportunity to discuss the details of the cultural field work. During the field visit, we discussed the locations within the project area that were investigated for cultural resources during the survey and what resources were identified. We visited a Japanese bunker that had not been previously identified. HDR had sent a letter to the Historic Preservation Officer (HPO) of the Commonwealth of the Northern Mariana Islands (CNMI) and NPS asking for "concurrence" on the determinations of eligibility to the National Register of Historic Places (NRHP) that was included in the Phase I report. This included the recommendation that some features within the NHL are ineligible for the NRHP. There was some confusion as to what HDR was asking for in regards to concurrence. We explained that the only way an NHL designation can be modified is through the NHL amendment process which includes a review and acceptance by the National Historic Landmarks Committee of the National Park System Advisory Board. Please refer to our detailed comments in the letter dated June 25, 2012 from Dr. David Louter to Mr. William Grannis (see Attachment).	Many of these issues have also been raised through the Section 106 process. Consultations were initiated on February 1, 2012 by Headquarters Pacific Air Forces (PACAF) with the Commonwealth of the Northern Mariana Islands (CNMI) State Historic Preservation Officer (SHPO). These consultations resulted in a draft Memorandum of Agreement (MOA) developed by the consulting parties. However, due to concerns from the newly established CNMI administration, the MOA was not finalized. Since that time, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). In this regard, Pacific Air Forces (PACAF) worked to redefine the Area of Potential Effect (APE) to address the issue of the National Historic Landmark (NHL) as a whole and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in	Postal Mail

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						On June 22, 2012, a team of HDR and Air Force representatives provided the NPS with a presentation about the DEIS. From that discussion, we understand the analyses required under the National Environmental Protection Act (NEPA) and NHPA are being combined. We would like to reiterate the need to invite all interested parties to participate in meetings that are clearly advertised as Section 106 consultation. In general, the Section 106 process should be followed to determine the effects, if any, to historic properties within the project area. To date, it appears that a letter initiating Section 106 was sent to the CNMI HPO, the NPS and the Advisory Council on Historic Preservation (ACHP) (February 2012). Additionally, a draft Phase I cultural resources survey was prepared for the Aslito/Isley Field area. This report identified cultural resources within proposed areas of ground disturbance within the project area for Alternative 1 in the DEIS.	Appendix D of the EIS.	
C33	Cultural Resources	Agency Stakeholder NPS	3-62	10-11	N/A	The description of the study area for cultural resources needs to be better defined. The Area of Potential Effect (APE) as defined in 36 CFR 800.16(d) "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" should be included. The NPS suggests the inclusion of a map showing the APE for the proposed project.	PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). In this regard, Pacific Air Forces (PACAF) worked to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	Postal Mail
C34	Cultural Resources	Agency Stakeholder NPS	3-68	14, 17	N/A	These sentences reference an "APE". The APE has not been previously defined in the DEIS. The Area of Potential Effect for each alternative should be defined in the Affected Environment section of the DEIS; and if there is variance	PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National	Postal Mail

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						between the alternatives, then individual APE maps should be included	Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). In this regard, Pacific Air Forces (PACAF) worked to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, which include the revised APEs. All documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	
C35	Cultural Resources	Agency Stakeholder NPS	4-69	Paragraph 2	N/A	This paragraph does not adequately define the Section 106 process requirements as outlined in 36 CFR 800. For example, it states that consultation will only be done if adverse effects to cultural resources are determined. Through the Section 106 process, effects to resources are determined through the consultation process.	The text in Section 4.8 of the EIS was revised per comment to correspond with 36 CFR 800.	Postal Mail
C36	Cultural Resources	Agency Stakeholder NPS	N/A	N/A	4.8.1	There is no mention of the Phase I Cultural Resources Survey (2012) that was prepared by HDR for the Aslito/Isley Field alternative. Suggest referencing the findings from the report.	The report is discussed in the Final EIS in Sections 3.8 and 4.8 and is included in the References section of the document.	Postal Mail
C37	Cultural Resources	Agency Stakeholder NPS	N/A	N/A	4.8.1	The area of the proposed associated fuel tanks located at the Port of Saipan is not addressed and should be.	The area at the Port of Saipan is included in the APE maps and discussion and is addressed in the EIS in Sections 3.8 and 4.8.	Postal Mail
C38	Cultural Resources	Agency Stakeholder NPS	N/A	N/A	4.8.1	If possible, the Section 106 finding of effect should be included with the NEPA impact determination. For example, a long-term major impact would be significant under NEP A as well as an adverse effect under Section 106.	A finding of effect was developed through the Section 106 consultation process and is included in the Revised Draft EIS in Section 4.8.	Postal Mail
C39	Cultural Resources	Agency Stakeholder NPS	N/A	32	4.8.1	While the adverse impacts could impact the historic fabric, a better way to state this would be that there could be adverse impacts to the National Historic Landmark historic properties.	Text in Section 4.8 has been revised per the modified Undertaking , APE, and FOE.	Postal Mail
C40	Cultural Resources	Agency Stakeholder NPS	N/A	33	4.8.1	Section 106 consultation as outlined in 36 CFR 800.2 needs to be done with all interested parties - not just the HPO and NPS. Additionally, because the proposed project area is within a National Historic Landmark the ACHP needs to be	PACAF began consultations with the ACHP after determining that there may be effects on the National Historic Landmark. PACAF also identified additional interested	Postal Mail

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						consulted.	parties for consultation. Text has been revised in the EIS in Section 4.8 for clarification. All documentation supporting Section 106 is contained in Appendix D of the EIS.	
C41	Cultural Resources	Agency Stakeholder NPS	N/A	34	4.8.1	Likewise, the determination of impacts to resources and identification of appropriate mitigations should also be done in consultation with all interested parties.	PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). In this regard, Pacific Air Forces (PACAF) worked with the consulting parties to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	Postal Mail
C42	Cultural Resources	Agency Stakeholder NPS		Paragraph 1	4.8.1.1	Replace the term historic fabric with historic property(ies) where appropriate.	Text revised per comment in Section 4.8.	Postal Mail
C43	Cultural Resources	Agency Stakeholder NPS		37	4.8.2	Section 106 consultation needs to be conducted with all interested parties to identify the APE, resources within the APE and potential impacts to those resources from project implementation. Likewise, the determination of impacts to resources and identification of appropriate mitigations should also be done in consultation with all interested parties.	PACAF has revised the scope of the Undertaking in coordination with CNMI officials. In this regard, Pacific Air Forces (PACAF) worked with the consulting parties to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section	Postal Mail

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							106 consultation process is contained in Appendix D of the EIS. (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	
C44	Cultural Resources	Agency Stakeholder NPS			4.8.2	If possible, the Section 106 finding of effect should be included with the NEPA impact determination. For example, a long-term major impact would be significant under NEPA as well as an adverse effect under Section 106.	PACAF has revised the scope of the Undertaking in coordination with CNMI officials. In this regard, Pacific Air Forces (PACAF) worked with the consulting parties to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	Postal Mail
C45	Cultural Resources	Agency Stakeholder NPS			5.3.8	In general, the impact assessment to cultural resources from cumulative impacts is lacking a discussion on past, present and reasonably foreseeable future actions when added to the proposed action. The discussion in the DEIS seems to further address impacts to cultural resources from the proposed action only.	Text revised per comment in Section 5.3.8.	Postal Mail
C46	Cultural Resources	Agency Stakeholder NPS		21	5.3.8	The long term impacts should be defined using NEPA terminology - long-term, direct/indirect, adverse, etc. As much as possible these should be factually described rather than qualitatively labeled.	Text revised per comment in Section 5.3.8.	Postal Mail
C47	Cultural Resources	Agency Stakeholder NPS		22	5.3.8	Historic fabric should be changed to historic properties	Text revised per comment in Section 5.3.8.	Postal Mail
C48	Cultural Resources	Agency Stakeholder NPS			5.6	Given that both Alternatives 1 and 2 had moderate to major adverse impacts to historic properties, the NPS suggests that some cultural resources may have irreversible impacts or be lost.	PACAF is consulting with all interested parties under Section 106 consultation process to avoid or mitigate irreversible impacts and complete loss of cultural resources. All documentation supporting	Postal Mail

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							Section 106 consultation is provided in Appendix D of the EIS.	
C49	Cultural Resources: Mitigation	Agency Stakeholder NPS	N/A	N/A	N/A	Because there would be adverse impacts to cultural resources there will need to be a discussion of mitigation measures to avoid or minimize these impacts.	PACAF is consulting with all interested parties to determine effects and develop appropriate mitigation under Section 106. The status of these ongoing consultations are included in the EIS in Section 4.8 and Appendix D.	Postal Mail
D50	Administrative	Agency Stakeholder Guam DAWR Mariquita F. Taitague	N/A	N/A	N/A	The Department of Agriculture's Division of Aquatic and Wildlife Resources (DAWR) received the Draft Environmental Impact Statement (EIS) for the proposed Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands (CNMI) for review and comments. The letter acknowledged by Maj. Gen. Russell J. Handy, Director of Operations, Plans, Requirements and Programs, did not state when comments are due.	Comment noted.	Postal Mail
D51	Natural Resources	Agency Stakeholder Guam DAWR Mariquita F. Taitague	N/A	N/A	N/A	The Draft EIS addressed environmental issues as required through the NEPA process. However, prior to the release of the Draft EIS, the Nightingale reed warbler (<i>Acrocephalus luscini</i>) study was not completed. The analysis of the reed warbler study is very important to be able to provide more constructive comments regarding the protection of this endangered species.	Results of the surveys and consultations were not provided in the Draft EIS because consultations were not complete at the time the Draft EIS was published. The Air Force wanted to seek public and stakeholder input on the Proposed Action and alternatives during scoping before initiating consultation. Therefore, the consultation process was an ongoing process and information on surveys and input from USFWS are included in the Revised Draft EIS. Consultation was completed prior to publication of the Revised Draft EIS and the Biological Opinion is included in Appendix B. The USAF is currently also conducting Section 7 consultation for the Proposed Action on Tinian.	Postal Mail
E52	Air Quality	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Impacts on air quality are not adequately addressed to the level of analysis required by federal and local regulations. The Impacts resulting from both Alternative 1 and 2 are identified as being equivalent; however, the Existing Conditions of each are identified as being unclassifiable.	The Revised Draft EIS is compliant with both Federal and local regulations. The existing condition of "Unclassifiable" means the same as an area being in attainment with ambient air quality standards, i.e., pollutant concentrations	Postal Mail

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						Comment: Address and consider in more detail in the FEIS the level of analysis required by federal and local air quality regulations for each alternative.	below the standards. Therefore, General Conformity regulations for Federal actions do not apply. Although not required, the analysis was taken a step further to compare emissions to attainment area thresholds and demonstrated that they were below those thresholds. Note that the Revised Draft is a tool to determine environmental impacts in the planning stages. Local air quality permits could be required when the projects are developed further and are submitted for actual construction. At that time, further analysis would be conducted to obtain any needed air permits, if required.	
E53	Air Quality	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The EIS states that CNMI DEQ requires all air permit applications to include dispersion modeling for comparison against NAAQS for compliance, The analysis does not appear to include air quality of pollutant dispersion modeling, thus does not adequately analyze and address the concern of localized air quality impacts. Comment: Address and consider in more detail air quality of pollutant dispersion modeling required by NAAQS in the FEIS.	Dispersion modeling is required when a project is being submitted for its air quality construction permit. Each of the submitted projects would file separately for an air quality construction permit.	Postal Mail
E54	Air Quality	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The proximity of the nearest residential population should be taken into consideration as a result of the potential for impaired local air quality and its effect on economically disadvantaged or health impaired communities. The DEIS inadequately addresses this issue. Comment: Prior to finalizing the EIS and making a determination of the preferred alternative, a more thorough technical evaluation and air quality modeling is needed to understand the localized impacts due to proposed operations as well as fuel storage. Please document the results in the FEIS.	Localized impacts on disadvantaged or health-impaired communities are not expected. The projects are proposed in locations where existing operations are of a similar nature (i.e. flight operations at an existing airport).	Postal Mail
E55	Cultural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The proposed action for Alternative 1 (Saipan) would result in major adverse effects on Saipan International Airport, which is a National Historic Landmark. The DEIS states that the Section 106 consultation is ongoing. The identification of mitigation "if any" is needed to provide a full understanding of potential impacts on these important cultural resources on Saipan.	PACAF is consulting with all interested parties to determine effects and develop appropriate mitigation under Section 106. The results of these ongoing consultations are included in the EIS in Section 4.8, and all documentation supporting the Section 106 consultations is included in Appendix D of the Final EIS.	Postal Mail

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E56	Cultural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The Section 106 consultation should be concluded prior to determination of final EIS preferred alternative selection.	There is no legal requirement that states Section 106 must be completed before a preferred alternative is identified. CEQ regulations require the section of the EIS on alternatives to “identify the agency’s preferred alternative or alternatives if one or more exists, in the draft statement, and identify such alternative in the final statement...” However, the EIS has been revised in coordination in coordination with CNMI officials and presents modified alternatives and a preferred alternative is no longer identified.	Postal Mail
E57	Cultural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)		5-17		Observation/Issue: The proposed parking aprons along the north side of GSN runways and the proposed BEAR-kit site at the existing soccer field between Flame Tree and Airport Roads. The Impacted Resources are concrete air raid bunkers associated with the Japanese military build-up before World War II and defense during World War II. Six such structures lie in very close proximity to the proposed parking aprons while two lie at one edge of the proposed BEAR-kit site. While direct avoidance is planned, the structures are susceptible to secondary impacts from vibration-related deterioration due to heavy traffic. In addition the BEAR-kit could face an increased risk of vandalism from military and civilian personnel. Comment: Please confirm that the Record of Decision (ROD) will include language stating that the DoD shall provide information such as pamphlets or a guided tour to military personnel prior to Divert Activity Exercise that indicate the significance of these historic landmarks.	PACAF is consulting with all interested parties to determine effects to historic properties and develop appropriate mitigation under Section 106. The results of these ongoing consultations are included in the EIS in Section 4.8, and all documentation supporting the Section 106 consultations is included in Appendix D. The ROD will either include all mitigation measures agreed upon during Section 106 consultation if it has been completed; or will include a statement that notes that the action will not be implemented until Section 106 consultation is complete and mitigation measures have been identified and agreed upon..	Postal Mail
E58	Cultural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)		3-63		Observation/Issue: The Isley Field Historic District contains historic artifacts and features associated with the construction of Japanese Aslito Field beginning in 1934. Comment: Using alternative 2 (Tinian) would eliminate any concerns with disturbing cultural artifacts on Saipan.	Comment noted. Because of the NHL, cultural resources at the Saipan alternative are better known and more accurately recorded. Using Tinian would not necessarily eliminate any concerns with disturbing cultural artifacts as Tinian also has many of the same historic and cultural features that Saipan has.	Postal Mail
E59	Cultural Resources	Political Stakeholder Government of		4-71		Observation/Issue: Possible major, direct, adverse impacts on cultural resources during implementation include those resulting from increased traffic, partial destruction or	Because of the NHL, cultural resources at the Saipan alternative are better known and more accurately recorded. Using Tinian	Postal Mail

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		CNMI (Submitted by Lt. Gov. Inos)				vandalism, looting, and other effects resulting from increased use of the area. Such impacts could diminish or destroy the overall integrity of these resources by affecting design, materials, or workmanship or structure and the location of archaeological materials in the event of looting. Large encampments of personnel or storage of material on aprons and runways would have detrimental effects on setting, feeling, and association. Comment: Alternative 2, (Tinian) has significantly fewer adverse impacts.	would not necessarily eliminate any concerns with disturbing cultural artifacts as Tinian also has many of the same historic and cultural features that Saipan has.	
E60	General	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	The Commonwealth of the Northern Mariana Islands (CNMI) extends our appreciation to the United States Air Force for evaluating and considering Saipan and Tinian; for affording us the opportunity to express our thoughts on this critical action; and for the CNMI to provide the location for the Divert Activities and Exercises initiative. We will continue to support and serve our Nation and the Department of Defense. The CNMI has a date with destiny and is ready to respond as the focus shifts to the Asia Pacific region.	Comment noted.	Postal Mail
E61	General	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	The CNMI has been and will continue to provide support for all military initiatives as the Nation and Department of Defense pivot toward the Pacific. The islands of Saipan and Tinian played major roles during World War II and Tinian in specific had the world's busiest airport during the war. The CNMI is extremely supportive of the military and openly endorses a robust military presence throughout the Commonwealth. Many joint training exercises have been conducted on Tinian and throughout the CNMI over the past 30 years.	Comment noted.	Postal Mail
E62	General	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The DEIS states that there will be no more than 8 weeks of divert exercises per year. The DEIS also states "this <u>adaptive management approach ensures</u> that any changes in quality or quantity of exercises is fully analyzed on a continuing basis." The definition of an adaptive management approach does NOT guarantee that there shall <u>NOT</u> be more than 8 weeks of exercises per year. Comment: Please note in the ROD the following: If the DOD desires to increase divert activities and exercises more than 8 weeks per year, it requires the trigger to start a new	The Draft EIS states that "These military exercises are well within levels of training previously analyzed in MIRC EIS. DOD, local stakeholders, and Federal regulators collect and review military training data annually to implement required adaptive management techniques and adaptive mitigation techniques if required. In addition to this annual review, military training in the MIRC ROD is also reviewed on a 5-year cycle. This adaptive	Postal Mail

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						NEPA process that includes public involvement/participation.	management approach ensures that any increase or changes in quality or quantity of exercises is fully analyzed on a continuing basis." The USAF and DOD are aware that if training levels and impacts exceed those analyzed within this EIS and the MIRC EIS, additional NEPA analysis could be needed.	
E63	General	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The DEIS does not address what would happen if there is a termination of the divert activities and exercises mission from the CNMI. There needs to be assurance that the DOD shall properly clean-up the land and facilities to greenfield standards. Comment: Please address in the FEIS how the DOD would clean-up the Divert facilities and land if the mission is terminated. CNMI respectfully requests that the FEIS recommend that the ROD states that the DOD shall properly clean-up the land and facilities to greenfield standards.	Should the DOD terminate Divert Activities and Exercises, the termination action would occur in compliance with federal and local environmental laws and regulations.	Postal Mail
E64	Geological Resources and Soils	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The evaluation of proposed alternatives does not consider proper mitigation of farmland. The evaluation does not consider the value of prime farmland in the CNMI region as it affects the overall economy and quality of life. Comment: Address and consider the value and mitigation required for farmland impacts for each alternative in the FEIS.	The EIS discusses prime farmland protected under the Farmland Protection Policy Act in Section 3.4.1 and 3.4.2. On Saipan and Tinian, there are no prime and unique farmland soils in the areas proposed for development. However, it is recognized that potential grazing lands may be affected on Tinian. The impact on potential grazing lands is provided in Section 4.14.	Postal Mail
E66	Geological Resources and Soils	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	4-51	39-45	N/A	Observation/Issue: The development proposed is located in Seismic Zone 3, which would require structures to be designed and built in conformance with Uniform Building Code for this area. The action states that this "should occur" and does not express a clear commitment to building safety. Comment: The FEIS shall state that the DoD shall build all divert facilities in accordance with Seismic Zone 3 Uniform Building Code.	The EIS was revised to state that "all facilities would meet the engineering requirements in the 2012 International Building Code." This is the most current criteria and AFCEC requires that all facilities meet these code requirements.	Postal Mail
E67	Geological Resources and Soils	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	4-52	21-23	N/A	Observation/Issue: The divert activities will have an increased impact to the Philippine Sea and other nearby water bodies. This is of great concern to CNMI. Comment: Address in the FEIS this issue and level of impacts to the Philippine Sea and other nearby water bodies.	The Proposed Action would have no impacts on the Philippine Sea or other bodies of water. This analysis is provided in the EIS in Section 4.5. Runoff would be controlled through the use of BMPs that will be implemented in coordination with local and federal agency requirements	Postal Mail

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							during and after construction as needed, and will be outlined in an Erosion and Sediment Control Plan (ESCP) and a Stormwater and Pollution Prevention Plan (SWPPP).	
E68	Geological Resources and Soils	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	4-52, 4-53	N/A	N/A	Observation/Issue: The EIS states that the potential impacts of Alternative 2 (Tinian) are anticipated to be similar to, but greater than, those described for alternative 1 (Saipan) as a result of the introduction of a greater level of impervious surface. Mitigation measures for the use of alternative materials should be considered to reduce impacts from impervious surface resulting from both alternatives should be considered. Comment: Address and consider in the FEIS the level of technology and best practices that would the impacts associated with impervious surface issues.	BMPs to reduce impacts associated with impervious surface will be implemented during and after construction as needed and will be outlined in an ESCP and an SWPPP. Examples of BMPs to be implemented are provided in Section 4.5 and Section 4.16.	Postal Mail
E69	Natural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The nightingale reed warbler is listed as a T&E species. This species is typically found in Tangantangan forest on Saipan. Comment: Address the removal of Tangantangan forest is identified as insignificant and does not consider its overall effect on species that depend on it for habitat in the FEIS.	The discussion of impacts on Saipan in Section 4.6 has been expanded to describe the results of surveys for nightingale reed warblers adjacent to the Saipan airport and to clarify the potential impacts on that species, such as the loss of tangantangan forest. The USAF consulted formally with the USFWS under Section 7 of the Endangered Species Act to determine the effect on the species and the mitigation required. All materials supporting the Section 7 consultation, to include the Biological Opinion, are included in Appendix B of the EIS.	Postal Mail
E70	Natural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Migratory bird populations and threatened and endangered species are identified as being significantly impacts for Alternative 1 on Saipan. Potential major adverse impact on vegetation (nightingale Reed Warbler) surrounding Saipan airport are present and could result in reduction and destruction of habitat. Comment: The value placed on these species is not consistent with federal protection and value. Address the level of analysis and concern for T&E species such as the nightingale reed warbler in detail and per the federal protection and value and consider their importance and history associated with its habitat on CNMI, particularly	The analysis in Section 4.6 for Saipan does not identify impacts on migratory birds on Saipan as significant. The analysis in Section 4.6 has been expanded to describe recently conducted surveys for nightingale reed warblers at the Saipan airport and to clarify potential impacts on that species better. The USAF formally consulted with the U.S. Fish and Wildlife Service as required by the Endangered Species Act and will implement actions to mitigate impacts on	Postal Mail

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						Saipan.	that species. The USAF has considered the potential effects of their Proposed Action on threatened or endangered species in selecting a preferred alternative. All materials supporting the Section 7 consultation, to include the Biological Opinion, are included in Appendix B of the EIS.	
E71	Natural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: On Tinian, there are no endangered species within the proposed divert base footprint that would require mitigation, whereas divert activities in Saipan proposed divert base footprint would likely necessitate a minimum of \$600K in the mitigation bank. Comment: Address this issue in more detail with the FEIS and take this issue into more consideration when determining the Final Preferred Alternative.	NEPA analysis on resource areas is based on potential impacts on that resource area and not based on cost. Cost is not to be considered a factor when evaluating impacts on the resource area, although the decisionmaker may take cost into account separately as a factor when choosing an alternative in the ROD. Potential mitigation needed to lessen these impacts is included in the EIS; however the ultimate decision is left to the decisionmaker and noted in the ROD. Additionally, the USAF has revised the proposal so that impacts to tangantangan and the nightingale reed warbler would be reduced. This analysis is provided in Section 4.6.	Postal Mail
E72	Natural Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Tangantangan forest was intentionally aerially seed by the US Navy after World War II and has served as a critical habitat for the Nightingale reed warbler on Saipan. Comment: Consider and address in the FEIS the effects of eliminating portion of this species' habitat and address their natural resource and cultural resource affects as part of the cumulative impacts analysis.	Tangantangan was not intentionally seeded by the U.S. government including U.S. Navy post-World War II. Investigations have determined that no intentional seeding of this invasive plant occurred by the U.S. government. Rather, tangantangan is a non-native weedy plant and took advantage of the displaced native forests that were impacted by battles and replaced less aggressive native plants. Impacts on the nightingale reed warbler are addressed in Section 4.6.. The analysis in Section 4.6 has been expanded to describe recently conducted surveys for nightingale reed warblers at the Saipan airport and to clarify potential impacts on that species better. The USAF has formally consulted with the U.S. Fish and Wildlife Service as required	Postal Mail

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							by the Endangered Species Act and will implement actions to mitigate impacts on that species. The USAF has considered the potential effects of their Proposed Action on threatened or endangered species in selecting a preferred alternative. All documentation supporting Section 7 consultation with USFWS, to include the Biological Opinion, is contained in Appendix B.	
E73	Noise Environmental Justice	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Per the DEIS, an estimate of 11,052 people live within the 65 dBA DNL or larger footprint within the Preferred Alternative 1 (Saipan). This is approximately 25% of the Island of Saipan's population and equates to approximately 2,768 low income housing units that are located within this area and are highly impacted by noise from the divert activities. It is critical that this issue be well mitigated if the Saipan Alternative is selected as the location for the divert activities. Comment: If the Preferred Alternative 1 (Saipan) is selected, highly recommend that the ROD include language that states that the DoD shall pay for sound attenuation for housing units and schools within the impacted area and/or coordinate and advocate with the FAA to fund an FAA Sound Attenuation Grant that will sound attenuate the low income housing units within the noise footprint. Recommend that this within the first year that the divert activities are bedded down. Recommend that DOD assist CNMI in coordinating and preparing the FAA Sound Attenuation Grant. If the above language is not part of the ROD, please explain in detail how the DoD plans on mitigating this issue.	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis in Sections 4.1 and 4.10. Additionally, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
E74	Noise Socioeconomic	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The DEIS does not adequately address and is very vague regarding the number of tourist that will be impacted by noise, the loss of revenue associated with tourism within this area and how this impact would be mitigated for Alternative 1 (Saipan). The following tourism areas that are highly impacted by noise for this alternative include the Pacific Island Club (PIC) Resort, Coral Ocean Point Resort, Lao Lao Bay Golf and Resort, Ladder Beach and Obyan Beach. Comment: Explain in detail the total impact on tourism from noise impacts and how the DoD will mitigate the loss	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Impacts on tourism are discussed in Section 4.14. Impacts on recreation are discussed in	Postal Mail

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						of revenue associated with this impact.	Section 4.9.	
E75	Recreation	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The proposed parking aprons along the north side of GSN runways and the proposed BEAR-kit site at the existing soccer field between Flame Tree and Airport Roads. Comment: The proposed parking aprons along the north side of GSN runways and the proposed BEAR-kit site at the existing soccer field between Flame Tree and Airport Roads. The soccer field is often used by numerous high schools and recreational league sports teams. Please indicate how the scheduled training exercises will be coordinated and communicated to the community to avoid scheduling conflicts.	The USAF will coordinate with the Government of CNMI to schedule divert activities and exercises. This information is presented in Section 4.16 in the EIS.	Postal Mail
E76	Recreation	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The noise impacts will have a significant effect on the following sites, Lao Lao Bay Golf Course, Coral Ocean Point Golf Course, Obyan Beach, Ladder Beach, Forbidden Island, and the Pacific Islands Club Resort and Waterpark. Comment: Please address in the FEIS: In addition to the residents affects, the number of tourist affected by noise who will be using these recreational facilities should be taken into account.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Impacts on tourism are discussed in Section 4.14. Impacts on recreation are discussed in Section 4.9.	Postal Mail
E77	Socioeconomics	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Loss of revenue from commercial airline operations due to a closure of the airport associated with a DOD event is not addressed in the DEIS. Mitigation measures need to be identified to address this loss of revenue during the times the airport is closed due to DOD activities. Comment: Please address the issue of loss of revenue from commercial airline operations due to a closure of the airport associated with a DOD event is not addressed in the FEIS. Also, address and identify mitigation measures needed to address this loss of revenue from commercial operations during times the airport is closed due to DOD activities.	Planned exercises would not shut down the airport as a result of DOD activities. The No Action alternative, which includes existing emergency divers, could result in temporary disruption of air service. Use of the airport for humanitarian assistance and disaster relief or contingency operations could potentially have minor temporary effects on air service but it is not anticipated that the airport would need to be shut down. It is not anticipated that there would be any loss of revenue from commercial operations during divert activities.	Postal Mail
E78	Tinian v. Saipan: Covenant	Political Stakeholder Government of CNMI (Submitted by	N/A	N/A	N/A	Observation/Issue: Reconsider acquiring an additional 40+ acres associated with Alternative 1 (Saipan) vs. the use of the extensive amount of land already under lease by the DOD on Tinian. This issue needs special consideration. The Covenant DoD leased lands on Tinian are adjacent to	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America	Postal Mail

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						the Tinian International Airport and are currently designated for DoD operations. Comment: Please explain the rational for why DoD is asking for an addition 40+ acres of land on Saipan for Alternative 1	(Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action.	
E79	Tinian v. Saipan: Covenant	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Approximately 17,799 acres of land on Tinian and 177 acres of land on Saipan are part of the Covenant. The Covenant, an agreement between the US and CNMI was codified at 48 U.S.C. § 1801, Section 803. Use of the leased lands on Tinian would provide a beneficial impact to the DoD operation and its commitment to Tinian. Comment: Please include in the DEIS an overall assessment of land use per the letter and spirit of Section 803 of the Covenant that established the Commonwealth of the Northern Mariana Islands.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. Land use analysis is provided in Section 4.10.	Postal Mail
E80	Tinian v. Saipan: Environmental Justice	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Alternative 1 (Saipan) has the greatest negative impact (noise) on the lowest economic group of citizens in comparison to the positive effect on the community and citizens on Tinian. According to Alternative 2 (Tinian), Alternative 2 (Tinian) would eliminate the potential for any environmental justice concerns, by reducing or eliminating the nose and associate impacts on the population in the villages of Koblerville, Dan Dan, and San Antonio. Comment: We strongly recommend that the DoD select Alternative 2 (Tinian) as the Final Preferred Alternative since it eliminate any potential socioeconomic and environmental justice impacts.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
E81	Tinian v. Saipan: Joint Use	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Cumulative Impacts. It is important that the DEIS consider and address at an overall planning level the integrated use of lands within CNMI, especially Saipan and Tinian related to the Record of Decision for the Military Buildup for the US Marines and the use of Tinian, use of Tinian as part of the MERC and the proposed Divert Activities. Comment: Please address in the FEIS the positive benefits	Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable actions on Saipan and Tinian with the Divert Proposed Action.	Postal Mail

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						associated with collocating DoD joint operations on Tinian.		
E81	Tinian v. Saipan: Joint Use	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Impacts: It is important that the EIS consider and address, at an overall planning level, the integrated use of lands within CNMI, especially Saipan and Tinian related to the Record of Decision for the Military Buildup for the US Marines and the use of Tinian, use of Tinian as part of the MIRC and the proposed Divert Activities.	Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable actions on Saipan and Tinian with the Divert Proposed Action.	Postal Mail
E82	Tinian v. Saipan: Land Use	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The use of land on island communities has significant impact on the local people and their culture due to the limited and scarcity of land for competing uses and needs. Comment: The value of scarcity of island land is not addressed in the FEIS. Please assess this issue in the FEIS and consider it in determining the Final Preferred Alternative.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. However, the USAF is not proposing a permanent beddown.	Postal Mail
E83	Tinian v. Saipan: Socioeconomics	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The initial Tinian investment would be slightly higher if viewed as a standalone action. However, as an initial component to a long term strategic initiative, this delta in costs are insignificant and are easily off-set by long term return on investment for CNMI. Investing in the Tinian alternative is in concert with and reinforces DOD's needs in the Pacific Region. The DEIS lacks in defining and quantifying the economic benefit and is too vague to determine a valid assessment between the alternatives. Comment: The value of the potential economic benefits be clearly defined and quantified in the Final EIS to communicate the economic value of the one-time capital investment (construction) as well as the potential annual revenue (generated from the divert activities usage).	NEPA analysis on resource areas is based on perceived impacts on that resource area and not based on cost. Cost is not to be considered a factor when evaluating impacts on the resource area although the decisionmaker may take cost factors into account when making decisions about the Proposed Action and alternatives. The ultimate decision is left to the decisionmaker and will be discussed in the ROD. The decisionmaker could take cost factors into consideration in addition to the analysis of environmental impacts presented in the EIS as weighed against the Purpose and Need and mission requirements.	Postal Mail
E84	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	4.5.1 and 4.5.2	Observation/Issue: The overall impacts for both alternatives do not take into consideration the use of improved materials and technologies that would allow for reduced impacts (runoff and sedimentation) to water bodies.	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are included in Section 4.16 in the EIS.	Postal Mail
E85	Water Resources	Political Stakeholder	4-55	20-21	N/A	Observation/Issue: The proposed actions do not consider the alteration of flood zones as a result of regarding and	Because there are no flood zones within the Project Area, no impacts on flood zones are	Postal Mail

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		Government of CNMI (Submitted by Lt. Gov. Inos)				changes to ground levels.	expected.	
E86	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	4-54, 4-55	N/A	N/A	Observation/Issue: Impacts resulting from Alternative 1 are identified as degradation with a broad range of pollutants affecting highly permeable surfaces that could be high susceptible to contamination. The commitment to reducing potential impacts hinges on that the infiltration features "should not" be located in close proximity to wellhead protection areas of GSN (Isley Field) in order to ensure protection of a safe drinking water supply. The exact distance that would be considered safe and the commitment to apply mitigation measures is not explicit in the evaluation. This needs to be developed.	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are included in Section 4.16 in the EIS.	Postal Mail
E87	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The impacts resulting from Alternative 2 are identified as long term whereas the impacts resulting from Alternative 1 are identified as short term. The rationale behind the duration of impacts is not clear and requires further evaluation and clarification.	Text in Section 4.5 of the EIS was revised to indicate potential long-term impacts for alternatives on Saipan and Tinian.	Postal Mail
E88	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	4.5.1 and 4.5.2	Observation/Issue: The assessment of Alternative 2 is based upon the extent of impervious surface introduced and does not consider alternative methodologies to reduce these surfaces or the imperviousness of these surfaces.	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are included in Section 4.16 in the EIS. Additionally, the USAF has revised its proposal based on agency and public comments on the Draft EIS. Due to the reduced scope of the revised proposal, the USAF is providing an additional opportunity to comment on the proposed action and alternatives by making a Revised Draft EIS available to agencies and the public.	Postal Mail
E89	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The analysis states "without proper site design, the implementation of Alternative 1 could lead to a depletion of groundwater resources and increased salt water intrusion to drinking water wells." Comment: Will there be an opportunity to comment on and review the final site design when a final determination of impacts are evaluated and assessed?	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are included in Section 4.16 in the EIS. The USAF has revised its proposal based on agency and public comments on the Draft EIS. Due to the reduced scope of the	Postal Mail

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							revised proposal, the USAF is providing an additional opportunity to comment on the proposed action and alternatives by making a Revised Draft EIS available to agencies and the public.	
E90	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	4-54	N/A	N/A	Observation/Issue: The EIS states that "designs could incorporate structural storm water management methods such as storm water retention ponds, shallow infiltration basins, and infiltration trenches, to collect storm water from the new impervious surfaces and allow water to infiltrate the ground to help restore or enhance...recharge rates" Comment: This statement does not commit to mitigation measures or consider proper BMPs such as permeable surfaces where practicable. This needs to be developed in the FEIS.	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are included in Section 4.16 in the EIS.	Postal Mail
E91	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Potential major adverse impact as a result of storm water sheet runoff or especially accidental petroleum spills. Comment: An enhance SPCC program and controls need to be assessed in both alternatives.	BMPs would be implemented prior to and after construction and would be outlined in an SPCC Plan. BMPs are included in Section 4.16 in the EIS.	Postal Mail
E92	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The increase in impervious surfaces has a greater effect on Saipan due to the recharge of the water aquifer and impact to the Waste Water Treatment Demands Alternative 1: total increase in impervious surface area of 2,392,200 sf Alternative 2: total increase in impervious surface area of 4,090,800 sf Comment: The impact of the increased WTF demands needs to be determined.	The increase of impervious surface areas is addressed in the EIS and would be fully permitted under SWPPP approved by CNMI. It is not anticipated that increased demand would be placed upon the WWTF as personnel would be housed in existing commercial hotels with existing WWTF hook-ups capable of handling the flow.	Postal Mail
E93	Water Resources	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: There is a need for consideration of alternative materials such as permeable surfaces that would reduce runoff and infiltration rates that would affect water resources, where practicable. The evaluation and assessment of Alternative 2 identifies potential impacts as being slightly greater than alternative 1. Comment: The use of improved technologies and surface materials should be considered to mitigate impacts that	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are included in Section 4.16 in the EIS.	Postal Mail

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						could have the potential to result in insignificant impacts.		
E94	Noise	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The off-airport area of land that is subject to increased noise levels for Alternative 1 (Saipan) is three times greater than that of Alternative 2 (Tinian); however, the overall impacts are identified as being equivalent for both alternatives. Area of Noise Impact statistic comparison includes: Alternative 1 (Saipan) - 11,052 people and 4 schools are impacted by noise Alternative 2 (Tinian) - 523 people and no schools are impacted by noise This analysis is not accurate given the disproportionate area of land and people subject to increased noise levels for Alternative 1 (Saipan). Comment: We strongly recommend that the DoD select Alternative 2 (Tinian) as the Final Preferred Alternative since there are minimal noise impacts associated with this alternative. If the DoD does not select Alternative 2 (Tinian) as the Final Preferred Alternative, please explain the DoD's justification on why they would select Alternative 1 (Saipan) that has a HIGH Noise Impact on the community over an alternative that has Minimal to No Noise Impact. In addition, please explain in detail what other regulatory and non-regulatory decision making items went into the decision to select Alternative 1 (Saipan).	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
E95	Noise	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: Noise sensitive land uses (Koblerville Elementary School, San Antonio Elementary School, Vincente Elementary School and Southern High School) currently exist with the 65dB DNL or larger footprints in the Preferred Alternative 1 (Saipan). Schools, that are currently located within the 65 dBA DNL noise levels and higher, are limited to using their air conditioning to a few hours a day and thus it is necessary to conduct classroom activities with the windows open. Classroom activities are highly impacted by the noise generated by divert activities during the time that the windows are open. Mitigation measures to reduce noise impacts are NOT adequately addressed in the DEIS. Detailed mitigation measure should be included in the document. Comment: Please confirm that the Record of Decision (ROD) will include language stating that the <u>DOD shall</u> coordinate the schedule of all Divert Activities and	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Mitigation measures and BMPs are provided in Section 4.16.	Postal Mail

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						Exercises with Government of CNMI and CNMI's Public School System in order to de-conflict any potential compatibility issues associated with noise generated by the divert activities. If the ROD will not include language to this affect is not in the ROD please explain how the DoD will guarantee that coordination for scheduling divert activities will occur with these agencies. Recommend that the DoD sound attenuate the schools if de-confliction of noise impacts are not guaranteed through scheduling.		
E96	Noise	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	4-6	6-7	N/A	Observation/Issue: The analysis of the High Scenario of Alternative 1 states "Under the Medium Scenario, approximately 37,115 acres consists of non-airport property." Comment: This should be corrected to " <i>under the High Scenario ...</i> "	The USAF has revised the noise analysis in Section 4.1. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
E97	Tinian v. Saipan: Socioeconomics	Political Stakeholder Government of CNMI (Submitted by Lt. Gov. Inos)	N/A	N/A	N/A	Observation/Issue: The development of the part in Tinian can underpin the potential economic development for the economy of Tinian. Although the value of the investment will benefit CNMI with either alternative, the greatest long term economic impact will be realized with alternative 2 (Tinian) being the divert installation. Comment: The EIS needs to take this issue into consideration when developing the FEIS.	Socioeconomic impacts are discussed in Section 4.14 of the EIS.	Postal Mail
F98	Tinian v. Saipan	Political Stakeholder Tinian Mayor Ramon Dela Cruz	N/A	N/A	N/A	As the mayor of the Municipality of Tinian and Aguiguan, I am submitting the attached three documents for your review. They include comments from Governor of the CNMI Benigno Fitial and his White Paper defining the Military Integrated Management Committee's stance on the Draft Environmental Impact Statement for Divert Activities and Exercises, Guam and Commonwealth of the Northern Mariana Islands ~ a resolution from the CNMI Senate; and our comments on the draft EIS from the Tinian Joint Leadership. All three share two common perspectives. First, they all support the construction of an Air Force Divert Base on either Tinian or Saipan. And, second, they all agree that Tinian is the best location for the Divert Base.	Submittal of the documents has been noted.	Postal Mail
F99	Tinian v. Saipan: Joint Use	Political Stakeholder Tinian Mayor	N/A	N/A	N/A	The people of Tinian have strong feelings about the Divert Base being constructed on Tinian, for several good reasons. Tinian was the world's busiest airport during World War II.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the	Postal Mail

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		Ramon Dela Cruz				Many joint training exercises have been successfully conducted on Tinian over the past 30 years, with the recent Marine Air Group 12 operations on both West Field and North Field being the best example of potential air operations on Tinian. Additional land would not need to be acquired if the base to be built on Tinian. Finally, and perhaps most important, the people of Tinian have been waiting patiently for the promised military development of their island since they agreed to lease two-thirds of their island to the United States Department of Defense in 1975.	Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action.	
F100	Tinian v. Saipan: Covenant	Political Stakeholder Tinian Mayor Ramon Dela Cruz	N/A	N/A	N/A	Although it might be true that it would be easier to establish the Divert Base on Saipan at this time, it would be in the best long-term interest of both the United States and the Commonwealth of the Northern Mariana Islands to have the base built on Tinian. If built on Tinian, the Air Force could obtain 100 % operational resiliency. If a true national emergency were to arise, the Divert Base on Tinian could be expanded onto adjacent lands already leased by the Department of Defense.	The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
F101	Tinian v. Saipan: Socioeconomics	Political Stakeholder Tinian Mayor Ramon Dela Cruz	N/A	N/A	N/A	Construction of the Divert Base on Tinian would spark the economic development of this island and facilitate the development of other military activities on Tinian's military leased lands.	Comment noted.	Postal Mail
G102	General	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	First and foremost, the establishment of an Air Force Divert Base in the CNMI is a welcome addition to the economy of the islands, whether it is constructed on Saipan where better housing and recreational opportunities are currently available for Air Force personnel, or on Tinian where the United States Air Force can obtain 100% of its operational resiliency in case of need, albeit with a lesser number of	Sections 1 and 2 of the EIS have been edited to reflect a discussion of recently proposed but not completed infrastructure projects. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified	Postal Mail

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						high end hotels, restaurants and golf courses. However, higher echelon Air Force decision makers should be aware that the draft EIS for a Divert Base in the Northern Mariana Islands is flawed both fundamentally and technically with regard to the Tinian option. There are significant costs that have not been clearly identified in either the EIS or the Executive Summary and there are significant recent developments on Tinian that have not been identified	alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
G103	Tinian v. Saipan: Covenant	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	Fundamentally, the EIS fails to recognize either the letter or the spirit of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, codified at 48 U.S.C. § 1801. Section 803 of the Covenant provides for the joint use of Tinian Harbor and Tinian West Field International Airport. When developed in the early 1970s it provided sufficient land for ground, sea and air training exercises to support air training and maneuvers, and an ammunition storage area. To this date, these lands have not been utilized and remain available to the Department of Defense. Operations on Tinian, therefore, are free to the military services, whereas they will have to pay to land aircraft at Saipan. Most important, Section 806 (a) of the Covenant provides that the United States will continue to recognize and respect the scarcity and special importance of land in the Northern Marianas. If the United States must acquire any interest in real property which it does not obtain under the Covenant, the United States will only seek to acquire such land if the public enterprise cannot be accomplished with a lesser interest. The lesser interest, in this case, would be taking advantage of the lands already under lease on Tinian. Essentially, this precludes the lease of additional lands on Saipan for a purpose that can be fulfilled on Tinian leased lands. The Covenant is also said to be the general United States policy with respect to land acquisition in the Northern Mariana Islands. It provides significant protections against the arbitrary or improper use of the authority of the United States to acquire property in the Commonwealth. This is especially so in view of the fact that Subsection (b) provides that no interest in real property will be acquired by the United States unless the acquisition has been duly authorized by the Congress and appropriations are available to pay the landowner just compensation. It is difficult to	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail

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						speculate on the cost of a long-term lease on 40 acres of prime land at Saipan International Airport, however, it would certainly be in the millions of dollars - far more than the cost of repairs to the breakwater at Tinian Harbor, for instance		
G104	Tinian v. Saipan: Covenant	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	Finally, and most important to the people of Tinian, building the Divert Base on Tinian will begin to fulfill a 40-year-old pledge to the people of Tinian. Before the 1975 plebiscite to ratify the Covenant, representatives of the United States of America., both military and civilian, led the people of Tinian to believe that if they voted in favor of the Covenant - including the technical agreement to lease two-thirds of their island for a hundred years - the United States would build a large multi-service training base on Tinian and the people of Tinian would benefit from the economic development. Other than few a few scattered training exercises, no significant military development has occurred on Tinian. The port of Tinian, built by Navy Seabees during World War II has been neglected, as have the access roads on the military leased lands. Building the Divert Base on Tinian will begin to allay the concerns of some Tinian residents who are now questioning the wisdom of their 1975 decision	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
G105	Tinian v. Saipan: Covenant	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	I find it very disappointing that the EIS has identified Saipan as the number one preference over the island of Tinian. For several reasons. The primary reason of course is that the covenant which established the Commonwealth of the Northern Mariana Islands including the technical agreement in Section 3 -- 803 of that Agreement, identified 2/3 of the Island of Tinian for military purposes and concluded that a -- not only have been identified for all future military uses, this included of course Farallon de Medinilla and certainly on Saipan, and 2/3 of the island of Tinian. It also stated that should the United States ever need additional land, they would have to lease or purchase those lands from the CNMI; and that cost would be far greater than any cost that would be incurred by establishing the base here on Tinian.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS	Tinian Public Hearing Verbal Comment

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							and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
G106	Tinian v. Saipan: Infrastructure	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	Although it is true that Saipan has more high end hotels than Tinian, the Tinian Dynasty Hotel and Casino has 412 rooms with a total capacity of well over 700, more than enough to support the personnel recommended in the EIS. Furthermore, if the Divert Base is constructed on Tinian, the refueling system would make the airport fully capable of receiving foreign jet aircraft. This would undoubtedly stimulate investors who have already purchased casino licenses to begin construction on their hotel complex. Just this month, Matua Bay resort broke ground on a new golf course to be located along beautiful Nassarino Beach on Southwestern coast of Tinian.	Comment noted. Sections 1 and 2 of the EIS have been edited to reflect a discussion of the hotel capacity of Tinian. Development of the fueling system and other improvements at Tinian airport would enhance the Tinian airport's capabilities. However, before increased traffic would be permitted, FAA would require additional airport certifications be completed.	Postal Mail
G107	Tinian v. Saipan: Infrastructure	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	The draft EIS goes to lengths to discuss the "dilapidated condition of the Tinian Harbor and the Tinian Dump. Currently, the fuel dock at Tinian Harbor is receiving extensive repairs, including a new sea wall, bollards and fenders. Recently, the Tinian joint leadership has concluded negotiations with the CPA and OIA to repair the two finger piers at the dock. This expenditure of CNMI CIP funds will undoubtedly lead to funding to repair the Breakwater. New equipment is being purchased to maintain the existing Tinian Dump, and design work is already at 30% completion for a new solid waste transfer station and a new landfill. Together, they will be more than adequate to handle all solid and liquid wastes produced by the Divert Base.	Comment noted. Sections 1 and 2 of the EIS were revised to include this recent information.	Postal Mail
G108	Tinian v. Saipan: Infrastructure	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	The stated primary justification for building the Divert Base is to give resiliency to the Air Force's primary mission in the Pacific by assuring a fall back base in case Andersen Air Force Base is compromised or if a natural or man-made disaster elsewhere mandates humanitarian relief. By utilizing Tinian, the United States Air Force could accomplish its mission 100%, whereas if the facility is established on Saipan they would lose 17% operational opportunity. The runway at Tinian's West Field	Comment noted. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail

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						International Airport could easily be extended to provide the runway necessary for the largest cargo and aerial refueling aircraft in the Air Force inventory.		
G109	Tinian v. Saipan: Infrastructure Tinian v. Saipan: Cumulative Impacts	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	The second reason is, I believe that the AI's document is outdated. There are several economic development projects that are going on right now including creation of landfills, solid waste transfer station, and significant improvements to the harbor that are not listed in the EIS. I would like to suggest that the EIS meet technical work before it's submitted to the Secretary of the Air Force for consideration.	Comment noted. Sections 1 and 2 of the EIS have been edited to reflect a discussion of recently proposed but not completed infrastructure projects.	Tinian Public Hearing Verbal Comment
G110	Tinian v. Saipan: Joint Use	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	The draft Air Force EIS also flies in the face of the Congressional mandate to streamline the DoD by establishing inter-service operations. This September there will be a joint Army-Navy training operation on North Field. At about the same time the III MEF will conduct a joint Navy-Marine Corps training operation on North Field. Most significantly, the recent Marine Air Group - 12 exercise on both West Field, establishing restraining wires for F-18 hot refueling operations, and on North Field, establishing an expeditionary airfield, demonstrated the island's ability to support major air operations. Despite all this joint inter-service activity on the part of the Army, Navy and Marine Corps, the Air Force-created draft EIS for a Divert Base purports to separate Air Force operations from the other services currently taking advantage of the joint-use opportunities available on existing Tinian leased lands.	Sections 1 and 2 of the EIS have been revised to discuss the Tinian leased lands. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable actions on Saipan and Tinian with the Divert Proposed Action.	Postal Mail
G111	Tinian v. Saipan: Joint Use Cumulative Impacts	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	Technically, the draft EIS is out of date. It fails to take into account several developments on Tinian in the last 2 years. The Record of Decision issued by the US Marine Corps in September 2010 created live fire rifle ranges on Tinian, primarily for the use of the US Marine Corps, yet available to all other federal agencies with a need to maintain small arms certification. Furthermore, Tinian was visited by high ranking representatives of the Japanese Self-Defense Force (JSDF), which co-funded the recent MAG -12 operations on Tinian. They are now considering joint USMC-JSDF	These proposals are discussed in Section 5, Cumulative Impacts.	Postal Mail

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						training exercises on Tinian. Having a fully operational air base on Tinian with refueling capabilities will support the Marine Corps effort on Tinian as well as joint training operations with other US and JSDF teams.		
G112	Tinian v. Saipan: Natural Resources	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	On Tinian, there are no endangered species within the proposed divert base area that would require mitigation, whereas construction in Saipan would likely necessitate a \$600,000 deposit in the mitigation bank.	Comment noted.	Postal Mail
G113	Tinian v. Saipan: Noise Airport Ops	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	The population of Tinian is not 5,000 people, as stated in the EIS. It is barely 3,000. Utilizing Tinian for the planned 8 weeks per year for training exercises will interfere less with local air traffic control than on Saipan, cause less effective noise pollution for the local community, and, because of the Covenant, the Air Force will not have to pay landing fees on Tinian. During the recent MAG - 12 operation at West Field International Airport, F-18 Hornets practiced rotating hot-refueling operations throughout the day for a full week with no appreciable distress to the community. Landing KC-135s as well as fighter jets at Saipan International Airport would cause considerable distress to the local population, and particularly to Kobler Elementary School and Southern High School, both of which are in the flight pattern.	Comment noted. The EIS has been revised with the most recent U.S. Census data. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available to the public.	Postal Mail
G114	Tinian v. Saipan: Socioeconomics	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	Furthermore, as noted in the draft EIS, while the construction of the Divert Base on Saipan will be of relatively minor importance to that economy, utilizing Tinian will provide a significant stimulus to the general economic development of this underdeveloped island, therefore decreasing the need for federal subsidies; building the Divert Base on Tinian will mean the completion of the West Field International Airport and the arrival of international commercial aircraft, allowing not only the importation of tourists, but the export of fresh and frozen produce and meats; completion of the Divert Base will stimulate the Army, Army Reserve, National Guard, Navy, and its Marine Corps, to take better advantage of training opportunities on Tinian.	Comment noted.	Postal Mail
H115	General	Political Stakeholder Guam Senator	N/A	N/A	N/A	I concur with the proposed actions of either Saipan International Airport in Saipan or Tinian International Airport in Tinian. A. B. Won Pat International Airport in	Comment noted.	Postal Mail

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		Judith P. Guthertz				Guam is not considered a feasible alternative location since it is too close to Andersen AFB. If a typhoon impacts on Andersen AFB, it will also impact on the A.B. Won Pat International Airport, only about twelve miles south of Andersen AFB. I support any program by our military to enhance its presence in the Mariana Islands. The people in Guam and the CNMI are very supportive of our military and very patriotic. In addition, any economic investment in the islands is critically needed at this time. The economy of the CNMI is very weak and any boost will be of major positive economic impact for this community of American citizens.		
H116	Tinian v. Saipan Covenant	Political Stakeholder Guam Senator P. Guthertz	N/A	N/A	N/A	The people of the CNMI actually voted in a plebiscite to become American citizens. They had to choose to remain non-American citizens, but they voted on June 17, 1975, (78.8 percent voting "yes") to become Americans. This was the first acquisition of American soil since the 1917 purchase of the Virgin Islands. At that time, the United States Government stated that it intended to invest economically by developing a harbor area in Saipan and an Air Base in Tinian. The United States, in the political agreement, called (The Commonwealth Covenant) leased the northern two-thirds of Tinian for ninety-nine (99) years for about \$21 Million Dollars. This was supposed to be a fall-back for Clark AFB in the Philippines. In 1990, when Mount Pinatubo near Clark AFB blew, the Air Force shut down Clark, but did not move those assets to Tinian, but scattered them around the Western States, Hawaii, and Guam. This was the time when the Soviet Union was collapsing and the end of the Cold War was in sight. Therefore, the anticipated development of an Air Force base in Tinian with its accompanied harbor facility in Saipan never came about. The United States can rightfully be seen as falling short on its commitments made in the run up to the critical plebiscite in 1975. We welcomed the population into our American political family, but have not reciprocated with the economic development envisioned at the time. For these reasons, I cheer the USAF desires to invest in the CNMI. I have been in touch with the CNMI Governor's and Tinian Mayor's staffs on this DEIS and have received word from them that any USAF investment will be	Comment noted. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Sections 1 and 2 of the EIS have also been revised to discuss the Tinian leased lands. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action.	Postal Mail

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						welcomed, whether it is in Saipan or Tinian. If all of the technical studies indicate that both Saipan and Tinian are feasible locations, I would then choose Tinian. Additional land would not need to be acquired, and the people there have been waiting patiently for the promised military development of their island. I support the CNMI Governor and the Tinian Mayor and I understand that my recommendation above is their position. They welcome any military investment and presence, anywhere in the CNMI, while favoring Tinian if that location is feasible. If it is not feasible, then they would support Saipan as the choice.		
II 17	Tinian v. Saipan: Airport Ops	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress, CNMI	N/A	N/A	N/A	[Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons]: The Tinian airport alternative would reduce potential conflicts between commercial and military activities. The Saipan International Airport is the gateway for the tourist economy of the Northern Marianas. There were in 2011 an average of 140 aircraft operations daily at the Saipan airport, including jet, single engine, and turbo prop international and inter-island flights. By contrast, there were 113 aircraft operations daily on average at Tinian airport in 2011, but these all involved small, single-engine aircraft and no international flights. So the Tinian Airport has greater capacity for the proposed increased use by the military. In addition, it has been demonstrated that military use can disrupt the commercial flights at Saipan Airport, which are essential to the overall economy of the islands. On February 21, 2012, an Air Force F-16 Falcon made an emergency landing at Saipan International Airport. This single incident forced the runway to be shut down for 18 hours, causing delays and cancellations of domestic and international flights to the detriment of tourist travel. The Proposed Action estimates eight weeks per year of joint military exercises and divert and humanitarian airlift staging training, so the potential for disruption of commercial activities at the Saipan Airport would be significant. The Tinian alternative would reduce this potential for conflict and avoid detriment to the flight-dependent tourist economy, as well as loss of revenues to the Commonwealth Ports Authority from decreased landing and other fees from	Comment noted. The EIS discusses impacts on flights and tourism in the Airspace and Airfield Operations section (Section 4.3) and the Socioeconomics section (Section 4.14).	Postal Mail

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						an interruption in commercial flights.		
I118	Tinian v. Saipan: Infrastructure	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress, CNMI	N/A	N/A	N/A	[Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons]: Tinian airport's runway could more easily be expanded to the requisite length. The Proposed Action would require that the Saipan airport runway be extended from the current 8,700 feet length to 10,075 feet. This would require that additional land be leased from the government of the Northern Mariana Islands at a cost to the Department of Defense. This Saipan extension would also require prior approval by the Federal Aviation Administration for a non-standard runway. By contrast, expansion of Tinian's airport runway from its current 8,600 feet to a requisite 10,000 feet would not require that additional land be leased from the local government. Rather the additional land needed for the runway extension is in the area already leased and paid for by the U.S	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
I119	Tinian v. Saipan: Infrastructure	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress, CNMI	N/A	N/A	N/A	[Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons]: Tinian has the necessary lodging options to support temporary personnel. Billeting for up to 700 personnel is required to support aircraft operations during a divert landing, humanitarian airlift, or military exercise event. The under-utilized Tinian Dynasty Hotel and Casino has 412 rooms capable of housing 824 temporary support personnel. Tinian also has several smaller scale hotels. While there are fewer commercial lodging options in total than on Saipan, there is sufficient capacity on Tinian; and the cost and concentration of these facilities may make Tinian a preferable alternative from the point of view of billeting.	Section 2 was updated to include additional information on commercial lodging on Tinian.	Postal Mail
I120	Tinian v. Saipan: Joint Use	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress,	N/A	N/A	N/A	[Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons]: Development of the Tinian alternative could have synergistic benefit for other military activities on Tinian. A number of joint, combined, and unit-level military training activities and exercises, described and analyzed in the	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft	Postal Mail

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		CNMI				Mariana Islands Range Complex EIS and subsequent Record of Decision, are scheduled for Tinian. Four live firing ranges are to be constructed there. These activities would benefit from renovation of the Tinian harbor to allow for safe, efficient, and reliable transportation of equipment, fuel, and military personnel. Developing the Tinian alternative for divert activities and exercises would strengthen the rationale for investment in harbor renovation and make Tinian an even more attractive location for joint-service and joint international training exercises.	EIS available the public. Additionally, Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable actions on Saipan and Tinian with the Divert Proposed Action.	
I121	Tinian v. Saipan: Natural Resources	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress, CNMI	N/A	N/A	N/A	[Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons]: Adverse impacts on the endangered nightingale reed-warbler could be expected on Saipan. Areas surrounding the Saipan airport have been identified as critical habitat for the nightingale reed-warbler, a species listed as endangered under the Endangered Species Act. The three years of construction activities that the Saipan alternative would require, as well as the subsequent implementation of the divert operations and annual eight-week training, are likely to have an adverse impact on that habitat and require mitigation measures. With the Tinian alternative, no threatened or endangered species are anticipated to be significantly affected in either the construction or the implementation phase. Therefore, no mitigation efforts are likely to be needed on Tinian and these costs can be avoided.	Comment noted.	Postal Mail
I122	Tinian v. Saipan: Noise	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress, CNMI	N/A	N/A	N/A	Of the two alternative sites, however, Tinian International Airport should be given preference in my view over Saipan International Airport for the following reasons: 1. Noise pollution would be less of a factor on Tinian than on Saipan. There are multiple residential villages adjacent to the Saipan airport that would be heavily impacted by increased noise levels both from the construction and from the subsequent operational activities related to the Proposed Action. These villages include Koblerville, Afetas, San Vicente, San Antonio, As Lito, and Dandan, all of which have considerable residential populations, schools, recreational areas, and tourist sites. Increased noise levels at the Tinian airport, on the other hand, would have minimal impact on the residents of	The noise analysis was revised in Section 4.1 and 4.10 based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis. The USAF has also revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Sections 1 and 2 of the EIS have	Postal Mail

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						Tinian. The closest residential development area is over one and a half miles away. There are no schools, recreational areas, or tourist sites in the vicinity of the airport. All of the land north of the airport is currently leased by the U.S. for military use, and recent training exercises held on Tinian have demonstrated that residential areas south of the airport are exposed to very low noise levels from military construction and aircraft operations there.	been revised to discuss the Tinian leased lands. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action.	
I123	General	Political Stakeholder Congressman Gregorio Kilili Gregorio Sablan U.S. Congress, CNMI	N/A	N/A	N/A	I appreciate the efforts to date of the U.S. Air Force and the Department of Defense to explore all aspects of the Proposed Action and to consider all relevant public comments, especially from those who would be most impacted, the people of Tinian and Saipan. Also, I am grateful that both alternatives for the Proposed Action include improvements to existing airports in the Northern Marianas. This investment would be welcome to the islands' ailing economy and would provide much-needed jobs.	Comment noted.	Postal Mail
J124	Tinian v. Saipan	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	We encourage you to re-think the real purpose behind the construction of the Divert Base and recognize that utilizing the existing military land lease on Tinian gives the United States Air Force the best opportunity to fulfill its mission, now and in the future.	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
J125	Tinian v. Saipan	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	However, the United States Congress and higher echelon United States Air Force decisionmakers should be aware that the draft EIS for a Divert Base in the Northern Mariana Islands is flawed both fundamentally and technically with regard to the Tinian option. There are significant costs that have not been clearly identified in either the EIS or the Executive Summary, and there are significant recent capital improvement developments on Tinian that have not been identified.	Comment noted. For further clarification, the USAF is not constructing a permanent divert "base". The Proposed Action focuses on the development and improvement of existing divert or contingency airfield capabilities and will not include the permanent deployment or "beddown" of forces in the Mariana Islands, nor will it include the development of a new airfield (e.g., new runway, new parking area) in a location that does not have existing capabilities within the Mariana Islands region. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF	Postal Mail

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							is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
J126	Tinian v. Saipan General	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	First and foremost, in the spirit of Governor Fitial's Military Integrated Management Council, we wish to state that the establishment of an Air Force Divert Base in the CNMI is a welcome addition to the economy of the Commonwealth of the Northern Mariana Islands, whether it is constructed on Saipan where an additional 40-some acres of land would have to be leased from the Commonwealth and provide only 87% operational resiliency to the United States Air Force, or on Tinian where military leased lands are already available at no additional cost to the United States of America and where the Air Force can obtain 100% of its operational resiliency in case of need. Pointedly, we are in full support of the constructing the Divert Base in the Commonwealth of the Northern Mariana Islands.	Comment noted. Sections 1 and 2 of the EIS have been revised to discuss the Tinian leased lands. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action.	Postal Mail
J127	Tinian v. Saipan: Covenant	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	Most important, Section 806 (a) of the Covenant provides that the United States will continue to recognize and respect the scarcity and special importance of land in the Northern Marianas. If the United States must acquire any interest in real property which it does not obtain under the Covenant, the United States will only seek to acquire such land if the public enterprise cannot be accomplished with a lesser interest. The lesser interest, in this case, would be taking advantage of the lands already under lease on Tinian. Essentially, this precludes the lease of additional lands on Saipan for a purpose that can be fulfilled on Tinian leased lands.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. Additionally, Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
J128	Tinian v. Saipan: Covenant	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	The Covenant is also said to be the general United States policy with respect to land acquisition in the Northern Mariana Islands. It provides significant protections against the arbitrary or improper use of the authority of the United States to acquire property in the Commonwealth. This is especially so in view of the fact that Subsection (b) provides	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et	Postal Mail

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						that no interest in real property will be acquired by the United States unless the acquisition has been duly authorized by the Congress and appropriations are available to pay the landowner just compensation. It is difficult to speculate on the cost of a long-term lease on 40 acres of prime land at Saipan International Airport, however, it would certainly be in the millions of dollars - far more than the cost of repairs to the breakwater at Tinian Harbor, for instance.	seq. which recognizes the significance and scarcity of land. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
J129	Tinian v. Saipan: Covenant	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	Finally, and most important to the people of Tinian, building the Divert Base on Tinian will begin to fulfill a 37-year-old pledge to the people of Tinian. Before the 1975 plebiscite to ratify the Covenant, representatives of the United States of America, both military and civilian, led the people of Tinian to believe that if they voted in favor of the Covenant - including the technical agreement to lease two-thirds of their island for a hundred years -- the United States would build a large multi-service training base on Tinian and the people of Tinian would benefit from the economic development. Other than for a few scattered training exercises, no significant military development has occurred on Tinian. No permanent military facilities have been built. The port of Tinian, built by Navy Seabees during World War II has been neglected, as have the access roads on the military leased lands. Building the Divert Base on Tinian will begin to allay the concerns of some Tinian residents who are now questioning the wisdom of their 1975 decision.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
J130	Tinian v. Saipan: Covenant Tinian v. Saipan: Infrastructure	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	It is surprising that top priority in identifying the appropriate first alternative was not giving the United States Air Force the maximum long-term capability to "establish additional divert capabilities to support and conduct current, emerging, and future training activities, while ensure the capability to meet mission requirements in the event that access to Andersen Air Force Base (AFB) or other western Pacific locations is limited or denied (Cover Sheet to Draft EIS). Utilizing existing Tinian Leased Lands can give the United States Air Force 100% resiliency in case access to Andersen Air Force Base is limited or denied. Even by leasing additional land on Saipan, the United States Air Force would automatically lose 17% operational resiliency. The runway at Tinian's West Field International Airport could easily be extended to provide the runway necessary to	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the Final EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Based on	Postal Mail

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						accommodate the largest cargo and aerial refueling aircraft in the Air Force inventory. Even at great expense to the American tax payer, this goal could not be achieved on Saipan.	comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	
J131	Tinian v. Saipan: Infrastructure	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	Although it is true that Saipan has more high-end hotels than Tinian, the Tinian Dynasty Hotel and Casino has 412 rooms with a total capacity of well over 824, more than enough to support the personnel recommended in the EIS.	Comment noted. Sections 1 and 2 of the EIS have been edited to reflect a discussion of the hotel capacity of Tinian.	Postal Mail
J132	Tinian v. Saipan: Infrastructure	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	The draft EIS goes to lengths to discuss the "dilapidated" condition of the Tinian Harbor and the Tinian Dump. Currently, the fuel dock at Tinian Harbor is receiving extensive repairs, including a new sea wall, bollards and fenders. Recently, the Tinian joint leadership has concluded negotiations with the CPA and OLA to repair the two finger piers at the dock. This expenditure of CNMI CIP funds will undoubtedly lead to funding to repair the Breakwater. New equipment is being purchased to maintain the existing Tinian Dump, and design work is already at 30% completion for a new solid waste transfer station and a new landfill. Together, they will be more than adequate to handle all solid and liquid wastes produced by the Divert Base.	Comment noted. Sections 1 and 2 of the EIS were revised to include this recent information.	Postal Mail
J133	Tinian v. Saipan: Joint Use	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	The draft Air Force EIS also flies in the face of the Congressional mandate to streamline the DoD by establishing inter-service operations. This September there will be a joint Army-Navy training operation on North Field. At about the same time the III MEF will conduct a joint Navy-Marine Corps training operation on North Field. Most significantly, the recent Marine Air Group - 12 exercise on both West Field, establishing restraining wires for F-18 hot refueling operations, and on North Field, establishing an expeditionary airfield, demonstrated the island's ability to support major air operations. Despite all this joint inter-service activity on the part of the Army, Navy and Marine Corps, the Air Force-created draft EIS for a Divert Base purports to separate Air Force operations from the other services currently taking advantage of the joint-use opportunities available on existing Tinian leased lands.	Sections 1 and 2 of the EIS have been revised to discuss the Tinian leased lands. However, as further explained in the EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable	Postal Mail

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							actions on Saipan and Tinian with the Divert Proposed Action.	
J134	Tinian v. Saipan: Joint Use	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	Technically, the draft EIS is out of date. It fails to take into account several developments on Tinian in the last 2 years. The Record of Decision issued by the US Marine Corps in September 2010 created live fire rifle ranges on Tinian, primarily for the use of the US Marine Corps, yet available to all other federal agencies with a need to maintain small arms certification. Furthermore, Tinian was visited by high ranking representatives of the Japanese Self-Defense Force (JSDF), which co-funded the recent MAG - 12 operations on Tinian. They are now considering joint USMC-JSDF training exercises on Tinian. Having a fully operational air base on Tinian with refueling capabilities will support the Marine Corps effort on Tinian, as well as joint training operations with other US and JSDF teams.	Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable actions on Saipan and Tinian with the Divert Proposed Action.	Postal Mail
J135	Tinian v. Saipan: Natural Resources	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	On Tinian, there are no endangered species within the proposed divert base area that would require mitigation, whereas construction in Saipan would likely necessitate a \$600,000 deposit in the mitigation bank.	Comment noted.	Postal Mail
J136	Tinian v. Saipan: Noise Airport Ops	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	The population of Tinian is not 5,000 people, as stated in the EIS. It is barely 3,000. Utilizing Tinian for the planned 8 weeks per year for training exercises will interfere less with local air traffic control than on Saipan, cause less effective noise pollution for the local community, and, because of the Covenant, the Air Force will not have to pay landing fees on Tinian. During the recent MAG - 12 operation at West Field International Airport, F-18 Hornets practiced rotating hot-refueling operations throughout the day for a full week with no appreciable distress to the community. Landing KC-135s as well as fighter jets at Saipan International Airport would cause considerable distress to the local population, and particularly to Kobler Elementary School and Southern High School, both of which are in the flight pattern.	Comment noted. The EIS has been revised with the most recent U.S. Census data. The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
J137	Tinian v. Saipan: Socioeconomics	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	Furthermore, as noted in the draft EIS, while the construction of the Divert Base on Saipan will be of relatively minor importance to that economy, utilizing Tinian will provide a significant stimulus to the general economic development of this underdeveloped island, therefore decreasing the need for federal subsidies; building the Divert Base on Tinian will mean the completion of the West Field International Airport and the arrival of	Comment noted. For further clarification, the USAF is not constructing a permanent divert "base". The Proposed Action focuses on the development and improvement of existing divert or contingency airfield capabilities and would not include the permanent deployment or "beddown" of forces in the Mariana Islands, nor would it	Postal Mail

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						international commercial aircraft, allowing not only the importation of tourists, but the export of fresh and frozen produce and meats; completion of the Divert Base will stimulate the Army, Army Reserve, National Guard, Navy, and its Marine Corps, to take better advantage of training opportunities on Tinian.	include the development of a new airfield (e.g., new runway, new parking area) in a location that does not have existing capabilities within the Mariana Islands region. Adverse and beneficial impacts on Saipan, Tinian, and CNMI as a whole are discussed in Section 4.14. Additionally, the potential for increased air traffic and the potential for increased tourism as a result of the improved airport have been accounted for with a projected 1% increase of civilian operations at the airport.	
J138	Tinian v. Saipan: Socioeconomics Cumulative Impacts	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	Furthermore, if the Divert Base is constructed on Tinian, the refueling system would make the airport fully capable of receiving foreign jet aircraft. This would undoubtedly stimulate investors who have already purchased casino licenses to begin construction on their hotel complex.	Comment noted.	Postal Mail
J139	Tinian v. Saipan	Political Stakeholder Tinian Joint Leadership	N/A	N/A	N/A	The EIS did not give sufficient importance to the transportation of ammunition from Tanapag Harbor in northern Saipan to Saipan International Airport on the very southern end of Saipan. Bombs would have to be transported through the heavily populated commercial and residential districts of western Saipan before reaching the airport. On the other hand, transporting ammunition from Tinian Harbor to West Field International Airport would pass through a very lightly populated area to nearby West Field at a much shorter distance approximately 1.5 miles.	The EIS does not discuss transportation of ammunition because transportation of ammunition is not part of the Proposed Action.	Postal Mail
K139	General	Agency Stakeholder CNMI DEQ David B. Rosario, Acting Director	N/A	N/A	N/A	Based on the information obtained at the public hearing and our review of the draft EIS, we have no significant concerns about the project at this time and believe the EIS to be sufficient. Thank you for the opportunity to comment on this proposal.	Comment noted.	Postal Mail
L140	Socioeconomics Land Use	Agency Stakeholder Tinian Cattleman's Association Lawrence Duponcheel	N/A	N/A	N/A	If Tinian is selected as the site for the alternate Airfield, a good number of cattle ranches (ranching families) will be affected. The people of Tinian rely on these ranches as the one and only source of fresh meats and sometimes produce for family consumption. Our ranches provide work, income, and food security for island residents. That being said, any plans for expanding the airstrips or boundaries of	Cattle ranching occurs on the military lease-back area north of the Tinian airport. It is recognized that potential grazing lands may be affected on Tinian. The impact on potential grazing lands is provided in Section 4.14.	Web site

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						any type that might affect these ranches should provide consideration and support where appropriate. If at all possible, grazing areas should be incorporated into the planned facility, just as they are on other bases which allow farming and ranching within their limits.		
M141	Cumulative Impacts	Agency Stakeholder Guam DAWR Commentor: JQ	5-2	1	Table 5.2-1	Table 5.2-1 does not show the amount of habitat being removed for all of the projects listed. The amount of habitat altered and/or cleared should be included in the Table to show cumulative impacts to wildlife habitat.	All projects are contingent upon approval and funding by the US Congress; because funding has not yet been approved for these projects, total acreage that could be cleared would not necessarily add to the cumulative impact discussion.	Postal Mail
M142	Cumulative Impacts: Mitigation	Agency Stakeholder Guam DAWR Commentor: JQ	5-14	7-8	5.3.4.1	BMPs should be implemented in duration of construction and post-construction phase and soil monitoring should be implemented to assess and manage any potential impacts to adjacent sites, such as erosion during a heavy rain storm.	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP. BMPs are summarized in Section 4.16 in the EIS.	Postal Mail
M143	Cumulative Impacts: Mitigation	Agency Stakeholder Guam DAWR Commentor: JQ	5-14	33-35	5.3.5.1	Continuous implementation of erosion and sedimentation controls and storm water pollution prevention at the construction sites during and when construction is completed is necessary to prevent or minimize potential cumulative impacts on water resources nearby. Control devices implemented must be monitored in duration of the construction period.	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and a SWPPP. BMPs are summarized in Section 4.16 in the EIS.	Postal Mail
M144	Geological Resources and Soils	Agency Stakeholder Guam DAWR Commentor: JQ	3-25	1-25	N/A	Text: Limestones and calcareous deposits compose about 90 percent of the surficial geology on Saipan, with volcanic rocks exposed on 10 percent of the land surface (from erosion and weathering.) Comment: Mitigation to control and further prevent erosion at the proposed site must be implemented the duration of the project and thereafter. Methods should not be restricted or limited to silt curtains, other methods should be employed and managed accordingly for effectiveness	BMPs would be implemented during and after construction as needed and would be outlined in an ESCP and an SWPPP. BMPs are summarized in Section 4.16 in the EIS.	Postal Mail
M145	Geological Resources and Soils	Agency Stakeholder Guam DAWR Commentor: JQ	3-25	3-12	N/A	Text: Limestones in Saipan are also highly permeable, which indicates connectivity of pores within the rock. A rock with a higher permeability has a greater ability to transmit the flow of groundwater. Volcanic rocks on Saipan typically are poorly sorted and have undergone secondary alteration that inhibits the flow of groundwater. However, faults transect the island in a north-northeast direction, complicating the sequence and porosities/permeabilities of	BMPs would be implemented prior to and after construction and would be outlined in a Spill Prevention, Control, and Countermeasure (SPCC) Plan. BMPs are summarized in Section 4.16 in the EIS.	Postal Mail

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						rock units (DON 2010b). Porosity, permeability, and groundwater are further ... Comment: Contractors and the Military (AF) must develop and implement mitigation to prevent any petroleum fuel leakage to exposed limestone surface in duration of project construction and duration of military activities.		
M146	Geological Resources and Soils	Agency Stakeholder Guam DAWR Commentor: JQ	5-14	11	5.3.4.1	Soil surveys should also be conducted at least quarterly, post construction phase, after project is completed and training occurs. This will help determine if soils are contaminated which allows remediation efforts to take place.	Comment noted. The USAF does not expect any impacts to soils resulting from contamination and will work with federal and local environmental agencies to assure all preventative measures and monitoring are current for all activities. Should spills occur, the USAF would follow a SPCC Plan approved by the appropriate environmental agencies. BMPs are summarized in Section 4.16 in the EIS.	Postal Mail
M147	Marine Bio	Agency Stakeholder Guam DAWR Commenter: JQ	3-60, 3-61	41-43/1-10	3.7.2	The sea turtle section references a Kolinski 1999 survey/study published in 2001; 11 years ago. Recent information regarding sea turtles in Saipan should be included in the Final EIS. Sea turtle movements and behavior in Saipan, especially within the project area is needed information to determine 'specific' mitigation. Upgrading GSN, requires more lighting, and removal of a 'natural' barrier, existing forest, may have an impact on sea turtles	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives that eliminates some of the lighting at the airport originally proposed. Text added to the EIS in Section 4.7 to provide more recent information and: clarify that no forest vegetation will be removed from the ends of the runways, that parking area lighting would be more than 0.5 miles from any nesting beaches, and that the lighting is not considered additional lighting because only the existing terminal lighting would be expanded. Additionally, lights at the port facility would not be pointed towards the harbor. Also, there is no nesting beach at the harbor.	Postal Mail
M148	Marine Bio	Agency Stakeholder	4-67	25-26	4.7.1.1	The proposed project requires clearing and grading and as a result soil will be loosened and may run-off during a heavy rains or continuous rain. Mitigation to control erosion or run-off will need to be addressed during construction and implementation phase.	BMPs would be implemented during and after construction and would be outlined in an ESCP and an SWPPP. BMPs are summarized in Section 4.16 in the EIS.	Postal Mail
M149	Marine Bio	Agency Stakeholder	4-68	3-8	4.7.1.2	Aside from noise impacts, visual cues may impact sea turtles. Visuals such as lighting may have an impact on sea	Based on comments received on the DEIS and coordination of federal and local	Postal Mail

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		Guam DAWR Commenter: JQ				turtle behavior. Lighting devices at GSN, especially near the coast, must be 'turtle friendly' lighting.	stakeholders and the public, the USAF has developed modified alternatives. Text added to the EIS in Section 4.7 to provide more recent information and: clarify that no forest vegetation will be removed from the ends of the runways, that parking area lighting would be more than 0.5 miles from any nesting beaches, and that the lighting is not considered additional lighting because only the existing lighting would be expanded. The USAF concludes that enhancement of existing lighting would not affect nesting sea turtle behavior. Additionally, lights at the port facility would not be pointed towards the harbor. Also, there is no nesting beach at the harbor.	
M150	Marine Bio	Agency Stakeholder Guam DAWR Commenter: JQ	5-16	13-21	5.3.7.1	The section describes impacts to sea turtles from the expected increase in noise during DoD redevelopment project and low-flying aircrafts. Of concern, that needs to be addressed is the impact on sea turtles from lights associated to the proposed project. The extension of the runway and new additions of buildings will require some lighting, increasing the exposure of lighting pollution to sea turtles that may be present offshore at GSN. The FEIS should mention impacts caused by lighting. Nests should be monitored during activities.	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. Text added to the EIS in Section 4.7 to provide more recent information and: clarify that no forest vegetation will be removed from the ends of the runways, that parking area lighting would be more than 0.5 miles from any nesting beaches, and that the lighting is not considered additional lighting because only the existing lighting would be expanded. The USAF concludes that enhancement of existing lighting would not affect nesting sea turtle behavior. Additionally, lights at the port facility would not be pointed towards the harbor. Also, there is no nesting beach at the harbor. Because of the lack of impacts, the USAF does not plan to monitor turtle nests.	Postal Mail
M151	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	3-48	32-33	N/A	Native skink and gecko species are known at the preferred alternative sites. Surveys must be conducted to determine absence/presence and mitigation should be developed and implemented in duration of construction activity at the preferred Alternative site.	Section 4.6 acknowledges that some skinks and geckos might be killed during construction. All applicable CNMI laws and regulations will be followed to protect native species; however, the USAF does not	Postal Mail

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							plan to conduct surveys or develop mitigation for skinks and geckos.	
M152	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	3-49	5-7	N/A	The Mariana swiftlet is known to forage in areas abundant with insects, and does not restrict its foraging territories to 'nature forest habitats.' It is known that the swiftlet forages in variety of habitat types. What may not be known is the distance, away from roosting caves to foraging territories?	The text was modified in Section 3.6 to state the distance to the nearest known roosting cave on Saipan and to describe foraging habitat for this species better.	Postal Mail
M153	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	3-49	5-7	N/A	On page 3-39, lines 15-18, describes the canopy vegetation in the Tangtangan forest. The trees identified include; Premna, Ficus, Aidia, Morinda, Carica, and Albizia. Abundance of these tree species may not be abundant, although are present, but minimal. They serve as roosting and foraging trees for the fruit bat and should still be considered. The Final EIS must identify that these Tangtangan forest with minimal presence of the trees mentioned earlier has the potential for fruit bat habitat; and should not be 'ruled-out'.	The text was modified in Section 4.6 to summarize the results of surveys conducted in January–April 2012 and to clarify that the areas that would be cleared is not suitable habitat for roosting or foraging fruit bats.	Postal Mail
M154	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	3-49	8-12	N/A	Due to the potential of standing water in the project area, moorhens may be attracted. For the purpose of NEPA, the chances of moorhens being present at the project site is not truly known, not much is known what time of the day the 10 weeks of surveys were; it is known that moorhens move about in the evening and are attracted to freshwater habitats (including standing water after a heavy downpour). Mitigation actions must be developed and implemented to address moorhens and all other species that 'may be attracted' at the project site	Moorhens using any nearby surface waters, such as the airport detention basin or golf course ponds west of the runway could be temporarily displaced during construction and divert exercises, but would not otherwise be adversely affected by project activities. The USAF received a not likely to adversely affect determination from USFWS for moorhens in the <i>Biological Opinion for Divert Activities and Exercises, at Saipan International Airport, CNMI</i> . All documentation supporting Section 7 consultation with USFWS is included in Appendix B of the EIS.	Postal Mail
M155	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	4-63	18-19	4.6.1.2	T&E species that occur at the proposed project site, or adjacent to, are accustomed with the existing conditions present at GSN. With an expected increase of 5.9 aircraft operations, noise (and overflight shadows) may cause disturbance to protected species. For example: opening of North runway at AAFB, fruit bat colonies declined after North runway was open and used periodically. 40+ bats were observed prior to opening the runway and slowly declined at the colony soon after the North runway was	The effects of noise on threatened and endangered species are addressed in Sections 4.6. Additionally, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern	Postal Mail

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						opened.		
M156	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	4-63	22-23	4.6.1.2	As stated earlier in the DEIS (Ch. 3), there is no 'permanent' wetland at the proposed project site, however there is standing water accumulated after a rainfall. The DEIS also indicated there is the 'potential' this area may attract migratory birds, the moorhen, and the megapode. The presence of standing water that may attract species to the area must be addressed to prevent any protected species in the area that may be harmed by the construction and/or implementation of the proposed action.	As part of the USAF Bird Hazard Safety program, all attempts are made to assure wildlife is not encouraged to forage or use areas adjacent to operating areas. Through proper wildlife management, including limiting the locations for temporary standing water, USAF would minimize any potential for effects on moorhens, migratory birds, and other species. The project would not result in an increase in standing water in areas where wildlife could be harmed by project or airport activities.	Postal Mail
M157	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	4-63	24	4.6.2	Comments addressed under Alternative 1 (GSN; the preferred alternative) applies to Alternative 2 (TNI).	Comment noted.	Postal Mail
M158	Natural Resources	Agency Stakeholder Guam DAWR Commenter: JQ	5-16	22-28	5.3.7.1	Beside Noise, the FEIS will need to identify all possible impacts, to the wildlife and their habitats of Saipan and Tinian. In addition, the FEIS will need to reference studies determining whether marine mammals, sea turtles, or other marine organisms are 'extremely unlikely to be repeatedly exposed to low-altitude overflights.' The expected 'overuse' of GSN due to meet the mission for the USAF for the MIRC, MITT, ISR/Strike activities, will happen. Exposure to the additional noise, lighting, burning jet fuels, will have a cumulative impact to the wildlife present on land and nearshore.	All potential impacts of the alternatives on wildlife and their habitats are addressed in Section 4.6. Potential impacts on marine mammals, including sea turtles, are addressed in Section 4.7. As described in that section, little information regarding the reaction of sea turtles to fixed-wing aircraft overflights is available. The USAF disagrees that there would be an overuse to meet military missions because the airport would only be used for up to 8 weeks per year for training. Impacts related to marine species caused by training missions within the MIRC are analyzed and approved under the MIRC letter of authorization and the MITT EIS and associated Biological Opinion completed in July 2015.	Postal Mail
M159	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR	3-39	Table 3.6-1	N/A	Vegetation community within the proposed action are communities important to seasonal migratory birds protected under the MBTA (mowed fields). Tangantangan	The USAF consulted formally with the USFWS under Section 7 of the Endangered Species Act to determine the effect on	Postal Mail

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		Commenter: JQ				forest are important habitat for foraging and nesting like the yellow bittern and Endangered reed warbler. Mitigation actions must be developed and implemented to avoid harm to nesting, foraging, perching birds protected under the MBTA and ESA.	species and the mitigation required. All materials supporting the Section 7 consultation, to include the Biological Opinion, are included in Appendix B of the EIS.	
M160	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	3-48	4-8	N/A	Mitigation to minimize or avoid alteration to the normal behavior for the black noddies, a protected species under the MBTA, must be developed and implemented. Nesting birds should be monitored in duration of construction and military training activities.	As required by the Migratory Bird Treaty Act, construction activities would not destroy nests of black noddies or any other migratory birds. The USAF would monitor any active nests discovered during construction activities to ensure that those nests are not destroyed.	Postal Mail
M161	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	3-48	11-14	N/A	The lake and ponds within the proposed project site (Golf course ponds) is known to attract the endangered Mariana common moorhen. Mitigation must be developed and implemented to avoid and minimize impacts to the protected species. Moorhens are known to move about during the evening hours from site to site, therefore, mitigation must address time of day activities for the species.	The USAF consulted formally with the USFWS under Section 7 of the Endangered Species Act to determine the effect on the species and the mitigation required. All materials supporting the Section 7 consultation, to include the Biological Opinion, are included in Appendix B of the EIS.	Postal Mail
M162	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	3-48	18-19	N/A	Lessor plover and moorhen movements around Saipan should be known to define mitigation actions for the proposed activity in GSN. Mitigation to avoid harm and harassment changes to normal behavior to protected species must be addressed and is required under the MBTA and ESA.	Specific information on the movements of these species is not required to evaluate potential impacts. The USAF would implement all measures required to comply with the Endangered Species Act and the Migratory Bird Treaty Act.	Postal Mail
M163	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	4-30	27-28	4.2.1.1	A black noddy rookery, with 60 active nests, was discovered approximately 675 feet from the proposed project sites for construction. Mitigation to prevent dust from impacting nest activities must be implemented in duration of the construction phase.	As stated in Section 4.2, fugitive dust-control measures would be employed during construction to minimize dust emissions.	Postal Mail
M164	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	4-59	20-21	4.6.1.1	Noise from construction will impact breeding activities for birds in the area. Mitigation should include the monitoring of nesting activities during the construction phase.	The USAF would implement all measures required to comply with the Migratory Bird Treaty Act. Monitoring of the response of migratory birds to noise is not required by that Act. However, USAF and USFW will coordinate throughout the project for issues including potential effects on birds covered under the MBTA	Postal Mail
M165	Natural	Agency	4-60	1-11	4.6.1.1	Not too sure how USAF determines that behavioral change,	The USAF consulted formally with the	Postal Mail

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	Resources: Mitigation	Stakeholder Guam DAWR Commenter: JQ				disorientation, hearing loss, displacement, increased mortality, as the result of unavoidable direct impacts associated with construction activities would be minor. Majority of the bird species identified within or adjacent to the proposed project site are special-status species, protected under the MBTA and ESA. USAF must mitigate on impacts to wildlife. There must be a fine balance to meet the requirements of the military mission and nature.	USFWS under Section 7 of the Endangered Species Act to determine the effect on the species and the mitigation required. All materials supporting the Section 7 consultation, to include the Biological Opinion, are included in Appendix B of the EIS. As described in Section 4.6, the conclusion that impacts of noise will be minor was based on the existing noise levels in the area and the infrequent and short-term increase in noise that would occur during exercises. The USAF will implement all measures required within the Biological Opinion provided in EIS Appendix B to comply with the Endangered Species Act and the Migratory Bird Treaty Act.	
M166	Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	4-62	41-42	4.6.1.2	5.9 increase of air operations is expected at GSN. Wildlife may be 'accustomed' to existing conditions, but may respond differently with the expected increase. Increase air traffic could result to disturbance on nesting birds resulting nest abandonment, or neonates falling off the nest. Biologists must be present to monitor nesting activities during exercises and/or during use of GSN.	Section 4.6 acknowledges that noise could adversely affect wildlife. Monitoring of the effects of noise on wildlife is not routinely done at other airports.	Postal Mail
M167	Noise	Agency Stakeholder Guam DAWR Commenter: JQ	3-3	3	N/A	Text: The noise analysis contained in the Draft EIS is based upon readily available background information and data that were current at the time of the analysis. Refinement of the noise analysis is an ongoing process and will be finalized based on Draft EIS comments prior to the final EIS. Comment: Noise analysis should include impacts to migratory birds and endangered species in the area. Noise impacts on protected species should be determined and mitigated to avoid any "harm, harassment, or alteration" to the protected species behavior	Assessment of impacts on migratory birds and endangered species from noise has been included in the EIS in Section 4.6 and the BA/BO as coordinated with the USFWS.	Postal Mail
M168	Noise Natural Resources: Mitigation	Agency Stakeholder Guam DAWR Commenter: JQ	4-3	21-28	4.1.1.2	DEIS does not indicate the preferred option for Alternative 1 (low, medium, or high scenario). Nor does the DEIS indicate what exact month implementation (use of GSN) will take place. As described in Ch. 3, Biological resources, protected species are known to nest at certain times of year. Mitigation to avoid nesting activity must be	Impacts on migratory birds and endangered species from noise have been included in the EIS and the BA/BO as coordinated with the USFWS.	Postal Mail

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						developed and implemented		
N169	Land Use	Agency Stakeholder CPA Edward M. Deleon Guerrero	N/A	N/A	N/A	Availability of Land on Tinian Section 803 of the Covenant provides for joint use of the Tinian International Airport. To date, the U.S. Armed Forces have failed to fully utilize TNI to its fullest potential. Section 2.2.1 states that selection standards required for the airfield must include existing land and infrastructure with expansion capabilities and it must be located within the MIRC training area. Tinian fits that bill. Although there is no current fuel farm located on Tinian, any added cost of constructing a fuel farm on Tinian will be outweighed by the benefit of concentrating all proposed military activities on Tinian as there is sufficient land to accomplish its goals and objectives in Tinian.	Comment noted. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail
N170	Mitigation	Agency Stakeholder CPA Edward M. Deleon Guerrero	N/A	N/A	N/A	<i>The Best Alternative: Alternative 2 TNI</i> While CPA recognizes that the CNMI will continue to play a critically important role in U.S. military efforts in the Asia Pacific region, we must remind you that the Divert Activities and Exercise program as proposed, with its first alternative being Saipan and its second alternative being Tinian, will impact our environment and create a myriad of financial, social, and cultural burdens for the people of the Commonwealth. CPA understands that there are possible mitigation proposals to deal with the various impacts, including best management practices and design concepts to avoid adverse impacts. However those specific measures have not been identified in the DEIS.	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. The ROD will officially specify which airport the USAF elects to use as its Divert Activities and Exercises location, or will announce selection of the No Action Alternative. Through the NEPA process, PACAF and USAF are considering at all potential impacts on Saipan and Tinian and the CNMI. Mitigation measures and best management practices were added to Section 4.16 of the EIS. Mitigation measures and BMPs are also discussed in Section 4 under the respective resource area and will be identified in the ROD	Postal Mail
N171	Noise	Agency Stakeholder CPA Edward M. Deleon Guerrero	N/A	N/A	N/A	Impact of Noise Environment at GSN and TNI Although the DEIS distinguishes between three possible noise level scenarios (Low, Medium and High), CPA feels that any scenario will negatively affect the noise environment of Saipan thereby affecting its residents, visitors, and CPA employees. CPA therefore feels it is	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised	Postal Mail

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						prudent to comment on the High Scenario. Under the High Scenario, periodic, direct, moderate to major, adverse impacts on the noise environment would be expected (page 4-9). The DEIS estimates that there would be four operations per day for twelve F-16 and F-22 aircrafts. This would total 48 operations per day. Although the DEIS states that the Divert Activity and Exercises would only be for 8 weeks and the majority of the operations would be completed from 7:00 a.m. to 10 p.m., such operation would still severely impact Saipan's noise environment. Even though a majority of the operation would be conducted before 10:00 p.m., thirty percent of the operation would still be conducted from 10:00 p.m. to 7:00 a.m. All total, Saipan residents and visitors would have to endure fourteen F-16 and F-22 operations from 10:00 p.m. and 7:00 a.m. Saipan's main industry is tourism. Tourists flock to Saipan to enjoy its clean beaches and peaceful environment. Surrounding tourist facilities include Coral Ocean Point and Lao Loa Bay Resort. It is CPA's position that both resorts will inevitably be negatively impacted by the high noise level resulting from the proposed action. Moreover, residents in surrounding residential areas such as Dandan, Koblerville, Aslito and Kagman will also be victims of the high level of noise. It is important to note that the first three aforementioned areas are all within the High Scenario Noise Contours at GSN. See Figure 4.1-3, page 4-11. Alternatively, TNI Is located away from the concentrated populations of San Jose Village, Marpo Heights, and Carolina Heights. Noise impact will be concentrated on the northern end of Tinian, away from the main residential areas. CPA believes that there should nonetheless be noise mitigation. This could be accomplished by requiring that all aircrafts approaching TNI avoid flying over San Jose Village.	proposed action and alternatives by making a Revised Draft EIS available the public.	
N172	Tinian v. Saipan	Agency Stakeholder CPA Edward M. Deleon Guerrero	N/A	N/A	N/A	CPA is mindful that the proposed action will not only consist of Air Force Divert Landings and Exercises and humanitarian airlift staging, but will also consist of joint military exercises with U.S. Navy, U.S. Marine Corps, and military from other countries to meet U.S. national security interests. CPA wants to ensure that any negative socio-economic impacts associated with the proposed action are at a minimum mitigated through federal efforts or in the	Through the NEPA process, PACAF and USAF are considering all potential impacts on Saipan and Tinian and the CNMI. Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to	Postal Mail

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						alternative outweighed by the economic benefits the proposed action will bring to the CNMI. Therefore, given the potential impacts the proposed action will have on the CNMI as a whole, CPA recommend that Alternative 2 TNI be selected as we feel that Tinian is the best alternative for all stakeholders.	comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public. Mitigation measures and best management practices were added to Section 4.16 of the EIS. Mitigation measures and BMPs are also discussed in Section 4 under the respective resource area and will be identified in the ROD	
N173	Cultural Resources Cumulative Impacts	Agency Stakeholder CPA Edward M. Deleon Guerrero	N/A	N/A	N/A	Impact of Cultural Resources at GSN and TNI The Saipan International Airport sits on what was once Aslito/Isley Field and is designated as a historic landmark under the National Park Service. Along with the air fields, there are several Japanese bunkers, buildings and other structures that were eventually used by the U.S. forces during World War II. The historic and cultural significance of the former Aslito/Isley Field and its surrounding buildings and structures is profound. In the nine month period between November 1944 and Japan's unconditional surrender in August 1945, Army Air Force B-29s conducted long-range raids against Japanese industrial and urban targets from Saipan thereby contributing to the eventual end of World War II. Section 5.3.8.1 specifically states that the historic structures are susceptible to secondary impacts from vibrating related deterioration due to heavy aircraft traffic at the parking aprons and increased vehicle traffic and personnel presence. CPA is understandably concerned that the proposed action will threaten the historic and cultural resources at Aslito/Isley Field. Moreover, it is unclear what mitigation efforts would be used by PACAF to minimize any potential deterioration of such resources. Although there will be potential cumulative impacts on Tinian historic and cultural sites as a result of the proposed action, those sites are not located on TNI. Therefore, there would be less of a burden on Tinian historic/cultural sites than to GSN which sits on an actual historical landmark.	Through the NEPA process, the USAF is considering all potential impacts on Saipan and Tinian and the CNMI. Mitigation measures and BMPs were added to Section 4.16 of the EIS. Mitigation measures and BMPs are also discussed in Section 4 under the respective resource area and will be identified in the ROD. The USAF is undergoing Section 106 consultation with the CNMI HPO, NPS, ACHP, and other interested parties under Section 106 of the NHPA and cultural resources provisions in NEPA for divert activities and exercises. PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). In this regard, Pacific Air Forces (PACAF) worked to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	Postal Mail
N174	General	Agency	N/A	N/A	N/A	CPA supports Pacific Air Force (PACAF)'s mission to	Comment noted.	Postal Mail

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		Stakeholder CPA Edward M. Deleon Guerrero				provide ready air and space power to promote U.S. interests in the Asia Pacific Region. Specifically, CPA supports the establishment of an Air Force Divert Base on the island of Tinian. CPA understands that PACAF's first preference for divert activities and exercises is Saipan. However, CPA agrees with CNMI Governor Benigno R. Fitial and Tinian Mayor Ramon M. Dela Cruz that any divert activities in the CNMI should be located on Tinian. CPA's comments are meant to constructively point out possible consequences caused by PACAF's proposed action in this draft environmental impact statement and to offer solutions in the process. CPA trusts that its comments and concerns will be taken into consideration.		
N175	General	Agency Stakeholder CPA Edward M. Deleon Guerrero	N/A	N/A	N/A	PACAF must work closely with FAA Given the several requirements for the set-up of the runway, lightings, markings, munitions, etc., it is extremely important that PACAF work closely with AA to ensure compliance with all FAA rules and regulations. PACAF must know that any attempt to alter or replace any mechanism at GSN or TNI will require FAA approval.	FAA is a cooperating agency on this project and has been working with PACAF and USAF since its beginning. PACAF and USAF understand that any attempt to alter the airport will require FAA approval and will continue to work with FAA and CPA to ensure that all parties are in agreement and approval of any proposed alterations or replacements. FAA will be required to consider the Final EIS and adopt it prior to approval of the amended airport layout plan. This information is explained in Section 1 of the EIS.	Postal Mail
O175	Cumulative Impacts	Public Teresa Arriola	N/A	N/A	N/A	My concern is that really that I'd like a little more clarity on the overall connection, or lack thereof, of the proposed actions being discussed tonight and the overall military buildup or marine relocation and the MIRC in the CNMI. I'm unsure how this connects or not with broader projects the U.S. military is conducting in the region.	The Divert Activities and Exercises proposal is not directly connected to the Guam Military Build-up and Relocation or the MIRC. The Guam Build-up is an entirely separate action from the Divert Activities and Exercises. The MIRC is a land and sea training study area within which the Divert Activities and Exercises could occur. All air exercises that would be completed under the Divert proposal are analyzed and below the threshold of the training analyzed within the MIRC. Additionally, Section 5 of the EIS addresses cumulative impacts of all past, present, and reasonably foreseeable actions on Saipan and Tinian with the Divert Proposed Action.	Saipan Public Hearing Verbal Comment

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O176	General	Public Rosiky Camacho	N/A	N/A	N/A	Sir, I think it's not very clear on the -- the airport. I'd like to comment that, you know, the share activities that is going on, has been slightly been mentioned, I'd like that to be written in more formal and what good it comes out, out of that share activities existing if you use Saipan. Second is, I'd like to emphasize the surrounding areas especially the schools and southern high school -- then you have the elementary. And just to brief comment -- actually we brought this up in a coffee shop and a lot of people said that there is commerce, the money is coming in due to this activities that the Air Force is coming in to use the airport. And I hope that is true. And my biggest question now is -- and I think it brought up tonight; is that what remedies that the Air Force or the military can assist us in case something really happen? I like this hearing because we can comment.	The Divert Activities and Exercises proposal is not associated with the Guam Military Buildup. The Air Force is aware of the schools near the airport and has conducted a special outreach for these communities. Additionally, the USAF proposes to remove fighter jets from its proposal and reduce the number of KC-135 operations, thereby eliminating the noise concern to the potentially affected communities. The USAF operates with the utmost safety in mind and assures all activities minimize any adverse affect on the surrounding community. Analysis in the EIS indicates that the Proposed Action would have beneficial socioeconomic impacts in Saipan. The primary mission of Pacific Air Forces is to provide ready air and space power to promote U.S. interests in the Asia Pacific region during peacetime, through crisis, and in war and the Divert Activities would support that mission. Comment noted.	Saipan Public Hearing Verbal Comment
O177	General	Public Ruth Tighe	N/A	N/A	N/A	I wanted to note that I appreciate receiving a hard copy of the EIS in time to review it before the hearing. It was very helpful to me. I found it comprehensive -- comprehensive and readable with less charting than many other EIS reports I've seen. I may be putting my foot in my mouth but I support the implementation of the project and I support the implementation of it on Saipan because I believe that it would provide some much needed boost to our economy.	Comment noted.	Saipan Public Hearing Verbal Comment
O178	Mitigation	Public Ruth Tighe	N/A	N/A	N/A	I hope that the Air Force holds up to its promise to use best management practices, especially with science and compliance with like NEPA and historic preservation.	The EIS contains mitigation measures and BMPs, as appropriate, which are summarized in Section 4.16.	Saipan Public Hearing Verbal Comment
O179	Mitigation	Public Teresa Arriola	N/A	N/A	N/A	Secondly, I have a concern for how mitigating efforts by the military will be completed after the EIS comes out with the final version, or the ROD. For example, if somebody has a concern about something that's happening because of a proposed impact, what can they do; can they say anything and how will it be included within the thing that the military does to mitigate?	The EIS contains mitigation measures and BMPs, as appropriate, which are summarized in Section 4.16. Should the general public be unsatisfied with the proposed mitigation measures, they should contact the regulatory authority with oversight for the particular resource area requiring mitigation.	Saipan Public Hearing Verbal Comment

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O180	Natural Resources	Public Rosiky Camacho	N/A	N/A	N/A	The other concern is, I've been listening, and that's about, you know, that building up there that is unfinished? The hotel? There is a surrounding there that there's some habitats. And I hope that they don't move to where I live. But -- because I live about four blocks. And I hope that if those habitats, those birds, native species move to my place, now I become endangered, and what consequences can I take? And that's the concern.	The proposed project would not affect any habitat near the unfinished hotel or any protected species living in areas surrounding that building.	Saipan Public Hearing Verbal Comment
O181	Noise	Public Rosiky Camacho	N/A	N/A	N/A	My biggest concern is I live in two areas in the south, over in Aslito. And in Kobeler, I am actually further away from the airport. But the noise in Kobeler is practically higher in terms of vibration, so. When I move to Aslito, which is about two minutes walk, I don't have that vibration. Looking at your results on your decibels, my problem is this, is the consequences. Let's say for example, my tenant that is in Kobeler so decided that, you know, your base is not good in this area. So, they left. Now I end up with no tenant. And if the tenant so decided that -- she decided, they decided, because of that noise level is just bothering them, what action can I take? That's my concern.	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis in Sections 4.1 and 4.10. Additionally, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Saipan Public Hearing Verbal Comment
O182	Noise	Public Rosiky Camacho	N/A	N/A	N/A	But my biggest concern is consequences and the impact that this activity that is going on. Just to brief, even the island of Guam from 75 to 79 Toto/Mongmong; and back then I have experienced those noise. And then I move on to Saipan in '84 and I have experience those noise. And I hope that those noise doesn't affect the environment.	The USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Saipan Public Hearing Verbal Comment
O183	Noise	Public Rosiky Camacho	N/A	N/A	N/A	The other biggest concern is I looked at your contour and it seems that the level of decibels is kind of 65 dba; right? And if you look at the mass land area, it's about half of the population of Saipan. And what I'm saying is it seems half population of Saipan is affected. It makes more sense to protect the human.	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis in Sections 4.1 and 4.10. Additionally, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised	Saipan Public Hearing Verbal Comment

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							proposed action and alternatives by making a Revised Draft EIS available the public.	
O184	Proposed Action	Public James Arriola	N/A	N/A	N/A	However, I have heard on several occasions to enquire on the proposed project that all of the items that are going to be conducted -- conducted are in line with the laws and policies and procedures of other entities aside from those people who are living here. And my comment and my concern would be that although perhaps the items may have been translated into the opinion of someone from the United States as rudimentary, the majority of our population does not -- might not have the access or understanding of the terminology utilized in such a -- such an -- impacting item such as this in our country in the Commonwealth. And so therefore, my largest concern will be that although you may have complied with the law, to be considerate perhaps in the future of other alternatives that are in line with the indigenous people or local residents of this island, particularly in those who are not English speakers, inclusive of the form, which is also not very culturally competent in a manner in which is conducted. So, if this item does pass, my concern is the vast majority of the indigenous people's voices, although the law was complied with, would not be fair on how it impact us here in the Commonwealth.	Comment noted. CNMI regulatory agencies have been fully engaged with USAF on multiple issues involved with the Divert activities and exercises proposal.	Saipan Public Hearing Verbal Comment
O185	Proposed Action	Public Ruth Tighe	N/A	N/A	N/A	But I did have a question as to what the timeframe -- what timeframe has been established for the construction? We know what's going to happen to the action. But no one has spelled out when the construction will start and how long and how slow. And I wanted to get that on the record.	Comment noted.	Saipan Public Hearing Verbal Comment
O186	Proposed Action	Public Teresa Arriola	N/A	N/A	N/A	I guess if it's -- if things are being put on the record tonight, I think it's also important to recognize that on the record it should be known that not everybody -- unlike Ms. Tighe here, I noticed that you did support -- you do express your support. I think it's important to recognize the -- that there are people on the island that may not even be here tonight that don't support many of the activities that the military are conducting in the area.	Comment noted.	Saipan Public Hearing Verbal Comment
O187	Tinian v. Saipan	Public Rosiky Camacho	N/A	N/A	N/A	The last concern is, probably Tinian is the best place based on the report of the Air Force, saying that there's no such big events or biological or anything affected. And I know -- I know, that's how much -- he's going to give me his time. Anyway, let me give one last one. Now, I need to find in my own heart if -- is there any action that I can take? What action can I take to protect my consumer enemies or	Comment noted.	Saipan Public Hearing Verbal Comment

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						commerce enemies?		
P188	Tinian v. Saipan: Socioeconomics	Political Stakeholder Chief of Staff to Tinian Mayor Don Farrell	N/A	N/A	N/A	The other thing is, that's simply stated, the people of Tinian sacrificed 2/3 of their island for the creation of the Commonwealth back in 1975 with the full expectation that a very large multiservice training base was going to be created on this island for the economic development of the people. And that base has never materialized. By taking this opportunity to create a divert base on Saipan which will have little advantage economically to the people of Saipan, instead placing it on Tinian, which would have tremendous economic development opportunities for the people of Tinian. They are doing a disservice to the people of Tinian; and I believe in the long run a disservice to United States Air Force and to the United States of America.	Comment noted. The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. Additionally, Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Tinian Public Hearing Verbal Comment
P189	Tinian v. Saipan: Covenant	Political Stakeholder Vice Chairman for the Tinian Council Joseph Cruz	N/A	N/A	N/A	I'm the vice chairman for the Tinian Council. My comment here is, it's been years that we've been waiting for the base to be fulfilled here in Tinian. For the record, I am a son of the former Senator Jose R. Cruz, he's one who negotiate the CNMI to become a U.S. citizen. It was President Ford at that time. And I was a little boy. I remember when I went to America with my dad, and spoke to the senators; and I remember when he sang the "God Bless America". So, here am I now, and I am so honored for you guys to come and try and build the base on Tinian. So, we ask you again that you use Tinian. And we've been waiting for America to fulfill what the promise for our island of Tinian.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the Final EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Tinian Public Hearing Verbal Comment
P190	Tinian v. Saipan:	Public Ike Quichocho	N/A	N/A	N/A	Please allow me to welcome all our visitors here to Tinian. I would like to express some same similar sentiment that the	Comment noted. Based on comments received on the DEIS and coordination of	Tinian Public

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	Covenant					previous speakers shared, especially what Mr. Farrell has mentioned before. People of Tinian overwhelmingly support it for the leasing of 2/3 of the island to the military, and with expectations that our small island be benefited from the military coming in. And so, you know, if -- like I said, I'm not too familiar with how that will affect our industry. But I'm not sure also whether there's still a chance that Tinian will be chosen after the EIS, when Saipan is the number 1 site.	federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Hearing Verbal Comment
P191	Tinian v. Saipan: Covenant Tinian v. Saipan: Socioeconomics	Agency Stakeholder Head of Tinian Department of Commerce Jose Kiyoshi	N/A	N/A	N/A	I'm the resident department head for the Department of Commerce here in Tinian. Hearing the Air Force searching for a divert airfield, we were happy. We were motivated with the mayor, the cabinet members, because -- that 30 years ago we gave up 2/3 of our land. There were promises made and there were promises broken. When we heard that the Air Force were looking for a divert airfield, like I said we were elated. As you guys know that our mayor is not shy of bringing or convincing the military to move here to Tinian; because one of our biggest problems is population-wise, we don't have the magnitude population. And hearing from the news that Saipan was preferred, we're kind of disappointed. Two-thirds of our land has been given away. And 30 years we're still waiting. And as you guys know that just the past few weeks, the Marine Corps left the island. When they came, the businesses were happy, the community were happy; so I hope again that the folks here, gentlemen, will bring back to the higher-ups and to please consider again trying to make any efforts in choosing. You guys have 2/3, you know, military lease land; I'm hoping that the Air Force will consider that opportunity to be used.	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land. The EIS has also been revised to consider the Covenant lands on Tinian for the Proposed Action. However, as further explained in the Final EIS, the Covenant lands are dismissed as alternatives because they do not meet the selection standards or the purpose of and need for the Proposed Action. Additionally, based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Tinian Public Hearing Verbal Comment
P192	Tinian v. Saipan: Socioeconomics	Public Ike Quichocho	N/A	N/A	N/A	However, I would like also to note that -- first, I'll admit that I haven't really gone through the details of the EIS and its impact. And since we can't questions and so I would also -- my concern about on one hand, I heartily support any proposed use of our island, like I said, to help our economy here. And if that -- if Tinian is chosen as the divert site and the military should invest in upgrading our airport, then that is even, you know, there for us. We also have a casino industry. And I'm not sure how that will impact our gaming industry. We may have only a single operating casino, but I am optimistic that our industry has the potential to grow;	Comment noted.	Tinian Public Hearing Verbal Comment

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						and that the Bibi area, which is near the airport -- connected to the airport, Tinian International Airport property, is down in that area is on a prime property on island that all prospective investors at that time, that might have been contacted, have expressed interest in investing in that property. So, if we build a big hotel and casino with golf course, I don't know how, what impact it is going to be. So -- hope this is very helpful. But if I will review the details and I think that it may not really affect because it would be just use this on -- only on certain short period of time, then I think that I would welcome. And if it does not affect the commercial operation side of the airport such as cancelling flights, we're hoping that -- as you can see our runway has been -- there's been a lot of improvement. And the purpose of that is to have direct flights, international, you know, flights; so we're still pursuing that.		
P193	Tinian v. Saipan: Socioeconomics	Public Ike Quichocho	N/A	N/A	N/A	But if -- you know, if that can still be changed, then please consider Tinian. I think that -- like Mr. Farrell said and some previous speakers that the people of Tinian are expecting more. We have a very disadvantaged, you know, situation being we're just so close to Saipan, everything has to be duplicated and, you know, it's a high cost of running government operation, with the employees. The bottom line is we want to have every opportunity to develop the island or to help our local economy. So, I will review the EIS and see if this -- anticipate from for you to submit a written comment.	Comment noted.	Tinian Public Hearing Verbal Comment
Q194	Natural Resources	Public Justine B. de Cruz (former Saipan biologist)	ES	Table ES-2 and Table ES-3	ES	I was surprised that the Executive Summary, especially Tables ES 2 and 3, only mentions the impacts of the proposed alternatives on wildlife as being noise, possible displacement, and habitat loss. One of the most severe potential impacts on either Saipan or Tinian is the possibility of introduction and spread of the brown treesnake. The prospective impacts of this dreaded avian predator are well described in Section 4.6.1 and it is important that they be included in the ES as well.	The Executive Summary is not intended to provide all details about potential impacts, only a qualitative summary. Because of the existence of military protocols and existing interagency agreements on the brown treesnake, it is less of a concern than it has been in the past. However, additional details about the brown treesnake have been added to the Executive Summary and Section 4.16 per comment.	Web site
Q195	Natural Resources	Public Justine B. de Cruz (former Saipan	3-42	Table 3.6-2	3.6	First, could the rats reported as being the often urban Rattus norvegicus have been instead the more arboreal R. exulans (the Pacific rat), which is common in the forests of Saipan? How did the observers distinguish among the several Rattus species that might be present?	The table was modified in Section 3.6 to clarify that the rats observed could have been one of the species of Rattus that occurs on Saipan.	Web site

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		biologist)						
Q196	Natural Resources	Public Justine B. de Cruz (former Saipan biologist)	3-42, 3-43, 3-55	Table 3.6-2 and Table 3.6-5	3.6	Second, the observers recorded Black drongos on Saipan? That would be note-worthy as the species is not usually present on the island (or on Tinian, as stated in Table 3.6-5). Some avian observers have confused starlings with drongos in the past and perhaps these identifications are also mistaken. The EIS surveyors reported seeing drongos frequently on both Saipan and Tinian (pp. 3-43 line 11, and pp. 3-55 line 9), which seems so unlikely that it is probably an error (either in transcription or identification) and the data should be verified	The inclusion of Black drongos on Saipan was an editorial error and the text was modified in Section 3.6 to correct the list of bird species observed on Saipan.	Web site
Q197	Natural Resources	Public Justine B. de Cruz (former Saipan biologist)	3-42, 3-43, 3-46, 3-55	Table 3.6-2 and Table 3.6-5	3.6	Third, although the White tern <i>Gygis alba</i> has sometimes commonly been called a fairy tern, it should not be confused with the Fairy tern <i>Sternula nereis</i> that is mostly an Australian species. <i>G. alba</i> is common on both Saipan and Tinian while <i>S. nereis</i> is not. Did the observers actually see both species as recorded in Table 3.6-2? Was the airplane strike, noted as a fairy tern (pp. 3-46 line 37), in fact the Fairy tern, or one of the island's numerous White terns? And four, Rufous fantail is, I think, the more common spelling (as opposed to 'Roufous' in both Table 3.6-2 and 3.6-5)	The text and tables were revised in Section 3.6 to clarify the species observed.	Website
Q198	Natural Resources	Public Justine B. de Cruz (former Saipan biologist)	3-47, 3-48	N/A	3.6	To the list of wildlife attractant areas on pp. 3-47 and 3-48, it might be wise to add the dense, grassy wetlands extending southwest from Lake Susupe known as the CK Potholes. This area offers excellent habitat close to the airport for large water birds and flocking terns, many of which can be aircraft strike hazards	The text was modified in Section 3.6 to include the wetlands extending from Lake Susupe.	Website
Q199	Natural Resources	Public Justine B. de Cruz (former Saipan biologist)	3-49	27 and 28	3.6	On page 3-49 lines 27 and 28 (and in several other places in the document), the authors state that Section 7 consultations with the USFWS regarding impacts on endangered species, particularly the Nightingale reed-warbler and the Mariana common moorhen, are underway. Apparently the results of the consultations are not currently available and are only to be included in the final EIS. I was wondering why issuing the Draft EIS was not delayed until the consultations were completed so that the public might have a chance to comment on the proposed mitigation measures? Because "...short-term to long-term, direct and indirect, adverse impacts on threatened and endangered species would be expected from construction activities associated with the	Results of the consultations were not provided in the Draft EIS because consultations were not complete at the time the Draft EIS was published. The Air Force wanted to seek stakeholder and public input on the Proposed Action and alternatives during scoping before initiating consultation. Therefore, the consultation process was an ongoing and information on the surveys and information on consultation and input from USFWS are included in the Revised Draft EIS and the BA/BO developed in coordination with the	Web site

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						[sic] Alternative 1” (pp. 4-60 lines 42-44), would it not have been appropriate to include the supporting data for review in lieu of the opportunity to comment on the consultation results? As it stands, the Draft EIS does not give the public any information from the surveys conducted for endangered and threatened species in the proposed project area, so a critical component of the document is missing.	USFWS. See Section 4.6 and Appendix B of the EIS. The USAF is currently undergoing Section 7 consultation for the Proposed Action on Tinian	
Q200	Natural Resources	Public Justine B. de Cruz (former Saipan biologist)	N/A	Table 3.6-5	N/A	Also, Table 3.6-5 lists two types of Bridled white eyes observed during Oct reconnaissance surveys on Tinian. That is probably an error (perhaps in transcription) and should be corrected	This was an editorial error and the bridled white-eye was removed from the table in Section 3.6.	Web site
R201	Noise	Public Reo Arrioloa (Vice Principal Dandan Elementary)	N/A	N/A	N/A	The CNMI PSS requires all schools to limit use of air-conditioning during the school day. We are limited 4 hrs per day, here at Dandan we have it on 9[am]-1pm. I'm concerned about the possible noise & distraction during the times when we have our windows open (due to no aircon), here at our campus.	The noise analysis was revised based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis in Sections 4.1 and 4.10. Additionally, the USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Written Comment Form at Public Meeting
S202	Water Resources	Public Ignacio Cabrera	N/A	N/A	N/A	I think Tinian Water Quality and Recharge of Groundwater Aquifers needed to be resampled for war world II hazardous waste contamination such as Jet fuel, Arsenic and the airplane junkyard site	Water quality is important to the health of the public as a whole, and particularly important to island communities with confined water sources. However, testing and remediation of groundwater outside the geographic scope of the Proposed Action on Tinian alternative is not anticipated under the Proposed Action.	Web site
T203	Tinian v. Saipan: Joint Use	Public Anonymous	N/A	N/A	N/A	The Executive Agent should attempt to maximize the efficiency of this EIS while limiting the impact, this can be accomplished by linking it to other military NEPA actions in the Marina Islands. The EA should evaluate the alternatives of this EIS relative to potential future cantonment and training locations. One known example is	Based on comments received on the DEIS and coordination of federal and local stakeholders and the public, the USAF has developed modified alternatives. The USAF is providing an additional opportunity to comment on the revised proposed action	Postal Mail

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						the Marine Corps relocation to Guam and CNMI. The Marine Corps has expressed interest in training on Tinian so the build-up of the port and airfield facilities seems to make more sense to be focused on Tinian. This seems to be the greatest efficiency for the tax payer. At a minimum, this important fact needs to be considered in the analysis.	and alternatives by making a Revised Draft EIS available the public. The decisionmaker will weigh all available information to make the final decision, which will be identified in the ROD.	
U204	Proposed Action Tinian v. Saipan: Joint Use Tinian v. Saipan: Covenant	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	The Commonwealth of the Northern Mariana Islands (CNMI) is supportive of the military and openly endorses a robust military presence in the Commonwealth. The CNMI is especially pleased that the United States Air Force (USAF) has evaluated and considered the islands of Rota, Saipan, and Tinian for the proposed Divert Activities and Exercises initiative. The CNMI looks forward to hosting the USAF Divert Activities proposed action within the Commonwealth. The CNMI understands the USAF environmental analysis and the sensitivity to the financial implications and rationale on selecting Saipan as the Preferred Alternative. The CNMI encourages the USAF to consider a more strategic and holistic approach, which leverages scarce Department of Defense resources on a joint service – joint international training complex on the island of Tinian. Enhancing Tinian West Field supports the USAF Divert Activities mission, while also enhancing Tinian’s training value. Recent training exercises, inclusive of Marine Air Group 12 (MAG12) exemplifies the interoperability of missions in the region and justifies the need for a comprehensive integrated training venue. Existing civilian infrastructure affords the potential of cost sharing, while the small civilian population does not generate significant compatability challenges. The choice of Tinian for the USAF Divert Activities is a step forward in fulfilling the intent of the long term lease between the Commonwealth and the United States. The island of Tinian was pivotal to ending World War II and Tinian looks forward to serving the Nation once again.	Comment noted.	Postal Mail
U205	Tinian v. Saipan: Covenant	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	The Commonwealth of the Northern Marianas has been and will continue to provide support for all military initiatives as the Nation and Department of Defense pivot toward the Pacific. The islands of Saipan and Tinian played major roles during World War II and Tinian in specific had the world’s busiest airport during the war. The Covenant to Establish a Commonwealth of the	The EIS has been revised in Sections 1 and 2 to include a discussion of The Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America (Covenant) contained at 48 U.S.C. 1801 et seq. which recognizes the significance and scarcity of land.	Postal Mail

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						Northern Mariana Islands in Political Union with the United States of America defines the unique relationship between the Northern Mariana Islands and the United States, recognizing U.S. sovereignty but limiting, in some respects, applicability of federal law. On March 24, 1976, President Gerald Ford signed Public Law 94-241 (90 Stat. 263), enacting the Covenant. Some provisions became effective on that date, pursuant to Covenant Section 1003(a). Remaining provisions became effective on January 9, 1978, and November 4, 1986, the dates specified in Presidential proclamations issued pursuant to Covenant Section 1003(b)-(c). On the latter date, qualified residents of the Northern Mariana Islands became U.S. citizens.		
U206	General	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	The CNMI is extremely supportive of the military and openly endorses a robust military presence throughout the Commonwealth. The Guam Buildup EIS from 2009 and Record of Decision in 2010 indicate that Tinian would host four live fire training ranges. Many joint training exercises have been conducted on Tinian over the past 30 years.	Comment noted	Postal Mail
U207	Proposed Action	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	The Draft EIS has indicated that Saipan is the Preferred Alternative 1. CNMI officials understand that Saipan offers numerous advantages such a access to fuel vessels, better infrastructure, a control tower, and existing fuel storage capabilities. We also realize that any improvements made on Saipan will only enhance our islands and region for future military actions. If the USAF determines that Saipan is indeed so advantageous to this mission we will welcome the Air Force to the Commonwealth.	Comment noted.	Postal Mail
U208	Tinian v. Saipan: Noise Tinian v. Saipan General Cultural Resources	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	We realize that this study looks only at impacts the activities will have on environmental issues and weighs them accordingly. Our major concerns to the Preferred Alternative 1 are the noise impacts to the villages of Koblerville, Dan Dan and San Antonio, the requirement for additional land leases on and around Commonwealth Ports Authority (CPA) property and the Cultural Resource adverse impacts on AsLito/Isley Field National Historic Landmark.	The noise analysis was revised in Section 4.1 and 4.10 based on input from the public, Headquarters Air Force, AFCEC, and FAA. A more thorough land use compatibility assessment was completed based on these revisions to the noise analysis. Additionally, he USAF has revised its proposal to eliminate jet fighter aircraft and reduce the number of KC-135 operations, thereby eliminating the high noise concern. The USAF is providing an additional opportunity to comment on the revised proposed action and alternatives by making a Revised Draft EIS available the public.	Postal Mail

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							With regards to cultural resources, PACAF has revised the scope of the Undertaking in coordination with CNMI officials. Now, PACAF seeks to complete the Section 106 process and parallel procedures under the National Environmental Policy Act (NEPA) for an Environmental Impact Statement (EIS). In this regard, Pacific Air Forces (PACAF) worked to redefine the Area of Potential Effect (APE) and to make a formal finding of effect for which concurrence was requested. The Section 106 process took place as laid out in 36 Code of Federal Regulations (CFR) 800. This information has been clarified in the Revised Draft EIS, specifically in Sections 3.8 and 4.8, and all documentation in support of the Section 106 consultation process is contained in Appendix D of the EIS.	
U209	Tinian v. Saipan: Joint Use	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	The island of Tinian was pivotal to ending World War II. The residents on the island of Tinian are willing and ready to host the Department of Defense and serve the Nation. Current training exercises, such as Operation Geiger Fury, have been extremely successful and underscore why the U.S. Government and the Government of Japan are evaluating a joint training complex, within the Commonwealth. The addition of the Divert Activities and Exercises initiative on Tinian allows DoD to leverage its scarce resources on a joint-service and joint international training complex. Tinian is well postured, having the required land to carry out the Divert Activities and Exercise mission, within the existing military lease area.	Comment noted.	Postal Mail
U210	Tinian v. Saipan: Joint Use	Political Stakeholder Gov. Fitial White Paper	N/A	N/A	N/A	The initial Tinian investment would be slightly higher if it is viewed as a stand alone action. However, as an initial component to a long term strategic initiative the delta in initial costs are insignificant and are easily off-set by long term return on investment. Investing in Tinian is in concert with and reinforces DoD's pivot to the Pacific Region.	Comment noted.	Postal Mail
U211	General	Political	N/A	N/A	N/A	The CNMI extends our appreciation to the USAF for	Comment noted.	Postal Mail

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		Stakeholder Gov. Fitial White Paper				evaluating and considering Rota, Saipan and Tinian; for affording us the opportunity to express our thoughts on this critical action; and to hosting the Divert Activities and Exercises. We will continue to support and serve our Nation and the Department of Defense. The CNMI has a date with destiny and is ready to respond as the focus shifts to the Asia Pacific region.		

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