

**DEPARTMENT OF PUBLIC LANDS**

**PUBLIC LAND USE  
MASTER PLAN UPDATE**

**PHASE 1**

**Geographic Information System for Public Lands**

**Review of the CNMI Economy and Public Lands  
Projections of Homestead Applicants**

**Alternative Goals and Selected Goal**

**Public Land Use Planning Criteria (Partial)**

**Prepared for  
Department of Public Lands  
Commonwealth of the Northern Mariana Islands**

**Prepared by**

***dueñasbordallo***  
**R ASSOCIATES INC.**

**January 2007**

**TABLE OF CONTENTS**

---

	<b>PAGE</b>
LIST OF TABLES .....	ii
LIST OF EXHIBITS .....	ii
ACRONYMS AND ABBREVIATIONS .....	iv
CHAPTER 1. UPGRADE AND UPDATE THE DEPARTMENT OF PUBLIC LANDS GEOGRAPHIC INFORMATION SYSTEM.....	1-1
CHAPTER 2. ANALYZE PUBLIC LAND USES .....	2-1
CHAPTER 3. PUBLIC LAND USE PLANNING AND THE CNMI ECONOMY .....	3-1
CHAPTER 4. PROJECTIONS OF HOMESTEAD APPLICANTS BY YEAR 2015 FOR SAIPAN, TINIAN AND ROTA .....	4-1
CHAPTER 5. FORMULATE PRELIMINARY GOAL AND OBJECTIVES .....	5-1
CHAPTER 6. DEVELOP AND UPDATE LAND USE PLANNING CRITERIA (PARTIAL) .....	6-1

---

LIST OF TABLES

---

TABLE		PAGE
1.4.-1	Saipan, Rota and Tinian Drawing Names and Topology .....	1-3
1.4.-2	Saipan, Tinian and Rota Personal Gcodatabase.....	1-4
4.2-1	Saipan – DPL Homestead Eligibility Through Year 2015 .....	4-3
4.2-2	Tinian– DPL Homestead Eligibility Through Year 2015.....	4-4
4.2-3	Rota – DPL Homestead Eligibility Through Year 2015.....	4-5
4.2.4	Rccap of Application Data.....	4-6

---

LIST OF EXHIBITS

---

1.2-1	DPL Public Land Use Plan Update Data Collection and End-Use Matrix
1.3.-1	DPL Public Land Use Plan GIS Map Parameters
1.3.-2	Sample Metadata
1.6-1	Land Tenure Classification
1.6-2	PLUPU Existing Land Use Classification/Data Definition
2.1-1	CNMI Generalized Island Inventory and Uses
2.2-1	Saipan General Public Land Inventory
2.2-2	Saipan Existing Public Land Use
2.3-1	Tinian General Public Land Inventory
2.3-2	Tinian Existing Public Land Use
2.4-1	Rota General Public Land Inventory
2.4-2	Rota Existing Public Land Use
2.5-1	Anatahan Existing Public Land Use

**LIST OF EXHIBITS (Continued)**

---

- 2.6-1 Alamagan Existing Public Land Use
- 2.7-1 Pagan Existing Public Land Use
- 2.8-1 Agrihan Existing Public Land Use

---

**ACRONYMS AND ABBREVIATIONS**

---

CNMI	Commonwealth of the Northern Mariana Islands
CPA	Commonwealth Ports Authority
CRMO	Coastal Resources Management Office
DOI	Department of Interior
DPL	Department of Public Lands
ESRI	Environmental System Research Institute
FNL	Final
GDP	Gross Domestic Product
GIS	Geographic Information System
MDB	Microsoft Database
MIHA	Mariana Islands Housing Authority
MPLA	Marianas Public Lands Authority
MPLC	Marianas Public Lands Corporation
NMI	Northern Mariana Islands
NRPA	National Recreation and Parks Association
PAR	Parcel
PLAND	Public Land
PLUPU	Public Land Use Plan Update
PVLAND	Private Land
UTM	Universal Transverse Mercator
WWII	World War II

**CHAPTER 1  
UPGRADE AND UPDATE THE DEPARTMENT OF PUBLIC LANDS  
GEOGRAPHIC INFORMATION SYSTEM**

---

**SECTION 1.1 ACQUIRE AND CONFIGURE GEOGRAPHIC INFORMATION  
SYSTEM SOFTWARE**

In these initial two tasks, the Consultant acquired and configured Geographic Information System ("GIS") software for use in this public land master plan update project. With the concurrence of the Department of Public Lands (DPL), the GIS application software selected for the project is ArcGIS 8.3 developed by ESRI. DPL procured the software, and the Consultant installed and configured the software for its work stations. AutoCAD Land Desktop was used for cleaning, building parcel topology and inserting basic parcel identification attributes from existing AutoCAD drawings. Then the Consultant completed topologically-corrected parcel polygons with parcel identification (ID) that were exported as ESRI shape files.

**SECTION 1.2 RESEARCH, IDENTIFY, GATHER AND PREPARE LAND USE  
INFORMATION**

The Consultant then researched and identified existing available data that was available from DPL and other Commonwealth of the Northern Mariana Islands (CNMI) agencies. That research resulted in the DPL Public Land Use Plan Update Data Collection and End-Use Matrix (Exhibit 1.2-1). DPL assisted with the work by coordinating meetings with agencies for data collection within a prescribed timeline. Priority was given to those data that were available in digital formats such as AutoCAD drawings, Microsoft Excel, Microsoft Access, Lotus and raw ASCII files.

**SECTION 1.3 DEVELOP PUBLIC LAND UNIFIED GIS WITH GIS SPECIFICATIONS,  
AND CREATE GIS**

In these three subtasks, the Consultant set up GIS data on two spatial references:

- Locally-derived data such as parcel maps to be referenced by their survey coordinates (Mariana Islands Coordinate System of 1966); and
- Federally-derived data, such as land features, to be referenced in their published spatial reference, which is UTM 55 North.

Exceptions to this data set-up format are U.S. Census data, which were published in Generic Geographical Coordinates.

ARCGIS 8.3 has the capability to perform “on the fly” spatial reference transformation from data sets having different spatial references, so long as the spatial reference is defined for each separate feature.

The GIS parameters employed for this project are presented in Exhibit 1.3-1, DPL Public Land Use Plan GIS Map Parameters.

With respect to GIS database development, the DPL Unified GIS database utilized the ARCGIS 8.3, PERSONAL GEODATABASE engine to develop data and structure for each of the seven Northern Mariana Islands being master planned under this project.

Within the GEOBASE data structure, the following data sets were established:

- A different dataset for each group of data: i.e., slope, soil, geology, watershed are under the dataset of PHYSICAL ENVIRONMENT.
- Each datum feature in the dataset has an accompanying METADATA which describes its source and other pertinent information. See Exhibit 1.3-2 as an example of METADATA FROM SAIPAN UNIFIED PARCELS FEATURE.
- The PERSONAL GEODATABASE runs on Microsoft Access software. The number of fields (data attributes) that may be collected for any spatial feature such as a polygon, a line and a point is limited to 256; however, most of the features have fields (attributes) of less than 20.
- One advantage of using the PERSONAL GEODATABASE is that the data can be queried and easily exported easily to other database and spreadsheet software programs.

#### SECTION 1.4 CLEAN, EDIT, ADJUST, CONVERT, ETC., ELECTRONIC GRAPHICS FILES

This was a very labor intensive task, designed to assure correct input of all data into the GIS database. All land parcel data provided to the Consultant were in an AutoCAD drawing format.

The Consultant utilized AutoDesk Land Desktop with its AutoCAD Map functions and routines to clean and build the unified parcel polygon topology for the three islands of Saipan, Rota and Tinian. The parcel polygon topology was difficult to build due to the integrity rule governing the linking of all the links in the parcels joining in the topology. For instance, there are about 14,000-plus parcel polygons for the island of Saipan. Each parcel must have 3 links defining the area of the polygon. The successful completion of the Unified Parcel Polygon Topology required that all links must have no duplicate and that every link must snap to the vertex with a tolerance of .001.

The lack of AutoCAD drafting standards and quality control in the original CAD drafting of the parcel maps from CNMI agencies contributed substantially to the time and effort required to clean and build this topology. In particular, the indiscriminate use of lines, polylines and different line widths within a particular polygon compounded the effort necessary to clean these drawings. The Consultant's work strategy for cleaning and building the parcel polygon topology was to clean and build the topology incrementally by geographic sections of the islands. For this purpose the Consultant utilized the existing Cadastral Parcel Map Index System, thereby allowing for a section at a time to be cleaned, followed by incremental merging of the different sector parcel topologies until a unified parcel topology was built for each island.

All land parcel drawings must be based on the Northern Mariana Islands (NMI) Coordinate System of 1966 for each island; however, the Consultant encountered instances where the AutoCAD drawings were geometrically correct but the drawings were outside of the bounds of their coordinate values. These drawings were shifted accordingly and transformed to their correct coordinate values.

Each parcel within the Unified Parcel Polygon Topology must have in its centroid a unique Parcel ID. The unique ID used for the project is the Lot Number Text. Each parcel in the AutoCAD drawing was checked and cleaned for duplicate Lot Number Texts. The parcel polygon topology rule does not allow for duplicate centroids; therefore, those parcels without a Lot Number Text were assigned a Parcel ID of MLN for "Missing Lot Number." If the Parcel ID has a prefix or suffix with "PLAND," it means that the particular parcel is public land. The purpose of the unique Parcel ID is to allow each parcel to be linked to external data that were being provided to the Consultant.

The Consultant cleaned and built these drawings using AutoDesk Land Desktop Unified Parcel Polygon Topology for Saipan, Rota and Tinian. Table 1.4-1 displays the drawing name and the topology name as well as the number of nodes, links and polygons for each drawing.

**Table 1.4-1  
Saipan, Rota and Tinian Drawing Names and Topology**

	<b>Drawing Name</b>	<b>Topology Name</b>	<b>Nodes</b>	<b>Links</b>	<b>Polygons</b>
Saipan	SAIPAN UNIFIED PARCELS 1-64-FNL 070904	1-64-FNL-PARID2	59,907.00	80,334.00	20,815.00
Rota	UNIFIED PARCEL 1-43 WITH PARID	1-43FNLPARID1	12,165.00	15,921.00	3,860.00
Tinian	TINIAN UNIFIED PARCELS FINAL	U_PARCEL_FINAL	7,716.00	9,476.00	1,866.00



These three drawings were then exported using the export function as ESRI shape files. The three ESRI shape files were imported into the PERSONAL GEODATABASE for Saipan, Tinian and Rota as indicated in Table 1.4-2.

**Table 1.4-2  
Saipan, Tinian and Rota Personal Geodatabase**

	<b>Personal Geodatabase Name</b>	<b>Dataset Name</b>	<b>Feature Name</b>
Saipan	SAIPAN GIS.MDB	SAIPAN UNIFIED PARCELS	UNIFIED_PARCELS_FINAL
Rota	ROTA GIS.MDB	UNIFIED PARCELS	UNIFIED_PARCELS_1_43_UPDATE_081 404_LAND_TENURE
Tinian	TINIAN GIS.MDB	TINIAN_UNIFIED_PARCELS	UNIFIED_PARCELS_FINAL_LANDUSE _REV

Each of these unified parcel datasets were checked for polygon topological integrity after being imported into the PERSONAL GEODATABASE. The attributes table for each of the datasets was checked so as to assure that each parcel has a PARCEL\_ID and SHAPE\_AREA field. These two fields are absolutely required by the GIS.

**SECTION 1.5      PREPARE SUPPORTING LAND USE TABULAR DATA FILES,  
COMPILE AND MERGE SELECTED TOPOLOGICALLY-CORRECTED  
MAPS, LINK TABULAR DATA TO GRAPHIC DATA, AND INPUT  
PUBLIC LAND PARCELS USING COGO**

DPL provided the Consultant with the following data in Microsoft Excel and Lotus spreadsheet formats:

- Village Homestead Recipients
- Agriculture Waiver Act Recipients
- Limited data on TT Agricultural Homestead Recipients
- Land Exchange Recipients
- Public Land Leases

The Consultant then converted these flat data files into ASCII comma-delimited files and imported the files into Microsoft Access. In so doing, the Consultant also checked each file for field definition consistency throughout the dataset in order to avoid any problems with executing queries. Here again, it required considerable time and effort to clean the

PARCEL\_ID attribute data on the files in order for them to be consistent with the PARCEL\_ID attribute data in the Unified Parcel database. This was necessary in order for the spatial and database data to link based on the GIS link integrity rule.

## SECTION 1.6 CREATE PUBLIC LAND OWNERSHIP AND EXISTING PUBLIC LAND USES DATABASES

In order to develop Public Land Ownership and Existing Public Land Use Databases, it was necessary to undertake the collection of all necessary data for the public land inventory phase of the project. This required the development of a public land ownership and public land use classification scheme.

In creating the Public Land Ownership Classification Scheme it was determined that every parcel of public land in the CNMI is legally considered as "public land under the management and jurisdiction of DPL." The only exceptions are those public land parcels that were deeded to other entities under grants of public domain. Further, public land parcels are being used by different government entities through customary usage, expressed authorization by DPL and by designations. The final land tenure classification system was developed to allow analysis of the management of public land at different levels both in spatial and tabular format. See Exhibit 1.6-1 Land Tenure Classification.

In creating the Existing Public Land Use Classification Scheme it was determined necessary to select a hybrid of traditional land use classification and the newly developed Land Base Classification System adopted by the American Planning Association. This land use classification is divided into four levels of land use hierarchy in order to accommodate the analysis of public land use from broad to specific activities. At the general and highest level of classification all existing public land uses are classified as:

- Urban or Build-Up Land
- Tourism
- Agricultural
- Nr-Extraction-Alteration
- Nr-Conservation-Protection
- Undeveloped-Site In Natural State
- Road

All existing public facility land uses can be readily identified, because they are assigned a LEVEL\_2 classification assignment number of 18. See Exhibit 1.6-2 PLUPU Existing Land Use Classification/Data Definition.

The Existing Land Use Data Definition is in Microsoft Access format and linked to the Unified Parcel attribute table to accommodate general existing land use analysis.

The Attribute Table of Unified Parcel Database for Saipan, Rota and Tinian contains the following attributes:

- OBJECTID: ESRI automatic assignment
- SHAPE : size of parcel polygon imported from AutoCAD MAP
- PERIMETER: perimeter of parcel polygon imported from AutoCAD
- PARCEL\_ID: unique ID based on LOT Number (most critical field)
- LEVEL\_1:level\_1 land use classification
- LEVEL\_2:level\_2 land use classification
- LEVEL\_3:level\_3 land use classification
- LEVEL\_4:level\_4 land use classification
- Shape\_length: length of the link in the parcel polygon from ESRI geometry
- Shape\_area: area of parcel polygon from ESRI geometry
- LANDTENURE\_I: land tenure level I classification
- LANDTENURE\_II: land tenure level II classification
- LANDTENURE\_III: land tenure level III classification
- LANDTENURE\_IV: land tenure level IV classification
- PLAND\_PVLAND\_TENURE: public land or private land ownership
- ISLAND: island where parcel polygon is located

Note: For Tinian, the land tenureship value is not input into the attribute table but rather linked to an external Microsoft Access database. This was possible due to the high level of consistency and correctness of the Microsoft Excel spreadsheets that was provided to the Consultant.

## **SECTION 1.7 COLLECT AND MERGE TOPOLOGICALLY CORRECTED MAPS INTO PERSONAL GEODATABASE FOR SAIPAN, ROTA AND TINIAN**

The primary sources of physical and environmental data maps that were collected and imported into the unified GIS were provided by the Coastal Resources Management Office (CRMO). These maps were generated by Federal agencies and were available in ArcView or ArcInfo format. The maps included the following data:

- Slope map
- Geology map
- Soils map
- Wetlands map
- Watershed map
- Environmental sensitivity map

The Commonwealth Utilities Corporation provided water and wastewater distribution system maps in AutoCAD drawing format. The Consultant then processed and imported the data into ArcGIS format.

Airport Noise Impact maps from available Airport Master Plan studies for Rota and Tinian were scanned, digitized and spatially fitted. The airport noise impact map for Saipan was

created by the Consultant using the Federal Aviation Administration FAA NMI60.C software, and flight operation data extracted from the Saipan Airport Master Plan.

The Consultant researched and input new public land survey maps into the Unified Parcel Polygon database using AutoCAD MAP and directly into the database with ArcGIS 8.3 COGO functions.

**SECTION 1.8      GENERATE PRELIMINARY GIS MAPS AND OVERLAYS, IKONOS  
AERIAL ANALYSIS, INTERPRETATION AND CLASSIFICATION, AND  
PREPARE UNIFIED GIS AND CURRENT LAND USE PLAN**

Development of Public Land Tenure Database

The public land tenure data were collected and input into the unified parcel database using different techniques depending on the availability of external data. For Tinian, the DPL Tinian office completed external data on all public lands that have been granted over the years through the Agriculture, Village and Land Exchange Programs. The AutoCAD drawings collected from Tinian were updated to show all the public land parcels being used by different CNMI agencies. This product was supplemented with IKONOS overlays and subsequent field verification.

Saipan and Rota DPL offices have incomplete external data on all public lands ownership data. The collection and input of public land tenure data was accomplished using a mix of the following techniques:

- Link PARCEL\_ID with external data table if available
  - During the PARCEL\_ID cleaning and checking process, the Consultant assigned a "PLAND" prefix to those parcels that, based on their LOT NUMBER, were not private parcels. Private parcels in the CNMI were customarily assigned one of the following Lot Prefixes:
    - E.A. (for Exchange Area)
    - Lot (for pre-WWII private lots)
    - AH (for Agricultural Homestead)
    - TR (Tract No. for Agricultural Homestead)
- Overlay of AutoCAD drawings and other maps showing delineation of public usage.
- Overlay of rectified IKONOS satellite imagery to determine public usage.
- Field verification to check actual usage.

## **SECTION 1.9 DEVELOP EXISTING PUBLIC LAND USE DATA**

The Unified Parcel Database was queried and a separate layer produced showing only public land parcels for Saipan, Rota and Tinian. The Consultant then conducted a parcel by parcel overlay analysis of each public land parcel in order to determine its existing land use using the following techniques:

- First round of analysis using overlays of maps delineating public land usage.
- Second round of analysis using the IKONOS satellite imagery.
  - For large-area, existing public land uses such as airport, golf course, conservation, agriculture and undeveloped lands, the Consultant made use of the Multi-Spectral Imagery (MSI). Vegetation is very visible in Band-4 (near-infrared) of the MSI.
  - For small-area existing public land uses such as public facility, the Consultant made use of the Panchromatic (black and white) imagery with its higher resolution of 1 meter. Building footprints and site structures can be delineated at the 1 meter resolution.
- Third round of analysis using windshield survey and walk-through field verification of the actual use of the public land parcels for Saipan, Tinian and Rota.

Further, the Consultant used the following method of assigning existing public land use by parcel.

- For small public land parcels such as those being used for public facilities (i.e., school, hospital, community center, etc.), the whole polygon defining the parcel was assigned a single land use classification.
- For large public parcels such as airport, conservation, golf course, etc. the polygon defining the parcel is split into sub-polygons. The sub-polygons within the parcel were assigned a multiple land use classification.

## **SECTION 1.10 PRELIMINARY GIS MAPS AND OVERLAYS**

The Personal Geodatabase for each island has datasets with features that have been spatially referenced and topologically corrected that can be geoprocessed and queried to generate single layer or multiple layer thematic maps, overlay maps, suitability maps, tables and reports. The datasets and features can be explored by opening the ArcCatalog under ArcGIS 8.3.

The DPL Unified GIS comprises the following Personal Geodatabases:

- SAIPAN GIS.MDB
- TINIAN GIS.MDB
- ROTA GIS.MDB
- ANATAHAN GIS.MDB
- ALAMAGAN GIS.MDB
- PAGAN GIS.MDB
- AGRIHAN GIS.MDB

The following Public Land Thematic Maps and Tables can be generated.

- Public Land Inventory Map (Level\_I To Level\_IV)
- Public Land Inventory Detail by Parcel and Summary (Level\_I To Level\_IV)
- Public Land Existing Land Uses (Level\_I To Level\_IV)
- Public Land Existing Land Uses by Parcel and Summary (Level\_I To Level\_IV)

The following Overlay Maps can be generated.

- Contour
- Slope
- Soil
- Geology
- Inland waters (wetland)
- Watershed
- Ground water resources
- Physical infrastructure systems
- Safety/hazard areas
- Environmental sensitivity
- Benthic habitats
- 2000 Census population distribution
- Designated critical habitats/protected areas
- Vegetative land cover

## CHAPTER 2 ANALYZE PUBLIC LAND USES

---

This section summarizes the inventory and existing land uses of all public lands on Saipan, Tinian, Rota, and four Northern Islands as of mid-2004. These data are digitally captured and property characteristics are entered in the geographic information system, enabling analyses and planning.

### SECTION 2.1. CNMI GENERALIZED ISLAND INVENTORY AND USES

Exhibit 2.1-1 is a generalized geographical summary of all fourteen islands which geographically and legally made up the Commonwealth of the Northern Mariana Islands.

### SECTION 2.2 PUBLIC LAND USE ANALYSES FOR SAIPAN

Exhibit 2.2-1 and Exhibit 2.2-2 summarize public land inventory and uses for the island of Saipan. Saipan, being the largest, the most developed and most populated island, has the least hectares of land remaining in the public domain.

### SECTION 2.3 PUBLIC LAND USE ANALYSES FOR TINIAN

Exhibit 2.3-1 and Exhibit 2.3-2 summarizes public land inventory and uses for the island of Tinian. Tinian, being the second largest and topographically most level island, has the most land remaining in the public domain. A substantial portion of the public land is leased to the U.S. Government under the terms of the US-CNMI Covenant Agreement.

### SECTION 2.4 PUBLIC LAND USE ANALYSES FOR ROTA

Exhibit 2.4-1 and Exhibit 2.4-2 summarize public land inventory and uses on the island of Rota. Rota is the third largest island and has the second most land remaining in the public domain. A substantial portion of the public land is designated as conservation areas for resource protection.

### SECTION 2.5 PUBLIC LAND USE ANALYSES FOR ANATAHAN

Exhibit 2.5-1 summarizes public land uses for the island of Anatahan, which is the sixth largest island in the CNMI and is geologically classified as a volcanic island. All the lands are still in the public domain and considered public land. The island has been inhabited since the Spanish Period. The economic mainstay of the island during the Post-WWII Period was copra production. The western part of the island is covered with coconut groves. Betel nuts are also exported to Saipan and beyond. Anatahan Village was evacuated in May 2003 when a volcano located on the northern part of the island erupted. The inhabitants were evacuated to Saipan. Travel to the island is restricted to authorized activities as ordered by the Office of the Governor.

## **SECTION 2.6 PUBLIC LAND USE ANALYSES FOR ALAMAGAN**

Exhibit 2.6-1 summarizes public land uses for the island of Alamagan, which is the seventh largest island in the CNMI and is geologically classified as a volcanic island. All the lands are still in the public domain and considered public land. The last suspected volcanic eruptions occurred in 1864 and 1967. The island has been inhabited since the Spanish Period. The economic mainstay of the island during the Post-WWII Period was copra production. The southwestern slope of Mt. Alamagan is covered with coconut groves. A small extended family settlement is situated in the northwest section of the island geographically known as "Kakaderu".

## **SECTION 2.7 PUBLIC LAND USE ANALYSES FOR PAGAN**

Exhibit 2.7-1 summarizes public land uses for the island of Pagan which is the fourth largest island in the CNMI and geologically classified as volcanic island. All the lands are still in the public domain and considered public land. The island has been inhabited since Spanish Period. The economic mainstay of the island during the Post-WWII Period was copra production. Coconut groves south of the caldera were not affected by the 1981 volcanic eruption. There are visible indications that those coconut groves on the northwest slope of Mt. Pagan (Malas and Taraguc areas) are making a comeback.

In 1980, the former Marianas Public Land Corporation (MPLC) started a village homestead survey project whose objective was to distribute village lots. The effort to distribute village homestead lots to the then-residents of Pagan was disrupted with the eruption of Mt. Pagan in 1981. The island residents were evacuated to Saipan and subsequently were settled in a Mariana Islands Housing Authority (MIHA) subdivision called Paganville on Saipan. Since the aftermath of the 1981 eruption, a number of firms have expressed interest in mining the volcanic ash (pozzolan) that covers sections of the island. Travel to the island is restricted to authorized activities as ordered by Office of the Governor; however, there are visible indications of scattered settlement in the vicinity of the former village.

## **SECTION 2.8 PUBLIC LAND USE ANALYSES FOR AGRIHAN**

Exhibit 2.8-1 summarizes public land uses for the island of Agrihan, which is the fifth largest island in the CNMI and is geologically classified as a volcanic island. The last known volcanic eruption was in 1917. Mt. Agrihan is the highest elevation in the Mariana Islands at 3,165 feet above sea level. All the lands are still in the public domain and considered public land. Agrihan has been inhabited since the Spanish Period. The economic mainstay of the island during the Post-WWII Period was copra production. Coconut groves are found around the coastal slope. The island has two buildings – a dispensary that doubles as a typhoon shelter, and a single-classroom school house. The village is located along the southwestern coastal flat land along one of the longest and widest stretches of black sandy beach found in the CNMI.



### **CHAPTER 3**

## **PUBLIC LAND USE PLANNING AND THE CNMI ECONOMY**

---

DPL's mandate for providing homestead lots cannot succeed in the absence of overall economic growth within the Commonwealth. Homesteading is but one of many programs that cumulatively constitute community development and, therefore, homesteading must be pursued in conjunction with other aspects of development such as growth in the private sector, increased wages, adequate infrastructure, better social services, and fiscal restraint by the government. Without an economy that provides jobs and job growth, salaries that are responsive to cost of living indices, and a safety net for those who cannot survive without some public assistance, the CNMI's homestead program will not fulfill its constitutional objectives. In sum, DPL's homestead program and a healthy CNMI economy should occur in tandem.

### **SECTION 3.1 THE RELATIONSHIP BETWEEN DPL AND THE CNMI ECONOMY**

DPL is already inextricably linked to the economy of the CNMI by virtue of its commercial leases for hotels, golf courses and other commercial enterprises. Additionally, any public entity that controls approximately 80% of the Commonwealth's land base is, de facto, a major influence on economic development. The Department already fulfills two economic objectives with its commercial leasing program: first, by offering relatively large tracts of land for commercial development, it contributes to employment growth and the government's tax base; and second, its lease revenues fund both homestead administration as well as expenses related to homestead and support infrastructure development. While DPL programs and policies cannot be solely determinant of the Commonwealth's economic health, the Department's influence is nonetheless significant. Consequently, every land development (or non-development) policy, whether it be for homesteading, agricultural or commercial uses, should be analyzed with respect to its short and long term impact on the Commonwealth's economic welfare.

### **SECTION 3.2 THE RELATIONSHIP BETWEEN THIS PUBLIC LAND USE MASTER PLAN AND THE CURRENT CNMI ECONOMY**

In any land use master planning process it is absolutely necessary to reflect both the current economic state as well as future economic plans. In the case of the CNMI it is critically essential that the Commonwealth's economic health as well as its economic future be foundation blocks for public land use master planning. As such, it is necessary to recap the CNMI's economy today and to reflect the Commonwealth's economic development plans as well as its planning process as comprehensively as possible.

It is unnecessary to reiterate the events which lead to the current state of the economy within the CNMI. This story is chronicled daily in news reports, speeches and official commentary. Suffice it to say that the declines in garment manufacturing followed by a sudden withdrawal of a major airline, Japan Airlines (JAL), have created devastating negative multiplier effects throughout the CNMI economy.

Although Saipan's garment manufacturing industry provided the bulk of revenues for the Commonwealth in the late 1990's, the industry continues to shrink. U.S. import quotas were lifted on January 1, 2005 under provisions of a new global trade regime for textiles and clothing under the agreement that established the World Trade Organization in 1994. Some quotas, however, were re-imposed on China by President Bush on a temporary basis and then through a bilateral agreement with China, but these quotas will expire after 2008. In anticipation of this new trade regime, therefore, the garment industry is consolidating and relocating some operations, causing a decline in both production and the payment of taxes and fees. Some officials believe that garment manufacturing will disappear from the CNMI within a few years.

Japan Airlines provided approximately 40% of the airline seats to Saipan from Japan, and Japan is the CNMI's largest market, having been the source of about 70% of all visitors to Saipan, Tinian and Rota. Additionally, there is evidence that Japanese investors are leaving Saipan, particularly those invested in the tourism industry. In sum, nearly every commercial business has been affected by these events, including hotels and shipping companies, assorted small businesses such as grocery stores, retail stores, insurance companies and security companies as well as their associated support industries. It is commonly expected that many of these businesses will downsize or possibly close. CNMI's economic challenges are even more dramatic, therefore, because both of its major industries, garment manufacturing and tourism, are declining at the same time.

Even before the precipitous decline in garment manufacturing and tourist arrivals, the Commonwealth's Gross Domestic Product (GDP) was already lower than that of any state. In 2005, the U.S. Census Bureau's preliminary estimate of the CNMI's GDP was \$1 billion. With a total population of 75,066, the CNMI's per capita GDP was an estimated \$13,350, a figure 50.9% of the lowest state per capita GDP, and 33.7% of the national per capita GDP. Even as far back as the 2000 U.S. Census of the Northern Marianas it was reported that 46% of the population was living below the poverty line, with a per capita income of \$9,151, and a steady 13% unemployment rate for the permanent population.

Fiscally, the CNMI is experiencing a major decline in revenues as well as cutbacks in governmental services. For fiscal year 2006, the outgoing Governor proposed a total budget of \$213 million. That figure was revised downward to \$198.5 million by the current Governor, with the consent of the Legislature. These most recent austerity measures, however, are not the first to be taken. Even during the past six years CNMI spending was curtailed in such areas as deferred maintenance of public facilities, delayed or deferred payments of the government's share of retirement contributions, and delayed or non-payment of government utility bills, private vendors and government contractors.

In fact, these budget cuts within all three branches of the government are at a level unseen since the inception of the Commonwealth in 1978 and have prompted the Administration to request an economic bailout of \$140 million from the U.S. Congress, including funding for government operations for the first time in more than 20 years. That amount encompassed a \$127.5 million financial package by the Governor as well as more than \$12 million added by CNMI Washington Representative Pete A. Tenorio for capital improvement projects that were deferred from funding in previous years. Nonetheless, Department of the Interior Deputy Assistant Secretary David Cohen believes that it will be a challenge for the U.S. Government to find that kind of money in the current fiscal environment.<sup>1</sup>

The CNMI Administration also announced its intentions to support a bill that has been in the U.S. Congress for two years to amend what is known as "Headnote 3(a)" that allows garments manufactured in the CNMI to enter the U.S. duty-free as long as there is a 50% product added on in the CNMI. Now the CNMI is asking for a 70-30 ratio, so less work could be done in the CNMI to make locally produced garments competitive with Asian garment products. The Administration believes that this legislation will keep the CNMI garment industry viable for approximately the next 10 years. During this time other industries can be developed in the CNMI to replace it.<sup>2</sup>

Certainly, the CNMI enjoys a number of programs and advantages which are conducive to its economic growth and vitality. Chief among these are its ability to control immigration and establish a minimum wage. Local control of immigration helps to overcome the constraint of a small indigenous labor force, and the Commonwealth - not unlike the continental United States and Hawaii in their early years - has relied upon imported labor to develop its economy. Clearly, the experience of the last decade has shown that foreign temporary labor has now become an indispensable part of the economic structure of the Commonwealth, and any disruption in its flow could further damage the fragile and otherwise unpredictable tourism sector on which the economy is partly based.<sup>3</sup> Similarly, the ability to offer wage rates lower than the United States minimum wage, at least for a period of time, is tantamount to what many businesses would consider a tax holiday. These incentives, coupled with proximity to Asia's 1.4 billion people with a combined GDP of \$2.9 trillion dollars as well as CNMI's association with the United States and the advantage of being able to ship qualified manufactured products to the United States duty free all contribute to the potential for CNMI's economic health.

---

<sup>1</sup> Pacific Magazine, "Focus on the Future." Samantha Magick, July 1, 2006.

<sup>2</sup> Honorable Pedro A. Tenorio, CNMI Resident Representative to the United States. Testimony before the U.S. Senate Energy and Natural Resources Committee. March 1, 2006.

<sup>3</sup> Bank of Hawaii. Commonwealth of the Northern Mariana Islands Economic Report. October 2003.

### SECTION 3.3 ECONOMIC PLANNING WITHIN THE CNMI

Economic planning for the CNMI is taking place at several venues, among them being the Executive Branch (Governor's Office, Marianas Visitors Bureau and Department of Commerce), the private sector (Chamber of Commerce, Hotel Association, and Garment Manufacturer's Association) and the federal government (Department of Interior). It is understandably difficult to harness all those efforts into one focused, efficient and cohesive planning process. Nonetheless, in order to glean the most benefit from the sum total of all such planning (however incrementally it may be occurring) it is first necessary to assemble the proposed plans, policies and programs into one compendium. At that point is it possible to organize and study the material so as to determine whether overlaps and/or missed elements occur. Further, that compendium can be transformed into a draft master plan for economic development, albeit one which must be regularly updated and evaluated in order to respond to changing conditions and accomplishments.

It is neither in the scope of this project nor the objective of this Plan to undertake economic development planning. As discussed earlier in this Chapter, however, every public land development (or non-development) policy, whether it be for homesteading, agricultural or commercial uses, should be analyzed with respect to its short and long-term impact on the Commonwealth's economic welfare. Consequently, some understanding of the current CNMI economic development planning is essential to formulating this public land use plan. In the absence of a single compendium of economic development plans, therefore, the following compilation represents an outline of the planning that is currently being undertaken with respect to land use planning only, as presented by various sources.

*Bank of Hawaii Commonwealth of the Northern Mariana Islands Economic Report,  
October 2003*

Following the recognition of garment making as a legitimate industry, public and private sector energies are free to focus on how to make the Commonwealth once again an attractive and desirable regional destination. If that requires improvements in infrastructure, including resurfacing main roads and beautifying points of tourist interest, or tax incentives for investors, the leadership should make these efforts a priority. (page 8)

Separating the industrial economy of garment manufacturing from leisurely tropical tourist pursuits on Saipan presents the Commonwealth with yet another obstacle to revitalizing tourism. (page 12)

Chinese tourists are likely to increase in the years ahead, perhaps at rates greater than either Japanese or Korean tourists in the past decade. Two factors give credence to this expectation. One factor is an immediate potential for the Northern Marianas in the form of the Tinian Dynasty Hotel and Casino intended mainly for Chinese travelers and gamblers. (page 13)

The Garapan District is being transformed into a world-class commercial and recreation area for residents and tourists. The focus on this area underscores public and private commitments to enhance the Commonwealth's image in an effort to encourage longer visitor stays, increased expenditures and provide airline and travel agents with marketing tools to sell the Marianas as an attractive destination. (page 18)

Meanwhile, the Commonwealth must enhance its tourist infrastructure and keep its tropical ecosystem as undisturbed as possible to remain popular as a tropical paradise with a unique American and Asia-Pacific mix of culture and facilities. (page 19)

As the conventional economy recovers, contingent on recoveries in other economies, the new education industry offers a complementary path to further economic growth, development and diversification. With real property prices at their lowest in years, the timing is good for the Northern Marianas College to secure land. (page 19)

*Commonwealth of the Northern Mariana Islands Business Opportunities Report, US Department of Interior, Office of Insular Affairs, September 2004*

Zoning allows for consistent and reliable planning and ensures that real estate development values are not potentially impaired by undesirable industries. (page 8)

Large reserves of volcanic ash (pozzolan) are found on Pagan Island and have been said to provide a substantial economic potential for exploration and use by the cement industry as a strengthening additive. (page 12)

A wide variety of horticultural and agricultural products can be harvested on the Mariana Islands. (page 12)

It is important to think about industries that are compatible and consistent with the image of the Mariana Islands as a tourist destination. These industries need to be respectful of the environment, while supporting the development of local infrastructure, and participating in increasing the level of the local education system and standard of living. (page 13)

This report identifies four focus sectors as strategic areas that could participate in providing the CNMI with the economic independence that it is pursuing:

- Transshipment (US Customs pre-clearance, free trade zone)
- Tourism (Chinese tourists, ecotourism, gaming)
- Film industry (production and post production)
- Education (page 13)

Additional opportunities are also available to mainland investors and/or partners to participate in the growth of the CNMI's economy:

- Utilities privatization (water, sewage, and energy)
- Retirement communities
- Spring water on Rota
- Exotic plants, fruits, and flowers (fumigation plant)
- Agricultural products (page 13)

In the near future, additional public land from DPL will be transferred to CPA for needed land area to accommodate current and future needs for container storage and queuing. (page 16)

Light manufacturing may benefit from free trade zones and free import duty to the U.S. by undertaking value-added operations such as assembly or customization work. Effective September 22, 2000, the Northern Marianas established a 20-hectare free trade zone (FTZ) near the Saipan International Airport. Other FTZ's may be established at a later date. (page 16)

Ecotourism – The Adventure Travel Society defines ecotourism as *“environmentally responsible travel to experience the natural areas and culture of a region while promoting conservation and economically contributing to the community.”* If ecotourism is properly implemented:

- It integrates conservation and rural development by helping to protect valuable natural areas; and
- By generating income, it stimulates economic development through tourism expenditures and provides jobs and markets for local goods. (page 17)

Rota, with its exceptional cultural and environmental heritage, is well suited to the successful development of ecotourism. (page 17)

Tinian's gaming industry would provide a viable source of economic growth for the island in the form of increased revenue and employment for the local population. (page 17)

Investment projects and business opportunities are available in various sectors and areas. A short list of the types of projects available with the CNMI is provided below:

- Utilities – Develop renewable energy projects.

Agribusiness – Exotic fruits and plant farming for export and domestic markets. Tropical flower production for export markets.

Agribusiness – Develop and manage a fumigation plant to support fruits, flowers and plants exportation.

Agribusiness – Develop honey production for the local market.

Natural resources – Exploit the most pristine spring water source in Micronesia on Rota.

Marine Infrastructure – Development of Smiling Cove Marina (Saipan).  
Development of a Marina on Rota.

Ecotourism – Establish an adventure cable line (i.e., zip line) on Rota.

Tourism – Develop a “sugar cane train” from the Airport to SongSong Village on Rota to be used by tourists and as mass transportation.

Casino – Develop a new casino on Tinian.

Ecotourism – Develop the Chamorro and Carolinian cultural heritage for tourism.

Healthcare – Develop retirement communities.

Transshipment – Investment in transshipment infrastructure.  
Development of Free Trade Zone.

Agribusiness – Representation and distribution of local tropical products.  
(page 21)





*The Internet Web site for the CNMI Department of Commerce, Research and Development Division (<http://www.commerce.gov.mp/>) describes their objective to promote and encourage foreign investment in areas such as:*

Franchise Restaurants

Water Parks

Aquariums

Cultural Centers

Theme Parks

Resort Hotels and Condominiums

Golf Courses

Convention Centers

Dinner Theaters

Special Sporting Events

Manufacturing Facilities of New Age Products

**CHAPTER 4**  
**PROJECTIONS OF HOMESTEAD APPLICANTS BY YEAR 2015**  
**FOR SAIPAN, TINIAN AND ROTA**

---

In order to match the supply and demand of DPL homestead lands with the number of homestead applicants by year 2015, it is necessary to forecast the number of applicants who meet eligibility by that date. The CNMI Constitution, as amended, requires DPL to "make available some portion of the public lands for a homestead program."<sup>4</sup> That general mandate has been articulated several times since 1979 through public laws and by rules and regulations promulgated by the Department. Taken together, the mandate and subsequent adjustments have evolved into a current policy for criteria which determine homestead eligibility.

In order to project DPL's requirements for homesteads by year 2015, the eligibility criteria must be matched against CNMI population projections, yielding the number of homestead lots necessary to serve all eligible applicants.

**SECTION 4.1 HOMESTEAD ELIGIBILITY CRITERIA**

Homestead eligibility is divided between agricultural homesteads and village homesteads. Agricultural homesteads have been authorized and defined in P.L. 2-13; P.L. 3-44; P.L. 8-9, Rules and Regulations pursuant to P.L. 2-13, dated July 13, 1981; and Rules and Regulations promulgated pursuant to P.L. 2-13, as amended, dated May 27, 1983. Tinian Agricultural Homesteads have been further authorized and defined by P.L. 6-15; Proposed Rules and Regulations promulgated pursuant to P.L. 6-15; and P.L. 10-2. Rota Agricultural Homesteads have been further authorized and defined by P.L. 7-11; Proposed Rules and Regulations promulgated pursuant to P.L. 7-11; P.L. 10-3; and P.L. 12-53. CNMI's Village Homestead Program has been authorized and defined by P.L. 3-74; P.L. 6-6; Rules and Regulations promulgated pursuant to Article XI of the CNMI Constitution and the Village Homesteading Act of 1979, as amended; P.L. 1-41; Rules and Regulations promulgated pursuant P.L. 1-42; and Proposed Rules and Regulations promulgated pursuant to the Northern Mariana Islands Homesteading Act of 1979, as amended.

While only the most current public laws and regulations are pertinent to establishing eligibility today, the 25-year evolution of these criteria indicates that changes have, indeed, occurred and may continue to occur during the life of this Public Land Use Master Plan. Those criteria have addressed (and in some cases, re-addressed) ethnicity, age, quota, marital status, income, and other land interests. In order to establish a reliable projection of future homestead requirements, however, one set of eligibility criteria must be selected as the basis for determining eligibility. Of all the adopted criteria modifications, three have remained as the bedrock of eligibility: CNMI descent; minimum age of 18; and no more than one lot per eligible applicant. Additionally, DPL

---

<sup>4</sup> Commonwealth Constitution, Article XI, Public Lands, Section 5 a).

is now considering a limitation of one homestead lot per married family; therefore, this calculation is also relevant to applicant projections. These basic criteria will serve as the only criteria for this Plan's projections, allowing for error only on the side of possibly over-estimating homestead lot requirements.

## **SECTION 4.2 PROJECTIONS FOR ELIGIBLE APPLICANTS**

Homestead requirements for year 2015 can be determined on the basis of ethnicity, age and quota by analyzing Census 2000 data for Saipan, Tinian and Rota. In particular, the age group profiles foretell the number of people who will be age 18 or older by year 2015 and the ethnic profiles categorize Chamorros and Carolinians as a percent of overall population. With those data, the number of eligible applicants can be computed as of year 2015.

This projection methodology is further adjusted by three variables: mortality, migration and saturation. Between now and 2004, the number of projected eligible applicants will be expected to be reduced by a mortality rate similar to that experienced overall in CNMI, or 1.9% per annum. Note, however, that this decline in eligible applicants is not offset by CNMI's birth rate, because no one born between now and year 2015 will become eligible by that year, due to the minimum age requirement of 18 for applicants. With respect to migration, eligible applicants can be reasonably expected to engage in either in-migration or out-migration, and these two shifts are considered to balance each other. Therefore, migration is not factored into the projections. Saturation refers to the proportion of those eligible applicants who are expected to actually file an application for a homestead lot. Based on DPL's operating experience, saturation is projected at 100%.

Homestead eligibility by year 2015 for Saipan, Tinian and Rota are calculated in Tables 4.2-1 through 4.2-3, respectively. First, Census data regarding age as of year 2000 are used to determine how many residents will turn age 18 or older by year 2015. For the age group "under 5 years" as of year 2000, those who were age 3, 4 or 5 will reach age 18 by year 2015 and those who were younger will not. For the purpose of these projections, half of all residents in the "under 5 years" age group are considered to be age-eligible for a homestead by year 2015. No upper limit of age is excluded from eligibility.

Having established age eligibility among all residents, Census 2000 data are then used to determine ethnicity. The Census reports ethnic race and origin of all ethnicities within the CNMI by both number and percent of total. The total percentage of both Chamorro and Carolinian residents is each applied against the number of age-eligible residents previously determined. This calculation yields the number of Chamorro and Carolinian age-eligible residents for homestead lots.

**Table 4.2 - 1**  
**SAIPAN - DPL HOMESTEAD ELIGIBILITY THROUGH YEAR 2015**

<b>Age as of Year 2000 Census</b>	<b>Total</b>	<b>Age 18 or over through 2015</b>	
Under 5 years	5,103	2,552	
5 to 9 years	4,703	4,703	
10 to 14 years	3,801	3,801	
15 to 19 years	3,512	3,512	
20 to 24 years	7,190	7,190	
25 to 34 years	18,529	18,529	
35 to 44 years	11,329	11,329	
45 to 54 years	5,492	5,492	
55 to 59 years	1,088	1,088	
60 to 64 years	748	748	
65 to 74 years	645	645	
75 to 84 years	198	198	
85 years and over	54	54	
		<b>59,841</b>	<b>ELIGIBILITY BY AGE</b>
<b>Ethnic Origin and Race</b>	<b>Total</b>	<b>% Population</b>	
One ethnicity or race			
Carolinian	2,645	4.2	
Chamorro	11,644	18.7	
Two or more races or ethnic groups			
Carolinian and other group(s)	2,018	3.2	
Chamorro and other group(s)	3,727	6	
		<b>32.1</b>	<b>% ELIGIBILITY BY RACE</b>
<b>Age and Race</b>			
@ 32.1% of 59,841		<b>19,209</b>	<b>ELIGIBILITY BY AGE AND RACE</b>
<b>Mortality</b>			
@ 1.9% per year = 25% in 15 years		<b>14,407</b>	<b>ELIGIBILITY BY AGE AND RACE AND ADJUSTED FOR MORTALITY</b>
<b>Marital Status</b>			
@ 50% of eligibility by age, race and adjusted for mortality		<b>7,203</b>	<b>ELIGIBILITY BY AGE, RACE, MARRIAGE AND ADJUSTED FOR MORTALITY</b>

**Table 4.2 - 2**  
**TINIAN - DPL HOMESTEAD ELIGIBILITY THROUGH YEAR 2015**

<b>Age as of Year 2000 Census</b>		<b>Age 18 or over through 2015</b>	
Under 5 years	321	161	
5 to 9 years	350	350	
10 to 14 years	288	288	
15 to 19 years	209	209	
20 to 24 years	210	210	
25 to 34 years	965	965	
35 to 44 years	702	702	
45 to 54 years	346	346	
55 to 59 years	41	41	
60 to 64 years	46	0	
65 to 74 years	45	0	
75 to 84 years	13	0	
85 years and over	4	0	
		<b>3,272</b>	<b>ELIGIBILITY BY AGE</b>
<b>Ethnic Origin and Race</b>	<b>Total</b>	<b>% Population</b>	
One ethnicity or race			
Carolinian	3	0.1	
Chamorro	1,320	37.3	
Two or more races or ethnic groups	505		
Carolinian and other group(s)	66	1.9	
Chamorro and other group(s)	386	10.9	
		<b>50.2</b>	<b>% ELIGIBILITY BY RACE</b>
<b>Age and Race</b>			
@ 50.2% OF 3,272		<b>1,642</b>	<b>ELIGIBILITY BY AGE AND RACE</b>
<b>Mortality</b>			
@ 1.9% per year = 25% in 15 years		<b>1,232</b>	<b>ELIGIBILITY BY AGE AND RACE AND ADJUSTED FOR MORTALITY</b>
<b>Marital Status</b>			
@ 50% of eligibility by age, race and adjusted for mortality		<b>616</b>	<b>ELIGIBILITY BY AGE, RACE, AND MARRIAGE AND ADJUSTED FOR MORTALITY</b>

**Table 4.2 - 3**  
**ROTA - DPL HOMESTEAD ELIGIBILITY THROUGH YEAR 2015**

<b>Age as of Year 2000 Census</b>	<b>Total</b>	<b>Age 18 or over through 2015</b>	
Under 5 years	388	184	
5 to 9 years	367	367	
10 to 14 years	287	287	
15 to 19 years	220	220	
20 to 24 years	166	166	
25 to 34 years	686	686	
35 to 44 years	619	619	
45 to 54 years	369	369	
55 to 59 years	70	70	
60 to 64 years	43	0	
65 to 74 years	58	0	
75 to 84 years	22	0	
85 years and over	8	0	
		<b>2,968</b>	<b>ELIGIBILITY BY AGE</b>
<b>Ethnic Origin and Race</b>	<b>Total</b>	<b>% Population</b>	
One ethnicity or race			
Carolinian	4	0.1	
Chamorro	1,780	54.2	
Two or more races or ethnic groups	313		
Carolinian and other group(s)	40	1.2	
Chamorro and other group(s)	270	8.2	
		<b>63.7</b>	<b>% ELIGIBILITY BY RACE</b>
<b>Age and Race</b>			
@ 63.7% OF 2,968		<b>1,891</b>	<b>ELIGIBILITY BY AGE AND RACE</b>
<b>Mortality</b>			
@ 1.9% per year = 25% in 15 years		<b>1,418</b>	<b>ELIGIBILITY BY AGE AND RACE AND ADJUSTED FOR MORTALITY</b>
<b>Marital Status</b>			
@ 50% of eligibility by age, race and adjusted for mortality		<b>709</b>	<b>ELIGIBILITY BY AGE, RACE, AND MARRIAGE AND ADJUSTED FOR MORTALITY</b>

Mortality is then factored into the number of age-eligible, Chamorro and Carolinian ethnic applicants. According to CNMI Department of Public Health, Statistics Division, the CNMI death rate was 1.9% for calendar year 2003. This is a crude rate based on the mid-year (June 2003) population estimate of 76,129 persons within the CNMI. Public Health does not track mortality by the individual islands in the CNMI. This mortality rate is assumed to be constant between years 2000 and 2015. Note that the birth rate plays no part in these calculations for determining homestead applicants, inasmuch as no resident born during or later than year 2000 will turn age 18 by year 2015.

Next, the restriction on one lot per marriage is calculated. In the absence of census data correlating marital status and ethnicity, empirical data suggest that almost every Chamorro and Carolinian gets married and does so within their own races. As such, the potential number of age-eligible, Chamorro and Carolinian ethnic applicants as of year 2015 is reduced by 50% in order to account for the one-lot-per-marriage restriction for homestead lot eligibility.

Tables 4.2-1 through 4.2-3 calculate the Saipan, Tinian and Rota homestead applicants as of year 2015 in accordance with this methodology, showing both projected homestead requirements at the one-lot-per-applicant criterion as well as projected requirements at the one-lot-per-marriage criterion.

Table 4.2-4 recaps applications awarded, pending, and projected as of year 2015 at the one-lot-per applicant criterion, and projected at the one-lot-per-marriage criterion.

**Table 4.2 - 4  
 RECAP OF APPLICATION DATA**

	<b>TOTAL APPLICANTS AWARDED*</b>	<b>TOTAL APPLICANTS PENDING*</b>	<b>TOTAL APPLICANTS AS OF YEAR 2015 WITH ONE LOT PER APPLICANT</b>	<b>TOTAL APPLICANTS AS OF YEAR 2015 WITH ONE LOT PER MARRIAGE</b>
<b>SAIPAN</b>	3,248	3,101	14,407	7,203
<b>TINIAN</b>	592	452	1,232	616
<b>ROTA</b>	752	523	1,418	709

\* as of mid-2003.

## CHAPTER 5 FORMULATE PRELIMINARY GOAL AND OBJECTIVES

---

The task of goal and objectives setting is critical to any master planning process, because it builds the bridge between problem identification and public expectations. If the expectations are set beyond any likelihood of reasonable accomplishment, then the planning process is doomed to failure. If the expectations are set short of reasonable achievement, then the planning process does not yield the greatest possible benefit of the public resources over which it manages.

During the course of goal setting for this DPL Public Land Use Master Plan Update, three issues are examined: the Department's Constitutional and public law mandates; the Department's predecessor's 20-plus year history of operations; and the Department's influence on economic development within the CNMI. Common to all goals are the two-fold missions of homestead development and revenue enhancement to support the Department's operations. As a result of that analysis, three alternative goals are offered for consideration:

- The Traditional Homestead Lot Program;
- The Traditional Homestead Lot Program plus an Assisted Housing Program; and
- The Traditional Homestead Lot Program, with or without the Assisted Housing Program, plus an Economic Stimulus Program.

### Alternative Goal A – The Traditional Homestead Lot Program

This alternative reaffirms in substantial part the 1989 MPLC goal and objectives which addressed the traditional programs of homesteading, exchange of public lands where necessary for private land takings, and new reservations of public lands to provide for expanding NMI governmental land needs. Homesteading was to accommodate eligible applicants through a system of single and multi-family housing and other use-efficient land planning strategies. This alternative goal acknowledges the ongoing, practical and mathematical difficulties of accommodating all eligible homestead applicants and explores several types of eligibility restrictions so as to better align the number of approved applications with an equal number of available lots. The practice of commercial leases is preserved. In large measure, this Alternative Goal A embodies the traditional role of DPL.

### Alternative Goal B – The Traditional Homestead Lot Program plus an Assisted Housing Program

This alternative builds on the traditional DPL program of providing improved homestead lots and commercial leases by expanding its work into the provision of housing units on those lots. This goal recognizes the constitutional intent of the homestead program as a means of providing adequate housing for eligible homestead applicants, although the homesteading program's operational history shows a gap



between families that receive lots and families that can comply with the deadline for constructing a residence on those lots. The Assisted Housing Program would expand DPL's operations into the administration of housing financing and construction, not unlike the scope of MIHA's programs for individual home buyers. Additionally, in the event that DPL engages the multi-family housing option attendant to Alternative Goal A, it is very likely that the Department would be required to undertake a strong managerial position in organizing and coordinating the development of multi-unit residential projects. This could be accomplished by partnering with other CNMI agencies or with private endeavors, or both.

Alternative Goal C – The Traditional Homestead Lot Program, with or without the Assisted Housing Program, plus an Economic Stimulus Program

This alternative recognizes DPL's mandate for homesteading, either with or without the assisted housing program, in tandem with its predominant role in the economic development of CNMI and focuses on the Department's capacity to stimulate the Commonwealth's economy while simultaneously supplementing DPL revenues for the purpose of developing homesteads. Inasmuch as many important CNMI businesses already occupy DPL properties and the Department manages an even larger inventory of properties with commercial potential, the Department's latent influence over economic development on all three islands is unmistakable. Nonetheless, the opportunity to stimulate economic development cannot be marshaled without supportive capacity to plan for, coordinate and administer a commonwealth-wide program for economic development. Naturally, any commercial development which creates jobs and generates more tax base will also augment DPL's revenue base for supporting the development of new homesteads.

The following sections elaborate on each alternative goal so as to provide for the widest possible platform of information from which DPL can determine the direction most appropriate for this Master Plan.

One objective meriting inclusion into this Plan's final goal, whichever option, was first stated in the 1989 Public Land Use Plan:

to utilize the public land resources of the CNMI in an equitable and efficient manner, where equitable refers to:

equal access, allowing people of various income categories use/access of public lands;

and where efficient refers to:

land used at its highest and best use and in a manner which provides for public services in a cost efficient manner.

Utilization of public land resources encompasses all three traditional programs: homesteading, exchange and future NMI governmental land needs.

## **SECTION 5.1 ALTERNATIVE GOAL A – THE TRADITIONAL HOMESTEAD LOT PROGRAM**

The first alternative goal worthy of consideration by this Plan is the goal and supportive objectives adopted in the MPLC 1989 Public Land Use Master Plan, which embodies the traditional homestead lot program. In summary, that Plan's adopted goal and objectives are:

### **GOAL**

To assure that there are sufficient land resources to meet demands on public lands for services and homestead programs through the year 2015 and, as second priority, to support the economic development of the CNMI.

### **OBJECTIVES**

1. Use the public land resources of the CNMI in an equitable and efficient manner.
2. Manage public lands to direct overall physical growth in a socially responsible manner.
3. Provide land resources to supply the demand for housing for the residents of the CNMI as provided by law.
4. Utilization of public land to provide revenues for the management of public lands and for physical development that serves public purpose.

This goal and its objectives reflect the traditional thinking about DPL's role in the Commonwealth and, as such, conform to both the Constitution and the public's current expectations of the Department.

### ***SECTION 5.1.1 ASSESSMENT OF DPL'S IMPLEMENTATION OF 1989 PUBLIC LAND USE PLAN GOAL AND OBJECTIVES***

By most accounts, implementation of the 1989 goal and objectives has fallen short of expectations. Although a very large number of homestead lots have been issued (3,248 on Saipan, 592 on Tinian, and 752 on Rota), a moratorium on applications has been in effect since September 2002, creating a backlog of applications amounting to some 3,101 for Saipan, 452 for Tinian, and 523 for Rota as of mid-2004.

Despite its best efforts to move more eligible families into homesteads, the Department is hindered by insufficient funds to survey, design and construct the necessary improvements which are necessary to implement the homestead process at a pace that responds to demand.

### **SECTION 5.1.2 USING MULTI-FAMILY RESIDENCES TO MEET THE DEMAND FOR HOMESTEAD LOTS**

It is possible that additional policies and programs could lead to better results with respect to achieving the 1989 Plan goal. For example, given considerably more refinement to the process for creating multi-family homesteads, the Department is likely to be capable of implementing a system whereby more applicants can be accommodated, particularly on Saipan. Conceptually (and preliminarily) such a process would issue certificates which are securitized by homestead-specific DPL lands that are reserved for multi-family homesteading. For this program to be successful, such multi-family homesteading lands have to be pre-planned, designed and developed by DPL to accommodate multi-family projects of a specified size and number of units. An example of such specifications might include access, water, sewer, power and telecommunications adequate to service a 40-unit condominium comprised of 20 units on 2 floors, with each unit having 1,400 sq. ft. encompassing 3 bedrooms and 2 baths, etc., along with common project amenities such as parking, open space and recreation facilities. Of course, the size and configuration of these multi-family homestead projects must be adjusted to meet site conditions, the capacity of nearby service infrastructure, DPL development budgets, and other constraints or opportunities. DPL would then act as a facilitator in organizing groups of certificate holders into an association which secures financing for the condominium structure and common amenities, collectively having the title to the land to post as collateral. While the mechanics of this process require additional refinement, it does offer credibility to re-adoption of the 1989 Plan goal.

### **SECTION 5.1.3 IMPOSING A LOTTERY SYSTEM AS A CONDITION OF ELIGIBILITY ASSOCIATED WITH THE TRADITIONAL HOMESTEADING GOAL**

Aligning homestead lot availability with the number of eligible applicants can also be achieved through certain restrictions and delimiting conditions to eligibility, such as personal income, personal assets, marital status, residency, etc. While DPL has exercised social conscience by liberally interpreting "eligibility," adjustments have been implemented from time to time regarding applicant requirements that, in one manner or another, delay application processing as well as a limit of one homestead lot per eligible family. However equitable this policy, the reality of growing demand and fixed supply described earlier in the Plan dictates the serious difficulty for DPL to satisfy the requests of all future applicants.

Eligibility could also be established through an annual lottery on each island to select applicants who will be served with available homestead lots. Conversely, those applicants not selected through such a lottery are deemed thereafter ineligible, a situation which is identical to applicants who fail to meet other pre-qualification conditions such as income, assets, marital status, residency, or whatever.

Additionally, while Article XI of the Commonwealth Constitution mandates DPL to “make available some portion of the public lands for a homestead program,” there is no attendant mandate to accommodate every eligible applicant (regardless of restrictions imposed to such eligibility) within a specific timeframe. Indeed, DPL makes no representations about timeliness, yet applicants who are deemed eligible have come to harbor false expectations about the schedule of availability for their homestead lots. This is a natural reaction to being deemed “qualified;” however, it eventually breeds discontent and distrust among the very applicants for whom DPL exists to serve. A lottery could match-up eligibility with the pre-determined number of lots that will be available, thereby eliminating all cause for false expectations by those not selected in the lottery.

It would not be necessary to pre-establish the actual number of lottery winners in order to assess the value of this alternative goal; that can be determined during subsequent phases of the master planning process. Nonetheless, the adoption of this aspect of defining eligibility would impose a dramatic impact on the operations of DPL with respect to defining annual operational objectives.

#### ***SECTION 5.1.4 ADVANTAGES AND DISADVANTAGES OF DETERMINING HOMESTEAD ELIGIBILITY THROUGH A LOTTERY***

Alternative Goal A is designed to acknowledge traditional eligibility for homestead lots but restrict processing to only those applications that qualify through other established eligibility requirements and are selected through an annual lottery. The number of applicants to be selected will be adjusted each year to reflect an identical number of developed homestead lots expected to be available on each island within a predetermined (say, 5 years) period of time after the lottery.

The advantages of this alternative goal include:

- Public expectations of DPL can be more closely aligned with guaranteed achievements by DPL.
- Eligible applicants will be given a time-specific response to their applications and applicants not selected need not harbor false expectations about future possibilities of receiving a homestead lot. This may spur a secondary advantage for the private real estate market.
- Continued ability of DPL to impose other restrictions on application processing, such as income level, marital status, etc.
- A significant amount of DPL managerial and staff resources can be diverted from the task of endless applicant processing and inquiry responding to that of homestead planning and development.

The disadvantage of this alternative goal is that it:

- Imposes a permanent digression from the traditional expectations by pre-lottery eligible applicants that every qualified applicant will eventually receive a homestead lot.

## **SECTION 5.2 ALTERNATIVE GOAL B – THE ASSISTED HOUSING PROGRAM**

This alternative goal grows DPL's scope of responsibilities to include typical home development services such as finance and construction consultation services and assistance with the formation of homeowner associations at multi-family housing developments. The primary reason for such an adjustment in DPL's mission is the interpretation of Article XI of the Constitution that the reference to "homestead program" reaches beyond the deceding of a lot and, additionally, embrace's the residential structure to be built on that lot. There is reason to conclude that such assistance is necessary, based on the number of deceded lots which cannot meet the 2-year deadline for completion of construction.

In the event that DPL pursues the multi-family residential housing option, it is likely that consultation assistance will be required for the approved applicants in order to arrange for the construction of housing structures under a horizontal property regime (i.e., "condominium-ize" the property). While this is a common land use and development practice under U.S. property law, the process is not without some complexity. Nonetheless, such processes are easily learned and, with competent legal assistance, this program can be established. This option could benefit from a pilot project specifically designed as a training experience for DPL staff. Also, due to the legal and project administration similarities among all condominium structures, DPL can expect that the first projects will be the hardest to implement.

### **SECTION 5.2.1 ADVANTAGES AND DISADVANTAGES OF DETERMINING HOMESTEAD ELIGIBILITY THROUGH A LOTTERY**

The advantages of this alternative goal include:

- By providing the full slate of homestead development services, DPL will increase the percentage of lot recipients who eventually build a home.
- It is likely that the multi-family housing option could not be successfully implemented without DPL's assistance in managing, organizing and coordinating such projects.

The disadvantages of this alternative goal include:

- DPL must prepare for and undertake a new set of services for its approved applicants, which will require specially trained staff and legal services.

**SECTION 5.3 ALTERNATIVE GOAL C – THE TRADITIONAL HOMESTEAD LOT PROGRAM (WITH OR WITHOUT HOUSING ASSISTANCE) PLUS STIMULATION OF CNMI'S ECONOMIC DEVELOPMENT**

Alternative Goal C is designed to: a) accommodate the traditional homestead lot program, with or without housing assistance, along with commercial leases for DPL revenue enhancement; in addition to b) acknowledge the importance DPL's mandate for providing homestead lots within the context of CNMI's overall economic development and take a proactive role in stimulating the economy through the marketing of those public lands best suited for commercial development. In reality, DPL's current inventory of commercially developed properties already proves the Department's importance in the Commonwealth's economic development.

This alternative would continue to service homestead applications while focusing sizeable attention to the commercial development of public lands. Additionally, this goal could be considered as an interim alternative, implemented only until such time as the CNMI economy becomes more self-sustaining, without substantial reliance on the commercial development of public lands. Further, Alternative Goal C would have the collateral result of increasing DPL revenues for the Department's operations, particularly for survey and development of new homesteads.

***SECTION 5.3.1 THE CNMI ECONOMY AND DPL***

It is irrefutable that any homestead program launched by DPL, regardless of how many lots are decided, is a meaningless pursuit in the context of a failing economy. Without a public revenue base, infrastructure and utilities cannot function; and without a job market, home owners cannot afford to pay mortgages and other essential costs of living. This alternative goal, therefore, makes the inextricable link between the mission of DPL and the health of the CNMI economy.

DPL's commercial leases constitute the real estate backbone of CNMI's economy. Many hotels, golf courses and other commercial enterprises would not exist without DPL-managed properties. This reality, combined with the uncertain economic outlook in the absence of any other economic development strategy, suggests that a program of more, not less, commercial leasing by DPL is needed, provided that such leases assure local employment, grow the CNMI tax base, and augment DPL revenues. Such a program must be closely coordinated with other CNMI authorities that have statutory responsibility for Commonwealth-wide economic development. In the absence of such guidance, however, DPL can unilaterally initiate a commercial lease program designed to grow the CNMI economy.

**SECTION 5.3.2 ADVANTAGES AND DISADVANTAGES OF ALTERNATIVE C GOAL**

The advantages of this alternative goal include:

- Recognizing the value of DPL's commercially-leased properties in growing the CNMI economy will enable the Commonwealth to utilize these resources in a productive manner during this period of transition away from a major garment industry and back to a tourist industry or other economic development opportunity.
- Prudent management of DPL's commercially developed public properties not only promotes economic growth and public revenues through job creation and the purchase of supplies and services, but it also increases DPL revenues for the development of homesteads.

The disadvantages of this alternative goal include:

- Less public lands will be available for homesteading, at least during the next several decades during commercial leasehold periods established under this goal.
- A DPL mission shift to include economic development responsibilities along with its homesteading program will require expanded skill sets within the Department's planning and land administration services.

**SECTION 5.4 SELECTED GOAL**

In a letter dated August 10, 2006, the Secretary of DPL selected Alternative C Goal for this Public Land Use Master Plan, focusing the use of public lands to help stimulate the CNMI economy, along with incorporating traditional homesteading through multi-family development. The Secretary also directed the incorporation of a plan for an assisted housing program.

**CHAPTER 6**  
**DEVELOP AND UPDATE LAND USE PLANNING CRITERIA**  
**(PARTIAL)**

---

This Section presents land use planning criteria for DPL public lands.

**SECTION 6.1            SITE PLANNING CRITERIA FOR PUBLIC LAND USES**

Site planning criteria are required for all proposed public land uses which require the reservation of DPL public lands. Such uses include roads; utilities; major infrastructure facilities such as wastewater treatment plants, power generation plants and landfills; schools, public health clinics; police and fire stations; parks, playgrounds and other public recreation facilities; and general government administration facilities. Such criteria are not provided in the Saipan Comprehensive Land Use Plan and Zoning Law (1993); and in some cases, public land siting criteria have been established by DPL. Nonetheless, all criteria for public land use siting are reviewed and recommended as part of this Plan's work.

DPL's broad mandate for public land use planning necessitates conservative siting criteria for all public facilities, particularly those which require relatively large parcels. Consequently, before reserving additional public lands to meet proposed community facilities, DPL should employ a two-prong review policy. First, DPL should ascertain whether existing reservations of public lands for community facilities are being efficiently utilized. Examples of maximizing land base for public facilities include such measures as adding second and third floors to school and government office buildings; consolidating health and safety operations such as police, fire and public health; promoting facility multi-use such as school-parks, and commercial leasing of privately-owned land and improvements whenever agency budgets permit so. DPL should defer all decisions to reserve additional public land for community facilities until such time as those lands already designated for use are fully and efficiently utilized; and such site reviews by DPL should precede any consideration of reserving additional land for community facilities. Second, wherever possible, CNMI's existing land base for public facilities should be expanded in order to accommodate new growth rather than accommodate new community facility growth by designating non-contiguous parcels.

In sum, DPL should consider new designations of public land for community facilities only after determining that existing parcels are efficiently utilized and there is no option for expanding existing designations of public lands.

**NOTE: THE FOLLOWING LIST OF SITE PLANNING CRITERIA WILL BE RE-SEQUENCED AFTER EACH SECTION IS COMPLETE.**

**SECTION 6.2            SCHOOLS**

Nearly every State has adopted siting requirements for public elementary, middle and high schools, including minimum useable acreage per school facility. These sizes range in size for



states which are generally land-abundant, such as Texas, to those states which are generally land-restricted, such as California.

### **SECTION 6.2.1 TEXAS AND CALIFORNIA CRITERIA**

The Texas Education Association, Council of Educational Policy Planners, has adopted the following siting criteria for public schools.<sup>5</sup>

Elementary - 10 acres plus 1 acre per 100 students  
Middle - 20 acres plus 1 acre per 100 students  
High - 30 acres plus 1 acre per 100 students

In California, the California Department of Education has recently updated its school siting criteria to the following standards.<sup>6</sup>

#### Elementary

<u>Students</u>	<u>Acres</u>
450	9.6
750	13.8
1200	17.6

#### Middle School (with track facilities)

<u>Students</u>	<u>Acres</u>
600	17.4
900	20.9
1200	22.5

#### High School (with track facilities)

<u>Students</u>	<u>Acres</u>
1200	33.5
1800	44.5
2400	52.7

### **SECTION 6.2.2 SCHOOL SITING CRITERIA FOR DPL PUBLIC LAND PLANNING**

Inasmuch as CNMI's pressures for public land allocation meet or exceed those of other municipalities, siting criteria for public education facilities should be at least as conservative as those jurisdictions facing similar pressures. Consequently, subject to conformance with the public land allocation policies discussed in Section A, above,

---

<sup>5</sup> Brady, Jim. Keys to Success – Schools Facilities Primer. PageSouthcrlandPage. Arlington, VA. June 2003

<sup>6</sup> California Department of Education. Guide to School Site Design and Analysis – 2000 Edition. Sacramento. 2000

DPL should adopt the California siting standards for public elementary, middle and high schools.

## SECTION 6.3 PARKS

Public park size standards for small to medium parks are set by the National Recreation and Parks Association (NRPA), and these standards are commonly adopted by most jurisdictions, although many variations exist. The NRPA standards encompass neighborhood, community, metropolitan and regional parks. To those categories, many communities add mini-parks/playgrounds, school parks and sport complexes, for a total of seven park categories. All seven categories are appropriate for Saipan; although all but the regional park are applicable for Tinian and Rota.

### SECTION 6.3.1 PARK SITING CRITERIA FOR DPL PUBLIC LAND PLANNING

#### **Mini-Park**

**Description:** Provides limited recreational opportunities, primarily for pre-school and elementary school children.

**Typical Facilities:** Playground equipment and seating. Picnic tables with grills.

**Service Area:** ¼ mile radius. **Population Served:** Residential neighborhoods

**Acres Required:** Less than 1 acre. 0.5 acres per 1,000 people.

#### **Neighborhood Park**

**Description:** Provides recreational opportunities for all ages of the neighborhood. When possible, neighborhood Parks should be separate facilities, however, they may be located adjacent to elementary schools or linear parks.

**Typical Facilities:** Play apparatus for all ages of children, multi-use paved surfaces, picnic areas with shelters, informal ball fields, walkways, tennis courts, restrooms and landscaping.

**Service Area:** ¼ to ½ mile radius. **Population Served:** 1,000 to 5,000

**Acres Required:** 5 acres per 1,000 (5 acres minimum)

#### **School Park**

**Description:** Joint-use park/school facility.

**Typical Facilities:** Variety of activities, but typically athletic facilities which are used jointly for school and park and recreation purposes.

**Service Area:** Generally conforms to school district. **Population Served:** School district.

**Acres Required:** Same as school campus.

### Community Park

**Description:** Provides recreational facilities for the community to utilize. Facilities should be provided for people of all ages. Should be located on arterial streets and accessible by pedestrians and bicyclists.

**Typical Facilities:** Swimming pools, lighted athletic fields and tennis courts, pedestrian and exercise trails, large picnic areas with shelters, landscaped areas to buffer adjacent developments, areas of natural value and water areas.

**Service Area:** ½ to 3 milc radius. **Population Served:** 15,000 to 20,000

**Acres Required:** 3 acres per 1,000 (20 acres minimum)

### Metropolitan Park

**Description:** To accommodate social, cultural, educational, and physical activities of particular interest to the community.

**Typical Facilities:** Lighted athlctc complex, large swimming pool, nature center, zoo, community center, museum, golf course, historical sites and amphitheater.

**Service Area:** Whole Community. **Population Served:** Varies with usage

**Acres Required:** Varies

### Regional Park

**Description:** Provides extensive areas for passive recreation and regional recreational facilities that compliment urban resources.

**Typical Facilities:** Campgrounds, picnic areas, nature centers, wildlife sanctuaries and golf courses.

**Service Area:** Urban areas. **Population Served:** 50,000 to 100,000

**Acres Required:** 5 acres per 1,000 (250 acres minimum)

**LIST OF LARGE FORMAT MAP EXHIBITS  
IN ATTACHED ROLL**

EXHIBIT		MAP SIZE (INCHES)
2.1-1	CNMI Generalized Island Inventory and Uses	32 X 42
2.2-1	Saipan General Public Land Inventory	32 X 42
2.2-2	Saipan Existing Public Land Use	32 X 42
2.3-1	Tinian General Public Land Inventory	32 X 42
2.3-2	Tinian Existing Public Land Use	32 X 42
2.4-1	Rota General Public Land Inventory	32 X 42
2.4-2	Rota Existing Public Land Use	32 X 42
2.5-1	Anatahan Existing Public Land Use	18 X 24
2.6-1	Alamagan Existing Public Land Use	18 X 24
2.7-1	Pagan Existing Public Land Use	18 X 24
2.8-1	Agrihan Existing Public Land Use	18 X 24

Table 4.2 - 1  
SAIPAN - MPLA HOMESTEAD ELIGIBILITY THROUGH YEAR 2015

Age as of Year 2000 Census	Total	Age 18 or over through 2015	
Under 5 years	5,103	2,552	
5 to 9 years	4,703	4,703	
10 to 14 years	3,801	3,801	
15 to 19 years	3,512	3,512	
20 to 24 years	7,190	7,190	
25 to 34 years	18,529	18,529	
35 to 44 years	11,329	11,329	
45 to 54 years	5,492	5,492	
55 to 59 years	1,088	1,088	
60 to 64 years	748	748	
65 to 74 years	645	645	
75 to 84 years	198	198	
85 years and over	54	54	
		<b>59,841</b>	<b>ELIGIBILITY BY AGE</b>
Ethnic Origin and Race	Total	% Population	
One ethnicity or race			
Carolinian	2,645	4.2	
Chamorro	11,644	18.7	
Two or more races or ethnic groups			
Carolinian and other group(s)	2,018	3.2	
Chamorro and other group(s)	3,727	6	
		<b>32.1</b>	<b>% ELIGIBILITY BY RACE</b>
Age and Race			
@ 32.1% of 59,841		<b>19,209</b>	<b>ELIGIBILITY BY AGE AND RACE</b>
Mortality			
@ 1.9% per year = 25% in 15 years		<b>14,407</b>	<b>ELIGIBILITY BY AGE, RACE AND ADJUSTED FOR MORTALITY</b>
Marital Status			
@ 50% of eligibility by age, race and adjusted for mortality		<b>7,203</b>	<b>ELIGIBILITY BY AGE, RACE, MARRIAGE AND ADJUSTED FOR MORTALITY</b>

Table 4.2 - 2

## TINIAN - MPLA HOMESTEAD ELIGIBILITY THROUGH YEAR 2015

Age as of Year 2000 Census		Age 18 or over through 2015	
Under 5 years	321	161	
5 to 9 years	350	350	
10 to 14 years	288	288	
15 to 19 years	209	209	
20 to 24 years	210	210	
25 to 34 years	965	965	
35 to 44 years	702	702	
45 to 54 years	346	346	
55 to 59 years	41	41	
60 to 64 years	46	0	
65 to 74 years	45	0	
75 to 84 years	13	0	
85 years and over	4	0	
		<b>3,272</b>	<b>ELIGIBILITY BY AGE</b>
Ethnic Origin and Race	Total	% Population	
One ethnicity or race			
Carolinian	3	0.1	
Chamorro	1,320	37.3	
Two or more races or ethnic groups	505		
Carolinian and other group(s)	66	1.9	
Chamorro and other group(s)	386	10.9	
		<b>50.2</b>	<b>% ELIGIBILITY BY RACE</b>
<b>Age and Race</b>			
@ 50.2% OF 3,272		<b>1,642</b>	<b>ELIGIBILITY BY AGE AND RACE</b>
<b>Mortality</b>			
@ 1.9% per year = 25% in 15 years		<b>1,232</b>	<b>ELIGIBILITY BY AGE AND RACE AND ADJUSTED FOR MORTALITY</b>
<b>Marital Status</b>			
@ 50% of eligibility by age, race and adjusted for mortality		<b>616</b>	<b>ELIGIBILITY BY AGE, RACE, AND MARRIAGE AND ADJUSTED FOR MORTALITY</b>

Table 4.2 - 3

**ROTA - MPLA HOMESTEAD ELIGIBILITY THROUGH YEAR 2015**

<b>Age as of Year 2000 Census</b>	<b>Total</b>	<b>Age 18 or over through 2015</b>	
Under 5 years	368	184	
5 to 9 years	367	367	
10 to 14 years	287	287	
15 to 19 years	220	220	
20 to 24 years	166	166	
25 to 34 years	686	686	
35 to 44 years	619	619	
45 to 54 years	369	369	
55 to 59 years	70	70	
60 to 64 years	43	0	
65 to 74 years	58	0	
75 to 84 years	22	0	
85 years and over	8	0	
		<b>2,968</b>	<b>ELIGIBILITY BY AGE</b>
<b>Ethnic Origin and Race</b>	<b>Total</b>	<b>% Population</b>	
One ethnicity or race			
Carolinian	4	0.1	
Chamorro	1,780	54.2	
Two or more races or ethnic groups	313		
Carolinian and other group(s)	40	1.2	
Chamorro and other group(s)	270	8.2	
		<b>63.7</b>	<b>% ELIGIBILITY BY RACE</b>
<b>Age and Race</b>			
@ 63.7% OF 2,968		<b>1,891</b>	<b>ELIGIBILITY BY AGE AND RACE</b>
<b>Mortality</b>			
@ 1.9% per year = 25% in 15 years		<b>1,418</b>	<b>ELIGIBILITY BY AGE AND RACE AND ADJUSTED FOR MORTALITY</b>
<b>Marital Status</b>			
@ 50% of eligibility by age, race and adjusted for mortality		<b>709</b>	<b>ELIGIBILITY BY AGE, RACE, AND MARRIAGE AND ADJUSTED FOR MORTALITY</b>





EXHIBIT 1.6-2 PLUPU EXISTING LAND USE CLASSIFICATION/DATA DEFINITION

LAND_USE_CLASSIFICATION	LEVEL_1	LEVEL_2	LEVEL_3	LEVEL_4
<b>URBAN OR BUILD-UP LAND</b>	1	1	1	1
Residential	1	11	11	11
Single-Family	1	11	11	11
Single-Family-FVHP	1	11	11	11.11
Multi-Family	1	11	11.2	11.2
Group-Quarters or Barracks	1	11	11.3	11.3
Construction Industries	1	12	12	12
General construction	1	12	12.1	12.1
Heavy construction	1	12	12.2	12.2
Special trade construction	1	12	12.3	12.3
<b>MANUFACTURING</b>	1	13	13	13
Food-and-kindred-products	1	13	13.1	13.1
Rubber-and-miscellaneous-plastics-products	1	13	13.11	13.11
Stone-clay-and-glass-products	1	13	13.12	13.12
Transportation-equipment	1	13	13.13	13.13
Miscellaneous-manufacturing-industries	1	13	13.14	13.14
Textile-mill-products	1	13	13.2	13.2
Apparel-and-other-textile-products	1	13	13.3	13.3
Lumber-and-wood-products	1	13	13.4	13.4
Furniture-and-fixtures	1	13	13.5	13.5
Paper-and-allied-products	1	13	13.6	13.6
Printing-and-publishing	1	13	13.7	13.7
Chemicals-and-allied-products	1	13	13.8	13.8
Petroleum-and-coal-products	1	13	13.9	13.9
<b>TRANSPORTATION-COMMUNICATION-UTILITIES</b>	1	14	14	14
Radio/TV stations	1	14	14.1	14.1
Stevedoring	1	14	14.11	14.11
Fuel storage	1	14	14.12	14.12
Telephone Exchange	1	14	14.13	14.13
Antenna sites	1	14	14.2	14.2
Cable corridors	1	14	14.3	14.3
Power plants	1	14	14.4	14.4
Treatment plants	1	14	14.5	14.5
Water well (private)	1	14	14.6	14.6
Warehouses/storages	1	14	14.7	14.7
Air freight	1	14	14.8	14.8
Sea freight	1	14	14.9	14.9
<b>WHOLESALE TRADE</b>	1	15	15	15
Durable-goods	1	15	15.1	15.1
Nondurable-goods	1	15	15.2	15.2
<b>RETAIL TRADE</b>	1	16	16	16
Use-merchandise-stores	1	16	16	16
Hardware stores	1	16	16.1	16.1
Drug-stores-and-propriety-stores	1	16	16.11	16.11
Miscellaneous-shopping-good-stores	1	16	16.12	16.12
Sporting-goods-and-bicycle-stores	1	16	16.12	16.121
Book-stores	1	16	16.12	16.122
Stationery-stores	1	16	16.12	16.123
Jewelry-stores	1	16	16.12	16.124

EXHIBIT 1.6-2 PLUPU EXISTING LAND USE CLASSIFICATION/DATA DEFINITION

LAND_USE_CLASSIFICATION	LEVEL_1	LEVEL_2	LEVEL_3	LEVEL_4
Gift-novelty-and-souvenir-shops	1	16	16.12	16.125
Luggage-and-leather-goods-stores	1	16	16.12	16.126
Sewing-needlework-and-piece-goods	1	16	16.12	16.127
Retail-nurseries and garden stores	1	16	16.2	16.2
General-merchandise-stores	1	16	16.3	16.3
Food-stores	1	16	16.4	16.4
Automotive-dealers	1	16	16.5	16.5
Gasoline-service-stations	1	16	16.6	16.6
Apparel-and-accessory-stores	1	16	16.7	16.7
Furniture-and-home-furnishing stores	1	16	16.8	16.8
Eating-and-Drinking-places	1	16	16.9	16.9
Eating places	1	16	16.9	16.91
Drinking-places	1	16	16.9	16.92
SERVICE INDUSTRIES	1	17	17	17
Passenger-transportation-arrangement	1	17	17.1	17.1
Hotels-and-other-lodging-places	1	17	17.2	17.2
Personal-services	1	17	17.3	17.3
Laundry-cleaning-and-garment-services	1	17	17.3	17.31
Beauty-shops	1	17	17.3	17.32
Barber-shops	1	17	17.3	17.33
Funeral-service	1	17	17.3	17.34
Miscellaneous-personal services	1	17	17.3	17.35
Business-services	1	17	17.4	17.4
Advertising	1	17	17.4	17.41
Credit-reporting-and-collection	1	17	17.4	17.42
Mailing-reproduction-stenographic	1	17	17.4	17.43
Services-to-buildings	1	17	17.4	17.44
Miscellaneous-equipment-rental-and-leasing	1	17	17.4	17.45
Personnel-supply-services	1	17	17.4	17.46
Computer-and-data-processing-services	1	17	17.4	17.47
Miscellaneous-business-services	1	17	17.4	17.48
Auto-repair-services-parking	1	17	17.5	17.5
Legal-services	1	17	17.9	17.5
Automotive-rentals-no-drivers	1	17	17.5	17.51
Automotive-repair-shops	1	17	17.5	17.52
Top-and-body-repair-and-paint-shops	1	17	17.5	17.52
Miscellaneous-repair-services	1	17	17.6	17.6
Museums-botanical-zoological-gardens	1	17	17.91	17.6
Electrical-repair-shops	1	17	17.6	17.61
Motion-pictures	1	17	17.7	17.7
Amusement-and-recreation-services	1	17	17.8	17.8
Producers-orchestras-entertainers	1	17	17.8	17.81
Bowling-centers	1	17	17.8	17.82
Commercial-sports	1	17	17.8	17.83
Miscellaneous-amusement-recreation-services	1	17	17.8	17.84
Poker Parlor	1	17	17.8	17.85
Engineering-and-management-services	1	17	17.92	17.92
Church	1	17	17.93	17.93
Cemetery	1	17	17.94	17.94
Parking	1	17	17.95	17.95

EXHIBIT 1.6-2 PLUPU EXISTING LAND USE CLASSIFICATION/DATA DEFINITION

LAND_USE_CLASSIFICATION	LEVEL_1	LEVEL_2	LEVEL_3	LEVEL_4
School	1	17	17.96	17.96
PUBLIC FACILITIES	1	18	18	18
Public-safety-facilities	1	18	18.1	18.1
Central-station	1	18	18.1	18.11
Substations	1	18	18.1	18.12
Boating-safety	1	18	18.1	18.13
Training-sites	1	18	18.1	18.14
Prison	1	18	18.1	18.15
Maintenance-support-sites	1	18	18.1	18.16
Public-health-facilities	1	18	18.2	18.2
Hospital	1	18	18.2	18.21
Clinics	1	18	18.2	18.22
Health support facility	1	18	18.2	18.23
Public Mental Health	1	18	18.2	18.24
Educational-facilities	1	18	18.3	18.31
Head-start	1	18	18.3	18.32
Elementary school	1	18	18.3	18.33
Middle/Junior high school	1	18	18.3	18.34
High-school	1	18	18.3	18.35
Special school	1	18	18.3	18.36
College	1	18	18.3	18.37
Central-office	1	18	18.3	18.38
Education-support-facility	1	18	18.3	18.39
Parks-recreation-facilities	1	18	18.4	18.4
Historical-tourist-site	1	18	18.4	18.41
Senior Center	1	18	18.4	18.411
Youth Center	1	18	18.4	18.412
General Park	1	18	18.4	18.413
Small Boat Ramp-Pier	1	18	18.4	18.413
DYS Detention Center	1	18	18.4	18.414
Multi-Sport Complex	1	18	18.4	18.414
Community Social Hall	1	18	18.4	18.415
Beach-park	1	18	18.4	18.42
Community Center-MPSCourt	1	18	18.4	18.43
Community Multi-Purpose Center	1	18	18.4	18.44
Baseball-field	1	18	18.4	18.45
Track-field	1	18	18.4	18.46
Basketball-Tennis Court	1	18	18.4	18.47
Playground	1	18	18.4	18.48
Swimming-pool	1	18	18.4	18.49
Judicial-center	1	18	18.6	18.6
Legislative-center	1	18	18.7	18.7
General-government-service-facility	1	18	18.8	18.8
Heavy Equipment Maint/Storage	1	18	18.81	18.81
Solid Waste Transfer Station	1	18	18.82	18.82
Junk Yard	1	18	18.83	18.83
Gov Warehouse & Storage	1	18	18.84	18.84
Capitol Hill Support Complex	1	18	18.85	18.85
Navy Hill Complex	1	18	18.86	18.86
Civic Center Complex	1	18	18.87	18.87

EXHIBIT 1.6-2 PLUPU EXISTING LAND USE CLASSIFICATION/DATA DEFINITION

LAND USE CLASSIFICATION	LEVEL_1	LEVEL_2	LEVEL_3	LEVEL_4
Public Library	1	18	18.88	18.88
CPA Seaport	1	18	18.9011	18.9011
CPA-Seaport-Dock	1	18	18.9011	18.90111
CPA-Seaport-Warehouse-Storage	1	18	18.9011	18.90112
CPA-Seaport-Fuel Storage	1	18	18.9011	18.90113
CPA-Seaport-General Services	1	18	18.9011	18.90114
CPA-Seaport-Open Space	1	18	18.9011	18.90115
CPA-Seaport-Access Road	1	18	18.9011	18.90116
CPA Airport	1	18	18.9012	18.9012
CPA Airport and related activities	1	18	18.9012	18.90121
CPA Airport support activities	1	18	18.9012	18.90122
CPA Airport open space	1	18	18.9012	18.90123
CPA Airport agricultural	1	18	18.9012	18.90124
NMRF	1	18	18.902	18.902
NMHC-OFFICE	1	18	18.903	18.903
CUC Water Reservoir/Booster Station	1	18	18.9	18.91
CUC Water Well	1	18	18.9	18.92
CUC Power Plant	1	18	18.9	18.93
CUC WWT Plant	1	18	18.9	18.94
CUC Sewer LS	1	18	18.9	18.95
CUC Power Sub-Station	1	18	18.9	18.96
CUC Power Pole	1	18	18.9	18.97
CUC Support Service	1	18	18.9	18.98
CUC Fuel Storage-Pipeline	1	18	18.9	189.8
<b>TOURISM</b>	2	2	2	2
Resort-hotel	2	21	21	21
Resort-golf-course complex	2	22	22	22
Golf-course	2	23	23	23
Tourist-attraction-center-shopping	2	24	24	24
<b>AGRICULTURAL</b>	3	3	3	3
Crop-land	3	31	31	31
Grazing-land	3	32	32	32
Plantation-orchard	3	33	33	33
Poultry	3	33	33	33
Animal husbandry	3	34	34	34
Mixed agricultural uses	3	35	35	35
Agri-Structure	3	36	36	36
Agri-Clearing	3	37	37	37
<b>NR-EXTRACTION-ALTERATION</b>	4	4	4	4
Quarry	4	41	41	41
Quarry-rock-processing-mixing	4	42	42	42
Landfill	4	43	43	43
Water wells	4	44	44	44
<b>NR-CONSERVATION-PROTECTION</b>	5	5	5	5
Designated General Conservation	5	51	51	51
Designated Wildlife Conservation	5	52	52	52
Designated Forest Conservation	5	53	53	53
Designated Historical Protection Conservation	5	54	54	54
Designated Wetland Conservation	5	55	55	55
Designated Marine Conservation-Sanctuary	5	56	56	56

EXHIBIT 1.6-2 PLUPU EXISTING LAND USE CLASSIFICATION/DATA DEFINITION

LAND_USE_CLASSIFICATION	LEVEL_1	LEVEL_2	LEVEL_3	LEVEL_4
Designated Ponding Basin	5	57	57	57
Designated Shoreline Conservation	5	58	58	58
Designated Natural Drainage	5	59	59	59
<b>UNDEVELOP-SITE IN NATURAL STATE</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>
UNDEVELOP-SITE-OPEN GRASSLAND	6	6.1	6.1	6.1
UNDEVELOP-SITE-OPEN GRASSLAND-TREES	6	6.2	6.2	6.2
UNDEVELOP-SITE-CONTIGEOUS TREES	6	6.3	6.3	6.3
Boys Scout Area	6	18	18.416	18.416
<b>ROAD</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>
Primary Road	7	71	71	71
Secondary Road	7	72	72	72
Access Road	7	73	73	73
Urban Street	7	74	74	74
Shoreline access	7	75	75	75
Pland-Encroachment	8	8	8	8
PLAND FVHP	9	9	9	9
USGOV	1000	1000	1000	1000
USGOV Park	1000	1001	1001	1001
USGOV Military Facility	1000	1002	1002	1002
USGOV Radio Antenna	1000	1003	1003	1003
USGOV Military Training	1000	1004	1004	1004
Verify Parcel	5000	5000	5000	5000
Verify Pland-DLU	5002	5002	5002	5002
Verify Wetland-Acquisition	5003	5003	5003	5003
Verify Ponding-Acquisition	5004	5004	5004	5004
Verify if Pland Lease or Permit	5005	5005	5005	5005
Verify-If-Pland	5006	5006	5006	5006
Verify-if-Pvland	5007	5007	5007	5007
Verify-Pland-Survey	5008	5008	5008	5008
Verify-ELU in Field	5009	5009	5009	5009