

of Transportation

Federal Aviation Administration Western-Pacific Region Airports District Office 300 Ala Moana Blvd, Rm. 7-128 Honolulu, HI 96813 MAIL: Box 50244 Honolulu, HI 96850-0001 Telephone: (808) 312-6028 FAX: (808) 312-6048

March 22, 2022

Ricard V. Salas Director Division of Coastal Resources Management 3<sup>rd</sup> Floor, Gualo Rai Center Chalan Pale Arnold P.O. Box 501304 Saipan, MP 96950

#### SUBJECT: Coastal Zone Management Act, Federal Consistency Determination for the Proposed Francisco C. Ada/Saipan International Airport, Airport Rescue and Fire Fighting Facility, Rapid Refill Project, Saipan, Commonwealth of the Northern Mariana Islands

Dear Mr. Salas:

The Commonwealth of the Northern Mariana Islands (CNMI), Commonwealth Ports Authority (CPA) is proposing to utilize federal grant funds from the Federal Aviation Administration (FAA), Airport Improvement Program (AIP) to finance the proposed Francisco C. Ada/Saipan International Airport (GSN), Airport Rescue and Fire Fighting (ARFF) Facility, Rapid Refill Project, Saipan, CNMI. The AIP grant amount for this project is projected to exceed the \$1,000,000 threshold established by the CNMI Division of Coastal Resources Management (DCRM) for FAA's AIP grant program that would require Coastal Zone Management Act (CZMA) review by DCRM.

#### **Description of the Project**

The proposed project would replace the existing water tanks, high-capacity water pumps, electronic controls, yard piping, and overhead ARFF vehicle refill piping within the existing ARFF facility at GSN (See Enclosure 1 for graphical depiction of project features).

The main components of the project are the construction of two new pre-stressed concrete tanks at 250,000 gallons each along with a new high-capacity triplex booster pump. Since the new tanks will be located outside the existing ARFF footprint, new piping will be installed to the appropriate systems for fire protection, ARFF operations, and domestic supply. The proposed project's scope will include: demolition of the existing (2) steel water tanks and replacing them with two pre-stressed concrete tanks at a nearby location; demolition and replacement of existing piping and electrical controls within the ARFF facility; and the demolition and replacement of hydrants, pumps and piping serving the ARFF facility.

The water to fill the two new tanks will be sourced through an existing Commonwealth Utilities Corporation (CUC) water well labeled IF-208 located within the ARFF facility. It is important to note that Well IF-208 will need to be recommissioned upon installation of a new granular activated carbon (GAC) filtration system specifically for the well. It is our understanding that the CUC has agreed with CPA to install the GAC system which is not within the AIP grant's scope of work. The GAC system will not be federally funded under the FAA AIP grant that CPA is seeking.

#### **Consistency Determination Basis**

The proposed project will not be located in or within 150 feet of any of the five designated Area of Particular Concern (APC) within the CNMI which includes: the Shoreline APC; the Lagoon and Reef APC; the Wetland and Mangrove APC; the Port and Industrial APC; and, the Coastal Hazard APC. The proposed project is not located seaward of a line 150 feet inland of the high hazard floodplain.

Consultation for the project was conducted with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act of 1973 (ESA), as amended. The Service concurred with the FAA's determination that the proposed project "may affect, but not likely to adversely affect" the Mariana common moorhen (*Gallinula choropus guami*) with the implementation of the following conservation measures:

- Vegetation clearing will occur between December 1 through June 30 to avoid the CNMI wet season when Marianas common moorhens would be most likely to use the proposed project area. If vegetation clearing is to be conducted outside this window, the Service and CNMI Division of Fish and Wildlife must be notified prior to any vegetation removal.
- Prior to any vegetation removal regardless of season, a biologist experienced in locating moorhen nests will search for active nests in areas identified as having potential habitat for the Marianas common moorhen.
- Any habitat where a Marianas common moorhen is observed will require a minimum 25- meter buffer from all construction activities. The perimeter of the property nearest any identified Marianas common moorhen habitat would also be excluded using 36-inch high plastic construction fencing placed on rebar posts to increase visual obstruction and reduce disturbance to the species and its habitat.

Implementation of these conservation measures will ensure that the species is protected and any potential impacts will be mitigated to the maximum extent practicable. The Service's ESA consultation response letter is included as Enclosure 2 to this letter for your review.

Consultation for the project was conducted with the CNMI Historic Preservation Office (HPO) under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended. The FAA's letter initiating consultation with the HPO was received by the HPO on December 21, 2021. The FAA sought the HPO's concurrence with our determination of "no historic properties affected" based upon research of the area and the inclusion of an archaeological monitoring program that would be implemented. The HPO had 30 days to respond to the FAA's Section 106 consultation letter. The 30 day review period ended on

January 19, 2022. As of the date of this letter, the 30 day review period has lapsed and the FAA has not received a response to the consultation letter. No objection to the FAA's determination of "no historic properties affected" was made by the HPO within the 30 day period, therefore, under 36 Code of Federal Regulations Part 800.4(d)(1)(i), the FAA's responsibilities under Section 106 have been fulfilled. CPA will conduct the archaeological monitoring as prescribed in the FAA's Section 106 consultation letter

The FAA's Section 106 letter initiating consultation with the HPO is included as Enclosure 3 to this letter.

The FAA is drafting the appropriate level of environmental documentation under the National Environmental Policy Act of 1969 (NEPA), as amended and in accordance to applicable Council on Environmental Quality regulations and FAA Orders. The completion of the NEPA document pends the outcome of DCRM's concurrence with the FAA's consistency determination. The finalized NEPA document will sent to DCRM upon completion.

#### FAA's Consistency Determination

Based upon the consistency determination basis provided above, the FAA has determined that the proposed project is consistent, to the maximum extent practicable, with the enforceable policies of the CNMI's Coastal Zone Management Program and seeks DCRM's concurrence. Please review the information provided in this letter and the enclosed project information.

If you have any questions, please contact me by email at: kevin.h.nishimura@faa.gov.

Sincerely, 2 1/2

Kevin Nishimura Environmental Protection Specialist Federal Aviation Administration Honolulu Airports District Office

Enclosure 1: Project Documents Enclosure 2: Section 7 Consultation, USFWS Response Letter Enclosure 3: Section 106 Consultation, FAA Consultation Initiation Letter

# Enclosure 1 Project Documents













# Enclosure 2 Endangered Species Act Section 7 Consultation

# **USFWS** Response Letter



# United States Department of the Interior

FISH & WILDLIFE SERVICE

FISH AND WILDLIFE SERVICE Pacific Islands Fish and Wildlife Office 300 Ala Moana Boulevard, Room 3-122 Honolulu, Hawai'i 96850

In Reply Refer To: 01EPIF00-2022-I-0132

Kevin Nishimura Environmental Protection Specialist Federal Aviation Administration Department of Transportation 300 Ala Moana Blvd, Room 7-128 Honolulu, Hawaii, 96850-0001

Subject: Endangered Species Consultation for Federal Aviation Administration's Airport Rescue and Fire Fighting Facility, Rapid Refill Project in Saipan, Commonwealth of the Northern Mariana Islands

Dear Mr. Nishimura:

The U.S. Fish and Wildlife Service (Service) received your letter on December 13, 2021 requesting our concurrence that the proposed Federal Aviation Administration's Airport Rescue and Fire Fighting Facility, Rapid Refill Project in Saipan, Commonwealth of the Northern Mariana Islands (project) may affect, but is not likely to adversely affect the Mariana common moorhen (*Gallinula chloropus guami*) (moorhen), pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531 et seq.). This informal consultation addresses the implementation of the project on the species listed above.

The findings and recommendations in this consultation are based on: (1) your letters and the attachments received on December 13, 2021; (2) the site visit conducted by Service biologist Tyler Willsey and Micronesian Environmental Services (MES) in April 2021; (3) telephone and email conversations with the Service and MES; and (4) and other information available to us. A complete administrative record is on file in our office.

#### Project Description

The CNMI Commonwealth Ports Authority (CPA), is proposing to replace the existing water tanks, fire pumps, electronic controls, yard piping, and overhead refill components within the Airport Rescue and Fire Fighting facility. The CPA is also planning to construct two new prestressed concrete tanks at 250,000 gallons with new triplex booster pumps at the Saipan International Airport (Figure 1). The action will be funded by the Federal Aviation Administration.

#### INTERIOR REGION 12 Pacific Islands

IDAHO, MONTANA\*, OREGON\*, WASHINGTON \*partial American Samoa, Guam, Hawaii, Northern Mariana Islands

#### Kevin Nishimura



#### Figure 1: Proposed Project Activities

#### Avoidance and Minimization Measures

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

- 1. Vegetation clearing will occur between December 1 through June 30 to avoid the CNMI wet season when Marianas common moorhens would be most likely to use the proposed project area. If vegetation clearing is to be conducted outside this window, the USFWS and CNMI DFW must be notified prior to any vegetation removal.
- 2. Prior to any vegetation removal regardless of season, a biologist experienced in locating moorhen nests will search for active nests in areas identified as having potential habitat for the Marianas common moorhen.
- 3. Any habitat where a Marianas common moorhen is observed will require a minimum 25- meter buffer from all construction activities. The perimeter of the property nearest any identified Marianas common moorhen habitat would also be excluded using 36-inch high plastic construction fencing placed on rebar posts to increase visual obstruction and reduce disturbance to the species and its habitat.

#### **Analysis of Consequences**

#### Kevin Nishimura

Our analysis is based on information provided in your December 13, 2021, letter and telephone conversations, and other information in our records. A complete record of this consultation is on file at the Pacific Islands Fish and Wildlife Office.

#### Potential Adverse Consequences

The project may result in adverse consequences to the moorhen through noise disturbance related to the demolition of remnant structures and subsequent construction of the new water tanks. Noise disturbance could result in the harassment of the moorhen causing disruptions to feeding, breeding, or sheltering behavior.

In order to minimize affects to the moorhen, the project proponent will implement the conservation measures listed above to avoid and minimize impacts. These measures include limiting vegetation removal to the minimum amount necessary, contractor education on the sensitivity of the area, removal of all trash and debris (aside from native vegetation), and conducting species surveys prior to project activities to avoid direct impacts to listed species.

#### Conclusion

The Service has reviewed the biological assessment, the proposed conservation measures, and analyzed other information pertaining to the presence or absence of listed species in the project vicinity. Based on the documents reviewed, the survey finding and the proposed conservation measures, the Service concurs with your determination that the project may affect, but is not likely to adversely affect listed species or critical habitat because any adverse effects would be discountable and temporary. Therefore, no further endangered species consultation will be required unless: 1) the identified action is subsequently modified in a manner that causes an effect on a listed species or designated critical habitat; 2) new information reveals the identified action may affect federally protected species or designated critical habitat in a manner or to an extent not previously considered; 3) a new species is listed or critical habitat is designated under the Act that may be affected by the identified action; or, 4) the project is not completed within three years from the date of this consultation. If new effects are identified in the future, the project proposal should be resubmitted to our office for further consideration.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact Tyler Willsey (phone: (670) 234-7207 ext. 2008; email tyler willsey@gmail.com).

Sincerely,

Jacqueline B. Flores Mariana Islands Team Manager Enclosure 3 National Historic Preservation Act Section 106 Consultation

FAA Initiation Letter



of Transportation Federal Aviation Administration Western-Pacific Region Airports District Office 300 Ala Moana Blvd, Rm. 7-128 Honolulu, HI 96813 MAIL: Box 50244 Honolulu, HI 96850-0001 Telephone: (808) 312-6028 FAX: (808) 312-6048

December 21, 2021

Rita Chong-Dela Cruz State Historic Preservation Officer Division of Historic Preservation Department of Community and Cultural Affairs Caller Box 10007 Saipan, MP 96950

#### SUBJECT: National Historic Preservation Act, Section 106 Consultation for the Proposed Francisco C. Ada/Saipan International Airport, Aircraft Rescue and Fire Fighting Facility, Rapid Refill Project, Saipan, Commonwealth of the Northern Mariana Islands

Dear Ms. Chong-Dela Cruz:

The Commonwealth of the Northern Mariana Islands, Commonwealth Ports Authority (CPA) is proposing to utilize funds from the Federal Aviation Administration (FAA), Airport Improvement Program (AIP) to finance the proposed Francisco C. Ada/Saipan International Airport (GSN), Aircraft Rescue and Fire Fighting Facility (ARFF), Rapid Refill Project, Saipan, Commonwealth of the Northern Mariana Islands. (Figures 1, 2, and 3 of Enclosure 1).

The Federal Aviation Administration's (FAA) approval of the AIP grant request constitutes a federal action which requires compliance with the National Environmental Policy Act (NEPA) and review under Section 106 of the National Historic Preservation Act of 1966, as amended. The FAA is the lead federal agency charged with conducting Section 106 consultation with the State Historic Preservation Officer.

#### **Description of the Undertaking (Proposed Action)**

The proposed project (Figures 4, 5, and 6 of Enclosure 1) will replace the existing water tanks, high-capacity water pumps, electronic controls, yard piping, and overhead ARFF vehicle refill piping within the existing ARFF facility at GSN.

The main components of the project are the construction of two new pre-stressed concrete tanks at 250,000 gallons each along with a new high-capacity triplex booster pump. The new tanks will be sourced via a Commonwealth Utilities Corporation (CUC) water well labeled IF-208 located within the ARFF facility. Since the new tanks will be located outside the ARFF footprint, new piping will be installed to the appropriate systems for fire protection, ARFF operations, and domestic supply. It is important to note that IF-208 will be

recommissioned upon installation of a new granular activated carbon (GAC) filtration system specifically for the well. It is our understanding that the CUC has agreed to provide the installation of the GAC system which is not within the AIP grant's scope of work.

The proposed project's scope will include: demolition of the existing (2) steel water tanks and replacing them with two pre-stressed concrete tanks at a nearby location; demolition and replacement of existing piping and electrical controls within the ARFF facility; and the demolition and replacement of hydrants, pumps and piping serving the ARFF facility.

#### Description of the Area of Potential Effect (APE) for the Proposed Undertaking

For the purposes of this Section 106 consultation, the FAA has identified an APE encompassing the area delineated by the red and blue dashed lines in Figure 4 in Enclosure 1 with an additional 20-foot buffer beyond the border of these areas.

#### **Determination of Effects**

Background information has been gathered and reported as Enclosure 2 to this letter for your review. There are no reported historic properties within the APE. However, a planning document for archaeological monitoring and data recovery in support of the proposed project has been developed in consultation with your staff as a precautionary measure.

The FAA, based on the information that is known at this time and with the inclusion of archaeological monitoring during ground disturbing work, makes the determination of "*no historic properties affected*" for the proposed undertaking under 36 CFR Part 800.4(d)(1).

Please review the information provided in this letter and the enclosed project information. If you agree with the above APE and effects determinations, please respond within 30 days of receipt of this letter with your concurrence. If we do not hear from your office within 30 days, we will consider a no-reply as a "concurrence".

If you have any questions, please contact me by email at: <u>kevin.h.nishimura@faa.gov</u>.

Sincerely,

2-1/2

Kevin Nishimura Environmental Protection Specialist Federal Aviation Administration Honolulu Airports District Office

Enclosure 1: Figures (1-6) Enclosure 2: Planning Document for Archaeological Monitoring and Data Recovery

# Enclosure 1 Figures 1-6













Enclosure 2 Planning Document Archaeological Monitoring and Data Recovery

### PLANNING DOCUMENT FOR ARCHAEOLOGICAL MONITORING AND DATA RECOVERY FOR FRANCISCO C. ADA/SAIPAN INTERNATIONAL AIRPORT ARFF RAPID REFILL IMPROVEMENT PROJECT, AIP NO. 3-69-002-93

ISLAND OF SAIPAN Commonwealth of the Northern Mariana Islands

Prepared by: Michael Dega, Ph.D.

May 2021

Prepared for: Commonwealth Ports Authority (CPA) P.O. Box 501055 Saipan, MP 96950

Archaeolog

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#### **INTRODUCTION**

At the request of Hofschneider Engineering Corporation, working for the Commonwealth Ports Authority (CPA), and through consultation with the CNMI-Historic Preservation Office (HPO), Applied Archaeology LLC. (AA) has written this archaeological monitoring and data recovery work in advance of the proposed ARFF Rapid Refill Improvements project. The project area occurs at the eastern end of the Francisco C. Ada/Saipan International Airport on Saipan, CNMI (Figures 1-4a/4b). The project will require ground altering work/excavation and thus, necessitates this planning document.

The project proposes to replace existing pumps, controllers, piping and associated system components in addition to the replacement of existing piping warranted by an onsite inspection due to poor condition, removal of the ARFF apparatus overhead refill piping and support structures and cap the pipe at a determined location. Additional work includes demolition and removal of the existing modular water tanks to be replaced with pre-stressed concrete tanks. The project also includes upgrading the existing Commonwealth Utilities Corporation (CUC) electrical system for capacity to handle the loads from the new pumps as well as identifying a new water supply source with the CPA in coordination with the CUC.

Description	Area	Length	Depth	Width	Comment
Bio Retention Basin	3,864 square feet	79 linear feet	1'-6"	51'	Side slope at 2:1 Maximum
Pavement Area	13,572 square feet		1'-6"		3" AC, 8" basecourse and 6" Subbase
Transmission Line from Well to New Tank		266 linear feet	3'-10"	2'	4" pipe
Distribution Line to Fire Hydrant		625 linear feet	4'-8"	2'-6"	14" pipe
Distribution Line for Domestic Water Supply		394 linear feet	3'-10"	2'	4" pipe
Distribution Line for Sprinkler System		394 linear feet	4'-4"	2'-6"	10" pipe
Concrete Pad Area	3,982 square feet (exclusive of water tank footprint)		1'-0"		6" thick concrete and 6" basecourse
Water Tank Concrete Foundation	2,043 x 2 tanks = 4,086 square feet		5'-0"		Assume the concrete foundation extends 4' horizontally beyond the water tank wall and 5' deep (including structural fill).

Ground altering activities associated with this project will include the following:

This archaeological planning document discusses two phases of work related to the project: archaeological monitoring for identification purposes (Phase 1) and second, if needed, archaeological data recovery (Phase 2). The project will initially start with full-time archaeological monitoring during all ground altering activities (i.e., excavation work). During the course of monitoring, if a significant cultural deposit is identified, the HPO may call for data recovery of that cultural deposit. This plan covers both scenarios, with methodologies for each discussed below.



Figure 1: Map Showing Location of Saipan in Northern Marianas Archipelago (Northern Marianas 1:250,000, Series W543 U.S. Army Map Service, 1955).



Figure 2: USGS Topographic Map Showing Project Area Location (Island of Saipan Topographic Map 1:25,000 U.S. Geological Survey, 1999).



Figure 3: Portion of USGS Topographic Map Showing Project Area Location (Island of Saipan Topographic Map 1:25,000 U.S. Geological Survey, 1999).



Figure 4a: Aerial Photograph of Project Area and Proposed Work (Courtesy of Hofschneider Engineering Corporation).



Figure 4b: Site Layout Map of Work to be Performed (Courtesy of Hofschneider Engineering Corporation).

Archaeological resource management is being conducted for this project due to the potential for prehistoric and historic era cultural resources in the project area. While no pre-Latte or Latte period sites are presently known in the project area, it was utilized during Japanese Colonial times (buildings) and thus, has an historic presence (see below). The project area is mostly flat land, this area having been graded in the past.

The present document outlines the procedures for monitoring and data recovery, including field protocol and testing procedures, data analysis, and a schedule of deliverables. Proposed activities will conform to the "Content, Format, and Submission Standards for Final Reports of Archaeological Projects in the CNMI." In the event of encountering human remains, work protocol will follow "Procedures for the Treatment of Human Remains" adopted by the CNMI in 1999 (Appendix A). All activities will comply with pertinent sections of the National Historic Preservation Act (NHPA) and associated 36 Code of Federal Regulations (CFR) Part 800, as well as with CNMI Public Law 3-39.

#### **PROJECT LOCATION**

The project area is located in the far southern end of Saipan, with Obyan region to the south, Naftan to the east, Dandan to the north/northeast, and San Antonio to the west. The proposed work area occurs on the southern plateau of the island and is situated on the grounds of the airport, to the east of the terminals and just north of the runways (Figure 5). The project area lies at an average 60 feet above mean sea level (amsl.).



Figure 5: Aerial Photograph Showing Project Area at Airport.

#### **ENVIRONMENTAL SETTING**

In general, the project area occupies the southern plateau of the island to the south of the axial uplands and encompasses low limestone platforms and low terraced benches. This area is south of Pleistocene and Holocene deposits that extend through the northern three-fourths of Saipan, with the axial uplands to the north culminating at an elevation of 1,555 feet on the top of Mount Tagpochau (Ogso Tagpochau) (Cloud et al. 1956; Dickinson 2003).

#### GEOMORPHOLOGY

While the northern portion of the island is composed of volcanic uplands forming the island's axial spine, with numerous limestone terrace benches or platforms with abrupt escarpments dropping to the coasts, the southern portion of the island has broad, level lowlands formed of limestone terraces and fault ridges that rise from Agingan Point toward the slopes of Mount Tapotchau at the center of the island, with a second arm of this landform extending below the Donni belt of clay hills to the east overlooking Laolao Bay on the Kagman Peninsula (Figure 6).

A distinctive topographic contrast can be observed between Saipan's east and west coasts as well. Rocky cliffs form much of the eastern coastline, which has but a few very narrow beaches between Unai Fanonchuluyan surrounding Bird Island to the north and Unai Bapot on Laolao Bay to the south. The western coastal plain is derived from low limestone terraces and ranges from 100 meter (m) to 1 kilometer (km) wide, with extensive beaches from Unai Achugao in the north of San Roque to Unai Afetna in the south protected by a shallow fringing reef and extensive lagoon. The current project area encompasses the southern plateau near a thin expanse of coastal plains to the south.

As noted by Young (1989), soils in the general project area consist of two main series: Chinen-Takpchao and Chinen-Urban land. The two soil types are characterized as:

- 1. <u>Chinen-Takpochao:</u> Very shallow and shallow, well-drained soils, nearly level to slightly sloping on limestone plateaus and side slopes; sediment consists of very dark grayish brown clay loam to clay and clay loam subsoil (Young 1989:9).
- 2. <u>Chinen-Urban Land:</u> shallow, well drained, nearly level soils and urban land on limestone plateaus; sediment consists of gravelly sandy loam to a clay loam subsoil (Young 1989:10).

While the current project area may contain the above noted "native" soils, there is undoubtedly much fill in the area, given that is has been a built environment since Japanese Colonial times, prior to WWII. Much of the topographical changes in the area were the result of pre-WWII and post war military bulldozing and land clearing in the area, as well as construction. Fill would be expected in this area, perhaps as crushed limestone, as was common across Saipan.


Figure 6: Major Geomorphological Zones and Prominent Natural Features on the Island of Saipan (Tomonari-Tuggle et al. 2007:164).

#### VEGETATION

Fosberg (1960:118-119) hypothesized that Saipan was likely "originally forested with the typical mixed forest found on limestone in the Marianas", and today "scarcely an acre of the island has not been profoundly disturbed." The current project area contains no forest and very little vegetation for that matter, besides some overgrown grasses and very low-cut grasses near the exiting buildings. It is an active, built environment used on a daily basis and has been mostly cleared of any overstory or understory. Ground visibility is extremely high for the most part.

#### CLIMATE

The climate of Saipan is warm and humid throughout the year, when daytime temperatures usually climb to about 30 degrees Celsius with a relative humidity level of about 70 percent. Nighttime temperatures fall to about 20 degrees Celsius with a relative humidity of about 90 percent (mean average temperature is about 27 degrees Celsius). Winter temperatures tend to be only slightly cooler.

Saipan rainfall has a monsoonal pattern, averaging 230 cm annually. It is highest during the months between July and November when it averages about 24 to 34 cm per month. Rainfall averages about 8 to 10 cm per month between December and June. Dominant winds in the Marianas are the trades, which blow from the east or northeast during the winter dry season (Young 1989). Dry season fires in the area are a yearly threat as well.

West to northwest moving storm systems and typhoons bring heavy showers and occasional torrential downpours. Although typhoons can occur at any time, most occur late in the year most recently in the month of October. Storm surges and flooding along the coastline are a particular danger from the most violent storms, and these can inundate and cause much damage to low-lying roads and residential areas.

## HISTORICAL CONTEXT TO PROJECT AREA AND ENVIRONS

Settlement in the Marianas, primarily on Saipan, has been generally recognized to have commenced c. 1500 (Perzinski and Dega 2016; Carson 2014). However, recent data by Petchey and Clark (2021) put colonization at the 1350 BC mark, based on an evaluation of absolute dating techniques used to date these older sites. Primarily, examining the evolution of ceramic styles coupled with radiocarbon dates have allowed for refining the Marianas prehistoric cultural sequence into four periods: early pre-Latte, Intermediate pre-Latte, transitional, and Latte period. This sequence was built upon previous work decades earlier, when Spoehr (1957) summarized a cultural sequence based on cultural material recovered from his studies. Spoehr's two-phase chronology consisted of the pre-Latte (1500 BC to AD 900) and Latte period (AD 900 to 1700). The chronology was based primarily on the presence/absence of Latte sets and finely finished redware pottery (Carson 2012a, 2012b). While very close to the mark of what present day scholars are using for cultural sequencing dates, later studies helped refine Spoehr's original sequence, breaking the pre-Latte period into three separate periods using pottery types, radiocarbon dating, as well as the presence/absence of various types of midden and artifacts through time (Dixon et al. 2006). These four cultural sequences are summarized below by their archaeological signatures with a note that the dates are fluid (i.e., 1500 BC, 500 BC etc. represent general temporal terms).

#### SETTLEMENT: CIRCA 1500/1350 BC

The southernmost islands of the CNMI were initially settled by at least 1500/1350 years B.C. (Table 1) according to analyses of radiocarbon dated archaeological materials found on Saipan and Tinian (Carson and Kurashina 2012). Some paleoenvironmental evidence suggests initial settlement of Saipan by as much as 900 years earlier, although this date from a pollen core has not been corroborated by archaeological evidence. Far from the discovery of the Mariana archipelago being an accident, it appears many of the islands of Southeast Asia were being deliberately populated at roughly the same time in what has been termed a "swarm" of maritime exploration (Peterson 2009), perhaps responding to a global high sea stand between 5,000 and 3,500 years Before Present (B.P.) inundating shorelines on a regional scale.

Two theories have evolved to explain the origins of Pre-Latte Period settlement circa 1500 B.C. (Carson *et al.* 2013). The first theory involves emigration from Sulawesi, based on mitochondrial DNA evidence from a sample of modern Chamorros in Guam and the CNMI (Vilar *et al.* 2012). Maritime adapted people are hypothesized to have migrated to the Mariana Islands by way of Palau and Yap using seasonal winds in search of new habitats for settlement (Hunter-Anderson 2013). The Chamorro language is not derived from Palauan, however, since both seem to be of roughly the same antiquity and developed in relative isolation (Blust 2009 in Carson 2014).

The second theory dictates that the first encounter with the Mariana Islands occurred when Austronesian peoples, who originally inhabited Taiwan and later settled in the northern or central Philippines circa 2000 B.C. for several centuries – then sailed toward the east presumably for much the same reason as their Indonesian neighbors sailed north. This theory is contested given the reliability of sailing directly from the Philippines to the Mariana archipelago against prevailing trade winds (Winter *et al.* 2012) but is given credence by similarities in coastal archaeological settlement patterns and Pre-Latte Period ceramic forms and decorative styles from northern Luzon (Carson 2014). Some other noticeable differences are found between contemporaneous sites in the Philippines and Pre-Latte Period sites in the CNMI. For example, early habitation sites in the Northern Marianas lack evidence of pigs, dogs, and chickens commonly found in contemporaneous Philippine sites.

Regarding ceramic similarities, it should be cautioned that "...the early period Marianas pottery resembles a *sub-set* [italics added] of the more diverse Nagsabaran pottery" (Hung *et al.* 2011:915). Conversation with ceramic specialist Darlene Moore, who has examined assemblages from both culture areas, also indicates that neither surface treatment nor paste and temper are identical (personal communication with B. Dixon in 2012), nor should they be. Therefore, it seems likely that early maritime settlers were able to transfer their knowledge of ceramic production to using local clays within a relatively brief time frame but may not have been able to transfer their entire set of foods or foodways during pioneering voyages or were not inclined to do so in subsequent return trips. One origin theory does not exclude the other of course, and both places of origin may have contributed to Pre-Latte Period development of culture and language over time.

Moore (2002) subdivides the Pre-Latte Period into four phases based on pottery styles: Early (1500-900 B.C.), Intermediate (900-400 B.C.), Late (400 B.C – A.D. 400), and Transitional (A.D. 400- A.D. 1000). Archaeological sites dating to the Early Pre-Latte Phase are few and limited in size. These early Pre-Latte Phase sites are usually found in coastal calcareous sand deposits and typically contain small numbers of redware pottery sherds (a small percentage with lime-filled stamping or incising) associated with marine midden or food remains, consisting mainly of bivalve shells (Amesbury *et al.* 1996). Site integrity is frequently compromised as a result of both natural shoreline processes reworking of the deposits and later human activities (Carson 2008). However, dating of early deposits in calcreted sandy sediments (Carson and Peterson 2011) and dating of deeply buried algal bioclasts in beach sites such as Ritidian on Guam (Carson and Peterson 2012) are bearing important results in deposits often overlooked in years past.

Major Period	Event/Activity	Date	Note		
	1500 BC - AD 1521				
Pre-Contact Era	Settlement	By 1500 BC	First human transformation of the Saipan		
			landscape, settlement, and agriculture		
	Pre-Latte Period	1500 BC - AD 1000	Coastal settlements based on marine resources, taro, and coconut; perishable structures		
	Early	1500-900 BC			
	Intermediate	900-400 BC			
	Late	400 BC - AD 400	Initial movement into interior areas		
	Transitional	AD 400-1000	Agricultural intensification		
	Latte Period	AD 1000- 1668	Island-wide settlement; communities with <i>latte</i> stone structures		
	Early Latte	AD 1000- 1300	Beginning of <i>latte</i> construction and probable introduction of rice		
	Middle Latte	AD 1300- 1521	Elaboration of <i>latte</i> structures		
	Late Latte	AD 1521- 1668	Continuity of traditional Chamorro life with infrequent Spanish contact		
	AD 1521-1898				
Spanish Era	Spanish discovery of Guam	AD 1521			
	Nuestra Senora de Concepcion wrecks off Aguigan Point	AD 1638			
	Spanish settlement of Saipan	AD 1668			
	Father Medina and two Philippino lay brothers killed on Saipan	AD 1670			
L					

Table 1: Saipan Chronology.

Major Period	Event/Activity	Date	Note
	Chamorro revolt on Saipan	AD 1684	
	Chamorros from Gani brought to Saipan	AD 1698	
	Churches at Anaguan and Fatiguan destroyed by typhoon	AD 1705	
	Chamorros removed from Saipan, island depopulated	AD 1722- 1730	Traditional site occupation is truncated
	Carolinian families first visit Saipan	AD 1805	
	Carolinian Chief Aghurubw settles at Arabawal / Garapan	AD 1815	
	Carolinian families authorized to remain on Saipan	AD 1818	
	New group of Carolinians allowed to settle on Saipan	AD 1843	
	Chamorros begin to resettle on Saipan	AD 1865- 1869	
	Spanish <i>deportados</i> temporarily housed on Saipan	AD 1875	
		1898-1914	
German Era	Spanish-American war, acquisition of Guam by the United States; acquisition of the Northern Mariana Islands by Germany	1898-1899	
	German administration; Garapan becomes capital of NMI	1899-1914	
		1914-1939	
Japanese Colonial Era	WWI, Japan occupies the formerly German-held islands of Micronesia	1914-1919	Mariana Islands settlement is an expression of Japan's <i>Nanshin Seisaku</i> or Southern Advance Policy
	League of Nations creates the Micronesia Mandate, governed by Japan	1919	
	Nan'yo Kohatsu Kaisha (NKK) established on Saipan, introducing successful sugarcane commerce	1922-1926	
	NKK leases properties on Saipan for sugarcane cultivation and refinery in Chalan Kanoa	1926	
	Garapan becomes capital of "Japan in the Tropics"	1926-1944	Transformation of Saipan landscape, most of the island is converted to sugarcane cultivation; private land leased
		1939-1944	

Major Period	Event/Activity	Date	Note		
Japanese Military Era	Japanese Naval Air Facilities established (facilities of the 1st Air Fleet as of February 1944)	1939-1944	Change to Saipan landscape as various agricultural areas are converted to air bases and defenses without compensation		
	Japanese forces construct defenses and places of war refuge	1941-1944			
	June 1944				
	U.S. amphibious assault (first day)				
Battle of Saipan	Japanese defenses hard fought; Banzai charges at Tanapag critical juncture in the battle				
	Prisoner of War camp established at Susupe				
	U.S. cemetery established at Hopwood				
U.S. WWII	August 1944 - September 1945				
Era	U.S. military facilities (airfields, camps, defenses) established across the island		Airfields at Aslito, Koblerville, Kagman, and Marpi		
		1946-1953			
Early Post- War Era	Japanese and Korean soldiers and civilians repatriated from Saipan	1946	POW camp at Susupe abandoned		
	Chamorros and Carolinians in camp at Chalana Kanoa liberated	July 4, 1946	NKK structures become base of new community		
	Trust Territory of the Pacific Islands declared	April 2, 1947	Capital on Guam		
	US Naval Technical Training Unit established to train Nationalist Chinese forces on Saipan	1952-1962	Saipan reverts to US Navy control until it becomes capital of Trust Territory		

Source: Farrell 1994, 2011.

#### EARLY PRE-LATTE PERIOD: 1500/1300 BC TO 500 BC

Initial colonization of the Mariana Islands is believed to have occurred by at least 1500/1300 BC. It is hypothesized that these seafarers travelled over 2000 kilometers of open sea to remote Oceania and originated from the central Philippines (Carson 2014) or in island Southeast Asia, around the Maluku/Sulawesi region of present-day Indonesia (Dega et al. 2017). Ultimately, these ancestral Austronesians left the hearth of Taiwan centuries before. Based on previous archaeological work, these early inhabitants lived in near coastal environments, specifically along stretches of coastline that had a fringing reef and direct access to marine resources.

Archaeological studies at Unai Bapot (Carson 2014) and environmental studies (Athens et al. 2002) have assessed the earliest radiocarbon dates from eight locations in the southern Marianas (three sites on Guam, two sites on Tinian, and three sites on Saipan, all noted above) along with the presence of finely made red slipped pottery often impressed, incised, or stamped and tempered with calcareous sand. Conus shell ornaments (almost exclusive to older deposits) have also been documented at the House of Taga and Unai Chulu (Tinian), Chalan Piao (Saipan), and Achugao (Saipan), the latter inclusive of the current APE. Radiocarbon dating of organic material in associated stratigraphic layers in Unai Chulu had age ranges from 2350 to 3160 BP (Craib 1993). Similar dates were also noted in Achugao and San Roque deposits respectively (Butler 1993; Perzinski and Dega 2016) and at Chalan Piao (Moore 1993). The Unai Bapot-1 site at Laolao Bay on Saipan's east side contains deposits spanning 3000 years of occupation with the oldest dating to c. 1500 BC (Carson 2008). The Achugao, San Roque, and Unai Bapot-1 sites all appear to be the earliest contemporary settlements on Saipan. Again, these dates are currently being re-evaluated based on the Petchey and Clark (2021) paper.

Sediment coring at inland Lake Susupe, located at one end of a large marsh approximately 2 kilometer north from Chalan Piao, produced evidence supporting a circa 3500 year B.P. date for early settlement of Saipan (Athens and Ward 2005; Athens *et al.* 2004), although earlier human activity is suggested. At an interval dated to approximately 4168 cal. B.P., the sediment core extracted from Lake Susupe contained the first upswing of charcoal particles perhaps implying deliberate forest burning. However, pollen from coconut (*Cocos nucifera*), betelnut (*Areca catechu*), the ti plant (*Cordyline fruticosa*), and Screwpine (*Pandanus fragrans*) were already present at 7821 B.P., indicating the native forest would have easily sustained small groups of initial immigrants with generations of horticultural experience in the jungles of Southeast Asia without large-scale deforestation. Whether this first period of burning is natural or human induced, subsistence practices of these early settlers may have already involved the management of tree gardens or "agroforests" (Dixon *et al.* 2011) perhaps using fire for clearing of weeds and grasses after typhoons, rather than the cultivation of a wider range of domesticates that characterized the Mariana Islands when Ferdinand Magellan arrived in 1521 C.E. Excavations at the Nansay tract of the Achugao site have yielded a small body of data for interpreting the Early Pre-Latte Phase on Saipan (Butler 1994, 1995) with two associated radiocarbon dates of 1755 B.C.E. and 1400 B.C.E. The excavations produced evidence of a non-intensive occupation, including a compact floor remnant, one posthole, and seven pits of various sizes with small amounts of habitation debris indicating cooking and tool manufacturing. The food debris included marine shell and fish bone. The site also produced flaked stone items of chert and fossilized coral or volcanic rock, implements of bone and shell including *Isognomon* and *Tridacna*, and ornaments such as shell bracelet rings and beads of *Conus* and *Trochus* or *Cypraea*.

Calcareous sand-tempered ceramic forms were restricted to small bowls and slightly larger storage jars, plus an example of a bottle form with spout, a short-necked carafe, and a possible plate. Rectilinear incisions and small-zoned punctations decorated some vessels below the rim though most were plain, with fewer examples of curvilinear whorls and stamped circles in-filled with lime in the San Roque style, and some slipping of red, black, or buff color. Similar phase artifacts have also been recovered elsewhere in Achugao, but within somewhat mixed and problematically dated contexts (Swift and Athens 1990; Swift *et al.* 1991). Early Pre-Latte subsurface remains from Unai Babot on Laulau Bay are similarly sparse and dated to 1612-1558 B.C.E., broader similar to those recorded from Achugao.

#### **INTERMEDIATE PRE-LATTE PERIOD: 500 BC TO AD 400**

The Intermediate pre-*latte* Period is distinctive from the earlier period based on the form and function of pottery. Unlike the more bulbous and non-thickened rimmed pottery from earlier periods, these ceramics were more flat on the bottom with vertical side walls. It is believed that these pots were more suitable for frying or roasting foods in earth ovens versus boiling. This suggests either a change in cooking styles or a shift in dietary preferences. These bowls also were larger in size suggesting a more communal aspect to sharing of food within the villages. The large size of the bowls has been argued to be indicative of more settled, permanent villages (Moore and Hunter-Anderson 1999). This hypothesis is based on the assumption that larger ceramic vessels do not travel as well as smaller vessels.

Like the Early pre-*latte* period, it is believed that villages in the Intermediate phase were located along the coastline with ready access to marine resources. Examples of pottery from this timespan have been found almost exclusively along coastal deposits and not at more inland reaches. Intermediate Pre-Latte Phase deposits are thicker and evidenced by a few midden scatters, hearths, and occasional postholes (Carson 2008; Clark *et al.* 2010; Marck 1978), plus rock shelters perhaps used before the Latte Period and several *latte* sets (Spoehr 1957; Olmo 1992a, 1992b; Carson and Welch 2005). The most common Intermediate Pre-Latte cultural deposits are radiocarbon dated between 1000-500 B.C.E. and include shellfish remains from food refuse and tool or ornament manufacturing, plus thicker redware ceramics with more common and bold decoration that earlier types. Unfortunately, WWII disturbances and modern development have compromised the prehistoric landscape along much of this coastline (Mazurek *et al.* 1991; Tomonari-Tuggle 1991).

The later Intermediate Pre-Latte Phase is characterized by the presence of large, thickwalled, shallow pan-like ceramic vessels (Moore and Hunter-Anderson 1999) dated between 400 B.C.E. and 400 C.E., although decreasing numbers of decorated bowls and jars are still present with the in-filling of lime disappearing over time. Later Intermediate Pre-Latte sites occur throughout coastal and inland areas of Saipan and include both surface and subsurface scatters of artifacts and midden in diverse settings. The appearance of a flat-bottomed ceramic vessel more ideally suited to shallow-hearth baking of large cakes perhaps wrapped in leaves, rather than boiling or storage in jars, suggests the adoption of a Carolinian cooking technique often relying on breadfruit as a staple.

#### **TRANSITIONAL PERIOD: AD 400 TO AD 900**

The Transitional Period was first described by Moore (1989) and refers to the time period where ceramic styles are consistent with later *Latte* period ceramics, but the archaeological record does not show contemporaneous *Latte* stone sets. During this phase, the thick, flat-bottomed bowls thought to have been associated with earth oven cooking were supplanted by bowls with rounded bases, incurving rims "that were suited to above-ground cooking, suggesting another change in vessel function or social context, or both (Moore and Hunter-Anderson 1999)." It may be argued that again, changing ceramic vessel morphology may be a function of dietary shifts. Dixon et al. (2011:377) suggest that "changes in cooking technology appear to accompany changes in subsistence activities, although the majority of habitation sites were still focused on a relatively stable coastline and its resources."

Transitional Pre-Latte Phase deposits contain a continuation of large flat-bottomed pans dated between 400 and 1000 C.E., but they decline in frequency as pots with rounded bases and slightly incurved rims become more common (Hunter-Anderson and Butler 1995). Transitional Pre-Latte Phase sites occur in the same coastal and inland settings as later Intermediate Pre-Latte sites, but cooking technology and ceramic manufacturing may have begun adapting to the introduction of new foods such as rice, while vessel decoration techniques may have been changing with the social messages of group identity they were imparting over time.

#### LATTE PERIOD: AD 900 TO CA. AD 1700

The locally recognized *Latte* period refers to the time when people built house structures elevated on stone pillars (*haligi*) and capstones (*tasa*) that stacked together are called *Latte*. Several other material markers are common during this period, including changes in pottery style and function, artifacts type and diversity, and of course, colonization in the seventeenth-century. Another shift was in dietary preferences, which may directly relate to the changes in ceramic technology. Characteristic changes in ceramic style and type included vessel form, rim thickness and shape, surface treatment, wall thickness, and tempering agents. Spoehr (1957) and most others having worked in the Marianas have classified Marianas Plainware as distinguishable by its thicker profile, coarser material, and a thickened rim. More pointedly, these vessels have thick walls, coarse volcanic sand temper, and thick rims. These ceramics are very utilitarian in nature and not decorated.

The adaptation to a heavier, larger, utilitarian-type vessel may be predicated again on a change in subsistence strategies. Stable isotope data from a collection of Garapan burials suggests a shift to a more terrestrial diet based on carbohydrates, starches, and proteins, not just marine resources (Dega et al. 2017). The *Latte*-era burial assemblage yielded significant signatures indicating a reliance on breadfruit, taro, coconut, and even rice. The Marianas Plainware ceramics also "may predate by several hundred years the construction of *latte* structures, but increased vessel sizes over time imply increasing capacity for boiling and storage of food...suggest a growing demand for sustenance" (Dixon et al. 2011:378). Craib (1986) states:

Chomorro sociopolitical organization at this time is interpreted as having centered around autonomous kin-based groups, several of which could exist within a single village. The presence of these groups is suggested in early Spanish accounts and by the spatial organization of *latte* sets within settlements.

In addition to shifts in subsistence strategies, artifact variability and quantity increases in the *Latte* period, this likely a result of population expansion and specialization. Artifacts included in *Latte* assemblages include both utilitarian tools and decorative/ceremonial items, with some utilitarian artifacts also being utilized as ceremonial. The assemblage from this time period could include pottery, mortar/pestle, shell adzes (primarily Tridacna), spear points (bone), hammerstones/pounders, stone disks, slingstones, shell fishhooks and lures, stone adzes, shell pendants, worked coral/coral abraders, shell beads, and lithic flakes, among other classes. Slingstones are often found associated with burials of this period: a utilitarian tool being used in a ceremonial role (see Dega et al. 2017).

Finally, the *latte* era population of Garapan, it is further argued through the results of 55 DNA samples (Dega et al. 2017), were Haplogroup E variants, or those associated with Island Southeast Asia E1 and E2 groups. The *Latte* culture is arguably an indigenous, *in situ* development and does not represent a second migration. *Latte* period populations resided in coastal settlements, particularly as beaches were accretionary through time. In addition to the coastal settlements, *Latte* period settlement was also occurring in inland areas removed from direct coastal environs (Dixon et al. 2011; Carson 2012a) as well as on more marginal islands in the north (Russell and Fleming 1988).

Latte Period settlement in Saipan (A.D. 900 to 1700) appears to have been oriented toward the lengthy lagoon along the west coast off Garapan, and to a lesser extent sheltered reefs off the south coast of Agingan and Obyan, and around Laulau Bay (Figure 7). Latte Period site complexes at Unai Babot on the southeast coast (Carson and Welch 2005), Agingan on the southwest coast (Hornbostel 1924-1925; Russell and Fleming 1986; Thompson 1932), and its neighbor Obyan Beach to the east (Tomonari-Tuggle 1990) indicate the presence of pre-Contact villages on Saipan and a preference for coastal locations with access to fresh water seeps at low tide. Subsurface deposits from Oleai to Garapan (DeFant 1991; Hasebe 1928; Hornbostel 1924-1925; Shun and Moore 1989) and from Tanapang to Achugao (Butler 1995; Butler et al. 2001; Moore 1989) bordering the lagoon reflect former coastal activity areas and burial sites destroyed by the WWII invasion and defense of Saipan's west coast.

Important for the current study, Latte Period sites are also present in other environmental settings including inland *latte* locations such as at I Pitot (DeFant 1993); Chalan Galaide (Graves and Moore 1986), Chalan Pupula (Craib 1999), Garapan (Allen 2002; Allen and Prasad 2002; Butler and DeFant 1994; Wickler 1990), and Afetna (McGovern-Wilson 1988), and caves with rock art presumably of the Latte Period in Laulau and Kalabera (Marche 1982; Thompson 1932). In fact, Farrell (1994) estimated that Saipan's population had probably reached 15,000 by the time of the earliest Spanish contacts with the island in the 16<sup>th</sup> century. An accurate population estimate from *latte* sets alone is fraught with complications (Thompson 1940).

Marine resources continued to provide the primary source of protein during this period. Shell middens contain increased quantities of gastropods and fewer bivalves. The difference in type of shellfish found in middens appears to relate to relative changes in sea levels that caused a loss in mangrove forests supporting bivalve habitat (Amesbury 1999), as siltation gradually intensified from deforestation and agriculture. Other coastal terrestrial resources exploited include birds, fruit bats, lizards, turtles, and land snails (Pregill and Steadman 2009).

The presence of *lusong* or boulder mortars near many *latte* sets (Dixon *et al.* 2006) suggests an increase in the consumption of rice in the Marianas (Butler 1990). Rock-filled ovens are assumed to have been used to bake tubers such as taro or yams (Bulgrin 2006), or forest products such as breadfruit. In 1602, Spanish clergy on Rota noted individual plots worked by Chamorro farmers well inland from coastal communities (Driver 1983). The ubiquitous Latte Period pottery scatter in these settings may well be the archaeological signature of this agricultural landscape on Saipan (Bulgrin 2009).

It has been argued that these changes in subsistence indicate a replacement of the earlier Pre-Latte society by a new cultural complex from Southeast Asia (Thompson 1945) or the indigenous spread of rice production already known from that region as populations increased (Butler 1995; Hunter-Anderson and Butler 1995). Regardless, recent examination of 18th century ethnohistoric accounts (Peterson 2009) and tropical plant biology (Petersen 2006) suggests late prehistoric contact was also maintained with Carolinian voyagers, who presumably had centuries of contact with Polynesian outliers and domesticated crops such as sweet potato or *Ipomoea batatas* and seedless breadfruit or *Artocarpus communis* from the South Pacific (Rainbird 1994).

Changes in subsistence and settlement, from a primarily coastal orientation to a more inland focus, are noted across much of the Pacific between 1350 and 1800 C.E. (Nunn *et al.* 2007). In many cases, this shift is interpreted as a response to the Little Ice Age and its effects on sea level, temperature, and rainfall. In the Marianas, however, it would be difficult to portray these changes as preceded by a societal breakdown associated with the "A.D. 1300 Event" (Nunn 2000), since existing coastal settlements appear to grow in size at much the same time as substantial new settlements appear in the interior of the larger islands.



Figure 7: Latte Period Settlement on the Island of Saipan (Hornbostel 1924-1925). Note: There are no Latte settlement areas on this map representing the current project area.

It can be assumed that some conflict accompanied the gradual infilling of these island environments, but there is no evidence of fortifications or defensive site locations until well after sustained European contact. A gradual increase in Latte Period ceramic vessel size and presumed storage or cooking capacity also suggests few shortfalls in tropical forest or domestic food supply (Dixon and Schaefer 2014; Dixon and Gilda 2011; Dixon, Bartow, *et al.* 2011).

Spanish Administration the Contact Period is the interval between Magellan's landing in 1521 and the first Spanish settlement in the CNMI after circa 1700. Latte stone structures continued to be built (Driver 1993), but Spanish-introduced materials were also found at a few sites dating to this period. These materials included iron (Quimby 2011), glass beads, and fragments of Asian or European ceramics traded to the islanders by visiting sailors. Breadfruit, coconuts, yams, and taro were traded to passing vessels during this time period, as were bananas, sugarcane, rice, and fish caught both inshore and offshore. Chamorros were noted for their *proa*, a uniquely fast outrigger canoe to European eyes, and for their superlative skills at handling these even in rough conditions (Barratt 2003).

With the establishment of the Manila Galleon trade to Mexico via the Mariana Islands on the return voyage every year after 1568, Chamorro inhabitants "...traded woven pandanus mats and baskets, coils of coir sennit, dove-like birds in wooden cages and small turtle-shell boxes" (Coomans 1997). And after the wreck of *Nuestra Senora de la Concepcion* in 1638 off Agingan Point, "some Islanders also offered gold neck chains and ivory figurines salvaged from the wrecks, causing observers to marvel that the islanders valued iron more than gold" (Quimby 2011:11). Beginning in 1989, more than "1,300 pieces of 22.5 carat gold jewelry including a variety of chains, rings, buttons, plates and other decorative gold items set with diamonds, rubies, sapphires and emeralds" were recovered from *Nuestra Senora de la Concepcion* (Mathers *et al.* 1990:529), but only a single silver coin in the denomination of one *Real* was among the recovered items (Moore 2013).

At the site of Achugao on the island of Saipan, a small fragmentary metal *flushloop* bell was found just above the pelvis on the left side of a Latte Period burial and was apparently attached to something around the waist (Butler 1995). This type of brass alloy bell of European manufacture is commonly found in eastern North American colonial contexts from the 17<sup>th</sup> and 18<sup>th</sup> centuries. The author argues that this particular specimen likely dates between the wreck of *Nuestra Senora de la Concepcion* on the south coast of Saipan in 1638 and the end of the Chamorro settlement of Saipan circa 1730, since native inhabitants were more interested in iron than other metals after contact with Magellan in 1521. At Laulau House A an iron spear point, a nail, and a fragment of an iron knife blade were found beneath rocks packed around a *latte* stone, while at Obyan the top of a copper object was found in a buried context, suggesting a post-Contact ending date to Latte Period occupations at both sites (Spoehr 1957). Chinese sailor Choco was also shipwrecked on Saipan in 1648 where he settled with a Chamorro wife, presumably being familiar with the working of metal to some degree.

Fray Diego Luis de Sanvitores settled at the native village of Hagatna in Guam with a handful of soldiers in 1668, then ordered another Jesuit father Morales and two Philippine lay helpers to establish a mission on Saipan. On August 16 that year, Fray Morales was speared in the leg while preaching and on August 19 a group of Chamorros accompanying another priest and lay helper from Saipan to Tinian killed both clergymen. When Sanvitores visited Saipan

after these attacks he met with resistance from local inhabitants reportedly encouraged by Choco (Hezel 1989), although he performed several baptisms and eventually renamed Saipan as San Jose after his departure for the northern islands of Gani. In July of 1669, Sanvitores briefly returned to quell unrest on the island and in 1670; Father Medina attempted to baptize a child at the village of Goa and was killed with his Philippine helper, Hipolito. Fray Sanvitores was then martyred in Guam on April 2, 1672, resulting in the eventual dispatch of the first military governor to the colony in 1673.

After quelling several native revolts on Guam, Sergeant Major Jose de Quiroga y Losada arrived as military commander in 1679 and assumed control of the Mariana Islands when Governor Salas returned to Manila the next year, initiating the final stages of *La Reduccion* of the Chamorro population with whatever violence was required. When Quiroga went to Saipan to salvage the shipwreck *Nuestra Senora de la Concepcion* in 1684, he met with strong resistance and proceeded to burn down native villages and crops on the island using cannon and firearms until they sued for peace in April. This reprieve allowed the construction of a fort and church, probably near the wreck site at Agingan Point where over 10 cannons were recovered (Farrell 2011). After a general revolt against Spaniards in Guam, Rota, Tinian, and the northern islands, Quiroga defended his fort with a small contingent of soldiers from several advances and then slipped away with canoes from Obyan to reinforce the garrison on Guam.

Father Coomans was then returned to Saipan in 1685 where he was killed, only to be replaced by Father Bouwens in 1695 when Quiroga returned to end Chamorro resistance. Two churches were established afterward, Immaculate Conception at Anaguan to minister to the survivors of the revolts in Tinian and Aguiguan, and St. Joseph at Fatiguan to minister to the survivors from the northern islands campaign, until 1698 when Gani residents were repatriated to Guam (Russell 1998). In 1705, a typhoon destroyed both churches and only Immaculate Conception was rebuilt to serve a few hundred people. Beginning in 1722, the dwindling native population on Saipan was resettled on Guam.

Sometime between 1815 and 1820, after severe storms devastated the Caroline Islands (Spennemann 1984); refugees from Elato and Satawal began arriving in Guam as they likely did periodically in prehistory (Barratt 1988). These Carolinians were resettled to Saipan where they established the village of Garapan from which they assisted in rounding up and salting feral cattle from Tinian for sale to Guam (Driver and Brunal-Perry 1993), while providing inter-island transportation to the *alcalde* of Saipan after 1835. Chamorros from Guam were then enticed to move to Saipan in the 1860s with offers of farmland, and in 1889 another group of Carolinians from the island of Namonuito left Tinian when the cattle venture collapsed and established the village of Tanapag. Remains of 19<sup>th</sup> century Carolinian burials have been exposed at Guma Capuchino in south Garapan with imported grave goods including beads of glass and ceramic, plus shell beads perhaps of local manufacture (Jones and Tomonari-Tuggle 1994).

While the Carolinians proved themselves to be an asset to the Marianas economy, the arrival on Saipan of deported Spanish and Filipino political prisoners during the 1870s became a serious impediment to local self-sufficiency (Madrid 2006) where they often led a life of destitution. Such deportations eventually ceased and most of the remaining prisoners were repatriated, after which a period of relative political calm prevailed in Spain's all but forgotten colonies.

The tranquility was broken with the arrival of the American cruiser U.S.S. *Charleston* in 1898 to take Spanish government officials prisoner to Manila at the onset of the Spanish-American War (Farrell 1994). In May of 1899, Colonel Eugenio Blanco arrived with soldiers from the Philippine province of Pampangan to establish an interim government on Saipan until June 30<sup>th</sup> when Germany purchased the Northern Mariana Islands (except Guam which remained in American hands) and the rest of colonial Spanish Micronesia. The price was set at the equivalent of 4.2 million dollars in February of 1899 after a Japanese counter offer (Spennemann 2007), and the Paris peace treaty was signed in December of 1898 while Spain retained the right to use Saipan as a coaling station.

#### **GERMAN ADMINISTRATION**

On November 17, 1899, Captain Georg Fritz became the first administrator of the Imperial German District Office with a small staff and police officers, and the Spanish Colonel Eugenio Blanco with his Pampangan troops were returned to Spain as Manila was now an American colony. Fritz soon offered free passage and land to Carolinians and Chamorros from Guam to resettle in Saipan where their children were taught in German schools and German Capuchin Catholic churches (Spennemann 1999, 2007). Attempts to lure German farmers to the new colony with a similar offer met with far less favorable responses. In 1902, Fritz (1989) reported 891 Chamorros, 524 Carolinians, and 42 foreigners in the capital of Garapan and 76 Chamorros, 97 Carolinians, and 1 foreigner in the port of Tanapag. Rota was briefly a duty station with coconut plantation and 490 residents, while Tinian remained a cattle ranch with 95 residents.

Germany's primary interest in the Northern Mariana Islands was the development of a cash-based export economy of copra production. Coconut trees were planted on Saipan, Rota, Tinian, and Aguijan as part of the Tinian Gesellschaft (Figure 8) and on the smaller islands to the north in two other lease areas, one to a Japanese firm beyond Agrihan. Japanese trading firm Nanyo Boki Kaisha (NBK) also shipped copra to Yokohama with 16-30 vessels a year, while the German ship *Germania* only resupplied the island three times a year (Farrell 1994). Spanish era grazing rights to large undeveloped tracts of land were revoked and lease holders were granted smaller plots to farm, the remainder being deemed public land suitable for the planting of coconuts or homesteading.

Four more administrators followed Fritz after he was reassigned to Pohnpei in 1907 with a core of Chamorro police and Carolinian bodyguards, retiring in 1910 after the Sokeh's Rebellion was poorly handled. Taxes were collected by local mayors, roads were constructed with community labor obligations, a postal service was established, a hospital and schools were opened, harbors were improved at Garapan and Tanapag, and an imposing administration building with replica *latte* stone pillars was built in Garapan behind Mount Carmel cathedral (Farrell 1994). Several young Chamorros were even selected for vocational and trade schooling in Tsingtao in German-held China and in Germany after 1907 until a trade school was opened on Saipan in 1910. A penal colony was built in Laulau for local criminals not housed on the island of Sarigan, and in 1909 a total of 64 Samoans including chiefs and their families were exiled on Saipan after an unsuccessful uprising and given land to farm between Garapan and Tanapag (Spennemann 1999, 2007), returning to Samoa only after WWI.



Figure 8: Tinian Gesellschaft Lease Holds Including Saipan (Spennemann 2007:115).

After a poor response to European agricultural settlement offers and the devastation of young coconut plantations by two typhoons in the Marianas and in the Western and Central Caroline Islands in 1905 and 1907, several hundred Carolinian residents were resettled to Saipan at Oleai village south of Garapan and then to Pagan. After destructive typhoons returned to Saipan and Rota in 1911, 1913, and 1914, the German administration eventually became convinced that their economic gamble to establish a viable colony in the Northern Mariana Islands had failed (Russell 1999). German authority over the islands ended in World War I when a Japanese naval squadron seized control of Saipan from the battleship *Katori* in October 1914 with no hostilities, along with other German possessions in Micronesia.

#### JAPANESE ADMINISTRATION

This time period is especially crucial to the current project area. As is shown following this section, buildings were constructed in the current project area during this time frame, dating from 1914-1944.

During WWI, Saipan was placed under military jurisdiction by Japan and German nationals were expelled since Japan and Great Britain were allies. The Supreme Council of the League of Nations awarded the mandate over German Micronesia to Japan in May 1919 at the close of the war, with an agreement not to fortify any of the islands. The Nan'yo-cho or South Seas Bureau replaced the Japanese naval administration in 1922 and authority was later transferred to the Ministry of Overseas Affairs (Farrell 1994).

After scientific studies of the island, two unsuccessful attempts were made to initiate agricultural industries on Saipan, until permission was granted to Haruji Matsue to grow sugarcane with the Nanyo Kohatsu Kaisha (NKK) or South Seas Development Company. In 1922, the company began importing laborers and cleared land for sugarcane fields, organized factories, constructed Shinto shrines, and built railroads to the first sugar mill near Lake Susupe. Chalan Kanoa where the NKK workers lived near the mill quickly grew into a major town with a distillery to use molasses from the sugar mill, a warehouse, railway sheds, a dock, administrative offices, and company housing. The capital Garapan soon boasted schools, jail (Allen 2006), hospital, leisure club for employees, recreational facilities, retail stores, power plant, radio station, and regular mail service to Japan (Peattie 1988). Islanders were served by Catholic priests brought from Japan and a convent was established for nuns.

The island was divided into rectangular plots, 14.7 ac (6 ha) each, that were leased by tenant farmers. Sugarcane fields occupied 68 percent of the arable land on Saipan and in 1937 the civilian population of was 46,708 with only 4,145 of those being Chamorro or Carolinian; most of the population was Japanese, Okinawan, or Korean (Bowers 1950). Private titles for land from the German period were honored after surveys were completed, but public land formerly used as a reserve became unavailable and native landowners began selling or leasing rural and town properties to sustain their families as employment became dominated by imported labor (Spoehr 1957). Chalan Kanoa grew to a town of 12,827 inhabitants with many dwellings of concrete, while rural homesteads were constructed of wood and thatch or sheet metal, where only the ruins of concrete cisterns and barn or house foundations remain today. Other areas more distant were farmed after the sugarcane railroad was extended to Marpi Point on the north and Talofofo to the east (DeFant 1993).

In anticipation of the impending war, naval surveys were completed for possible fleet bases and construction began on a seaplane base at Puntan Flores in 1934 as Japan withdrew from the League of Nations. Asilito Airfield was completed by NKK laborers and the following year ostensibly to serve a new air route by Great Japan Airways. Ships leaving with women and children of employees began returning to Japan, while 16,000 civilians and 2,000 Japanese prisoners from Yokohama were increasingly conscripted for military construction including new runways in Makpe, Kagman, and Chalan Kanoa, bunkers for artillery overlooking the expected invasion beaches such as Unai Bapot (Tomonari-Tuggle 1991) and Unai Obyan (Tomonari-Tuggle 1990), and networks of tunnels, rock shelters, and caves for defense and refuge in places such as Laulau (Haun and Henry 1993; Mazurek *et al.* 1991; Olmo 1992a and 1992b). Sugarcane was eventually suspended to use the railway for military purposes and agricultural produce was requisitioned to feed incoming troops, as were all livestock, so civilians relied on foraging in the jungles to feed their families. A division of veteran soldiers from China was later moved to Saipan to strengthen defenses, while American submarines began sinking transport ships with troops and materials thus placing more strain on available local resources.

On December 8, 1941, a squadron of Japanese aircraft left Asilito Airfield and the Puntan Flores seaplane base and bombed military targets around Apra Harbor on Guam, initiating WWII with similar raids across the Pacific. Several Chamorros from Saipan were enlisted to infiltrate Guam overnight and then became translators and policemen for the occupation force on Guam, while others remained at home to detect suspected collaborators with America in Saipan (Jordan 2014). Construction of 4,400 foot Marpi Point airfield was begun in April of 1944 once it became obvious that the Mariana Island "absolute national defensive sphere" (Denfield 1997) was to be targeted by the American offensive. Asilito Airfield was made operational with 3,900 foot runway, a hospital, administration building, oxygen plant, power plant, shop areas, taxiways, fuel and ammunition storage, and hangers plus anti-aircraft artillery positions - many of which are still visible today. Four infantry reserve companies and a tank regiment was assigned to Kagman and Laulau areas and a mountain artillery regiment with a battalion of field artillery was stationed in Mt. Fina Susu overlooking Chalan Kanoa invasion beaches (Denfield 2002). Anti-aircraft batteries were also set up overlooking the naval facilities at Puntan Flores in Tanapag and the airfields in Marpi, Kagman, Chalan Kanoa, and Asilito. Inland defenses were minimal with the prevailing strategy of denying the Americans a foothold upon landing on the beaches.

Operation Forager air raids of military targets on Saipan began in February 1944 as a U.S. Navy carrier task force with over 800 ships sailed for the Mariana Islands. Native islanders, Japanese NKK employees, and laborers from Korea and Okinawa were forced to work on repairs to facilities at night, which were bombed by day (Denfield 1997). The influx of Japanese troops also brought housing pressures to the island as combined army and navy strength grew to almost 30,000 defenders under Lt. General Obata Hideyoshi and Lt. General Saito Yoshitsugu, far more than estimated by the U.S. intelligence based on reconnaissance flights. Schools were closed and used to house new troops, while students were put to work. Most Chamorros and Carolinians were then forced to move to their *lanchos* in the jungle to avoid increased bombing of urban targets and to free coastal areas for defense (Petty 2002).

Systematic air and naval bombardment of Saipan began on June 11, 1944, from over 900 aircraft and a fleet of battleships, destroyers, and cruisers under the command of Vice Admiral Raymond Spruance. Landing along the west coast began on the morning of June 15 and the 2<sup>nd</sup> and 4<sup>th</sup> Marine Divisions under the command of Lt. General Holland Smith were soon pinned down to the beaches by aggressive pre-sighted Japanese artillery not neutralized during the shelling (Figures 9 and 10). They were reinforced by the 2<sup>nd</sup> Army Infantry Division the following day under the command of Major General Ralph Smith until he was relieved of duty on June 24 by Lt. General Holland Smith during the struggle for Mt. Tapachau. Counter attacks were repulsed each night by Marines and Army, but with heavy casualties. The U.S. naval carrier forces then left the scene of the invasion to meet an incoming Japanese fleet that had been detected by American submarines (Peattie 1988), and the resulting Marianas Turkey Shoot effectively destroyed Japan's naval air capacity on June 19<sup>th</sup>.

Meanwhile, the Marines had crossed the island to begin pushing defenders to the north, while the 165<sup>th</sup> Army Infantry captured Asilito Airfield becoming operational for American support aircraft by June 22<sup>nd</sup>, although continued combat was sustained with enemy forces on Nafutan Peninsula (Rottman 2004). Resistance in Kagman was lighter than expected given the strength of the defenses targeted before the battle and then avoided during the invasion, although fleeing Japanese troops participated in harassing Army Infantry advancement through the slopes and jungles of Death Valley, and some attempted to cross the channel to reinforce Tinian. Fighting in the streets of Garapan and Tanapag was intense in spite of previous shelling and the struggle to gain command of the high ground on Mt. Tapachau was not completed until June 25. The Flores Point Naval Base on the coast below was only taken on July 4th.

General Saito then moved his command north and ordered continued construction of the Banaderu Airfield near Marpi Point to receive reinforcements from the fleet he did not know would never arrive. In the evening of July 5 Lt. General Saito consolidated his remaining troops near the cliffs in Paradise Valley north of San Roque and had a farewell dinner with Admiral Chuichi Nagumo, before committing ritual suicide the next morning after ordering the *Gyokusai* or "crushed jewels" attack (Swift *et al.* 1991). His poorly armed troops and civilian volunteers were organized close to Matansa beach on the evening of July 6<sup>th</sup> and at 4am the next morning they attacked through a 500-yard gap in the American line, cutting communication between Marine defensive positions and base camps. As both sides withdrew toward Tanapag, both dangerously low in ammunition, U.S. fighter air strikes from Aslito Field hit moving targets indiscriminately from the village of Makunsha south (Figure 10) before reinforcements could be mobilized during the evening of July 7<sup>th</sup> to stem the tide.

A total 460 Americans were killed and 4,311 Japanese, although the process of separating the dead on the battlefield was complicated by rains and the mutilation of combat (Adams *et al.* 1996; Prasad and Williams 2001; Tomonari-Tuggle *et al.* 2007). As combat drew to the end, the number of Japanese civilian deaths from forced suicide off the cliffs of Laderan Banaderu rose. Civilians who survived were used to help in the burial process and then interned in Camp Susupe to the south. Saipan was declared secure on July 9<sup>th</sup> and Prime Minister Tojo's cabinet was ousted from power on July 18 when news of the defeat was accepted in Japan. Nevertheless, forces under the command of Captain Sakae Oba remained hidden in the jungles around Mt. Tapachau until deciding that information about the war's end from the Susupe internment camp was correct and he surrendered his command with 50 men on December 1, 1945 (Jones 1986).



Figure 9: Japanese Defenses and American Invasion Beaches (Rottman 2004:21). Note: Aslito Airfield, near the current project area.



Figure 10: 1:20000 Scale 1944 Map Showing Location of Makunsha Village (near San Roque in northwest Saipan) and Infrastructure (Prepared for Joint Intelligence Center P.O.A., April 1944).

#### AMERICAN ADMINISTRATION

Saipan was transformed into the first operational B-29 base in the Pacific in late 1944 (Farrell 1994). Isley Field, the present International Airport and former Asilito Airfield, soon saw the arrival of General Curtis LeMay to organize high level bombing of selected Japanese military targets, but not without incurring bombing raids from Japanese Betty Bombers based in Iwo Jima. East Field at Kagman above Laulau and Marpi Point Air Base were also renovated from Japanese airfields for P-47 fighter support employing napalm for the first time during the Tinian invasion, while Kobler Field was built near Isley Field near Agingan Point for support of the B-29s (Craib 1991). The 369<sup>th</sup> Station Hospital, squadron motor pool, and a warehouse area for refrigeration units or "reefers" were then built along the former railway line to Laulau near wartime quarries used for road base and runway fill by the 2807 Engineer Battalion (Olmo 1992b). Within days of its capture, U.S. construction battalions began converting the former Puntan Flores seaplane base into a U.S. seaplane base. This base was officially named U.S. Tanapag Naval Air Base, which constituted part of the sprawling Camp Calhoun complex that was a massive logistical supply depot supporting the U.S. war efforts elsewhere in the Pacific (DeFant 2014).

Civilian Japanese, Okinawans, Chamorros, Carolinians, and Koreans were interned in Camp Susupe to await repatriation to the homelands or release on Saipan after the island was secured. The immediate crisis was the medical care required by wounded, sick, and starving men, women, and children, but by the spring of 1946 nearly 10,000 Japanese and 1,300 Korean nationals were repatriated except for a few married to local islanders (Denfield 1997). Over 2,300 Chamorro and 800 Carolinians were then released and were in high demand for government wage labor as the U.S. war effort continued to grow (Bowers 1950). Houses, churches, and schools were built from the rubble of the invasion and small shops opened in Chalan Kanoa and Garapan to provide what food and clothing or dry goods were imported for support of the military or American administrative support staff and sell locally produced handicrafts. After the revival of native farming communities (Figure 11), local home government began with the establishment of a municipality in 1947 and a local police force in 1948, although by 1950 there was much uncertainty about the future of the island when American personnel began leaving the island during the Korean War with their local employment potential (Spoehr 1954).

After the establishment of the Trust Territory of the Pacific Islands by the United Nations, the U.S. continued administration of the Saipan under the jurisdiction of the navy until 1951 when the Northern Mariana Islands were transferred to the Department of the Interior. The following year Saipan became the headquarters for the U.S. Naval Technical Training Unit and was returned to the Navy, while the CIA trained Chinese Nationalists to fight the Chinese Communists in mainland China using Kagman East Field and Marpi Point runways as reception stations and camps (Denfield in Mazurek *et al.* 1991) until 1962 when it became provisional capital of the Micronesia Trust Territory (Farrell 1994). On February 15, 1975, Saipan voted to become a part of the Commonwealth of the Northern Mariana Islands with a provision for a portion of Tanapag Harbor and Isley Field to be jointly used by the U.S. military. The covenant with a new constitution was approved by President Ford and the American legislature in 1978 and American citizenship was granted to CNMI residents in 1986 by President Reagan. Today, ranching, subsistence agriculture, and fishing are the main rural economic activities, while government employment and Asian tourism are the most important industries.



Figure 11: Distribution of native Farms, Saipan, 1948 (after Bowers 1950:110). Note: the current project area contains both hard and graded gravel roads.

# PREVIOUS ARCHAEOLOGY

Beginning in the early 20th Century, archaeological studies focused more on the monumental *Latte* stones than smaller and less conspicuous sites and features. This was a common occurrence across the Pacific: early researchers would typically study the largest or most "significant sites", often bypassing the more diminutive sites. By mid-century, more work was focused on the chronology of Mariana Islands material culture and in more recent times, to pre-*Latte* culture that is believed to have occupied the Mariana Islands c. 1500/1300 B.C. Some of the earliest archaeological investigations that occurred in the Mariana Islands were conducted by Hornbostel (1921-1924). The work included the collection of over 9,000 specimens of Chamorro culture (Thompson 1932).

By the 1950's, advances in radiocarbon dating techniques allowed researchers to better understand the chronological development of Mariana Islands' material culture (Carson 2012). In 1957, Alexander Spoehr conducted extensive work in Saipan, Tinian, and Rota, eventually developing timeframes for two phases of Chamorro prehistory: pre-*Latte* and *Latte* phases. In addition to this important distinction, pottery seriation was also derived from the analysis of pottery fragments found during his investigations. In general, Spoehr found the Marianas Plain type was found to be contemporaneous with the *Latte* Phase and was distinguishable by its thicker profile, coarser material and a thickened rim. The Marianas Red, a type distinguished by thinner walls and red slipped or black burnishing, was found to be associated with pre-*Latte* times.

Following the establishment of a general timeframe for pre-*Latte*, *Latte*, and Post-European contact phases that includes the arrival of the Spanish, the sale of the Mariana Islands to Germany and later the awarding of the Marianas to the Japanese, archaeological studies have been able to differentiate and study each aspect of the Northern Marianas archipelago's chronology.

### **PROJECT AREA AND ENVIRONS**

The following presents previous archaeological study concentrated within and near the current project area and is not exhaustive for the entire island (Figure 12). One main study and archival research puts the current project area in historical perspective.

#### **AIRPORT AND ENVIRONS**

As noted on Hornbostel's (1924-1925) map showing Latte period settlement on Saipan, the current project area did not reflect such settlement. There was Latte period settlement in the area but more toward the coastline at Obyan to the south. The map is interesting as it primarily shows Latte settlement along the eastern and western coastlines, with almost none inland. The presence of inland Latte sites is real, however, and currently being investigated in several locations (Dega et al.-in preparation). The historic path for the project area and environs is mostly transformative during pre- and post-WWII times. The area was a sugar cane field prior to 1934, when the Japanese constructed runways as a landing field, along with support buildings and other infrastructure. Aslito Field was named in 1941, prior to the war and later re-named Isley Field in 1944 when the American military took over control of the island. On July 25, 1976 the airport was again re-named to Saipan International Airport, replacing Kobler Field to the north.

An archaeological assessment of 250 hectares of land was subjected to preliminary research (Tomanari-Tuggle 1990). This project involved only pedestrian survey, no testing was completed. The large project area was also coastal, occurring to the southwest of the current project area at Obyan. The large breadth of land was divided into fourteen different environmental zones with sites from both prehistoric and historic contexts being documented. In addition to 180 WWII era sites that were previously documented by HPO, an additional 30 were identified during the survey. Twenty-eight prehistoric sites were also identified in 11 of the 14 localities. Tomanari-Tuggle (1990) note that in two particular localities, there is a "high potential for intact buried cultural deposits". The localities closest to the current project area (Locality 13 and 14) both contained concentrations of military debris and a very low-density sherd scatter in Locality 14.

Swift et al. (1996a) conducted an archaeological survey for a Christian Service Center in As Lito, approximately 2 km to the northeast of the current project area. Four archaeological sites were documented, including a prehistoric artifact scatter (SP-1-0582), two Japanese Period sites that consisted of a water pump station (SP-4-0579) and canal, spillway, and railroad berm complex (SP-4-0580), and a site related to Japanese fortification of Saipan during WWII (SP-5-0581). This site consisted of a hand excavated cave with internal fortifications. The prehistoric artifact scatter (SP-4-0579) was comprised mainly of thick walled *latte* period ceramics, a Tridacna adze, and two slingstones. Swift notes, "These artifacts are also commonly associated with the Latte Period" (Swift et al 1996a:62). Additionally, the authors concluded, "that the sites represented short term habitations, and possible resource procurement locations" (ibid.:63). Based on the nature of the four sites, the project area had seen activity from *latte* times through Historic times, through WWII.

The singular major historical and archaeological study of the current airport project area and environs was conducted by Denfeld and Russell (1984). This study is summarized below but more importantly, it presents data from previous buildings within the current project area, which are also exhibited below. Figure 13 shows the location of sites identified during their survey of the central Isley area. Figures 14 and 15 show buildings formerly occurring in the project area, including Site SP-H-12. Three sites were identified in the current project area: SP-H-6, SP-H-12, and SP-H-13 but were all removed but for the power plant. These sites are presented below directly from the Denfeld and Russell (1984) report:



Figure 12: Portion of USGS Map Showing Locations of Previous Archaeological Studies.

#### SITE SP-H-6

This site consists of the remains of the Japanese refrigeration pyrotechnics storage building. Extant are the foundation of the storage building (Feature 1), a water cistern (Feature 2) and a revetment wall (Feature 3) which surrounds the storage building foundation. The revetment wall is constructed of coral stone and concrete and is 6, 7 meters high and 8. 5 meters thick at the base. It has one opening at the southwest corner that provided access to cargo trucks. Located 16 meters west of the pyrotechnics building are three Japanese munitions pits (Features 4, 5 and 6) and an antiaircraft gun position (Feature 7) constructed of coral filled fuel drums. This emplacement has a diameter of 6 meters. The area at this site has considerable amounts of debris from both American and Japanese operations.

All told, this site consisted of 7 features, including a building foundation, a concrete water cistern, a revetment wall, three munitions pits, and a gun emplacement.

### SITE SP-H-12

This site is the Japanese power plant and consists of a two-story concrete structure (Feature 1) measuring 8 to 9 meters by 10.9 meters. The floor of the structure is covered with the debris of the roof and plant equipment. Also associated with the power plant are a muffler system (Feature 2) and a concrete water cistern (Feature 3) which was part of a cooling system. The power plant is surrounded by a revetment wall (Feature 4).

This site consisted of four features, including a two-story power plant, muffler system, concrete water cistern, and a revetment wall.

### SITE SP-H-13

This site is the Japanese oxygen generating building. Approximately one half of the walls of this structure (Feature 1) are standing. Its corrugated roof is missing. One wall contains an air dryer (Feature 2) and the line of the purification system (Feature 3). To the rear is a water cistern (Feature 5) and to the front is an L-shaped revetment (Feature 4) which measures 2 meters high.

This site consisted of five features, including wall of the generating building, an air dryer, air purification system, and a revetment wall.

These sites were originally constructed prior to WWII by the Japanese, under the auspices of As Lito Field. Note that most of these buildings are not still in place. Only the power plant appears to have escaped destruction/demolition (Denfeld and Russell 1984:80-83).



Figure 13: Survey of Isley Field and Identified Archaeological Features (Denfeld and Russell 1984). Note: Current Project Area in location of Numbers 6, 12, and 13, right side of frame.



Figure 14: Photographs of Project Area Structures (from Denfeld and Russell 1984).



Figure 15: Photographs of Project Area Structures, Site SP-H-12 (from Denfeld and Russell 1984).

Previous archaeological research in the project area and environs has led to documentation of cultural materials and architecture spanning from Latte times (Obyan, Aslito) through the Japanese period and WWII times. Of particular interest is the excellent research done by Denfeld and Russell (1984) that includes the current project area. Multiple structures were built in the project area during Japanese colonial times (1914-1944) and later removed. However, multiple munitions pits were also excavated (Site SP-H-6) which may still contain remnants from that time period and WWII.

# **ARCHAEOLOGICAL MONITORING**

The work will initially commence with archaeological monitoring, with data recovery to follow, in consultation with the HPO, if significant cultural deposits are identified. This section exclusively discusses the methods to be employed during monitoring ground altering activities in the project area.

Full-time archaeological monitoring will be conducted by AA personnel for all ground disturbing construction activities in order to identify any potentially significant archaeological features or deposits discovered during the work. The intent is to identify these significant features/deposits and evaluate them for documentation, data recovery, or potential preservation. If such cultural resources are found during monitoring, they will be exposed to the extent necessary for construction and as required for the archaeological team to determine the boundaries of the site and how it may be impacted by construction. AA will document the site in relation to a permanent site datum through field forms, maps, and photographs.

AA will determine the stratigraphic sequence, approximate date of deposition, integrity, and range and quantity of artifacts from any identified sites during monitoring. If a cultural deposit is determined to be potentially significant, manual excavation will be utilized to determine the best strategy for mitigation of any potential impacts, in consultation with the HPO. AA will provide the client with options for estimated archaeological costs and schedules of mitigation measures including but not limited to avoidance, preservation, partial preservation, or excavation and curation. Based on site information supplied by AA, HPO will select the mitigation measures to be employed for the site.

In addition, multiple tenets of archaeological monitoring will be completed during the project. Archaeological conventions and methodologies for the work are presented below. The following presents the crew and methods for this phase of the project.

Available staff for this project consist of the following individuals and present location (non-exhaustive list):

Michael Dega, Ph.D. (Principal Investigator) Christopher King, Ph.D. (Field Supervisor) Trevor Iliff, B.A. (Field Director) Derek Butler, B.A. (Field Technician)

Dr. Christopher King will be the primary monitor during the project, as well as the project osteologist. We also welcome any staff from the HPO who would like to monitor with our team.

# ARCHAEOLOGICAL MONITORING CONVENTIONS AND <u>METHODOLOGY</u>

Monitoring is to occur during any ground altering activities associated with this project. Several tenets will be followed for the archaeological monitoring and are presented below. AA will use the following guidelines during monitoring in the project area:

- 1. All subsurface construction activities for the project will be monitored by a qualified archaeologist. No ground altering activities will occur on the project until this archaeological monitoring and data recovery plan have been accepted by the HPO.
- 2. Ground altering primarily refers to the excavation of any original, natural soil. Given the large-scale use of fill in this area over at least 80 years, fill will also be monitored as it may contain cultural materials dating to the 1930s and closer to modern times.
- 3. If non-burial cultural deposits and/or features are identified during monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the find location so the deposits or features may be identified, documented, and assessed for significance. The HPO will be immediately consulted regarding appropriate documentation and assessment, as noted above. Documentation will include GPS plotting of the find location, recording location on site map, photographing with scale and north arrow and illustrating the deposits or features in plan view and/or profile view (depending on nature of exposure), recording stratigraphy using USDA soil survey manual terminology and attributes and Munsell soil colors, and plotting and collection of artifacts and soil samples; stratigraphic profiles will measure a minimum of 1 m across. Construction work and/or back-filling of excavation pits or trenches will occur in the location of find only after all archaeological documentation has been completed and approved by the HPO.
- 4. Stratigraphy will also be recorded and photographed with north arrow and scale at selected locations along trenches and within building footprints, as available. We shall seek a representative stratigraphic profile covering all different portions of the project area. Again, the profiles will measure a minimum of 1 m across. Both vertical and horizontal scales will be recorded.
- 5. In the event that human remains (burial or isolated, displaced skeletal elements) are inadvertently encountered, all work in the immediate area of the find will cease, the area and human remains will be secured, and the archaeologist will immediately notify the HPO. Procedures for the Treatment of Human Remains" adopted by the CNMI in 1999 will be followed (Appendix A). Work will resume in the area of the inadvertent find only following HPO approval.
- 6. To ensure that contractors and the construction crew are aware of this archaeological monitoring plan and possible site types to be encountered on the parcel, a coordination meeting will be held between the construction team and PI/monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials and/or cultural deposits

or features could be encountered and how protection and mitigation should proceed if they observe such remains.

- 7. The archaeologist will provide all coordination with the contractor, CPA, HPO, and any other groups involved in the project. The archaeologist will coordinate all monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.
- 8. As necessary, verbal and/or written reports will be made to the HPO and any other agencies as requested. The HPO maintains the right to inspect the project area at any time to ensure the provisions of this monitoring plan are being met.

## LABORATORY ANALYSIS

All non-burial artifacts and samples collected during the project will undergo analysis at the AA laboratory in Garapan. AA may inquire with HPO on temporarily curating some samples (i.e., ceramic sherds) for further analysis at their Honolulu laboratory and would provide a list of samples and chain of custody letter for the artifacts to briefly leave the CNMI. Photographs, illustrations, and all paper and electronic documents accumulated during the project will be curated at the Honolulu laboratory of AA. All collected artifacts and midden samples will be cleaned, sorted, counted, weighed (metric), and analyzed (both qualitative and quantitative data), with all data recorded on standard laboratory forms. Midden samples will be minimally identified to major class (e.g., bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). Digital photographs with scales will be taken of a representative sample of the diagnostic artifacts. Tables and text discussing the artifact and sample results will be provided in the report, along with appropriate digital photographs.

Samples (wood charcoal, shell, non-human bone) identified as potentially suitable for dating from an undisturbed context (e.g., cultural layer, pit feature) shall be considered for radiocarbon dating. After approval by HPO and prior to submittal to the radiocarbon laboratory, potential wood charcoal samples would first be submitted to Sunrise Archaeology, archaeobotanical services in New Zealand for wood taxa identification. Samples identified as short-lived endemic species will be preferred for dating purposes.

All stratigraphic profiles and plan view maps of identified historic properties (e.g., sites, cultural layers, features) shall be drafted for presentation in the final report. Photographs of project work, including overviews, and of individual profiles, cultural layers, and features shall also be included in the final monitoring report.

## **CURATION**

All collected non-burial materials will be curated in the laboratory of AA on Saipan until a final disposition repository location is determined in consultation with the landowner and the HPO.

# **REPORTING**

All historic properties (non-burial and burial) identified and/or further documented during archaeological monitoring (e.g., cultural layer, pit features, buried walls) shall be assessed for site significance and an effect determination will be made. This information shall be included in the final report, along with recommendations for future mitigation.

An Archaeological Monitoring Report (AMR) shall be submitted within 90 days of the completion of fieldwork. If the monitoring work continues beyond a six-month period, the contracting archaeologist will update the HPO with a written summary as to progress of the work and any finds identified during monitoring. This will occur at the 90 days mark of monitoring, should work continue beyond this time frame.

# ARCHAEOLOGICAL DATA RECOVERY AND RESEARCH QUESTIONS

Data recovery would occur only if significant cultural resources are found during monitoring. Such resources could be related to pre-Contact times (Latte period) but more likely, Japanese Colonial times and the WWII era. There could be UXO in the project area, based on the presence of munitions pits documented by Denfeld and Russell (1984), although given the time lapse to present, they may have been remediated. This is an active work area, and one would suspect it has been cleared of UXO, with both the surface and below surface contexts being disturbed though multiple clearing and building events through time.

Several general research questions would drive this data recovery work. Again, this presumes that certain classes of artifacts/subsurface features are identified during archaeological monitoring. While there may be a Latte era component that may be identified and fully recorded, the focus herein lies with the Historic period.

- 1. Are any remnants from the Japanese construction of buildings and infrastructure still present on the surface or more likely, in subsurface contexts? Do these structures relate directly to the functioning of As Lito Field, pre-WWII? While most of the project area has been cleared and re-built, including the landscape, monitoring may lead to the identification of these older building footings or infrastructure (i.e., buried walls, pipes, etc.).
- 2. Monitoring will occur during excavation for the above noted infrastructure and tanks. Will all sediment/stratigraphic layers be composed of fill or disturbed sediment or will there be native soil still occurring in this area? The study here is of natural and cultural formation processes for the project area through stratigraphic analysis and sequencing: what are the subsurface contexts for original sediments, Japanese Colonial times, WWII, and Post-WWII and are these discernible in the archaeological record?
- 3. There would appear to be little probability for identifying pre-Latte cultural materials in this area, but Latte period artifacts are possible. Previous archaeology to the south of this area nearer the coastline (Tomonari-Tuggle 1990) and to the north of this area (Swift et al. 1996) both documented Latte period surface scatters (mostly ceramics). Such cultural materials (mostly ceramics) could be present in subsurface contexts, if fill and/or disturbance is not too extensive. If found, data recovery would occur to retrieve these materials, with questions on the nature and timing of Latte occupation in this area being investigated.

4. While the Historic era led to the construction of many buildings, walls, and other infrastructure in the area, including cisterns, are artifacts present that represent this occupation as well? Japanese artifacts composed of metal and glass, among other classes, could be present to reflect their use of the area.

The queries posed here are both culture historic in nature and processual, and would be addressed if data recovery was done, following the identification of these resources during monitoring. There is the possibility that no cultural resources will be found in the project area. Given that this area was utilized for sugar cane cultivation prior to being developed as a landing field, with more development occurring in the 1930s, 1940s, and into modern times, the entire area could reveal sterile, disturbed, or fill areas. This makes the project interesting, somewhat a *terra incognita* for subsurface investigation.

## **DATA RECOVERY INVESTIGATIVE PROCEDURES**

The investigative procedures are described in terms of 1) contextual research; 2) field protocol; 3) data analyses; 4) disposition of materials; and 5) schedule of deliverables. These procedures are proposed to meet the goal of identifying, documenting, and evaluating archaeological or historical resources potentially encountered in the APE.

### **DATA RECOVERY PERSONNEL**

Archaeological personnel for the data recovery fieldwork will include Michael F. Dega, Ph.D. (Principal Investigator), Christopher King, Ph.D. (Project Supervisor), and Ken Muna, assistant. Both Mssrs. Dega and King's qualifications exceed Secretary of Interior (SOI) standards. Additional specialists are available to perform other duties during the project, including a GIS specialist (Alondra Garcia, M.S.) and project osteologist (Christopher King, Ph.D.). All personnel for this research meet the U.S. Secretary of the Interior's standards for the specific type of work being performed.

#### **CONTEXTUAL RESEARCH**

Contextual research focuses on documentary and archival records relevant to evaluate and interpret archaeological and historic resources in the project area, and is largely dependent on the actual project findings. However, archival research has also been started, as needed to produce the background sections of this planning document. The "project context" section of this planning document provides the basic information necessary to frame the current work. Prior archaeological reports are available at the libraries and collections of MARC, the CNMI Historic Preservation Office, the CNMI Museum, and the Northern Mariana Islands Humanities Council. Additional archaeological, historical, cultural, and general environmental information may be available in documents and archives at the same facilities as well as at Northern Marianas College on Saipan. External archival searches may also be made at Hamilton Library (University of Hawaii) and the B.P. Bishop Museum, both in Honolulu.

### DATA RECOVERY FIELD PROTOCOL

Prior to conducting any field effort, all personnel will need to be briefed by the project's site safety/UXO officer for the contractor. This is especially crucial as there are possible munition pits in the area, as described by Denfeld and Russell (1984). Other rules will apply for work in and around excavation areas, as well as in the vicinity of mechanical equipment.

Data recovery excavations, as needed, will be determined on consultation with the HPO and by the nature of the cultural deposit. Ideally, data recovery will be conducted manually to investigate a subsurface feature, cultural layer or lens, or artifact dump. Test units will be set at the site, depending on concentration, boundaries, and the nature of the deposit. All testing will be confirmed with the HPO prior to excavation work. All units would preferably be manually excavated by trowel and shovel to sterile or limestone bedrock.

Data recovery excavation will proceed manually by arbitrary 10-centimeter (cm) levels within natural strata. Profiles will be taken of each test unit and reflect a record of the natural strata in the units. Excavated soil volume will be screened on-site through 1/4-inch hardwire mesh to ensure maximum recovery of cultural materials.

The locations of all work actions, findings, features, and relevant geographic reference points will be recorded by a survey-grade (sub-meter accuracy) global positioning system (GPS; Trimble Geo 7x). Each test unit, trench, and significant find will be recorded with a unique reference number and annotated with information about what is being recorded. In addition, all features will be fully recorded, including scaled plan and profile illustrations, text descriptions, scaled before and after photographs, GPS plotting, and soil and stratigraphic information.

Where cultural deposits are present, the cultural deposit will be fully excavated, with appropriate analyses conducted of all items, including potsherds, midden, and other "bulk items." In cases where specific isolated artifacts, charcoal, or other cultural materials are observed, they will be recorded *in situ* and will be collected individually rather than as parts of bulk samples.

In addition, measured soil samples may be collected for later analysis if deemed necessary. Locations of samples will be specified in profile illustrations. Sample volumes will be measured in liters, using standard-sized bags or graduated buckets. Samples will be retained in bulk for later wet-screening through 1/8-inch wire mesh to ensure maximum recovery of archaeological and historical material. In cases where specific isolated artifacts, charcoal, or other cultural materials are observed, they will be recorded *in situ* and will be collected individually rather than as parts of bulk samples.

If human remains are identified, then "Procedures for the Treatment of Human Remains" adopted by the CNMI in 1999 will be followed (see Appendix A). If this class of remains is identified, archaeological personnel will halt all work in the immediate location of the discovery and consultation will be immediately undertaken with the CNMI Historic Preservation Office. AA has an SOI-qualified osteologist on-island to assess the remains.

Excavation profiles will be recorded by photographs, scaled illustrations, and textual descriptions. Photographs will include a visible scale-bar or scale reference, and each image will be accompanied by a register of the date, photographer, direction of view, and subject matter. Scaled illustrations will show the stratigraphic layers and positions of significant findings. The textual descriptions will refer to color, texture, consistence, matrix, boundary interface, and other characteristics of the sedimentary units in each excavation profile. Samples of sediments may be retained for detailed studies of constituent particles and possible preserved palaeobotanical remains. These samples would be destroyed entirely during analysis.
## DATA ANALYSES

Depending on the nature of the cultural deposit, data analyses would involve mapping and site location via geographic/landscape information, natural and cultural stratigraphy, and recovered artifacts, midden, and other materials. Analysis would all occur on Saipan at the AA lab in Garapan. Samples of charcoal and sediments may be sent to external laboratories (*i.e.*, Beta Analytic, Florida; Sunrise Archaeology) for specialized analysis such as radiocarbon dating or identification of plant species residues.

Digital mapping data and other geographic information will be integrated into a single geographic information system (GIS) database for consistency of reference and ease of management. All data will be compiled in Universal Transverse Mercator (UTM) Zone 55 North, using the World Geodetic Survey (WGS) datum of 1984 for compatibility with existing GIS data currently used by local and federal agencies operating in the CNMI.

Stratigraphy will be recorded in the field, as noted, but later analysis will involve formulation of a comprehensive stratigraphic sequence for the data recovery area.

If needed, measured bulk samples from field collections may be wet-screened through 1/16inch (1.6-mm) or 1/8-inch (3.2-mm) wire mesh to facilitate identification of artifacts, charcoal, shellfish remains, and non-human animal bones.

## LABORATORY WORK

All recovered material types will be separated for more specific identification, with counts and weights tabulated. Artifacts will be compared with forms and functions of other known specimens, also compared with reference collections. Non-human animal remains (*e.g.*, shells and bones) will be identified to the Genus or other lowest taxonomic unit possible.

Any human remains will be analyzed in accordance with the procedures as indicated in Appendix A. If approved by the HPO, the team does not preclude the potential for conducting DNA samples of an identified individual. This would be done on an *ad hoc* basis.

If appropriate samples of sediments are available for study of possible pollen, phytoliths, and starch residues, then samples may be exported to Microfossil Research, Inc. in New Zealand.

#### **DISPOSITION OF MATERIALS**

All excavated artifacts and other archaeological materials will be temporarily curated at the AA laboratory in Garapan. Long-term curation would allow for transferring the collection to the CNMI Museum or HPO on Saipan.

## DATA RECOVERY SCHEDULE OF DELIVERABLES

Both the monitoring and data recovery field efforts will begin according to the client's schedule and when this research design is approved by the HPO. Upon completion of the monitoring and, if needed, fieldwork for data recovery, an end of fieldwork (EOF) letter will be prepared and submitted to the HPO within 10 days of the completion of fieldwork. The EOF will summarize the work conducted, results of monitoring/data recovery, and the initial interpretation of results. Within six months of fieldwork completion, AA shall submit to the HPO a draft report for review and comment. AA shall address any comments and submit a final report within two months of receiving comments.

## **REFERENCES**

#### Adams, Jim, D. Colt Denfeld, M.J. Tomonari-Tuggle

1996 *Test Excavation of a World War II Japanese Mass Grave at Achugao, Saipan, Commonwealth of the Northern Mariana Islands.* Prepared for Division of Historic Preservation, Commonwealth of the Northern Mariana Islands and Division of Health and welfare, Japanese Government. International Archaeological Research Institute, Inc.

#### Allen, Jane

- 2002 Archaeological Monitoring and Sampling During Testing and Remediation of Contamination from the Former Military Fuel Pipeline, Garapan, Saipan, Commonwealth of the Northern Mariana Islands. Prepared by Ogden Environmental and Energy Services Co., Inc., Honolulu, HI.
- 2006 The Old Japanese Jail: Archaeological Survey and Testing at Site SP-5-0020, Garapan, Saipan, Commonwealth of the Northern Mariana Islands. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

#### Allen, Jane, and Usha K. Prasad

2002 Archaeological Monitoring and Sampling During Testing and Remediation of Contamination from the Former Military Fuel Pipeline, Garapan, Saipan, Commonwealth of the Northern Mariana Islands. Prepared for U.S. Army Engineer Division, Honolulu, Fort Shafter, Hawai'i. Ogden Environmental and Energy Services Co., Inc., Honolulu, Hawai'i.

#### Amesbury, J.

1999 Changes in Species Composition of Archaeological Marine Shell Assemblages in Guam. *Micronesica* 31(2):347-366.

Amesbury, J., D. Moore, and R Hunter-Anderson

1996 Cultural Adaptations and Late Holocene Sea Level Change in the Marianas: Recent Excavations at Chalan Piao, Saipan, Micronesia. *Indo-Pacific Prehistory Association Bulletin* 15:53-69.

#### Athens, J.S.

2009 Final Archaeological Surveys and Cultural Resources Studies on Guam and the Commonwealth of the Northern Mariana Islands in Support of the Joint Guam Build-Up Environmental Impact Statement Volume III-I: Tinian Narrative Report and Volume II-I: Saipan, Saigan, and Pagan Narrative Report. Prepared by International Archaeological Research Institute, Inc., for TEC Inc., December.

#### Athens, S., Michael Dega and Jerome Ward

2002 Austronesian Colonization of the Mariana Islands: The Paleoenvironmental Evidence. 17<sup>th</sup> Congress of the Indo-Pacific Prehistory Association, Taipei, Taiwan. Athens, S., and J. Ward

2005 Holocene Paleoenvironment of Saipan: Analysis of a Core from Lake Susupe. Micronesian Archaeological Survey Report Number 35, Saipan.

#### Barratt, G.

- 1988 Carolinean Contacts with the Islands of the Marianas: The European Record. Micronesian Archaeology Survey Report Series Number 25. CNMI Division of Historic Preservation, Saipan.
- 2003 *The Chamorros of the Mariana Islands Early European Records, 1521-1721.* Occasional Historic Papers Series No. 10. CNMI Division of Historic Preservation, Saipan.

#### Bowers, Neal M.

1950 Problems of Resettlement on Saipan, Tinian, and Rota, Mariana Islands. Coordinated Investigation of Micronesia, Anthropology Report No. 31. Pacific Science Research Board. [Reprinted in 2001 as CNMI Division of Historic Preservation Occasional Historical Papers No. 7. Saipan.]

#### Bulgrin, L.

- 2006 "Fina`okso Antigo" Prehistoric Soil Mounds in the Interior of Rota. *Micronesian Journal* of the Humanities and Social Sciences 5(1/2):31-41.
- 2009 Beyond Latte Stones: Modeling the Latte Period. *Pacific Island Archaeology in the 21<sup>st</sup> Century: Relevance and Engagement.* Palau.

#### Butler, Brian M. [ed.]

1993 Archaeological Investigations in the Achugao and Matansa Areas of Saipan, Mariana Islands. Report prepared for Pelley Enterprises, Nansay Micronesia Corporation, and the Division of Historic Preservation, Commonwealth of the Northern Mariana Islands. Center for Archaeological Investigations, Southern Illinois University at Carbondale.

#### Butler, Brian M.

- 1990 Pots as Tools: The Marianas Case. *Micronesica* 2:33-46.
- 1994 Early Prehistoric Settlement in the Mariana Islands: New Evidence from Saipan. *Man* and Culture in Oceania 10: 15-38.
- 1995 Archaeological Investigations in the Achugao and Matasna Areas of Saipan, Mariana Islands. Micronesian Archaeological Survey Report Number 30. The Micronesian Archaeological Survey, Division of Historic Preservation, Department of Community and Cultural Affairs, Saipan, CNMI.

#### Butler, B., and D. DeFant

1994 Archaeological Survey on the Leeward Coast of Saipan: Garapan to Oleai. Micronesian Archaeological Survey Report No. 27. The Micronesian Archaeological Survey, Division of Historic Preservation, Department of Community and Cultural Affairs, Saipan.

#### Carson, Mike T.

2008 Refining Earliest Settlement in Remote Oceania: Renewed Archaeological Investigations at Unai Bapot, Saipan. *Journal of Island and Coastal Archaeology* 3:115-139.

2012a An Overview of Latte Period Archaeology. *Micronesica* 42:1–79.

2012b History of Archaeological Study in the Mariana Islands. *Micronesica* 42 (1/2): 312-371.

2014First Settlement of Remote Oceania: Earliest Sites in the Mariana Islands.Springer, NewYork.

- Carson, M., H. Hung, G. Summerhayes, and P. Bellwood
  - 2013 On the Trail of Decorative Pottery Style from Southeast Asia to Remote Oceania. *The Journal of Island and Coastal Archaeology* 8:17-36.
- Carson, M., and H. Kurashina
  - 2012 Reinvisioning Long-Distance Oceanic Migration: Early Dates in the Mariana Islands. *World Archaeology* 44(3):409-435.
- Carson, M., and J. Peterson
  - 2011 Calcrete Formation and Implications for Buried Archaeological Deposits in the Mariana Islands, Western Pacific, *Geoarchaeology* 26(4):501-513.
  - 2012 Radiocarbon Dating of Agal Bioclasts in Beach Sites of Guam. *The Journal of Island and Coastal Archaeology* 7(1):64-75.
- Carson, M., and D. Welch
  - 2005 Archaeological Survey, mapping, and Testing of the Bapot Latte Site (SP-1-0013) in Laulau, Saipan, Commonwealth of the Northern Mariana Islands. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.
- Cloud, P.E. Jr., R.G. Schmidt, and H.W. Burke
  - 1956 *Geology of Saipan, Mariana Islands; Part 1. General Geology.* Professional Paper 280-A. USGS Numbered Series, Washington D.C.
- Clark, G., F. Petchey, O. Winter, M. Carson, and P. O'Day
  - 2010 New Radiocarbon dates from the Bapot-1 Site in Saipan and Neolithic Dispersal by Stratified Diffusion. *Journal of Pacific Archaeology* 1(1):21-35.
- Coomans, Fr. P.
  - 1997 *History of the Mission in the Mariana Islands: 1667-1673.* Occasional Historical Papers Series No.4, Saipan: Division of Historic Preservation.

#### Craib, John L.

- 1986 Casas de los Antiguos: Social Differentiation in Protohistoric Chamorro Society, Mariana Islands. Unpublished Ph.D. dissertation, University of Sydney, Australia.
- 1992 Archaeological Investigations at the Proposed Coral Bay Resort, Achugoa, Saipan. Prepared for Efrain F. Camacho Consulting Engineers, Saipan, MP and Tokai Saipan, Inc.
- 1993 Early Occupations at Unai Chulu, Tinian, Commonwealth of the Northern Mariana Islands. *Bulletin of the Indo-Pacific Prehistory Association* 13:116-134.

#### Dega, M.F.,

2017 The Latte Village of Garapan: Archaeological Data Recovery, Saipan, Commonwealth of the Northern Mariana Islands. Scientific Consultant Services, Honolulu and Garapan.

#### DeFant, D.

- 1993 Phase I Archaeological Inventory Survey of the Saipan Eastern Bay Golf Course Project Area, Commonwealth of the Northern Mariana Islands. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.
- 2014 Archaeological Investigations of WWII Era Japanese Seaplane Base at Puntan Flores, Island of Saipan, CNMI. *Pan-Jan the International Journal of the Japanese Diaspora*, special issue on the Micronesian diaspora, edited by D. Tuggle and B. Dixon, in press.

#### DeFant, D., L. Guerrero, and V. Cabrera

2018 Archaeological Survey of Kannat Tabla Road, Flood Control and Drainage System Improvement Project, Island of Saipan, CNMI. SEARCH, Tamuning, Guam.

#### Denfeld, D. C.

- 1997 *Hold the Marianas: The Japanese Defense of the Mariana Islands.* White Mane Publishing Company, Inc., New York.
- 2002 Japanese World War II Fortifications and Other Military Structures in the Central Pacific. N.M.I. Division of Historic Preservation, Saipan.

#### Denfeld, D. C., and S. Russell

1984 *Home of the Super Fort: An Historical and Archaeological Survey of Isely Field.* Micronesian Archaeological Survey, Report No. 21. Office of the High Commissioner, Trust Territory of the Pacific Islands, Saipan, CM.

#### Dickinson, William R.

2003 Impact of Mid-Holocene Hydro-isostatic Highstand in Regional Sea Level on Habitability of Islands in Pacific Oceania. *Journal of Coastal Research* 19:489–502.

#### Dixon, B.,

2004 The archaeology of rural settlement and class in a pre-WWII Japanese plantation on Tinian, Commonwealth of the Northern Mariana Islands. *International Journal of Historical Archaeology* 8(4):281–299. Dixon, Boyd, Huw Barton, James Coil, William Dickinson, Gail Murakami, Jerome Ward

- 2011 Recognizing Inland Expansion of *Latte* Period Agriculture from Multi-Disciplinary Data on Tinian, Commonwealth of the Northern Mariana Islands. *Journal of Island and Coastal Archaeology*, 6:375-397
- Dixon, B., and L. Gilda
  - 2011 A Comparison of an Inland Latte Period Community to Coastal Settlement Patterns Observed on Southern Guam. *People and Culture of Oceania* 27:65-86.
- Dixon, Boyd, Tina Mangieri, Ephraim McDowell, Kanani Paraso, and Tim Rieth
  - 2006 Prehistoric Chamorro Household Activities and Refuse Disposal Patterns on the Micronesian Island of Tinian, Commonwealth of the Northern Marianas. *Micronesica* 39(1):55-71.
- Dixon, B., R. Schaefer, and T. McCurdy
  - 2014 Archaeological Investigation of Caves and Rock Shelters on Guam and Tinian: A Synthesis of Their Use Through Time. *Journal of Pacific Archaeology* 5(1):52-74.
- Dixon, B., S. Walker, M. Golabi, and H. Manner
  - 2011 Two Probable Latte Period Agricultural Sites in Northern Guam: Their Plants, Soils, and Interpretations. *Micronesica*, Supplement 8, 42(1/2):216-266.

#### Driver, M.

- 1983 Fray Juan Pobre De Zamora and His Account of the Mariana Islands. *Journal of Pacific History* 18:198-216.
- 1993 *Fray Juan Pobre in the Marianas 1602*. MARC Miscellaneous Series No. 8, University of Guam.
- Driver, M., and O. Brunal-Perry (editors)
  - 1993 Carolinians in the Marianas in the 1800s. MARC, University of Guam.

#### Farrell, Don A.

- 1991 History of the Northern Mariana Islands. Public School System, Saipan, CNMI.
- 1994 Saipan. Micronesian Productions, Commonwealth of the Northern Mariana Islands, Saipan.
- 2011 *History of the Mariana Islands to Partition*. Public School System, Commonwealth of the Northern Mariana Islands, Saipan.

#### Fosberg, F.R.

1960 The vegetation of Micronesia. 1. General descriptions, the vegetation of the Marianas Islands, and a detailed consideration of the vegetation of Guam. *Bulletin of the American Museum of Natural History*, 119 (1): 1-76 and plates 1-40.

#### Fritz, G.

1989 *The Chamorro: A History and Ethnography of the Marianas.* CNMI Division of Historic Preservation, Saipan.

#### Graves, M., and D. Moore

1986 An Inland Latte Period Site at Chalan Galaide, Saipan: Archaeological Survey and Test Excavations of Prehistoric and Historic Components. Prepared for the Division of Historic Preservation, CNMI, Saipan.

#### Hasebe, K.

1928 Ruins and Relics in the Islands of Saipan and Tinian. Zinruigaku Zassi 43(88):243-274.

#### Haun, A., and J. Henry

1993 Archaeological Inventory Survey Phase II – Data Collection Shimizu Golf Course Development Area Historic Context: Japanese World War II Defense of Saipan Circa 1930-1944 Island of Saipan Commonwealth of the Northern Mariana Islands. Prepared by Paul H. Rosendahl, Ph.D., Inc., Hilo, HI.

#### Hezel, F.

1989 From Conquest to Colonization: Spain in the Mariana Islands 1690 to 1740. Division of Historic Preservation, Saipan.

#### Hornbostel, H.

1921-24 Unpublished Field Notes 1921-1924. B.P. Bishop Museum, Honolulu.

- Hung, S., M. Carson, P. Bellwood, F. Campos, P. Piper, E. Dizon, M. Bolunia, M. Oxenham, and Z. Chi
  2011 The First Settlement of Remote Oceania: the Philippines to the Marianas. *Antiquity* 85:909-926
- Hunter-Anderson, R.
  - 2013 Migration for Settlement or Home Range Expansion: What Caused People to First Come to the Marianas c. 3500 Years Ago? Paper given at 2<sup>nd</sup> Marianas History Conference, University of Guam, Mangilao.

#### Hunter-Andersen, R., and B. Butler

1995 An Overview of Northern Marianas Prehistory. Micronesian Archaeological Survey Report No. 31. Commonwealth of the Northern Mariana Islands, Division of Historic Preservation, Saipan.

#### Jones, B., and M. Tomonari-Tuggle

1994 Archaeological Data Recovery at the Guma Capuchino abd South Garapan Sites Garapan Village, Saipan. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

#### Jones, D.

1986 Oba The Last Samurai Saipan 1944-1945. Presidio Press, Novato, CA.

#### Jordan, J.

2014 Colonial Subjects and Military Men: Experiences of the Pacific War (1941-1945) in the Northern Mariana Islands among Common and Elite Indigenous Islanders. Paper given at *Cultures in War Combatants, Islanders and Settlers in the Pacific War and Afterward.* CNMI Humanities Council, Saipan. McGovern-Wilson, R.

1988 Afetna: The Prehistory of South West Saipan. Prepared for the Division of Historic Preservation, CNMI, Saipan.

#### Madrid, C.

2006 Beyond Distances Governance, Politics and Deportation in the Mariana Islands from 1870 to 1877. Vibal Publishing House, Inc., Quezon City, Philippines.

#### Marche, A.

1982 The Mariana Islands. Translated by S. Chang, MARC, University of Guam, Mangilao.

#### Marck, J.

- 1978 *Interim Report of the 1977 Laulau Excavations*. Report on file, CNMI Division of Historic Preservation, Saipan.
- Mathers, W., H. Parker III, and K. Copus
  - 1990 Archaeological Report, The Recovery of the Manila Galleon, Neustra Señora De La Concepción. Prepared for the Government of the Commonwealth of the Northern Mariana Islands. Prepared by Pacific Sea Resources, Sutton, Vermont.
- Mazurek, C., M. Kasko, and C. Denfield
  - 1991 Interim Summary Report: Phase I Archaeological Inventory Survey of the Proposed Kagman Golf Course Project Area Saipan, Commonwealth of the Northern Mariana Islands. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.
- Moore, Darlene R.
  - 1989 Archaeological Investigations of the CUC Sewer Corridors Tanapag and San Roque, Saipan. Micronesian Archaeological Research Services, Guam, M.I.
  - 1993 Measuring Change in Marianas Pottery: The Sequence of Pottery Production at Tarague, Guam. Master's Thesis, University of Guam.
  - 2002 *Guam's Prehistoric Pottery and Its Chronological Sequence*. With contributions by William R. Dickinson, Hector Neff, Michael D. Glascock, Thomas H. Loy, and Alison Crowther. Prepared for International Archaeological Research Institute, Inc., Honolulu, and the Department of the Navy, Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, Hawai'i. Micronesian Archaeological Research Services, Guam.
  - 2013 Where is the Gold? Silver and Copper Coins from Two of Guam's Historic Sites. Unpublished typescript in the files of Micronesian Archaeological Research Services, Mangilao.

Moore, D.R. and R. Hunter-Anderson

1999 Pots and pans in the intermediate Pre-Latte (2500-1600 BP), Mariana Islands, Micronesia. In J-C Galipaud and I. Lilley (eds), *The Pacific from 5000 to 2000 BP*, *Colonisation and Transformations*, pp. 487-503. Paris: IRD Editions.

Moore, D., R. Hunter-Anderson, J. Amesbury, and E. Wells

1992 Archaeology at Chalan Piao, Saipan. Prepared for CNMI Division of Historic Preservation, Saipan. Micronesian Archaeological Research Services, Guam.

#### Nunn, P.

- 2000 Environmental Catastrophe in the Pacific Islands around A.D. 1300. *Geoarchaeology: An International Journal* 15(7):715-740.
- Nunn, P., R. Hunter-Anderson, M. Carson, F. Thomas, S. Ulm, and M. Rowland
  - 2007 Times of Plenty, Times of Less: Last-Millenium Societal Disruption in the Pacific Basin. *Human Ecology* 35(4):345-401.

#### Olmo, R.

- 1992a Phase I Archaeological Inventory Survey, Shimizu Laulau Resort Project Area Saipan, Commonwealth of the Northern Mariana Islands. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.
- 1992b *Phase I Archaeological Inventory Survey, Kanaya Property Laulau Bay, Saipan.* Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

#### Peattie, M.

1988 *Nanyo The Rise and Fall of the Japanese in Micronesia 1885-1945*. Honolulu: University of Hawai'i Press.

#### Perzinski, D., and M. Dega

2016 Archaeological Inventory Survey Report in Support of Proposed Development on 4.1 Hectares (10.13 Acres) in San Roque, Saipan, Commonwealth of the Northern Mariana Islands. Scientific Consultant Services, Inc., Honolulu and Garapan.

#### Petchey, F., and G. Clark

2021 Clarifying the Age of Initial Settlement Horizon in the Mariana Islands and the Impact of Hard Water: A Response to Carson (2020). In *Radiocarbon*, Vol. 00 Nr 00, 2021 p. 1-9.

#### Petersen, G.

2006 Micronesia's Breadfruit Revolution and the Evolution of a Culture Area. *Archaeology in Oceania* 41:82-92.

#### Peterson, J.

2009 The Austronesian Moment. College for Indigenous Studies' International Symposium on Indigenous Peoples' Education and Policy. Unpublished typescript in the files of Richard F. Taitano, Micronesian Area Research Center, University of Guam, Mangilao.

#### Peterson, J., and M. Carson

2009 Mid- to Late Holocene Climate Change and Shoreline Evolution in Tumon Bay, Guam. Manuscript on File, Micronesian Area Research Center. Mangilao, Guam: University of Guam.

#### Petty, B.

2002 Saipan Oral History of the Pacific War. London: McFarland & Company, Inc., Publishers.

#### Prasad, U., and S. Williams

2001 Archaeological Monitoring and Sampling During PCB Clean-Up at Tanapag Saipan, Commonwealth of the Northern Mariana Islands. Prepared by Ogden Environmental and Energy Services Co., Inc., Honolulu, HI. Pregill, G.K. and D. W. Steadman

2009 The Prehistory and Biogeography of Terrestrial Vertebrates on Guam, Mariana Islands. *Diversity and Distributions* 15: 983–996.

#### Quimby, F.

2011 The *Hierro* Commerce: Culture Contact, Appropriation and Colonial Entanglement. *The Journal of Pacific History* 46(1)1-26.

#### Rainbird, P.

1994 Prehistory in the Northwest Tropical Pacific: the Caroline, Mariana, and Marshall Islands. *Journal of World Prehistory* 8(3):293-349.

#### Ray, E., W. Fortini, and J. Babaula

1996 Archaeological Data Recovery at Akitsu Shoji's Residence in San Roque, Saipan, CNMI. A.B. Business Management and Consulting Services, Saipan.

#### Rottman, G.

2004 Saipan & Tinian 1944 Piercing the Japanese Empire. Oxford: Osprey Publishing.

#### Russell, Scott

- 1998 *Tiempon I Manmofo`ona: Ancient Chamorro Culture and History of the Northern Mariana Islands.* Micronesian Archaeological Survey Report 32, Saipan: CNMI Division of Historic Preservation.
- 1999 *Tiempon Aleman: A Look Back at German Rule of the Northern Mariana Islands 1899-1914.* Saipan: CNMI Division of Historic Preservation.
- 2017 Historic and Cultural Resource Assessment of Two Lots in the Lower Capitol Hill Area of Saipan, CNMI. Prepared for RPFC, Inc., Saipan, CNMI.

#### Russell, Scott and Michael A. Fleming

- 1986 Archaeology in the Northern Mariana Islands: An Overview. *Journal of the Polynesian Society* 95:115-126.
- 1988 The Report of an Archaeological Survey and Test Excavations Conducted at Unai Achugao, Saipan, Mariana Islands. Report prepared for the Northern Islands Company, on File at the HPO, CNMI, Saipan

#### Spennemann, D.

1999 Aurora Australis: The German Period in the Mariana Islands, 1899-1914. Occasional

Historical Papers Series No. 5, Division of Historic Preservation, Saipan.

- 2004 *Typhoons in Micronesia. A History of Tropical Cyclones and Their Effects Until 1914.* Division of Historic Preservation, Saipan.
- 2007 *The Edge of Empire The German Colonial Period in the Northern Mariana Islands.* Heritage Futures, Albury, Australia.

#### Spoehr, Alexander

- 1954 *Saipan The Ethnology of a War-Devastated Island*. Chicago Natural History Museum in Fieldiana, Anthropology, Volume 41, Chicago.
- 1957 Marianas Prehistory: Archaeological Survey and Excavation on Saipan, Tinian, and Rota. *Fieldiana*: Anthropology Bol. 48., Natural History Museum, Chicago

Swift, Marilyn K and J. Stephen Athens

1990 Archaeological Subsurface Investigation at the Achugao Resort-Part Two Project Area, Achugao, Saipan, Mariana Islands. Report prepared for Gecko Consulting Services, Saipan. IARII, Honolulu, HI.

Swift, M., S. Wickler, and S. Athens

1991 Archaeological Subsurface Investigations of the Gentle Breeze, Inc. Project Area, Achugao, Saipan. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

Swift, Marilyn K., Randy A. Harper, and Michael A. Fleming

1996 *Christian Service Center Development Intensive Archaeological Survey.* Prepared for Henry K. Pangelinan and Associates. Swift and Harper Archaeological Resource Consulting

#### Thompson, Dean

1979 *Marianas Plain Pottery from the Tanapag Site, Saipan, Mariana Islands*. Master's Thesis, Department of Anthropology, University of Iowa, Iowa City.

#### Thompson, L.M.

- 1932 Archaeology in the Mariana Islands. Bernice Pauahi Bishop Museum Bulletin 100.
- 1940 The Function of the Latte in the Marianas. *Journal of the Polynesian Society* 49:447-465.
- 1945 *The Native Culture of the Mariana Islands*. Bernice P. Bishop Bulletin 185, Bishop Museum, Honolulu.

#### Tomonari-Tuggle, M.

- 1990 Preliminary Assessment of Cultural Resources, Obyan, Saipan, Commonwealth of the Northern Mariana Islands, Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.
- 1991 Preliminary Assessment of Cultural Resources, Laolao, Saipan, Commonwealth of the Northern Mariana Islands, Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

Tomonari-Tuggle, M., D. Tuggle, J. Allen, D. Welch, and M. Carson

2007 Archaeological Assessment Study in Support of the Strategic Forward Basing Initiative, Guam and the Commonwealth of the Northern Mariana Islands, Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

#### Vilar, M.

2013 The Origins and Genetic Distinctiveness of the Chamorros of the Mariana Islands: An mtDNA Perspective. Paper given at 2<sup>nd</sup> Marianas History Conference, University of Guam, Mangilao.

#### Wickler, S.

1990 Archaeological Testing of the C.U.C. Underground Power Cable Right-of-Way Garapan Saipan, Commonwealth of the Northern Mariana Islands. Prepared by International Archaeological Research Institute, Inc., Honolulu, HI.

Winter, O., G. Clark, A. Anderson, and A. Lindahl

2012 Austronesian Sailing to the Northern Marianas, a Comment on Hung et al. (2011). *Antiquity* 86: 898-914.

#### Young, F.J.

1989 Soil Survey of the Islands of Rota, Aguijan, Tinian, and Saipan, Commonwealth of the Northern Mariana Islands. U.S. Department of Agriculture, Soil Conservation Service, U.S. Government Printing Office, Washington, D.C.

# APPENDIX A: PROCEDURES FOR THE TREATMENT OF HUMAN REMAINS IN THE COMMONWEALTH OF THE NORTHERN MARIANAS ISLAN



# & 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



Procedures for the Treatment of Human Remains in the Commonwealth of the Northern Marianas Islands TEL: 664-2120-25 FAX: 664-2139

## I. Policy Statement

It is the policy of the Division of Historic Preservation to ensure that human remains, regardless of ethnic affiliation, are protected from disturbance whenever practical and afforded respectful treatment under all circumstances. It is also recognized that *in situ* preservation for some classes of remains is not always possible or desirable, and that ultimate disposition will be determined based on priorities established for a particular class of remains. Finally, the Division of Historic Preservation places priority on the repatriation of indigenous human remains held in museum and private collections around the world.

## II. Definition

The term "human remains" used in these procedures, refers to the complete or partial human skeletal assemblage, including dentition. Excluded from this term are purposefully-fashioned tools and implements made of human bone, such as bone spear points, needles, etc. Human bone artifacts shall be treated s artifacts rather than human remains.

## III. Classes of Human Remains

The Division of Historic Preservation recognizes four classes of human remains. These are as follows:

Class I. Ancient Chamorro: This class encompasses remains of the indigenous people of the Northern Mariana Islands interred on archaeological sites throughout the islands.

Class II. *Pre-World War II Historic*: This class encompasses remains interred during a period starting with the resettlement of Saipan and Tinian in the early 1800s and ending at the outbreak of World War II. Human remains form this period can be expected in old cemeteries and will represent indigenous Chamorro and Carolinian populations.

Class III. *World War II*: This class encompasses the casualties of World War II. While the large majority of this class of remains will be of Japanese and Okinawan affiliation, other ethnic groups may also be involved, including but necessarily limited to Chamorro, Carolinian, Korean and American. Class IV. *Modern*: Human remains in this class encompass individuals who have been interred after World War II, including the remains of the individuals who met sudden death through natural, accidental and criminal means.

## IV. Discovery and Identification

In cases where human remains are discovered, either accidentally or through planned archaeological investigations, the first priority will be to determining to which class they should be assigned. In most instances, this will be done under the supervision of a qualified professional archaeologist with osteological training. In other cases, this determination will be made by Division of Historic Preservation staff with the guidance of the Staff Archaeologist or by the forensic specialists of the Department of Public Safety and/or the Federal Bureau of Investigation. To the extent possible, initial identification as to class will be performed *in situ*. Appropriate treatment shall then follow.

## V. Treatment

Class I:

(1) In situ preservation.

Top priority will be given to the *in situ* preservation of all Class I remains. Specific efforts will be made to achieve this through the redesign of the construction plans and other appropriate mitigative measures. In cases where remains are left in place, basic data will be recorded and maintained in the site files of the Division of Historic Preservation.

(2) Exhumation, analyses and reburial.

In cases where *in situ* preservation is not practical, the human remains shall be carefully and respectfully removed from the impact area under the supervision of a qualified archaeologist or Division of Historic Preservation staff. The burial will then be subjected to appropriate scientific analyses in accordance with a research design previously approved by the Division of Historic Preservation. The aim of the analyses is to expand our knowledge of and appreciation for ancient Chamorro culture. Upon completion of the analyses, human remains will be returned to the Division of Historic Preservation for reburial. Priority will be given to reburying remains at or near to the site from which they were exhumed. In cases were remains were exhumed in advance of public or private construction projects, the Division of Historic Preservation shall require the responsible party to dedicate land within the development for reburial. They will ensure that no further disturbance to this area is allowed. In most instances, such reburial sites will be marked with appropriate memorial and interpretive devices. In cases where it proves impractical or impossible to rebury remains at or near the burial site, another location shall be determined based on consultations between the Division of Historic Preservation and the responsible party. The expense of exhumation, analyses and reburial will be the borne by the responsible party.

## Class II:

(1) In situ preservation.

Top priority will be given to the *in situ* preservation of all Class II remains. Specific efforts will be made to achieve this through the redesign of the construction plans and other appropriate mitigative measures. In cases where remains are left in place, basic data will be recorded and maintained in the site files of the Division of Historic Preservation.

(2) Exhumation, analyses and reburial.

In cases where *in situ* preservation is not practical, the human remains shall be carefully and respectfully removed from the impact area under the supervision of a qualified archaeologist or Division of Historic Preservation staff. Should the remains be terminated to be of Carolinian affiliation, they will be turned over to the Carolinian Affairs office for reburial at an appropriate location. Should the remains be Chamorro, arrangements will be made with the church to reinter the remains within an established cemetery. In both instances, ostelogical analyses will be limited to basic field operations made during the disinterment process. The expense of exhumation and reburial will be borne by the responsible party.

## Class III

In cases where the remains have been determined to be those of Japanese nationals:

(1) Exhumation, temporary storage and repatriation.

Depending on the circumstances, the human remains shall either be disinterred under direction of the Division of Historic Preservation, or in cases of mass graves, with the assistance of the Japanese Ministry of Health and Welfare. Basic osteological field observation shall be made. In cases where live ordnance is present, the division of Historic Preservation shall notify the Emergency Management Office for assistance. Special attention shall be directed to recovering artifacts that might aid in determining the identity of the individual. In accordance with an agreement between the Ministry of Health and Welfare and the Division of Historic Preservation, Japanese World War II remains shall be temporarily stored in a shipping container located at the Division's office at the Airport area. The remains will be kept in storage until such time as they can be officially turned over to the Japanese government for cremation and repatriation to Japan.

In cases where the remains are identified as being of Carolinian or Chamorro war victims:

(1) Disinterment and Reburial

The remains will be excavated as carefully and completely as possible. Special attention shall be directed to locating diagnostic artifacts that might aid in determining the identity of a particular set of remains. Basic osteological field observations shall be made. In cases where

live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. Should the remains be identified, the Division of Historic Preservation shall consult with surviving family members to determine an appropriate final resting spot. In other instances, the Carolinian Affairs Office and the Catholic Church will be consulted, as appropriate.

In cases where the remains are identified as being of Korean war victims:

(1) Disinterment, Temporary Storage and Repatriation

The remains will be excavated as carefully and completely as possible. Special attention shall be directed to locating diagnostic artifacts that might aid in determining the identity of a particular set of remains. Basic osteological field observations shall be made. In cases where live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. The remains will then be placed in temporary storage until arrangements with the Korean government can be made for repatriation.

In cases where the remains are identified as being a U.S. serviceman:

(2) Disinterment, Temporary Storage and Repatriation

The remains will be excavated as carefully and completely as possible. Special attention shall be directed to locating diagnostic artifacts that might aid in determining the identity of a particular set of remains. Basic osteological field observations shall be made. In cases where live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. The remains will then be turned over to the US government for final disposition.

Class IV

(1) Identification and Reburial

Should the Division of Historic Preservation suspect human remains fall into Class IV, it shall immediately notify the Department of Public Safety particularly if foul play is suspected. This shall include fully documenting the remains. Should the remains be positively identified, the next of kin shall be notified to arrange for final disposition. Should the remains remain unidentified, they will be turned over to the Department of Public Health for reburial.

## VI. Repatriated Human Remains

It is the priority of the Division of Historic Preservation to actively seek out and affect the repatriation of human skeletal collections that exist outside the Commonwealth. The large majority of such collections will comprise Class I remains. Much smaller collections of Class II remains may also be encountered. Once identified, the Division of Historic Preservation shall initiate consultation with the appropriate party to effect repatriation. Special attention

shall be directed at acquiring as much provenience data relating to the collections as possible, so that this information can be used when deciding upon reburial sites. The Division should also ensure that human remains are properly packages to avoid damage during shipment. Once acquired, these remains shall be reburied on their island of origin as consistent with class treatment.

## VII. Human Remains at the Division of Historic Preservation

A substantial collection of Class I human remains is currently in the possession of the Division of Historic Preservation. These comprise human remains disinterred in advance of construction projects prior to the establishment of these procedures. The Division shall take necessary steps to have these remains reburied at appropriate locations on Rota, Tinian and Saipan, as appropriate.