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Coastal Zone Information Center

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COASTAL ZONE
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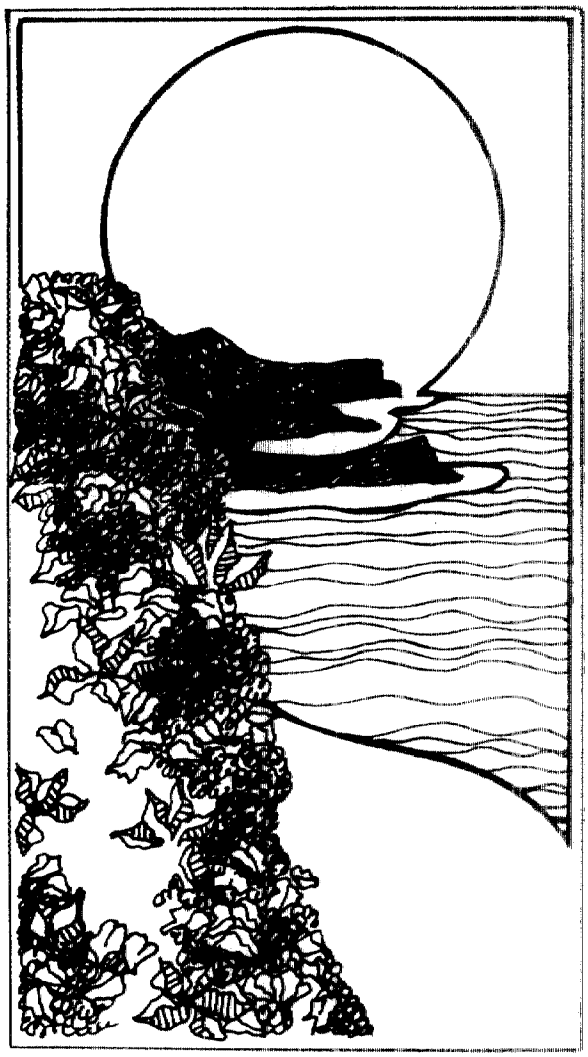
Guam Coastal Management Program and Final Environmental Impact Statement

BUREAU OF PLANNING
GOVERNMENT OF GUAM

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management



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U.S. National Oceanic and Atmospheric Administration
Office of Coastal Zone Management

INFORMATION FOR READERS

PURPOSE

This document is both a final environmental impact statement (FEIS) and a program document on the Guam Coastal Management Program. It is being circulated by the U. S. Department of Commerce for public and government agency review. Part Two is the Program document, and was written by the Guam Coastal Management Program, Bureau of Planning. The Summary, Part One, and Parts Three through Ten were prepared by the U. S. Department of Commerce, Office of Coastal Zone Management. An attachment has been added to the FEIS in which specific responses have been developed by OCZM to comments by various reviewers of the Draft Environmental Impact Statement (DEIS) circulated in March 1978. These responses, in addition to citing where changes have been made in the program document, provide further clarification on specific questions and concerns raised by reviewers of the DEIS. For this reason, the Attachment forms an important part of the FEIS.

HOW TO USE THIS DOCUMENT

Readers who are not familiar with the EIS standard format for coastal management programs will want to examine the following pages as aids to the reader:

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As mentioned in the introductory pages of the DEIS, the appendices to the Program (Volume 2) are not included with this FEIS. Please use your copy of Volume 2 of the Program/DEIS if you need to refer to the Appendices.

Additional copies of the Appendices are available from the Office of Coastal Zone Management and the Guam Bureau of Planning.

WHERE TO ASK QUESTIONS ABOUT THIS DOCUMENT

Questions on this FEIS can be answered in Washington by Peter Coffey, Pacific Region Assistant Manager of the Office of Coastal Zone Management (202/254-7100) and in Guam by Robin Grove, Program Manager, Guam Coastal Management Program (671/477-9502).

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U.S. National Oceanic and Atmospheric Administration
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UNITED STATES DEPARTMENT OF COMMERCE

FINAL ENVIRONMENTAL IMPACT STATEMENT

AND

COASTAL MANAGEMENT PROGRAM

FOR THE

TERRITORY OF GUAM

Prepared by:

Office of Coastal Zone Management
National Oceanic and Atmospheric
Administration
Department of Commerce
3300 Whitehaven Street, N.W.
Washington, D. C. 20235

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Bureau of Planning
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July 1979

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Charleston, SC 29405-2413

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Appendix 6 - Guam Environmental Protection Agency Programs and Responsibilities

Appendix 7 - Background Materials

(As noted in the introductory pages of the Draft EIS on the GCMP, the appendices circulated with the DEIS will not be reproduced with the FEIS but are available from, the GCMP or OCZM.)

Summary

( ) Draft Environmental Impact Statement

(x) Final Environmental Impact Statement

1. Type of Action

The Federal action for which this EIS has been prepared is the proposed approval of the Territory of Guam Coastal Management Program.

(x) Administrative ( ) Legislative

2. Brief Description of the Proposed Action

It is proposed that the Assistant Administrator for Coastal Zone Management approve the Coastal Management Program submitted by the Territory of Guam under Public Law 92-583, the Coastal Zone Management Act, as amended (CZMA). Approval of the Program would initiate implementation of the Program using Federal grant funds available to Guam under Section 306 of the CZMA. Approval of the Program would further require that future proposed Federal actions be consistent with the approved Program to the extent practicable.

3. Summary of Environmental Impacts and Adverse Environmental Effects

Approval and implementation of the Program will make Guam eligible to receive grant funds to implement laws and regulations which will limit certain land and water uses in parts of Guam, while promoting and encouraging development in other parts of the island. Program implementation may enhance some property values while reducing others, may limit or prohibit the siting of housing and commercial developments near environmentally sensitive island resources and may affect the methods of resources extraction as well as the amounts which can be taken. The purpose of the Coastal Management Program is to provide an improved decision-making process for determining land and water uses which will lead to increased long-term productivity of the Territory's resources for the benefit of both residents and visitors.

4. Alternatives Considered

Alternatives to the proposed action fall into two categories: those available to the Territory of Guam once the Coastal Management Program has been submitted for approval, and those available to the Assistant Administrator which would involve Program approval, or a delay or denial of approval.

The Territory of Guam has two alternatives:

1. To withdraw its application for approval of the Coastal Management Program and continue program development or attempt to use other sources of funding to meet the objectives of the Territorial Coastal Management Program;

2. To amend the Coastal Management Program to resolve any issues or fulfill any identified deficiencies.

Of the three alternatives available to the Assistant Administrator delay or denial would be taken only if the Program did not meet the legislative requirements of the CZMA or if "preliminary approval" of the Coastal Management Program were considered a more acceptable course of action.

The alternatives considered by the Bureau of Planning while developing the Coastal Management Program are presented in Part II, Section C of the Program document.

5. DISTRIBUTION Comments have been requested from the following Federal, State and local agencies and other parties:

Federal Agencies

Advisory Council on Historic Preservation
Department of Agriculture
Department of Commerce
Department of Defense
Department of Energy
Department of Health, Education & Welfare
Department of Housing & Urban Development
Department of the Interior
Department of Justice
Department of Labor
Department of Transportation
  U.S. Coast Guard
Environmental Protection Agency
Federal Emergency Management
Federal Energy Regulatory Commission
General Services Administration
Marine Mammal Commission
Nuclear Regulatory Commission

National Interest Groups

A.M.E.R.I.C.A.N.
AFL-CIO
American Association of Port Authorities
American Bar Association
American Bureau of Shipping
American Farm Bureau Federation

American Fisheries Society
American Forest Institute
American Gas Association
American Hotel and Motel Association
American Industrial Development Council
American Institute of Architects
American Institute of Merchant Shipping
American Institute of Planners
American Littoral Society
American Mining Congress
American Oceanic Organization
American Petroleum Institute
American Shore and Beach Preservation Association
American Society of Civil Engineers
American Society of Landscape Architects, Inc.
American Society of Planning Officials
American Water Resources Association
American Waterways Operators
Amoco Production Company
Ashland Oil, Inc.
Associated General Contractors of America
Association of Oil Pipe Lines
Atlantic Richfield Company
Atlantic States Marine Fisheries Commission
Atomic Industrial Forum
Barrier Islands Coalition
Boating Industry Association
Center for Law and Social Policy
Center for Natural Areas
Center for Urban Affairs
Center for Urban & Regional Resources
Chamber of Commerce of the United States
Chevron U.S.A., Inc.
Cities Service Company
City Service Oil Company
Coastal States Organization
Conservation Foundation
Continental Oil Company
Council of State Governments
Council of State Planning Agencies
The Cousteau Society
Earth Metabolic Design Laboratories, Inc.
Edison Electric Institute
El Paso Natural Gas Co.
Environmental Policy Center
Environmental Defense Fund, Inc.
Environmental Law Institute
EXXON Company, U.S.A.
Friends of the Earth
Getty Oil Company

Great Lakes Basin Commission
Gulf Energy and Minerals, U.S.
Gulf Oil Company
Gulf Refining Company
Gulf South Atlantic Fisheries Development Foundation
Independent Petroleum Association of America
Industrial Union of Marine & Shipbuilding Workers of America
Institute for the Human Environment
Institute for Marine Studies
Interstate Natural Gas Association of America
Izaak Walton League
Lake Michigan Federation
League of Conservation Voters
League of Women Voters Education Fund
Marathon Oil Company
Marine Technology Society
Mobil Oil Corporation
Mobil Exploration & Producing, Inc.
Murphy Oil Company
National Academy of Engineering
National Association of Conservation Districts
National Association of Counties
National Association of Dredging Contractors
National Association of Electric Companies
National Association of Engine & Boat Manufacturers
National Association of Home Builders
National Association of Realtors
National Association of Regional Councils
National Association of State Boating Law Administrators
National Association of State Park Directors
National Audubon Society
National Boating Federation
National Canners Association
National Coalition for Marine Conservation, Inc.
National Commission on Marine Policy
National Conference of State Legislatures
National Environmental Development Association
National Farmers Union
National Federation of Fisherman
National Fisheries Institute
National Forest Products Association
National Governors Association
National League of Cities
National Ocean Industries Association
National Parks and Conservation Association
National Petroleum Council
National Petroleum Refiners Association

National Realty Committee
National Recreation and Park Association
National Research Council
National Science Foundation
National Science Teachers Association
National Shrimp Congress
National Society of Professional Engineers
National Wildlife Federation
National Waterways Conference
Natural Gas Pipeline Company of America
Natural Resources Defense Council
The Nature Conservancy
Nautilus Press
New England River Basin Commission
North Atlantic Ports Association
Outboard Marine Corporation
Resources for the Future
Rice University Center for Community Design and Development
Shell Oil Company
Shellfish Institute of North America
Shipbuilders Council of America
Sierra Club
Skelly Oil Company
Society of Industrial Realtors
Society of Real Estate Appraisers
Soil Conservation Society of America
Southern California Gas Company
Sport Fishing Institute
Standard Oil Company of Ohio
Sun Company, Inc.
Tenneco Oil Company
Texaco, Inc.
Texas A & M University
United Brotherhood of Carpenters & Joiners of America
Union Oil Company of California
Urban Research and Development Association, Inc.
U.S. Conference of Mayors
U.S. Power Squadrons
Virginia Marine Resources Commission
Water Pollution Control Federation
Water Transport Association
Western Oil and Gas Association
Wildlife Management Institute
The Wildlife Society
World Dredging Association

Territory

Governor
Attorney General
Department of Administration
Department of Agriculture
Department of Commerce
Department of Land Management
Department of Libraries and Museums
Department of Parks and Recreation
Department of Public Works
Guam Airport Authority
Guam Economic Development Authority
Guam Energy Office
Guam Environmental Protection Agency
Guam Housing and Urban Renewal Authority
Guam Power Authority
Guam Visitors Bureau
Office of the Suruhanu
Port Authority of Guam
Public Utility Agency of Guam
Water Resources Research Center
Bureau of Budget and Management Research
Committee on Manpower Resources and Economic Development
Territorial Planning Commission
Marine Laboratory, University of Guam
Micronesian Area Research Center, University of Guam
Fifteenth Guam Legislature
Guam Chamber of Commerce
Guam Science Teachers Association
Guam Surfing Association
Guam Shell Club
Marianas Yacht Club
Guam Society of Professional Engineers
Pacific Architects and Engineers, Inc.
Marianas Divers Club
Guam Fisherman's Cooperation
Ventura and Associates
Trans-Asia Engineering Associates
Guam Hotel Owners Association
Pacific Daily News

Other Parties

Mailed upon request

Questions concerning this document may be addressed to:

Pacific Regional Manager
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3300 Whitehaven Street, N.W.
Washington, D.C. 20235

Phone: 202/254-7100

PART ONE: INTRODUCTION

PART ONE: INTRODUCTION

A. The Federal Coastal Zone Management Act

In response to intense pressure and because of the importance of coastal areas of the United States, Congress passed the Coastal Zone Management Act (P.L. 92-583)(CZMA) which was signed into law on October 27, 1972. The Act authorized a Federal grant-in-aid program to be administered by the Secretary of Commerce, who in turn, delegated this responsibility to the National Oceanic and Atmospheric Administration's (NOAA) Assistant Administrator for Coastal Zone Management, who heads the Office of Coastal Zone Management (OCZM).

The Coastal Zone Management Act of 1972 was developed from a series of studies on the coastal zone and its resources. National interest can be traced from the Committee on Oceanography of the National Academy of Sciences (NASCO) 12-volume report, "Oceanography 1960-1970" (1959), to the report of the Commission on Marine Science, Engineering and Resources (1969), which proposed a Coastal Management Act which would "provide policy objectives for the coastal zone and authorize Federal grants-in-aid to facilitate the establishment of State Coastal Zone Authorities empowered to manage the coastal waters and adjacent land." The National Estuarine Pollution Study (1969), authorized by the Clean Water Restoration Act of 1966 and the National Estuary Study authorized by the Estuarine Areas Study Act of 1968 further documented the importance of and the conflicting demands upon our Nation's coasts. These reports stressed the need to protect and wisely use the important national resources contained in the coastal zone and concurred that a program designed to promote the rational protection and management for our coastal zone was necessary.

The Coastal Zone Management Act of 1972 was substantially amended on July 26, 1976, (P.L. 94-370). The Act and its 1976 amendments affirm a national interest in the effective protection and careful development of the coastal zone, by providing assistance and encouragement to coastal States (and Territories of the U.S.) to develop and implement national programs for managing their coastal areas. The CZMA opens by stating "(t)here is a national interest in the effective management, beneficial use, protection, and development of the coastal zone" (Section 302(a)). The statement of Congressional findings goes on to describe how competition for the utilization of coastal resources, brought on by the increased demands of population growth and economic expansion, has led to the degradation of the coastal environment, including the "loss of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems, decreasing open space for public use, and shoreline erosion." The CZMA then states "(t)he key to more effective protection and use of the land and water resources of the coastal zone is to encourage states [and U.S. territories] to exercise their full authority

over the land and waters in the coastal zone by assisting [them]. . . in developing land and water use programs. . .for dealing with [coastal] land and water use decisions of more than local significance" (Section 302(h)).

While local governments and Federal agencies are required to cooperate and participate in the development of management programs, the State level of government is given the central role and responsibility for this process. Financial assistance grants are authorized by the CZMA to provide States with the means of achieving these objectives and policies. Under Section 305, 30 coastal States which border on the Atlantic or Pacific Oceans, Gulf of Mexico, and the Great Lakes, and five U.S. territories are eligible to receive grants from NOAA for 80 percent of the costs of developing coastal management programs.

Broad guidlines and the basic requirements of the CZMA provide the necessary direction to States for developing coastal management programs. These guidelines and requirements for program development and approval are contained in 15 CFR Part 923, as raised and published March 1, 1978, in in the Federal Register. In summary, the requirements for program approval are that a State develop a management program which:

(1) Identifes and evaluates those coastal resources recognized in the Act that require management or protection by the State;

(2) Reexamines existing policies or develops new policies to manage these resources. These policies must be specific, comprehensive and enforceable, and must provide an adequate degree of predictability as to how coastal resources will be managed,

(3) Determines specific uses and special geographic areas that are to be subject to the management program, based on the nature of identified coastal concerns. Uses and areas to be subject to management should be based on resource capability and suitability analyses, socio-economic considerations and public preferences;

(4) Identifies the inland and seaward areas subject to the management program;

(5) Provides for the consideration of the national interest in the planning for and siting of facilities that meet more than local requirements; and

(6) Includes sufficient legal authorities and organizational arrangements to implement the program and to insure conformance to it.

In arriving at these substantive aspects of the management program, States are obliged to follow an open process which incolves providing information to and considering the interests of the general public, special interest groups, local governments, and regional, State, interstate and Federal agencies.

Section 305 of the CZMA authorizes a maximum of four annual grants to develop a coastal management program. To date, Guam has received nearly $702,000 in program development funds. After developing a management program, the State (territory) may submit it to the Secretary of Commerce (or her representative in this case, the Assistant Administrator of NOAA for Coastal Zone Management) for approval pursuant to Section 306 of the CZMA. If approved, the State is then eligible for annual grants under Section 306 to implement its management program. If a program has deficiencies which need to be remedied or has not received approval by the time Section 305 program development grants have expired, a State may be eligible for preliminary approval and additional funding under Section 305(d).

Section 307 of the Act stipulates that Federal agency actions shall be consistent, to the maximum extent practicable, with approved management programs. Section 307 further provides for mediation by the Secretary of Commerce when a serious disagreement arises between a Federal agency and a coastal State with respect to a Federal consistency issue.

Section 308 of the CZMA contains provisions for grants and loans to coastal States to enable them to plan for and respond to onshore impacts resulting from coastal energy activities. To be eligible for assistance under Section 308, coastal States must be receiving Section 305 or 306 grants, or, in the Secretary's view, be developing a management program consistent with the policies and objectives contained in Section 303 of the CZMA. Guam has utilized $33,000 of 308 funds to plan for energy development impacts, analyses of any super port facilities, and investigation into the economic, social, or environmental consequences of the siting, construction and operation of an Ocean Thermal Energy Conversion (OTEC) facility.

Section 309 allows the Secretary to make grants to States to coordinate, study, plan, and implement interstate coastal management programs.

Section 310 allows the Secretary to conduct a program of research, study, and training to support State management programs. The Secretary may also make grants to States to carry out research studies and training required to support their programs.

Section 315 authorizes grants to States to acquire lands for access to beaches and other public coastal areas of environmental, recreational, historical, aesthetic, ecological, or cultural value, and for the preser-

vation of islands, in addition to the estuarine sanctuary program to preserve a representative series of undisturbed estuarine areas for long-term scientific and educational purposes.

B. Summary of Guam's Coastal Management Program

This section summarizes the coastal problems, issues and conflicts confronting the Territory of Guam, and differences the coastal management program will make. These topics are fully discussed in subsequent parts of this document.

Being an island with a delicate ecosystem -- the land is directly linked to the sea and affects the ocean or is affected by it -- all of Guam is considered to be the coastal zone (with the exception of excluded Federal lands).

While the Territory of Guam has existing laws and regulations designed to protect the island's natural resources, both renewable and non-renewable, the Guam Bureau of Planning recognized that administration of existing zoning laws did not adequately provide for protection of a wide range of sensitive lands and that interpretation and enforcement of these codes has not always been carried out in a comprehensive or consistent manner. Similarly, the reduction of the Seashore Reserve Area from 100 meters to 10 meters from high water illustrated the need for a comprehensive and enforceable approach to managing coastal resources.

A system was needed to administer and enforce Guam's laws related to land use and resources management that would sustain needed economic development without depleting natural resources essential to this growth. There is also a need to quantify the resource base to measure changes and determine when man's activities may produce unacceptable long-term impacts. In such a way, appropriate mitigation measures can be developed and implemented before resources are irretrievably lost.

In 1975, the Governor of Guam approved a request for matching funds to begin the planning phase and Federal funds were allocated for Guam's Coastal Management Program.

The program establishes new coastal policies, rules, responsibilities, obligations and relationships, but relies principally on existing statutory authorities and controls for implementation. The basis of the program is P.L. 12-200 enacted by the Guam Legislature in January 1975. The Act created a Central Planning Council (CPC), the Bureau of Planning as staff to the Council, and required the development of a Comprehensive Development Plan. The Bureau of Planning was designated by the Governor to administer the Guam Coastal Management Program and directed through Executive Orders to propose coastal regulations and policies to the CPC. Having adopted these policies the CPC has had them included in the

Comprehensive Development Plan and also in Guam's Land-Use Plan and both have been endorsed by the Governor.

Since there is no local government in the Territory, Guam's management program is characterized by direct administration by the Territory (Technique B, 15 CFR 923.41). The policies utilized are identified in the Program Section in Chapter I, with the full complement of major authorities for the program cited in Table 1, and explained in detail in Chapter VI of the Program Section (Part II).

New programs and mechanisms developed by the Bureau of Planning as part of its Coastal Management Program include:

1. A land-use districting system, guiding development and future zoning through designation of urban, rural, agriculture, and conservation districts by the Territorial Planning Commission (Executive Order 78-23)

2. Rules and regulations for protection of wetlands and management of flood hazard areas as areas requiring special management attention (areas of particular concern)(Executive Orders 78-20 and 78-21)

3. Guam's Land Use Policies, effected through Executive Order 78-37, which provide overall guidance to the government and people of Guam concerning land and water use.

Federal approval of the program is essential for Guam in order to fulfill Territorial objectives for effective management of the island's resources. If these objectives are met, the effects on Guam's lifestyle and appearance will be varied and significant. The size of the island magnifies the effects of unsystematic utilization and depletion of its natural resources, for the total supply is strictly limited. Given the competition for land and water use for agriculture, freshwater supply, urban development, conservation areas and historic preservation, and the potential consequences on coastal water resources from each of these activities, a great incentive exists for effective management. In essence, there is less room for error on an island.

How the Guam Coastal Management Program Meets the Requirements of the Coastal Zone Management Act

Requirements	Sections of Approval Regulations	Location in Pro. Document (Chapter)
Sec. 306(a) which includes the requirements of Sec. 305:		
305(b)(1): Boundaries.	923.31, 923.32 923.33, 923.34	IV
305(b)(2): Uses subject to management.	923.11	V
305(b)(3): Areas of particular concern	923.21, 923.23	VII
305(b)(4): Means of control.	923.41	VI
305(b)(5): Guidelines on priorities of uses. . . .	923.21	VII
305(b)(6): Organizational structure.	923.46	VI
305(b)(7): Shorefront planning process	923.24	VIII
305(b)(8): Energy facility planning process. . . .	923.13	VIII
309(b)(9): Erosion planning process.	923.25	VIII
Sec. 306(c) which includes:		
306(c)(1): Notice: full participation; consistent with Sec. 303	923.58, 923.51 923.56, 923.3	X, III VI
306(c)(2)(A): Plan coordination.	923.56	N.A.*
306(c)(2)(B): Continuing consultation mechanisms.	923.57	X, XI
306(c)(3): Public hearings	923.58	X
306(c)(4): Gubernatorial review and approval . . .	923.48	Gov. Letter
306(c)(5): Designation of recipient agency	923.47	VI
306(c)(6): Organization.	923.46	VI
306(c)(7): Authorities	923.41	VI
306(c)(8): Adequate consideration of national interests	923.52	V
306(c)(9): Areas for preservation/restoration. . .	923.22	VII
Sec. 306(d) which includes:		
306(d)(1): Administer regulations, control development; resolve conflicts.	923.41	V, VI
305(d)(2): Powers of acquisition, if necessary . .	923.41	
Sec. 306(e) which includes:		
306(e)(1): Technique of control	923.41-44	VI
306(e)(2): Uses of regional benefit.	923.12	N.A.*
Sec. 307 which includes:		
307(b): Adequate consideration of Federal agency views.	923.51	X
307(f): Incorporation of air and water quality requirements	923.45	III, VI

* Not applicable in absence of local governments

PART TWO: DESCRIPTION OF THE PROPOSED ACTION

THE GUAM COASTAL MANAGEMENT PROGRAM

The preparation of the Guam Coastal Management Program was financed in part by a coastal program development grant from the National Oceanic and Atmospheric Administration, under the provisions of the Coastal Zone Management Act of 1972, as amended (P.L. 92-583).

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GLOSSARY OF ABBREVIATIONS

FOUND IN TEXT

AAFB	Andersen Air Force Base
AICUZ	Air Installations Compatible Use Zone
APC	Area(s) of Particular Concern
BP, BOP	Bureau of Planning
CPC	Central Planning Council
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act of 1972, as amended
CDP	Comprehensive Development Plan
CEIP	Coastal Energy Impact Program
CHP	Comprehensive Highway Plan
COE	U.S. Army Corps of Engineers
DAg	Department of Agriculture
DLM	Department of Land Management
DPR	Department of Parks and Recreation
DPW	Department of Public Works
EDA	U.S. Economic Development Administration
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
GCMP	Guam Coastal Management Program
GEO	Guam Energy Office
GEPA	Guam Environmental Protection Agency
GORCO	Guam Oil and Refining Corporation

GHURA	Guam Housing and Urban Renewal Authority
GOVGUAM	Government of Guam
GVB	Guam Visitors Bureau
HCRS	Heritage Conservation and Recreation Service
HUD	U.S. Department of Housing and Urban Development
MARINE LAB	University of Guam Marine Laboratory
NAS	Naval Air Station
NCS	Naval Communications Station
NOAA	National Oceanic and Atmospheric Administration
OCZM	Office of Coastal Zone Management
PUD	Planned Unit Development
PUAG	Public Utilities Agency of Guam
SDRC	Subdivision and Development Review Committee
TPC	Territorial Planning Commission
TSPC	Territorial Seashore Protection Commission
UOG	University of Guam
WRRC	Water Resources Research Center
305, 306	Refers to Sections 305 and 306 of the Coastal Zone Management Act of 1972 administered by the U.S. Department of Commerce. 305 - Planning and Development Phase 306 - Implmentation Phase Guam is presently under a 305 grant and is attempting through submittal of this document to quality for 306 funding.

201, 208	Refers to Sections 201 and 208 of the Federal Water Pollution Control Act Amendments of 1972. 201 - Construction of Municipal Sewage Treatment Plants 208 - Water Quality Management Plan

CHAPTER I. SUMMARY

A. Background

In passing the Coastal Zone Management Act (16 U.S.C. 1451-1464) of 1972, the U.S. Congress declared in Section 303 of the Act that it is our Nation's policy:

> "(a) to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations,
>
> "(b) to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone giving full consideration to ecological, cultural, historic, and esthetic values as well as to needs for economic development.
>
> "(c) for all Federal agencies engaged in programs affecting the coastal zone to cooperate and participate with state and local government and regional agencies in effectuating the purposes of this title, and
>
> "(d) to encourage the participation of the public, of Federal, state, and local governments and or regional agencies in the development of coastal zone management programs. With respect to implementation of such management programs, it is the national policy to encourage cooperation among the various state and regional agencies including establishment of interstate and regional agreements, cooperative procedures, and joint action particularly regarding environmental problems."

A major conclusion of the Federal Commission on Marine Science, Engineering and Resources, whose report Our Nation and the Sea prompted passage of the CZM Act, was that:

> "the primary problem in the coastal zone was a management problem with all the attendant problems that proper management implies. It is true that the Federal, State, and local governments share the responsibility to develop and manage the coastal zone. In reviewing the situation, we concluded that effective management to date has been thwarted by the variety of Government jurisdictions involved at all levels of Government, the low priority afforded

to marine matters by State governments, the diffusion of responsibility among State agencies and the failure of State agencies to develop and implement long-range plans."

Recognizing the critical nature of these coastal management problems and the urgency of implementing the above policies, Congress made available, through the Coastal Zone Management Act (CZMA), Federal funds for preparation and implementation of individual State coastal zone management programs.

Rules and regulations promulgated by the CZM Act's administering agency, the Federal Office of Coastal Zone management within the Department of Commerce's National Oceanic and Atmospheric Administration, outline specific requirements for development and approval of such management programs.

Under Section 305 of the Coastal Zone Management Act, States are allowed up to four years for development of their respective management programs. Upon completing development and achieving Federal approval of the coastal programs, States become eligible for further funding under Section 306 of the Act for actual program implementation. This document, outlining Guam's Coastal Management Program (GCMP) in accordance with Federal CZM Program Approval Regulations (15 CFR Part 923), is submitted with the intent of achieving Section 306 funding approval by August 1, 1979.

B. Coastal Management and Land-Use Plannning

One of the most significant aspects of the GCMP, distinguishing it from most of the thirty-four (34) other such State or territorial programs, is its broad scope. The CZMA and accompanying regulations provide for the designation by the State or Territory of the inland boundaries of the coastal lands to be managed under the auspices of the coastal program. Rather than designating a distinct "Coastal Zone," through delineation of an inland boundary by distance (e.g., 1,000 yards in California) or by geographical features (to the crest of the coastal mountain range in Oregon), the entire island, including the surrounding sea out to 3 miles, was included under jurisdiction of the Guam Coastal Management Program. The rationale behind this program planning decision is detailed in Chapter IV of this document. The word "zone" is deleted in referring to Guam's Coastal Management Program, avoiding suggestion of its applicability to a narrower shoreline strip or fringe area.

Because the entire island has been designated a "coastal zone" in the context of the CZM Act, the GCMP applies islandwide. Therefore, all the Territory's land and sea areas and all its land-use related planning and regulatory agencies, programs and laws fall within the concern of this

program. The effect of this program on Federally owned lands, which constitute almost one-third of the island's land area, and on activities occurring on Federal lands is discussed later within the Federal consistency chapter.

Subsequent to institution of the GCMP, the Twelfth Guam Legislature had enacted comprehensive planning legislation (P.L. 12-200), the objectives of which were similar to those of the GCMP. Since both the comprehensive planning efforts and the GCMP shared similar goals and objectives, the Territory's land-use planning and Coastal Management Programs were merged. The GCMP has thus attempted to address the requirements and objectives established both under the local planning legislation and the CZMA.

Objectives achieved by the GCMP as outlined under the local planning legislation are:

(a) To determine the extent that our natural resources limit urban and rural development.

(b) To plan for the preservation of the natural charm and character of Guam within the framework of a growing population and modern technology.

(c) To establish generalized areas of use within an urban, rural, agriculture, conservation, and resort context.

(d) To provide a development pattern that enhances the comfort, convenience and economic welfare of the individual.

(e) To prepare land capability criteria as a basis for real property evaluation that tends to equalize the divergent qualities of location.

(f) To reappraise the total land tenure of the territory and provide guidelines for relocation of inefficient or inappropriate major uses.

(g) To plan for the development and extension of the infrastructure and transportation facilities.

(h) To plan for a high quality environment essentially free from pollution and with adequate and well-kept open space throughout our varying activity centers.

(i) To prepare criteria of substandard neighborhoods and identify areas that meet criteria levels.

(j) To recommend creative legislation regulating our use of land for the protection of future generations.

In addition, recognizing the CZMA's emphasis on improved management of coastal resources, the GCMP has sought, and will continue to pursue, the following objectives:

(a) more effective administration of natural resource related laws, programs, and policies through:

- o revision of unclear and outdated laws and regulations,
- o improved coordination among local agencies,
- o improved coordination between territorial and Federal agencies,
- o educational and training programs for local government personnel, and refinement of supporting technical data.

(b) more effective enforcement of natural resource related laws, programs and policies through:

- o increasing the capability of the Attorney General to respond to and prosecute reported violations
- o improving 1) the inspection staff level within agencies with enforcement responsiblilities and 2) such staff's coordination with the Attorney General's Office.

(c) increased public awareness of the values and responsibilities associated with coastal resource development and protection

(d) implementation of a management program that

- o encourages the prudent development of the Territory's economy
- o recognizes the competing pressures placed on its limited resources
- o is sensitive to the unique cultural, historical, and social aspects of the Territory, and
- o is responsive to the national interest in coastal resource management while recognizing Guam's unique political and geographical situation.

Because approval of the GCMP, and in turn, continuation and implementation of the island's land-use planning program, are contingent upon satisfying requirements under the CZMA, effort has been directed at meeting both the local and Federal program needs. Both P.L. 12-200 and the CZMA set out specific items to be addressed in development of the respective programs.

While the CZM Approval Regulations outline these items in more detail and are addressed in this document, P.L. 12-200's requirements relative to land-use management are enumerated in that section of the act mandating development of a land use plan (Section 6202(a), GCG).

The land-use element of the Comprehensive Development Plan, prepared by the Coastal Management Program within the Bureau of Planning and now awaiting legislative approval accomplishes the following as required under P.L. 12-200:

> "designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, agriculture, recreation, education, public buildings and grounds, conservation, and other categories of public and private uses of land, which include islands, reef and lagoon areas and the sea within the territorial waters and also includes a statement of the standards of population density and building intensity for the various districts and other areas covered by the plan, and regulatory devices governing the use, development and subdivision of land."

The Land-Use Plan Guam: 1977-2000 and the Community Design Plans, developed pursuant to Public Law 12-200, address the above areas as well as provide the basis for the GCMP. The Land-Use District Guidelines, Wetlands and Flood Hazard Area Regulations and additional authorities outlined in Table 1, fulfill the GCMP objectives and CZMA requirements.

It was considered important that certain basic policies embodied in the Land-Use Plan and the Comprehensive Development Plan be given immediate binding effect. Therefore, on November 15, 1978, Executive Order 78-37 was issued by the Governor directing that the following GCMP policies be implemented by all local government agencies and instrumentalities of the Territorial government:

1. Governmental Processes Policy

More effective administration of natural resource related laws, programs, and policies shall be achieved through:

- revision of unclear and outdated laws and regulations,
- improved coordination among local agencies,
- improved coordination between territorial and Federal agencies,
- educational and training programs for local government personnel, and refinement of supporting technical data.

2. Development Policies

(a) Shore Area Development

Only those uses shall be located within the Seashore Reserve which:

(1) enhance, are compatible with or do not generally detract from the surrounding coastal area's aesthetic and environmental quality and beach accessibility; or

(2) can demonstrate dependence on such a location and the lack of feasible alternative sites.

(b) Urban Development

Uses permitted only within commercial, multi-family, industrial, and resort-hotel zones; and uses requiring high levels of support facilities shall be concentrated within urban districts as outlined on the Land-Use Districting Map.

(c) Rural Development

Rural districts shall be designated in which only low-density residential and agricultural uses will be acceptable. Minimum lot size for these uses should be one-half acre until adequate infrastructure, including functional sewering, is provided.

(d) Major Facility Siting

In evaluating the consistency of proposed major facilities with the goals, policies, and standards of the Comprehensive Development and Coastal Management Plans, the Territory shall recognize the national interest in the siting of such facilities including those associated with electric power production and transmission, petroleum refining and transmission, port and air installations, solid waste disposal, sewage treatment, and major reservoir sites.

(e) Hazardous Areas

Identified hazardous lands including floodplains, erosion-prone areas, air installation crash and sound zones and major fault lines shall be developed only to the extent that such development does not pose unreasonable risks to the health, safety, or welfare of the people of Guam, and complies with land-use regulations.

(f) Housing

The Government shall encourage efficient design of residential areas, restrict such development in areas highly susceptible to natural and manmade hazards, and recognize the limitations of the island's resources to support historical patterns of residential development.

(g) Transportation

The Territory shall develop an efficient and safe transportation system while limiting adverse environmental impacts on primary aquifers, beaches, estuaries, and other coastal resources.

(h) Erosion and Siltation

Development shall be limited in areas of 15% or greater slope by requiring strict compliance with erosion, sedimentation, and land-use district guidelines, as well as other related land-use standards for such areas.

3. Resource Policies

(a) Conservation of Natural Resources - Overall Policy

The value of Guam's natural resources as recreational areas, critical marine and wildlife habitats, the major source of drinking water, and the foundation of the island's economy, shall be protected through policies and programs affecting such resources.

(b) Air Quality

All activities and uses shall comply with all local air pollution regulations and all appropriate Federal air quality standards in order to ensure the maintenance of Guam's relatively high air quality.

(c) Water Quality

Safe drinking water shall be assured and aquatic recreation sites shall be protected through the regulation of uses and discharges that pose a pollution threat to Guam's waters, particularly in estuarine, reef and aquifer areas.

(d) Fragile Areas

Development in the following types of fragile areas shall be regulated to protect their unique character: historic and archaeologic

sites, wildlife habitats, pristine marine and terrestrial communities, limestone forests, and mangrove stands and wetlands.

(e) Living Marine Resources

All living resources within the territorial waters of Guam, particularly corals and fish, shall be protected from overharvesting and, in the case of marine mammals, from any taking whatsoever.

(f) Visual Quality

Preservation and enhancement of, and respect for the island's scenic resources shall be encouraged through increased enforcement of and compliance with sign, litter, zoning, subdivision, building and related land-use laws; visually objectionable uses shall be located to the maximum extent practicable, so as not to degrade signficantly views from scenic overlooks, highways, and trails.

(g) Recreational Areas

The Government of Guam shall encourage development of varied types of recreation facilities located and maintained so as to be compatible with the surrounding environment and land uses; adequately serve community centers and urban areas, and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks, and historic sites.

(h) Public Access

The public's right of unrestricted access shall be ensured to all non-Federally owned beach areas and all Territorial recreation areas, parks, scenic overlooks, designated conservation areas and other public lands; and agreements shall be encouraged with the owners of private and Federal property for the provision of reasonable access to, and use of, resources of public nature located on such land.

(i) Agricultural Lands

Critical agricultural lands shall be preserved and maintained for agricultural use.

Full implementation of these policies, through compliance with and utilization of the above plans and regulations and additional authorities outlined in Table 1 will result in a comprehensive management program for Guam's Coastal and other natural resources.

Because of Guam's limited natural resources, and its dependence on them for both subsistence and major portions of its economy (tourism), wise resource management is essential. On a relatively small island, there is little room for error. The island's size demands a comprehensive and thorough management program.

CHAPTER II. INSTITUTIONAL AND RESOURCE SETTING

A. MAJOR NATURAL RESOURCES AND HUMAN ACTIVITIES

The purpose of this section is to briefly describe the unique physical setting and major natural resources of Guam including general human settlement patterns.

1. PHYSICAL SETTING

General

Guam is the southernmost and largest island in the Marianas Chain, an archipelago in the Southwest Pacific. It lies 13 degrees 28'29"N and 144 degrees 44'55"E at Agana, the capital city on the central western coast. The island is approximately 30 miles in length with a northern width of 8 1/2 miles and a maximum southern width of 11 1/2 miles. Northern and southern land areas taper at the central waist to a width of 4 miles. Excluding reef areas, the land area is 212 square miles or 550 square kilometers. The axis of the island is in a northeast-southeast direction. Guam is generally classified as a high island with 12 small islands along the reef. The largest offshore island is Cocos Island, a raised portion of the barrier reef encircling an atoll-like lagoon.

Climate

Generally, the climate on Guam is warm and humid regardless of the time of year. The relative humidity commonly exceeds 84% at night, all year long, and the average humidity is at least 66% every month. The daytime temperatures are commonly between 83 and 88 degrees with night temperatures falling to the midseventies during the coolest part of the evening. The two distinct climatic seasons on Guam are the wet and dry season. The dry season is generally from January to May and the wet season from July to November. December and June are considered transitional months. The mean annual rainfall ranges from approximately 80" along the coast to 95" for the higher mountainous areas; 20-24% falls in the dry season and 63-66% in the wet season.

Guam periodically experiences major storms or typhoons, with winds greater than 65 knots. The likelihood of typhoons is greatest during July through September; however, they may occur during any month. On May 12, 1976, for example, Typhoon Pamela devestated the island with recorded sustained winds of 115 mph and recorded gusts to 159 mph.

Seismic Conditions

Located 80 miles northwest of the Marianas Trench, Guam is subject to earthquakes and seismic sea waves at presently unpredictable frequency and intensity. Devastating sea waves have been absent during recorded history. Numerous earthquakes and tremors have occurred with the most damaging quake being recorded in 1902. Guam is structurally divided into six blocks by seismic fault zones that are defined by distinct divisions in the land surface.

2. MAJOR NATURAL RESOURCES AND SETTLEMENT PATTERNS BY SECTION

Northern Guam

The northern section of Guam is geologically characterized by a raised limestone plateau with a maximum elevation of 500 feet which gently slopes downward in a southwestern trend to less than 100 feet in the central mid-section of the island. The northern limestone is composed of the consolidated remains of reef coral and sediments. The northern limestone terraces and cliffs represent an ancient barrier reef, with the inland limestone terrain comprised of the sedimentary remains of the lagoon sediments. The coastal limestone is extremely permeable; thus rainfall quickly soaks into the ground and recharges three main aquifer areas. A lens of fresh water floats upon salt water and provides the bulk of the island's freshwater supply.

A very thin soil layer covers most of the northern limestone and hosts forest vegetation known as the limestone forest. The limestone forest is comprised of medium-size trees that form a canopy for understory shrubs, herbs, epiphytes, and lianas. Many of the plants grow from bare limestone. Many of the areas of limestone forest have been cleared by wartime efforts and postwar urban and military developments. The remaining areas are concentrated along coastal slopes and represent the critical habitat for many of Guam's endangered plants and animals.

The northern limestone plateau is interrupted by volcanic upthrusts at Barrigada Hill and Mt. Santa Rosa. The volcanic basalt is exposed at Mt. Santa Rosa and has resulted in the buildup of lateritic clay soil along an adjacent inland area. This region represents the only major sector of agriculturally developable land in the northern half of the island.

Because of the relative flatness of the terrain, readily available water, extensive limestone deposits, superb beaches, and existence of major infrastructure developed during the war, northern Guam is the focal point for the location of population, manufacturing and light industry,

mineral extraction, and tourist industry. Over 45% of the island's population, as well as the vast majority of public institutions, manufacturing enterprises and resort-hotel facilities are concentrated in this sector. Major Federal facilities include the Naval Air Station (Guam International Air Terminal), Andersen Air Force Base, Naval Communication Station, Federal Aviation Administration, and Naval Magazine.

Central Guam

Geologically, the central waist of Guam, from Agana Bay to Pago Bay, represents a transitional zone between the northern limestone and southern volcanic formations. The limestone in this area is argillaceous or yellowish in color from the volcanic sediments that mixed with the white reef coral during the later development of the northern reef adjacent to the older southern volcanics. The relief features are characterized by sloping hills that are intersected by low-lying basins that are periodically flooded during the wet season. They appear as grassy flats and are important for recharge of the central aquifer. The central aquifer is the smallest lens, yet least affected by saltwater intrusion. It reaches the surface at Agana Springs and disperses water over a floodplain or wetland wildlife habitat, known as Agana Swamp, which eventually flows into Agana Bay via Agana River--the northernmost river on Guam.

Despite the small land area, geologic characteristics and unique ecology of Central Guam, the area is the location of the major concentration of urban development on the island. Approximately 30% of the island's population resides in this small land area. Commercial, industrial and residential development has expanded from Agana, the major trade center and seat of both governmental and religious power structures.

Southern Guam

The southern portion of the island is geologically characterized by two distinct volcanic formations that developed in different geologic eras. The Alutom formation or mountainous ridge adjacent to Central Guam is the oldest formation. The highest peak is Mr. Alutom at 1,076 feet. The southern range, known as the Umatac formation, is characterized by high peaks or a coastal ridge that is steep on the seaward side and gently slopes inland toward the interior basin where the two formations merge. The highest peak is Mt. Lamlam at 1,334 feet. The rugged upland surfaces of volcanic areas are weathered. Exposed volcanic rock and conspicuous erosion scars are present. Major land areas, however, are covered with savannah grasslands that have adapted to the dry and nutrient deficient clay soils of the upper slopes. Water quickly drains

from sloped surfaces and forms a surface drainage pattern that comprises the freshwater resources of Southern Guam. A relatively small amount of rainfall soaks into the underlying rock strata. More than 40 rivers and streams form a surface drainage pattern that dissects the volcanic regions. These rivers flow into the sea at coastal embayments where floodplains and wetlands typify the estuarine areas. A heavy growth of tropical vegetation borders the inland areas of rivers and represents a plant community known as the ravine forest. Sharp divisions between the savannah grasslands and ravine forest provide particularly aesthetic contrasts in Southern Guam. The southern uplands are some of the only expanses of unspoiled terrain on Guam.

Only 24% of the island's population resides in southern communities because of terrain restrictions. Village centers are most often along coastal lowlands, with a traditional lifestyle and architecture producing a sharp contrast with northern and central urban development patterns. The reliance on farming and fishing for subsistence is more persistent in the south. Topographic, geologic, and ecological conditions have caused the deposition of fertile soil into southern interior basins. Large tracts of prime agricultural lands lie between the southern communities of Inarajan and Talofofo. Other portions of the interior basins, where the two major volcanic formations meet, however, are characterized by eroded reef coral that forms a jagged Karst topography. These areas are concentrated on Federally restricted property near the Fena Reservoir, a man-made reservoir that supplies 10% of the island's water consumption.

Shoreline Features

Being a small island with human settlement concentrated along coastal areas, the dynamic features and processes that occur at the shoreline or ocean-land interface are among the most important natural resources on Guam. Much of Guam is surrounded by coral reef, a diversified ecological community that is represented by different types in different locations. The northern coastline is generally characterized by an immediate reef front at the base of steep cliffs. However, as sandy beaches occur, the presence of a reef flat becomes more prevalent along central and southern shores. The reef flat is a level base of limestone that consists of the remains of ancient reef coral that has built seaward to the present offshore reef front of living coral. The reef front suppresses the force of all except the largest storm waves and contributes to the buildup of sand along the beaches. As a transition between the reef and beach, the reef flat area is sometimes exposed during low tides; however, it represents an important shelter for many small fish, shellfish, crustaceans, algae, and other forms of sea life. Two barrier reefs, which encircle lagoon areas, are represented on Guam. Cocos Island, at the southern extreme is a relatively pristine area that is important for both schools of juvenile deepwater fish and the species associated with the coral community. The existing and potential use of the area is recreational.

Apra Harbor, another barrier reef located along the central-west coast, still represents important underwater resources. The outward appearance, however, is vastly different from that at Cocos Island. The offshore Cabras Island and Luminao Reef have been linked and covered with surface development to form the Glass Breakwater. Apra harbor is the only deepwater port on the island. As the major port area, it serves both the military and civilian communities. Being a strategic location and situated on major trade routes, the harbor is the focal point of most sea traffic and transshipment in the Western Pacific. Industrial development in this area increases yearly to meet island-wide demands for imported supplies and energy development.

Natural shoreline configuration is variously represented by rocky coastline, sandy beaches, mangrove mudflats and river estuarines. The rocky coastline comprises 62% of Guam's shoreline. It is characterized by steep, uplifted limestone terraces and cliffs with a lower bench terrace covered with a growth of marine organisms. Many cliffline areas are characterized by a waterline niche that is cut by algae, limpets, and chitons.

The sandy beaches of Guam comprise a significant portion of the shoreline, 31%. They are sloping landforms composed of unconsolidated sand, gravel, broken shell, coral, and foraminifera.

They extend landward from the water's edge to a distinct break in the landform or to a point where terrestrial vegetaton covers the substrate. They extend seaward as far as the sandy bottom is appreciably affected by tide, currents, and wave movements.

Mangrove mudflats are represented in only two locations on Guam. An extensive stand of mangrove species has been increasing in size along the inner shore of Apra Harbor. The other area of mangrove shoreline is along the extreme southern coastline between Merizo and Inarajan, along the inner shoreline of Cocos Lagoon. They assist in natural shoreline stabilization and represent an important ecological community.

Guam's shoreline is interrupted by numerous bays, most of which are associated with estuaries or river mouths. The surrounding river valleys and immediate edge of the river are wetland communities. A diversity of aquatic plant and animal species rely on the specific environment of estuarine areas. These areas are potentially valuable for aquaculture development. Beach areas at river mouths are usually formed by a combination of reef material and riverine substances that originate from inland areas. Thus beaches at embayments have a higher content of soil and organic material than the white sandy beaches.

B. INSTITUTIONAL FRAMEWORK

1. Population

The changing population pattern of Guam is closely related to Guam's economic situation. These factors of population and economic conditions largely shape both the character of and resource demands placed on particular areas on Guam. Existing population data are imprecise, but are the only base upon which to make projections. These figures will continue to be revised until a sufficiently complete data base is established with which to make more definite projections. These figures will have to be revised further at the time of a census. Present data provide ranges of projections which vary significantly. Figure 1 summarizes several of the population projections that are available. The range of population projections is comprised of series developed by: Quinton-Budlong, a firm contracted by the Government of Guam in 1972; Professor Roy Chung, a research demographer at the University of Guam in 1970 and the Bureau of Planning. The projections developed by the Bureau of Planning in 1977 for land-use planning are being extensively used in related agency planning and generally considered to be the most functional, as limited information is available regarding the methodology used to develop the other series.

2. GOVERNMENTAL BACKGROUND

As a major facet of the cultural change that has occurred throughout Guam's varied heritage, the political setting has always been a major factor influencing the patterns of resource use. The multiple chiefdoms of the precontact Chamorro exhibited an upper class of magas ruling the lower classes of a flourishing population. After the period of Spanish conquest, a colonial era of government found the remaining popultion and subsequent generations within the realm of a nation-state form of centralized political control. A long succession of Spanish governors dominated island residents who were treated as a peasant class of a colonial possession of the mother country. This form of government was known as the colonial encomiendero system. The major beneficiaries of resources were the holders of colonial concessions (government officials) and the mother country. The major period of cultural change occurred simultaneously with the Spanish colonial domination.

The United States jurisdiction over Guam formally began in 1899 as a result of the Spanish-American War. This jurisdiction was manifested in a form of government exercised by the Department of the Navy. By the Treaty of Paris, Guam became a possession and Capt. Richard Leary became the first naval governor. A succession of naval governors mandated reforms with relative autonomy, and had a firm control over the island populace.

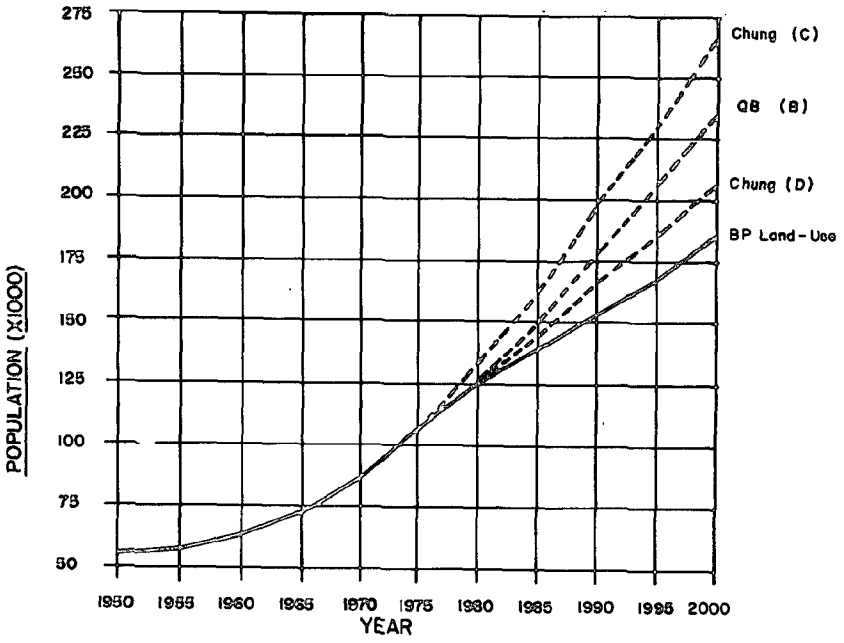


Figure No. 1 Selection of Population Projections

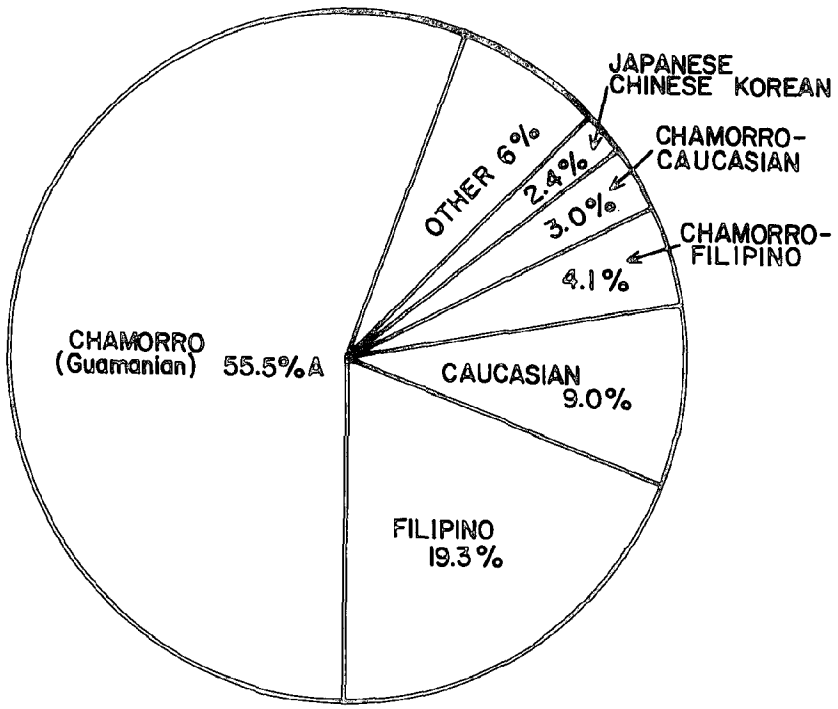


Figure No. 2 Ethnic Composition of the Population

It was not until 1917, under Governor Smith, that democratic principles began to appear and the island's residents provided with a mechanism for a voice in governmental policy. The First Guam Congress convened on February 3, 1917, and served as an advisory body to the governor. Without the authority to enact laws, however, their influence was minimal and they disbanded in 1930. Governor Willis Bradley issued a proclamation defining who were citizens of Guam and in 1930 established the Second Guam Congress. The bicameral body of elected members passed resolutions and submitted them to the governor for adoption or rejection. The Second Guam Congress and the Naval Government remained intact until the Japanese Invasion of World War II.

From December 10, 1941, to July 21, 1944, Guam was oppressively governed first by the Japanese Army and then by the Japanese Navy. The island was incorporated into the Greater East Asia Co-Prosperity Sphere until liberated by American Forces. During the remainder of the war, Guam was governed by combined military services. On May 30, 1946, the government was returned to the control of the U. S. Navy.

Following resumed governmental control by the United States, an increased desire for more political autonomy within the American system was recognized. During July, 1950, U.S. Congress passed the Organic Act of Guam. The Act, signed into law by President Harry S. Truman, became the governing document for the island's citizens. The island was placed under a civilian administration comprised of a 21-member unicameral legislature and a governor appointed by the President with confirmation by the U.S. Senate. The judiciary branch was divided between the Federal District Court handling all cases under the laws of the United States and the Superior Court having jurisdiction over all cases arising under the laws of Guam.

With the passage of the Organic Act, a new period of self-determination brought Guam into the economic sphere of Asia and the United States. A security ban was lifted in 1962 and foreign investment, tourism and immigration of a professional labor force stimulated an economic boom. Carlos G. Camacho was inaugurated as the first elected governor in January of 1971. Guam also has an elected, non-voting delegate to the U.S. House of Representatives. Guam's representative is primarily in a lobbyist position; however, he is allowed to participate in House subcommittes.

Presently, the island is still seeking greater political clarity in regards to its relationship with the U.S. Government. The island remains an Unincorporated Territory under the provisions of the U.S. Constitution. The local Consitutional Convention has completed the final draft of The Constitution of Guam which is designed to supercede the outdated Organic Act. The new document was approved by the U.S. Congress and the President of the United States and now must be approved by the people of Guam in a general referendum.

3. History of Land Use and Planning on Guam

Unlike many mainland communities, where land uses have evolved at a relatively constant growth rate or have been regulated by long-standing zoning controls, the island of Guam has been beset by radical political changes and wars that have caused drastic fluctuations in land-use patterns. The Spanish administration eradicated the original village territories and WWII devastated the land-use patterns within communities established under Spanish rule. New communities formed or were restructured after WWII with design more in response to military defense needs than regard to the physical characteristics of the island. Lifting a security ban in 1962 caused rapid economic growth that overwhelmed the limited land-use controls then in effect.

It has only been in little more than the last decade that concerted land-use planning and regulatory mechanisms such as those for zoning, seashore protection, and air and water quality have appeared on Guam. The 1966 Master Plan was the pioneer effort towards much-needed comprehensive planning, but was soon outdated. A 1972 Master Plan, which was only partially completed, identified problems, alternatives and opportunities, but was not fully implemented. Presently, the Comprehensive Development Plan is the first long-range plan with enforceable provisions and which has the benefit of a wide range of new technical reports as base data for the balanced growth of the Territory.

4. Economic Overview

The Federal Government and the visitor industry play the predominant roles in Guam's economy. Other primary activities include the construction industry; retail and wholesale trades; finance, insurance and real estate; and the service industry.

Recovering from its deepest recession in 1975, construction has been stimulated by reconstruction work resulting from Typhoon Pamela of May 1976. Construction costs will increase due to scheduled construction wage increases. A high concentration of alien workers is found in this industry.

Retail and wholesale trade activity is the largest industry in the private sector, both in terms of employment and gross receipts. The size of this sector is determined basically by the amount of income generated on island.

A smaller portion of the economy is represented by the finance, insurance and real estate sector. Financial institutions on Guam serve both the American and alien business firms which operate in the Western Pacific Region.

Of growing economic importance is the service industry. The wide range of services provided include personal services, auto repair, amusement and recreation, health, legal, educational, hotels and social services. The hotel and auto services constitute the two most important components of the service industry.

Guam's major sources of revenue derive from income taxes and Federal grants. Revenues declined drastically during the 1975 economic recession. Austerity measures were initiated to reduce government employment and expenditures. The government is now comprised of 23 autonomous and semi-autonomous agencies. Many of these agencies have received large subsidies, draining the General Fund.

The Territory's cost of living, wages and income are all rising. The increased participation of women and entrance of young adults into employment is changing the manpower resources on Guam. Major construction and expansion efforts are being undertaken by the local government to upgrade Guam's infrastructure.

5. Industries for Growth

There are five sectors classified as industries for growth. The two largest sectors in terms of income generated are the Federal Government and the visitor industry. Manufacturing, agriculture and fisheries exhibit a high potential for growth.

Federal Government

In recent years, the Federal Government has been identified as the island's single largest source of revenue. Its presence is felt in the construction industry, residential and office space rental, retail and wholesale trades and in employment and development of manpower. A substantial portion of capital improvement projects is funded through Federal grants. These large Federal outlays are primarily attributed to the military presence on the island. An average of 82 percent of the total Federal outlay is for the Department of Defense on Guam.

The Federal Government also constrains Guam's development with Federal laws that do not consider Guam's unique location. Some expansion programs for Guam's infrastructure require lands currently under control of the Federal Government, such as those found in the Apra Harbor area. The military outlets offer a wide array of goods and services and, in most cases, compete with the civilian outlets.

Visitor Industry

The visitor industry is the largest income producer in the private sector. Guam's tourists are mostly young Japanese. Arrivals are highly seasonal, with the peak months of March and August coinciding with the traditional vacation months of Japan. The growth potential of this industry lies in Guam's proximity to Japan and strategic location in the Pacific. The island is an ideal tourist destination and business center. Guam's political stability, favorable treatment of foreign investment and opportunities for expanding air routes add to the island's potential for increasing tourism. The natural beauty of Guam's environment in addition to its unique heritage and culture create a favorable destination for visitors. The economic impact of this industry can be measured in the 3,000 to 4,000 jobs created directly by visitor expenditures and an additional 500 to 1,000 jobs generated indirectly through these expenditures. As estimated $8-10 million in tourism related tax revenues is collected annually by the local government.

Manufacturing

In the 1960's, Guam's manufacturing industry produced goods mainly for local consumption. Later, this industry expanded production to include foreign markets, a watch assembly corporation, garment and textile firms, a brewery, feed mill, and an oil refinery.

Guam has a number of features that are attractive for manufacturing activities. Such desirable attributes include generous tax and financial incentives, a free port status, and no balance-of-payments constraints because of its association with the U.S. Guam products, which do not contain dutiable foreign materials exceeding 50 percent of the total value, can enter the U.S. mainland free of duty. There are also a large number of commercial banks with access to world money markets.

Guam's balance of trade is on a 10-90 percent basis in favor of imports. This type of trade balance presents the best potential for manufacturing on Guam. While imports cannot be totally replaced, products that use local resources can be encouraged.

One of the most dramatic changes that has occurred in this sector is the growth of transshipment and warehousing. This activity also takes advantage of Guam's strategic location.

Lands within Cabras Island, Harmon and Mongmong-Toto-Maite have been identified for concentrated industrial activity. These areas will receive the most attention for development of infrastructural support.

Agriculture

The agriculture industry has a potential far in excess of the current level of activity. Guam's climate, though characterized by periodic typhoons, is suitable for planting year-round. In addition to field farming, hydroponic farming has proven to be successful on Guam. Large-scale field farming can be encouraged primarily in the communities of Talofofo, Inarajan-Malojloj, Marizo and Yona. Altogether, there are an estimated 10,600 acres of arable land.

In recent years, there has been a revived interest in agriculture. To aid farmers, a number of programs have been instituted such as soil testing, land-use reform and equipment servicing. Agricultural credit and Federal financing are also available. Proposals for the construction of fumigation and vegetable-cannery plants have been submitted to the Economic Development Administration (EDA). A fumigation plant would insure plant protection on the island and allow for exports of local produce to Japan and other overseas markets. A vegetable-cannery would serve as an outlet for excess agricultural production. A new public market serves as a main distribution center of all agricultural products.

Livestock production includes chickens, pigs, ducks, cattle and goats. Guam has achieved self-sufficiency in production of eggs. The construction of a slaughterhouse is being considered by the Guam Hog Producer's Association to encourage an expansion of the hog industry.

Fisheries

The potential for the development of a viable fisheries program on Guam lies in aquaculture production and harvesting of wildstock. Guam has an ideal climate for aquaculture with year-round warm temperatures that allow for maximum growth. Portions of Apra Harbor are protected from surf and storm damage and therefore are ideal for mariculture. Guam is now producing freshwater eels, prawns and soft-shell turtles. The local government is investigating the feasiblity of constructing a prawn hatchery to encourage expansion of the prawn industry through a consistent supply of larval stock.

The waters surrounding Guam possess a variety of fish such as tuna, wahoo, mackeral, dolphin (mahimahi), grouper, snapper and marlin. Skipjack is the most abundant species of tuna but has been under-exploited in the western Pacific due to lack of advanced fishing technology. Greater harvesting of skipjack tuna will occur with the development of more effective purse-seine technology. Guam is in an excellent position to attract a fish processing industry and tuna transshipment operations.

The local fishing industry consists primarily of part-time commercial fisherman and recreational fishermen. The development of the Agana Marina and planned development of improved boating facilities in Apra Harbor, Merizo and Agat will stimulate greater activity. The Guam Fishing Cooperative is seeking provision of better cold storage facilities and more efficient marketing activity. Additionally, sport fishing is highly complimentary to the visitor industry.

6. Public Attitudes Concerning Land Use

In January 1977, the Bureau of Planning's CZM Section in coordination with the HUD 701 Program and the Bureau of Labor Statistics conducted an opinion survey of local attitudes toward land-use management. Following is an extremely brief synopsis of this study, initiated to meet partially the requirements of 306(c)(1) requiring opportunity for full participation in program development. (See Appendix 2 for details.)

Shoreline Development

Local opinion showed:

A. The majority of respondents feel residential development should be strictly limited along the shoreline.

B. Tourism development should be restricted; however, northern residents accept coastal resort development more so than residents of the central and south.

C. Generally, residents feel that business and industrial development should be strictly limited.

D. Overall, any development not contributing to the environmental qualities of coastal areas should be strictly limited.

Seashore Protection Act

A. Only 7% of the respondents felt that the present 30-foot zone is adequate to protect the coast.

B. Sixty-six percent felt that a much expanded Seashore Reserve was necessary.

Recreation

A. Present recreational facilities are inadequate.

B. Public access should be guaranteed along the coastline, although this was a less positive feeling in the south than north (63% vs. 76%).

C. Owners of coastal property should not have the right to refuse public access.

D. Public funds should be used to upgrade recreational facilities. For facilities catering to specific user groups such as boat owners, the use of public funds was not so widely supported.

E. Public funds should definitely be used for cleaning up public beaches.

F. Military beaches definitely should be open to the public.

Regulated Fishing

A. Thirty-two percent of the sample respondents had a person or persons in the immediate family who fished "regularly."

B. Overall opinion was nearly evenly divided on whether or not fishing and coral collecting should be regulated; however, 58% of the respondents in the south felt that it should not be regulated versus 32% giving an affirmative response.

Compensation for Losses Incurred Through Development Controls

Note: This question was an oblique reference to the taking issue and land-use control, a question which has never been addressed in case law on Guam. The overwhelming response to this perhaps oversimplified question was that property owners should be compensated for loss of use of one's land.

Citizen Participation

A. Seventy-nine percent of the respondents had not attended a public hearing in the last year.

B. Attendance is higher in the south, possibly because of the closeknit community structure and geographic size of the communities.

C. Respondents generally are split evenly on the effectiveness of public hearings.

D. Commissioner contact was not generally seen by respondents as reliable method of gauging a community's opinion.

E. Other methods of future participation should be developed.

General Conclusions

In summary, the survey brought out the following important points:

1. In general, coastal development should be strictly limited.

2. Along the coastline, public access should be guaranteed, although access through private property is less desired.

3. The boundary established by the Shoreline Protection Act in many cases is inadequate to protect Guam's coastline and needs to be redefined.

4. Recreational areas and facilities are (tremendously) inadequate.

5. Public taxes should be utilized to maintain and construct only those recreational facilities that cater to a large number of users and not specific user groups.

6. Subsistence fishing is not widely practiced and consequently should not be strictly regulated.

7. Property owners should be compensated for the impacts of implementing controls that affect the ability of owners to develop their property.

8. Citizen opinions should be obtained through a number of participatory mechanisms.

7. Agency Responsibilities Affecting Coastal Resources

In addition to the principal agencies described in Chapter V, (Authorities and Organization), numberous Territorial agencies, boards, commissions, and committees have programs and responsibilities that affect the coastal zone. Brief descriptions of these agencies are included here. The inter-relationships among the programs administered by these agencies are summarized in Appendix 5, Relationship of Agencies Under Current Programs.

Agencies

Guam Environmental Protection Agency (GEPA)
Department of Public Works (DPW)
Department of Land Management (DLM)
Department of Agriculture (DAg)
Department of Parks and Recreation (DPR)
Department of Public Health & Social Services (DPHSS)

Public Utility Agency of Guam (PUAG)
Office of the Attorney General (AG)
Bureau of Planning (BP)

Boards, Commissions, Committees

Territorial Planning Commission (TPC)
Territorial Seashore Protection Commission (TSPC)
Central Planning Council (CPC)
Subdivision Development Review Committee (SDRC)

Agencies whose activities affect land and water use, but not as a primary function are:

Guam Port Authority
Guam Power Authority (GPA)
Guam Housing and Urban Renewal Authority (GHURA)
Department of Commerce (DC)
Guam Economic Development Authority (GEDA)

Additional, more detailed information on Territorial agency authorities and enabling legislation is provided in the Appendices.

GEPA

The Guam Environmental Protection Agency administers management activities and studies and enforces all laws and regulations pertaining to the Safe Drinking Water Program, Community Wastewater Program, Individual Wastewater Program, Air Quality Program, Solid Waste Program, Pesticides Program, Areawide Wastewater Management Planning (208), Environmental Impact Program and Water Quality Monitoring Program. A GEPA member sits on the Subdivision Development Review Committee (SDRC). GEPA coordinates comments on Environmental Impact Statements (EIS's) concerning proposed Federal projects.

DPW

The Department of Public Works administers and enforces the Building Law, including requirements for building permits, clearing and grading permits, issuance of Certificates of Occupancy, sign permits, construction-in-street permits, foundation permits, and permits for change of occupancy requiring greater sanitary provisions. DPW also is charged with the planning construction and maintenance of Guam's roads and highways, and comments on EIA's and EIS's. DPW is a member of SDRC.

DLM

The Department of Land Management administers and manages activities on submerged lands, controls all public (GovGuam) lands, records, and maintains all land records, plans and develops GovGuam subdivisions,

administers the official zoning maps, comments on EIS's, and serves as staff to the Territorial Planning Commission in its reviews of applicable zoning code provisions as discussed in functions of the TPC. The Territorial Planner at DLM serves as the Chairman of the SDRC.

DAg

The Department of Agriculture administers Agricultural Land Leases and returns such Government of Guam land to DLM if it is not being used productively. The Division of Aquatic and Wildlife Resources within the DAg administers, manages, and enforces the Fish and Game Law; engages in fisheries research and development, as well as providing technical assistance in this field; and regulates trochus shell harvesting and coral harvesting through regulations and permits. The Division of Forestry and Soil Resources regulates the cutting of trees on public lands and provides these lands with as much protection as possible.

DPR

The Department of Parks and Recreation administers the management and protection of historic objects and sites and maintains the Guam Register of Historic Places. The department also administers the National Register of Historic Places Program for Guam. DPR administers and maintains public parks and beaches and plans for future expansion and for acquisition of parks for both local and Federal programs. DPR is a member of SDRC and reviews EIS's.

DPHSS

The Department of Public Health and Social Services enforces environmental health standards, issues health permits and health certificates, signs off on building permit applications involving food handling and certifies families for "underprivileged" status for wastewater hookup grants.

PUAG

The Public Utility Agency administers the provision and maintenance of water and sewer facilities. PUAG also authorizes water and hydrant facilities for qualifying subdivisions and authorizes grants and loans for connection to existing sewers or construction of septic tank facilities. PUAG occasionally comments on EIS's relevant to water supply or sewer infrastructure.

AG

The Office of the Attorney General is ultimately responsible for legal action taken against alleged offenders of land; water; or air-related laws, as well as other civil and criminal violations. The Attorney General provides opinions on code interpretation and legal advice on the commission and agency activities.

BP

The Bureau of Planning is vested with responsibility for Guam's comprehensive planning process for both physical and socioeconomic planning. The Bureau is the designated recipient agency for Federal funds disbursed under the CZM program. The Director of Planning serves as the chairman of the Central Planning Council, and serves on other executive level policy committees. The Bureau of Planning comments on all environmental impact assessments and EIS's for Federal projects, legislation having to do with the land, air or water use, and is a member of the SDRC.

Boards, Commisions, Committees

SDRC

The Subdivision and Development Review Committee chaired by DLM's Chief Planner, and including representatives from DLM, DPW, GEPA, DPR, and BP is responsible for review of all subdivision development projects, zone changes, variances, agricultural subdivisions, and PUD's prior to review by the Territorial Planning Commission.

TSPC

The Territorial Seashore Protection Commission is responsible for the review, approval, and permit issuance of all development within the Seashore Reserve. Its membership is identical to that of the TPC.

TPC

Territorial Planning Commission is the primary land use management agency. It administers the land use districting system, the zoning and subdivision laws, the sign law, the building law and related activities, statutes, and regulations. The TPC is composed of seven members, appointed by the Governor from the private sector, with the advice and consent of the Legislature.

CPC

The Central Planning Council acts as an advisory reviewing, and coordinating body to ensure that current planning programs are consistent with the Comprehensive Development Plan (CDP). CPC must review and approve all CDP elements prior to transmittal to the Legislature and Governor for approval.

Agencies Secondarily Involved with Land, Air, and Water Use

Port Authority of Guam

The Port Authority of Guam oversees the operations of the commercial port and is involved in planning for economic development and optimal land use within the Apra Harbor area.

Guam Power Authority

The Guam Power Authority oversees the production and distribution elements of the island's power system including preparation of studies and plans for improvement of existing facilities and construction of new facilities.

GHURA

The Guam Housing and Urban Renewal Authority administers programs relative to housing and urban renewal. Urban Renewal Programs (Sinajana and Yona, completed; Asan, underway) have had a major impact upon residential and related commercial land use.

DOC

The Department of Commerce is responsible for the Government's activities supporting agricultural, commercial, and industrial development, preparation of economic analyses, and generally coordinating economic development activities on the island. Priorities for future economic development (tourism, light industry, port development, fishing, and agriculture) affect certain land-use priorities.

GEDA

Guam Economic Development Authority works in the context of economic priorities developed by DOC to attempt to attract financing and capital, make loans, coordinate growth and act as a catalyst between investors and entrepreneurs.

C. Major Considerations and Alternatives

Federal Regulations (15 CFR Section 923.71) suggest discussion of "some of the major alternatives that led to particular management approaches" while Section 923.62 states that the discussion of alternatives "should be limited to the major or controversial alternatives that have been seriously considered and reviewed at some length by the [Territory]."

Considerations

Prior to formulation of alternatives, a number of "considerations" arose at the outset of the 305 program in October of 1976:

1. Adequacy of the original grant application program design to address the unique administrative and resource management problems on Guam.

2. Data availability and accuracy upon which an effective management program could be based.

3. Design of a program to operate effectively within a framework of numerous other local (GovGuam) resource planning and regulation activities without significant overlap.

4. Public Law 12-200, which established a process for development of a Comprehensive Development Plan including land use, community design, recreation, conservation, and historic preservation elements.

5. Adequacy of existing zoning, seashore protection and other resource management mechanisms.

6. The need for more than 'site specific' designation for identified areas of particular concern.

7. The size of the island and lands under direct Federal agency control relative to uses subject to the management program.

8. High frequency of natural disasters.

9. Persistent and pervasive economic difficulties faced by the island.

10. Island-wide emphasis of governmental goals for development planning.

Program Direction

The two obvious CZM program directions possible after analysis of major considerations were emphasis upon:

1. A management program restricted to a limited coastal zone; or

2. An integrated and comprehensive program encompassing all aspects of land and water-use management island-wide.

Development of a redesigned work program and coordination with OCZM through consultant Ralph Field, including a directive from OCZM to, among other things, "relate all of the work tasks to the particular needs and constraints of the island of Guam" (OCZM memo February 24, 1976), indicated that a comprehensive, island-wide approach would best serve Guam by strengthening the management of all resources.

Alternatives Under Island-Wide CZM Boundaries

Considerations

Zoning

The existing Zoning Law (Sections 17103-17109, GCG) under the jurisdiction of the Territorial Planning Commission (TPC), the Department of Land Management (DLM) and the Department of Public Works (DPW) provides for the following types of zones:

R-1 - Single family residential and related uses;

R-2 - Multi-family residential and related uses:

C - Commercial wholesale, retail, professional and personal services, restaurants, service stations and related uses.

A - Rural zone - one family dwellings, extractive and general (agricultural subdivisions, however, permit unimproved lots of 5000 sq. ft. to be created) and a wide range of recreational use.

M-1 - Light industrial zone - manufacturing, fabrication and uses not objectionable, obnoxious or offensive in nature, and related uses.

M-2 - Heavy industrial - all uses except residential (a conditional use), including junk yards and any uses not specifically prohibited by law.

H - Resort-hotel zone and related uses.

Administration of the zoning law alone does not adequately provide for protection for a wide range of sensitive lands, nor is interpretation or enforcement carried out in a comprehensive or consistent manner. The mechanism itself, however, is adequate, and closely resembles zoning procedures elsewhere. It is the administration of the mechanism, clarity of code provisions, and agency coordinative difficulties which have resulted in many cases of seemingly inappropriate development to date.

The Seashore Protection Act and Territorial Beach Areas Act

Prior to May 1976, the Seashore Protection Act (P.L. 12-108, GCG Chapter V-A, Sections 13410-13420) and the Territorial Beach Act (P.L. 12-19, GCG Chapter V, Sections 13453-60) provided fairly adequate protection for the seashore insofar as encroaching development was concerned. P.L. 12-19 provided for Territorial Recreation Areas, vesting public rights to the ocean shore 25' inland from the 2' contour, while the Seashore Protection Act required a special permit for all development taking place within 100 meters of the shoreline. Reconstruction legislation following typhoon Pamela, however, reduced the areas under the SPA from 100 to 10 meters. This action illustrated the need for incorporation of the CZM program into the overall fabric of land and water use management.

Options Under the Island-Wide Approach

The principal assumption behind an island-wide approach is a simple one: incorporation of shoreline protection and coastal resources management into the overall land use planning mechanism is preferable, for comprehensiveness and ease of management, to the development of two distinct management programs. Five island-wide management approaches were identified:

1. Update the 1966 master plan with inclusion of a CZM element addressing activities having a direct and significant impact upon coastal waters, and other requirements of the CZMA.

Discussion

Although a coastal management element probably could have been designed that would have addressed the requirements of the CZMA, the overriding concern was that such a management program could significantly conflict with an updated 1966 master plan. Updating the plan was considered infeasible for the following reasons:

- The abnormally high growth rate in the five-year period (1968-1973) following the plan's completion resulted in pressures for development and immigration, etc., in excess of the plan's scope, creating immediate and significant changes in basic assumptions.

- Inadequate funding in the area of land management for such things as updated and comprehensive legal recording of land parcel boundaries, updated ownership maps, and acquisition of current zoning information (delineation of zone changes, conditional uses, planned unit developments) has prevented, in many cases, accurate assessment of facts having a bearing upon procedures for updating the plan.

- o Additional modifications of the plan through approval of marginally acceptable development have established a pattern growth inconsistent with the intent of the master plan. Updating a plan already weakened by severe modifications was not considered a viable approach.

2. Institute an island-wide zoning system similar to the 1966 master plan, but emphasize more specific zoning regulation for the "catch-all" A (Agricultural) zone and develop more specific management programs for areas of particular concern, priorities of uses and other aspects of the CZM program.

Discussion

The concept of land-use districting, as mandated by P.L. 12-200, the proposed constitution and conservation-oriented elements of the coastal management program, would not be compatible with more specific Agriculture zone regulations since agriculture subdivision practices, as well as loosely controlled zone changes and variances, could still alter with relative ease the uses allowed within a given zone. This approach, therefore, would not provide the desired degree of protection for special management areas.

3. Institute an island-wide zoning system together with an urban, rural, agriculture, conservation land-use districting system and elements with the coastal management program.

Discussion

This approach could be a viable one except that zoning changes could too easily compromise the protection afforded by a conservation district, regardless of the specificity of the conservation district regulations. These considerations and those in Option 2, above, suggest the need for establishment of an unzoned conservation district with special additional attention being given to sensitive or areas expected to bear the brunt of intensive development. Such an approach would insulate these sensitive areas from zoning, and more importantly, from zoning variances.

4. Institute a "no zone" approach within the context of a land-use districting system with the coastal management program emphasizing special attention for sensitive areas as well as managing uses having impacts upon coastal waters.

Discussion

Suggested during hearings on proposed land-use legislation, this approach did not appear workable. Even if it is assumed that the coastal management program, together with existing regulatory mechanisms, would require an extremely detailed set of performance standards concerning all

possible types of development, imposition of such stringent standards could produce a sizeable disincentive for needed commercial and industrial activity. Development of such performance standards, let alone enforcement, was judged to exceed the capabilities of the government of Guam at the present time.

5. Institute a planning process addressing more specifically those particular island-wide problems and issues not addressed by the provisions of P.L. 12-200 and utilizing, for the most part, existing control mechanisms.

Discussion

This management approach, the approach selected for the GCMP, is based on existing control mechanisms, and certain additional functions to be carried out under Executive Orders and TPC Rules and Regulations for land-use districts, protection of wetlands and flood hazard area management.

Such an approach could simultaneously address comprehensive land-use planning requirements under P.L. 12-200 and the proposed Guam Constitution; and coastal management program planning elements required under the CZM Act. This is demonstrated by the inclusion of the Coastal Management Program's land-use policies, outlined in Executive Order 76-37, within the Land-Use Plan and Comprehensive Development Plan.

The CZM program could best serve the interests of Guam by integrating its objectives with those of P.L. 12-200 and ongoing management efforts within other agencies. Planning staff determined that the coastal management program should provide for:

- o General data development for all resource planning areas;
- o Public participation and involvement;
- o Resolution of regulatory procedural problems;
- o Federal agency coordination and consistency;
- o Designation of areas of particular concern and priority of uses within those areas; and,
- o Specific technical investigation of resources and management programs for those resources.

The local land-use planning effort, mandated by P.L. 12-200 would focus upon:

- o Land-use districting;
- o Coordination among local agencies;

- o Population and economic growth data;
- o Mapping development;
- o Community design master planning.

While performing functions under several programs and authorities, the Bureau of Planning, as the designated State agency for CZM, can achieve by this coordinated approach:

1. a complete Comprehensive Development Plan, including land-use and community design elements;
2. a sufficient strengthening of local agency procedures, laws, coordination and data base to adequately deal with the increasing complexity of planning and management programs;
3. more effective participation of public interest groups;
4. adequate consideration of Federal agency interests; and,
5. a completed coastal management program totally integrated with, and complimentary to, Territorial planning efforts.

Alternative to Island-Wide Boundary Designation

It has been observed that designation of a narrower "Coastal Management Program" boundary may satisfy the minimum standards of the CZMA for an approvable coastal program. Generally, this would involve:

1. Legislative approval of an expanded seashore reserve boundary;
2. Re-definition of those areas of particular concern within the boundary for which Federal funding under 306 could be used;
3. Reassessment of uses subject to the management program under a limited boundary; and,
4. Continuation of governmental processes, policies, coordination, participation, training, Federal consistency and those other activities as defined in the present program, that are not specifically tied to locational resource and development issues and problems.

It was the opinion of the Guam CZM program staff and OCZM personnel, however, that this approach should only be used as a last resort because of the clear advantages of an island-wide planning approach.

It should be noted again that a limited coastal boundary approach was considered during the first year of program development and rejected for reasons discussed in the preceding sections.

CHAPTER III. PROGRAM POLICIES

After identifying and evaluating those coastal resources recognized in the CZMA as requiring management or protection, CZM programs must re-examine existing policies or develop new policies to manage these resources. In the words of the program approval regulations, "these policies must be specific, comprehensive and enforceable". (CFR 923.1(c)(2)).

At a minimum, CZM programs are to include three broad classes of policies: resource protection policies, coastal development policies, and government process simplification policies (CFR 923.3(b)(2)). This chapter outlines the CGMP's eighteen major policies covering these three broad areas, the bases for their development, how they are enforced, and their impact on future management and development of Guam's resources.

The GCMP policies, listed with their respective enforcing authorities in Table 1 at the end of this Chapter, were developed through analysis of existing legislative policy as embodied in these various authorities and through results of management and resource studies conducted under the GCMP and related programs. While many of the policies are reflected in various legislative enactments and departmental or agency regulations, their embodiment in working planning documents was necessary to aid in their actual implementation. Therefore, the GCMP policies have been included in similar, though not identical, form in the Land-Use Plan: Guam 1977-2000 and in Guam's Comprehensive Development Plan, prepared by the Bureau of Planning. Both of these documents await legislative adoption, however, after having been approved by the Central Planning Council and Governor.

Though the GCMP policies would become law upon legislative adoption of these plans, thereby becoming enforceable through the authorities listed in Table 1, their more timely implementation was deemed desirable for purposes of program approval. Therefore, through the Governor's issuance of Executive Order 78-37, on November 15, 1978, the eighteen GCMP policies took legal effect with the appropriate agencies and instrumentalities directed to so implement them. Now, as was not the case in the past, various government agencies and instrumentalities must take whatever affirmative action is necessary to implement these policies and therefore legally comply with this executive directive. The legal authority and effect of Executive Orders is discussed in Chapter VI, Authorities.

Following are the eighteen GCMP policies, divided into the three previously mentioned general categories: government processes, development, and resources. Discussion preceding each policy briefly outlines the issues and problems leading to the policy's enactment. Primary

authorities used to implement the particular policy, the full complement of which are outlined in Table 1, are then referenced. Closing each policy discussion is a listing of programs and activities that may be conducted under an approved Guam Coastal Management Program.

A. Government Processes

- Current administration of existing laws and regulations at times does not result in the most effective management of the island's resources. Coordination difficulties create significant confusion among enforcement agencies as to the extent of their jurisdiction.

When particular agencies with responsibility for enforcement of regulatory controls do not clearly understand the extent of their jurisdiction, alleged violators are allowed, through neglect, to continue and even expand activities which are obviously in direct conflict with the law. Understaffing of regulatory agencies is often cited as a reason for failure to address the violations and enforce or improve the laws, rules and regulations. Ministerial activities consume time which should be devoted to improving enforcement procedures and planning programs required by law.

- The lack of a sufficient data base, both for projecting population and describing specific characteristics of various land and water areas, hinders effective planning, management and development of the island's resources.

Demographic information, especially concerning population projections, is fragmented and incomplete. Serious land and water data deficiencies exist regarding existing zoning and land use, property line maps (at least 1:4800 scale), government land maps, and legal recordation of parcel boundaries. Systematic approaches to correction of errors in parcel recordation and change in land use designations through zone changes or variances are not developed. Resource data is limited in such areas as fisheries potential, seismic fault zones, agricultural use impacts (pesticides, leachates, etc.) and soil drainage patterns.

- Inadequate analysis or consideration of current laws results in a large number of proposed bills which conflict with the policies or provisions in existing legislation.

Passage of special interest legislation tends to favor development-oriented activities which do not meet standards imposed on activities reviewed through proper procedures. Such activities may not have undergone consideration for alternate locations, long-range impacts, adjacent uses, or comprehensive planning in general. Bills are proposed and enacted which are in conflict with the intent of existing law, and inconsistent with established policies and procedures for the regulation of land and water use.

Policy

More effective administration of natural resource related laws, programs, and policies shall be achieved through:

- o Revision of unclear and outdated laws and regulations;
- o Improved coordination among local agencies;
- o Improved coordination between territorial and Federal agencies;
- o Educational and training programs for local government personnel, and refinement of supporting technical data.

The Bureau of Planning, under which the GCMP operates, is vested with the authority to coordinate and improve governmental planning and information gathering programs through Public Law 12-200 (see Table 1). The Coastal Management Program Advisory Committee will continue to further cooperative efforts and exchange of information among local government agencies and between local and Federal programs.

Projected activities under an approved GCMP relating to improving government processes will include, in part, the following:

a. Provide for revision or introduction of legislation clarifying relevant aspects of law including zoning, seashore protection, and use of hazardous lands.

b. Improve coordination among local agencies by funding needed personnel in appropriate agencies including the Attorney General, Guam Environmental Protection Agency, Department of Land Management, and the Departments of Agriculture, Parks and Recreation and Public Works.

c. Provide for increased coordination between the Territorial government and Federal agencies with identified interests in specific activities relative to the scope of the CZM land-use program.

d. Help agencies achieve consistent and effective enforcement programs by developing specific guidelines on agency responsibilities and limits of jurisdiction under land and water use laws.

e. Provide for the planning and establishment of training programs seminars, workshops and similar activities to develop the skill levels of key personnel within enforcement agencies.

f. Continue and expand efforts for the expansion and dissemination of technical base data for population, mapping, resource description and use, fisheries, agriculture and other areas.

B. Development Policies

1. Shore Area Development

- Land resources adjacent to coastal waters have been used with little consideration of the suitability of such land for development or the water-dependency of the uses.

Historical development of major transportation routes immediately adjacent to the shoreline, particularly the 6-mile segment of Marine Drive (Route 2) from Apra Harbor to Tamuning, combined with inappropriate shoreline zoning, has promoted commercial and industrial activity along Guam's coastline. Such uses include large auto dealerships, night clubs, retail and wholesale enterprises, massage parlors, service stations, junk yards and other similar activities. Many are poorly maintained or abandoned and bear no relationship to the adjacent shallow reef flats and sandy beaches. Development of this nature continues despite the fact that these areas are eyesores, extremely detrimental to the image of Guam as a scenic island and of greater benefit to the public as park and recreational areas.

- Several coastal communities lack full sewering and typhoon-proof housing, suffer from substandard lot sizes, increasing population, poor road conditions, and are in constant danger from severe storm and flood damage.

Geographic access and public utility constraints to inland development have posed serious impediments to expansion of the villages of Asan, Piti, Umatac, Marizo, and, to a degree, Inarajan. These villages, constantly beset by water supply, sewering, road maintenance, and other infrastructural problems are also blessed with superb natural coastal scenic resources. The historic development of these relatively small communities has fostered a closely-knit social structure and the maintenance of a traditional land tenure systems. Natural disasters often reduce the attractiveness of these communities.

Policy

Only those uses shall be located within the Seashore Reserve which:

- Enhance, are compatible with or do not generally detract from the surrounding coastal area's aesthetic and environmental quality and beach accessibility; or

- o can demonstrate dependence on such a location and the lack of feasible alternative sites.

The primary means of enforcing this policy include the Territorial Seashore Protection Act permit process, Territorial Beach Areas Act public beach provisions and the Conservation District designation under the Land-Use District Guidelines (see Table 1).

The TSPA also mandates development of a Seashore Reserve Plan, with which all development within the Seashore Reserve is to be compatible. Application of the limitations implicit in the following definitiions through such a plan will reduce the possibility of conflicting shoreline uses, improve program predictability, and minimize the amount of shoreline lost to the use of the general public:

Water-dependent use: Waterfront location is necessary for its physical function -- such as handling goods and services for transportation on water (i.e., port facilities).

Water-oriented use: Facing the shoreline or water, but not requiring a location on the waterfront or shoreline (i.e., restaurants, hotels, condominiums, apartments). There must be adequate setbacks.

Water-related use: Requiring access to water or water utself as a resource, but does not require a waterfront location. Includes most industries requiring cooling water, or industries that receive raw material via navigable waters for manufacture or processing.

Projected activities related to shore area development under an approved GCMP will include, in part, the following:

a. Improve the coordination and enforcement of the wide range of existing authorities to protect the shore areas of Guam for the benefit of the entire public.

b. Encourage the development and implementation of land-use mechanisms designed to relocate uses currently adjacent to the shore which bear no relationship to the shoreline or sea.

c. Provide technical assistance to the Department of Land Management to aid in the development of a more effective program for the mapping of GovGuam lands so that land trading can become a more workable mechanism for correcting undesirable shore land-use patterns.

d. Provide technical and financial assistance, through the future designation of specific urban shorelands as Areas of Particular

Concern, for preparation of plans for the restoration of blighted urban shore areas. Coordinate activities with local and Federal agencies having an identified interest in such programs.

e. Influence future zoning patterns, through the application of the Comprehensive Development Plan, which in addition to incorporating the substance of the CZM policies, emphasizes the physical and socio-economic value of the coastal strand.

f. Continue to actively participate in review of projects proposed to be located on or adjacent to the shoreline.

g. Continue and expand activities seeking participation and involvement of the public, including special interest groups, civic organizations, and individuals, in the decision-making process for activities affecting the public shore of Guam.

2. Urban Development

- Location of high-intensity development areas has been determined in many cases by historical patterns of major facility and infrastructure placement.

During World War II, roads, airfields and utility systems were developed and located according to strategic guidelines rather than consideration of future land-use needs. Resultant attraction of commercial activities locating on or near these facilities promoted a development pattern inconsistent with the suitability of certain areas to support such uses.

- High impact development, especially intensive residential, commercial and industrial uses, continue to locate in a random pattern interspersed with residential, recreational, and fragile ecological areas.

In the past, the lack of clear policies in guiding location of high-impact uses has led to random patterns of urban sprawl, resulting in no general sense of design, compactness or efficiency. Many urban areas suffer from lack of adequate circulation, infrastructure and defined focus for community design. Fragile resources, including wetlands, limestone forests, beaches, and watersheds have been unnecessarily threatened by such activities and lack of adherence to general plans.

Policy

Uses permitted only within commercial, multi-family, industrial and resort-hotel zones; and uses requiring high levels of support facilities shall be concentrated within urban districts as outlined on the Land-Use Districting Map.

The primary means of enforcing the above policy will be through the Land-Use District Guidelines, which limit development of such activities to those areas with an urban designation on the Land-Use District Map. (See Table 1.)

Relating to urban development, the approved GCMP will:

a. Provide financial and technical assistance to agencies involved in urban development and urban renewal planning; and

b. Review all urban district boundary changes to resolve associated zoning, coordination and enforcement problems and encourage compatible uses within areas of present or projected urban development.

3. Rural Development

- Uncoordinated and random development of high-intensity urban areas severely limits alternatives for future development, places unnecessary pressure on the natural and financial resources of Guam, and discourages retention of certain traditional rural lifestyles.

Certain rural areas have been identified as suitable for future urban use. These areas have suitable physical characteristics, topography and proximity to major roads or infrastructure to support future urban development. Random development of these areas, without provision of adequate infrastructure or consideration of future development patterns, can commit the limited land resources of the island to inappropriate uses. In addition, traditional village and small scale farming activities should be permitted to continue in certain areas.

Policy

Rural districts shall be designated in which only low density residential and agricultural uses will be acceptable. Minimum lot size for these uses should be one-half acre until adequate infrastructure, including functional sewering, is provided.

Designation and retention of rural lands is accomplished primarily through the Land-Use District Guidelines Rural classification system (See Table 1.)

Under an approved GCMP, review and analysis of existing and future rural districts will be continued in addition to provision of technical assistance to those agencies responsible for regulation and monitoring of these areas.

4. Major Facility Siting

- The unavoidable siting of electric power plants and associated energy facilities in shoreline locations will continue to have negative environmental impacts upon coastal waters.

Electric power generation facilities, given severe geographic constraints, must be located adjacent to the ocean on the leeward side of the island. Prevailing winds, availability of cooling water, needed discharge points for heated effluents, and proximity to petroleum supplies require placement of energy facilities on or near the shoreline. Dependence on fossil fuels for present electrical generation, as well as the need for ocean water for feasible alternate sources (ocean thermal energy conversion) will continue to place pressures on certain shoreline areas for energy-related development.

- o Projected expansion of the Guam Commercial Port, Navy Ammunition Wharf, Naval shipyard facilities, and related support uses, although essential for port operations, may reduce potential recreation areas, destroy marine habitats, threaten the declining bird population, and reduce access to shore areas. Present port development plans are somewhat uncoordinated resulting in random expansion.

Guam has only one deepwater harbor which must serve all of the island's future needs. Compromises must be made in the near future in balancing development needs and conservation of fragile resources. A multiple-use port facility which emphasizes natural and recreational values, together with needed commercial and industrial facilities, is most desirable. Planning for such integrated use has, in the past, been carried out individually by the Commercial Port Authority, Guam Economic Development Authority, and the Navy. During its first year of program implementation, the GCMP will assist in coordinating preparation of a port master plan which addresses the above agency and resource needs.

Policy

In evaluating the consistency of proposed major facilities with the goals, policies, and standards of the Comprehensive Development and coastal Management Plans, the Territory shall recognize the national interest in the siting of such facilities including those associated with electric power production and transmission, petroleum refining and transmission, port and air installations, solid waste disposal, sewage treatment, and major reservoir sites.

The above policy is effectuated through the Land-Use Districting System, which identifies urban areas suitable for major facility development. The prioritization of uses within Areas of Particular Concern recognizes the national interest in development of certain major facilities in areas otherwise unsuitable for such development. (See Figure 4.)

Under an approved GCMP, the following activities and efforts are anticipated:

a. Ascertain the national interest in planning, siting, and construction of major facilities through the coordination with relevant Federal agencies.

b. Support Federal and GovGuam efforts to identify, designate and plan for areas especially suited for water-related economic development, including but not limited to, electric power generation, port facilities, petroleum storage and refining, and commercial fisheries.

c. Require Government of Guam and private interests to locate major commercial and industrial activities in urban districts, which have adequate public services and where such activity should have the least impact on identified fragile resources.

d. Provide technical and financial assistance for protection and preservation, as far as practicable, of unique floral and faunal communities within the impacted areas of major facility development.

5. Hazardous Areas

- Guam's geographical location and geological structure is such that major natural hazards are a way of life rather than occasional occurrences. Despite this fact, many hazard areas are not yet well regulated or protected from over-development.

Guam lies within both a major typhoon belt and one of the most active areas of the Pacific Ocean Basin's "Ring of Fire," or zone of intensive seismic activity. Despite the fact that, from 1948-1977 over 80 tropical storms and typhoons passing within 180 nautical miles have causing over $1 billion in damage, development has continued in flood hazard areas and coastal areas, as well as in or adjacent to groundwater sinks. Though recently promulgated flood hazard area regulations should adequately address development in these areas, very little information is available relative to performance standards for areas adjacent to the six major and over two dozen minor fault lines on the island. Research has indicated, though, that Guam is extremely vulnerable and is subject to as much earthquake risk as Southern California.

Policy

Identified hazardous lands including floodplains, erosion-prone areas, air installation crash and sound zones and major fault lines shall be developed only to the extent that such development does not pose unreasonable risks to the health, safety, or welfare of the people of Guam, and compiles with land-use regulations.

Regulation of development within hazard areas is accomplished through application of the Flood Hazard Area Regulations, Soil Erosion and Sedimentation Control Regulations and through review and revision of the zone changes in light of the Navy's AICUZ study. (See Table 1.) Continual monitoring of such development occurs through review of conditional use, variance and zone change requests by government agency participation in the SDRC.

Under an approved GCMP, the following hazard area-related activities are anticipated:

a. Assist in the land-use aspects of periodic updating of the Territorial Emrgency Plan and provide technical and financial assistance to related efforts for the identification of natural hazard areas.

b. Provide assistance in study of seismic fault zones which could pose a threat to intensive urban development and prepare rules and regulations in coordination with appropriate government agencies.

c. Coordinate closely with the Department of Land Management in the rezoning of identified hazard areas (seismic fault zones, flood hazard areas, AICUZ) in which certain uses should be limited.

d. Assure compliance with the requirements of the National Flood Insurance Program, continue to update the official flood hazard areas map and promote active implementation of the Flood Hazard Areas Rules and Regulations by the Department of Public Works.

This policy of the GCMP is the foundation for the Program's attention to the principal requirements of Presidential Executive Order 11988 concerning floodplain management. By citing floodplains as hazard areas, designating and mapping such flood-prone areas as generic APC's, and including in the GCMP regulations regarding use limitations for flood-prone areas, the Program addresses the Executive Order requirements to identify and limit use of floodplains. The flood area maps are available from the Bureau of Planning. The Bureau of Planning has executed revised maps from those previously recognized by the Federal Insurance Administration in order to map coastal flooding areas and sites subject to localized flooding due to poor drainage. The Territory is seeking approval of these maps for Federal insurance purposes.

The GCMP's policy and the Flood Hazard Area APC regulations will limit use of the floodprone areas to those uses for which no alternative site exists and for which adequate design and construction measures are available to minimize risk to life, welfare or property. Shoreline and river floodplain values are protected by other policies and authorities of the Program applicable to fragile natural, historic and cultural resources and water quality.

6. Housing

High density residential development has taken place within major accident potential zones such as the approach corridor to the Naval Air Station in Central Guam. Residential development has also occurred in floodplains and along Guam's shoreline, areas highly vulnerable to

damage from natural disasters. Development in such areas continues, in part, due to traditional practices of subdividing large tracts of land into parcels distributed to family members and relatives. As suitable areas for such development become more limited, alternative types of housing, such as cluster designs and innovative apartment or multi-story structures, must be explored.

Policy

The government shall encourage efficient design of residential areas, restrict such development in areas highly susceptible to natural and manmade hazards, and recognize the limitations of the island's resources to support historical patterns of residential development.

Residential development in hazardous or unsuitable areas is discouraged primarily through application of the Flood Hazard Area and Wetlands Regulations, Land Use District Guidelines and Seashore Protection Act permit provisions. More efficient subdivision design can be assured through required review of such development by the SDRC and TPC. (See Table 1.)

Projected GCMP activities relating to housing under an approved program are closely linked with those anticipated related to Hazardous Areas. Therefore, the efforts in both areas are almost identical.

7. Transportation

- Expansion of major roads poses a threat to certain beach areas and the primary aquifer.

Alternative means of transportation to the automobile, such as public bus lines, do not exist on Guam. Use of bicycles is difficult and dangerous due to lack of bicycle lanes on major roads, erratic driving patterns of the car-oriented population, and generally poor conditions of road shoulders. These conditions have made the use of private motor vehicles virtually the sole mean of transport. With well over 60,000 vehicles for a population of about 100,000, major road expansion is always in progress. Location of the Naval Air Station, including the Guam International Air Terminal, on the north central plateau inhibits development of possible alternative major transportation routes or use of existing routes through the area. The lack of alternate routes forces major expansion of Marine Drive adjacent to shoreline areas of Tamuning, Agana, and Anigua. Certain connector roads have been proposed through the center of a major aquifer.

Policy

The Territory shall develop an efficient and safe transportation system while limiting adverse environmental impacts on primary aquifers, beaches, estuaries, and other coastal resources.

Required compliance of Territorial Highway Plans with the Comprehensive Development Plan, in addition to application of Subdivision and Soil Erosion and Sedimentation Control Regulations can assure development of the most suitable transportation network. (See Table 1.)

Efforts under an approved GCMP related to transportation will include:

a. Review all proposed highway expansion plans for consistency with the Coastal Management Program's policies.

b. Provide technical support for updating the Guam Comprehensive Highway Plan by the Department of Public Works and incorporate transportation planning elements into revision of the Land-Use Plan.

c. Support research and development of mass transit systems and alternative modes of transportation.

8. Erosion and Siltation

o Onshore construction practices in areas of overburden, steep slopes and sinkholes have created serious erosion problems.

Development in areas having a substrate of unconsolidated weathered volcanics has caused extensive erosion and subsequent siltation of certain reef flats, particularly in the Piti Bay area. Project designers often do not consider erosion as a constraint to development and thus propose grading and clearing for construction on clay-covered slopes, sometimes with grades in excess of fifty percent. The practice of burning grasslands, primarily in Southern Guam, accelerates the erosion problem by removing the ground cover on these clay slopes. Other development occurs in areas adjacent to sinkholes. The resultant change in drainage patterns eventually silts-in the sinks and creates a potential flood hazard for surrounding development.

Policy

Development shall be limited in areas of 15% or greater slope by requiring strict compliance with erosion, sedimentation, and land-use districting guidelines, as well as other related land-use standards for such areas.

Designation of areas with slopes over 15% in grade as Conservation Districts and effecting improvements in the Soil Erosion and Sedimentation Control Regulations are the primary means of controlling damaging erosion and siltation. (See Table 1.)

Efforts in this area under an approved GCMP will be directed at further research into more effective erosion control regulations and means to reduce the adverse effects of undesirable construction and field burning practices.

C. Resource Policies

1. Conservation of Natural Resources (Overall Policy)

The value of Guam's natural resources as recreational areas, critical marine and wildlife habitats, the major source of drinking water, and the foundation of the island's economy, shall be protected through policies and programs affecting such resources.

This overall policy for conservation of Guam's natural resources, recognizing the specific problems and issues addressed in this section, outlines the primary justification for protecting the Territory's resources. It summarizes the overall policy of the Government of Guam and the Coastal Management Program regarding such resources. Authorities in support of this policy are referenced in the following individual resource policy discussion and listed in their entirety in Table 1.

2. Air Quality

- The large number of motor vehicles, the main solid waste disposal site at Ordot, electrical generating plants, a petroleum refinery, and high number of air installation takeoffs and landings contribute to Guam's air pollution.

Despite the above problems, the air quality on Guam is generally high due to farily constant trade winds and location of energy-related facilities on the leeward side of the island. Guam's relatively high ambient air quality can be maintained in accordance with Federal standards if the effect of the tradewinds is considered. Burning of high-sulphur fuel in the electical generating plants, while inappropriate in the mainland, may be less undesirable on Guam due to this wind factor. Airborne particulate levels, especially dust from construction activities and seasonally from wildland fires, do, at times, exceed recommended levels.

Policy

All activities and uses shall comply with all local air pollution regulations and all appropriate Federal air quality standards in order to ensure the maintenance of Guam's relatively high air quality.

Guam's Air Pollution Control Act is the primary means of ensuring compliance with the above policy. (See Table 1.)

Under an approved program, the GCMP will engage in the following activities related to air quality:

a. Assist in determination of the applicability of certain Federal air quality standards to Guam.

b. Assist in development of standards to better control particulate emissions during construction activities, particularly major highway reconstruction.

c. Assist in developing alternatives to major air pollution sources including automobile transportation and burning of solid waste.

3. Water Quality

- The high overall quality of Guam's coastal waters is being threatened by polluting discharges from various sources. The island's major aquifer in Northern Guam could be polluted from uncontrolled development, lack of functioning sewers or extensive use of pesticides and herbicides. Saltwater intrusion is evident in some drinking water wells.

Point source pollution from sewer outfalls, storm drains, and septic tanks has created serious pollution problems in Pago Bay, Sleepy Lagoon, Agana River, East Agana Bay, Tumon Bay, Ylig River, Geus River and others. Stormwater runoff from heavily developed urban areas adjacent to the shoreline contributes greatly to general water quality deterioration. Although presently in excellent condition, the northern aquifer is increasingly under development pressure as a result of its proximity to major island population centers and its suitability for development. If proper controls are not implemented, the aquifer could become polluted. Saltwater intrusion is evident in some drinking water wells and may be a result of excessive pumping.

Policy

Safe drinking water shall be assured and aquatic recreation sites shall be protected through the regulation of uses and discharges that pose a pollution threat to Guam's waters, particularly in estuarine, reef and aquifer areas.

Several authorities under jurisdiction of the GEPA, careful review of development by the SDRC and TSPC, and application of the Land-Use District Guidelines provide the primary means for Territorial authorities to assure compliance with the above policy. (See Table 1.) The inclusion and recognition of the Land-Use Districting System, particularly the Conservation designation for Guam's major aquifer, in GEPA's 208 Plan will further aid in enforcement of this policy. The Federal designation of the northern aquifier as a "principal source" under §1424(e) of the Safe Drinking Water Act strictly limits the use of Federal funds for any activity or program that may adversely affect the resource. In addition, it should be noted that the Federal CZMA requires incorporation of the requirements of the Federal Water Pollution Control Act, as amended. These standards are the law in Guam and must be met in any case in which they may be more stringent than the Territorial standards. The Federal standards, nevertheless, are incorporated into the GCMP and should be considered part of the GCMP water policy.

Under an approved GCMP, the following activities related to water quality are anticipated:

a. Review and comment upon all proposed development impacting upon water quality subject to SDRC, TPC and TSPC review.

b. Support and provide financial assistance for research, public awareness programs and enforcement of water quality standards.

c. Support the reclassification of certain water areas from A - (polluting discharges allowed) to an AA - (no polluting discharges allowed) classificaiton.

4. Fragile Areas

- o Development within unique terrestrial ecologic communities has seriously threatened certain unique animal and plant life.

Residential, commercial, and industrial activities often fail to develop in a manner complimentary to the characteristics of the terrain. Wetlands, clifflines, ravine forests and historic and archaeologic sites are increasingly being threatened by development. Prime examples of such development pressure include: Barrigada Heights housing subdivision, the Agana Shopping Center, the proposed Orote Point (Navy) ammunition wharf, the proposed Micronesian Cultural Center and the proposed Uruno Point hotel complex.

Programs for the protection of unique marine habitats are undeveloped. Guam's coral reef-associated marine resources are outstanding. Effects from thermal effluents, sewage and runoff pollutants, sedimentation and development activities mandate development of programs through which the most spectacular or threatened reef areas can be protected. Appropriate areas would include Cocos Lagoon and barrier reefs, Anae Island Patch Reef, Luminao Barrier Reef, Double Reef, Haputo Reef, Uruno Point, Tarague/ Scout Beach (Military), and others.

Policy

Development in the following types of fragile areas shall be regulated to protect their unique character: historic and archaeological sites, wildlife habitats, pristine marine and terrestrial communities, limestone forests, and mangrove stands and other wetlands.

Adherence to the Historic Preservation Laws and Wetlands Rules and Regulations, delineation of additional Conservation Areas and future designation through Executive Order of those Areas of Particular Concern warranting such classification are the primary means of protecting Guam's fragile areas. (See Table 1.) In addition, the designation of substantial portions of the southern interior and southeastern coastal areas as park-lands will greatly aid in preserving these areas for public use and benefits.

Efforts under an approved GCMP relating to these fragile areas will include the following:

a. Encourage and support activities and programs designed to protect or restore fragile areas including historic sites, pristine ecological communities, wildlife refuges, critical habitats and historic parks through provision of financial and technical assistance.

b. Provide financial and technical support for study of the ecology and extent of limestone forests on Guam, leading to development of performance standards supporting their designation as an area of particular concern.

c. Aid the Division of Aquatic and Wildlife Resources' development of a public awareness program concerning Guam's wildlife resources.

d. Promote the designation of terrestrial pristine ecological communities on government lands, including government-owned portions of Agana Swamp, as Government of Guam Conservation Areas.

e. Support efforts to identify Guam's threatened and endangered plant and animal species and the nomination of such species to local and Federal listings.

5. Living Marine Resources

- Guam's commercial fishing industry has not been developed to its full potential. Illegal methods of reef fishing continue.

To date, no comprehensive program has been developed for exploitation of Guam's fisheries resources. Attempts at coordinated harvesting and marketing of local fish catches have occurred only recently through efforts of the Guam Fisherman's Cooperative. The Guam Marine Fisheries Advisory Council, established under Executive Order 79-6, has begun formulating a Fisheries Management and Development Plan, however, and interest in GovGuam and the private sector is strong.

Certain illegal poisons and techniques are utilized in catching reef fish despite laws prohibiting their use. Lack of sufficient enforcement personnel allows such practices to continue. Without effective management programs, overharvesting of certain species and underutilization of others result.

Policy

All living resources within the territorial waters of Guam, particularly corals and fish, shall be protected from overharvesting and, in the case of marine mammals, from any taking whatsoever.

Enforcement of the Game, Fish and Coral Harvesting Laws, in addition to promulgation of additional regulations addressing those yet unprotected but endangered species, by the Department of Agriculture, provide the primary means of protecting Guam's valuable marine resources. (See Table 1.) Guam's participation in the Western Pacific Regional Fisheries Council and the Department of Agriculture's mandate to develop a fisheries management plan will result in eventual full and proper utilization of Guam's fishery resources.

Related activities under an approved GCMP will include:

a. Provision of technical and financial support to the Marine Fisheries Advisory Council for the preparation and implementation of a Fisheries Development and Management Plan.

b. Development of legislation or rules and regulations in coordinaton with the Guam Department of Agriculture, for the protection of marine mammals.

c. Support for the designation of Cocos Lagoon as a marine sanctuary under a multiple-use concept and the designation of pristine marine ecological communities as Government of Guam Conservation Areas or officially designated Areas of Particular Concern.

6. Visual Quality

- The scenic quality of the shoreline, particularly the ocean view from coastal roads, is rapidly deteriorating in urban areas.

Deteriorating economic conditions over the last five years and frequent natural disasters are responsible, to a great degree, for increasing numbers of dilapidated or abandoned structures. Inadequate enforcement of zoning, sign and subdivision laws also result in general degradation of the Territory's scenic qualities. General public apathy toward refuse disposal and associated practices, despite intensive public education efforts by certain government agencies and private groups, has led to proliferation of park and beach littering, abandonment of junk vehicles and illegal dumping. Inadequate funding in the area of park maintenance further compounds the problem.

Policy

Preservation and enhancement of, and respect for the island's scenic resources shall be encouraged through increased enforcement of and compliance with sign, litter, zoning, subdivision, building and related land-use laws; visually objectionable uses shall be located to the maximum extent practicable so as not to degrade significantly views from scenic overlooks, highways, and trails.

Primary authorities for enforcement of the GCMP's visual quality are included in the policy itself and detailed fully in Table 1. Voluntary programs instituted by GEPA, the Guam Visitor's Bureau and individual village commissioners can be quite effective if properly publicized and are generally more widely accepted than regulatory measures.

In light of current efforts to improve Guam's visual quality, the GCMP, when approved, can assist in part, as follows:

a. Provide technical and financial support to those agencies involved in the planning, management and restoration of scenic areas, including such island beautification activities as litter clean-up, removal of abandoned vehicles and structures, enforcement of sign laws and development of parks, scenic highways, overlooks and trails.

b. Revise and update the Territorial Planning Commission landscaping guidelines.

7. Recreation Areas

- Parks, conservation areas, wildlife refuges and open-space public lands often lack basic amenities. Some communities and residential areas lack adequate sports facilities. Park and beach support facilities are poorly maintained or lacking altogether.

Sufficient land area is available for coastal and inland parks, wildlife refuges, scenic overlooks and hiking areas. Use of these resources is hampered, however, by limited access in terms of developed and maintained roads, paths or trails, inadequate support facilities, and lack of detailed locational information. A majority of citizens have indicated that insufficient facilities are available within village community centers for basketball, tennis, volleyball, and softball. Although government funds are continually being appropriated for recreational facilities, actual acquisition, planning, construction, and/or improvement is often a lengthy process. Funding for continuous maintenance is a persistant problem for both passive and active recreational facilities. A more extensive and better maintained park system is needed which includes marine areas as well.

Policy

The Government of Guam shall encourage development of varied types of recreation facilities located and maintained so as to be compatible with the surrounding environment and land uses; adequately serve community centers and urban areas and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks, and historic sites.

The Department of Parks and Recreation's authority to designate Territorial Parks, to implement the Territorial Beach Areas Act and provide general recreational programs and facilities provides the primary means of implementing this policy. (See Table 1.)

An approved GCMP can aid in the following ways:

a. Provide technical and financial assistance for the planning and management of existing and proposed territorial parks.

b. Provide technical assistance and support for the development of additional cooperative use agreements with the military for joint use of Federal recreational areas.

8. Public Access

- Increasing development along Guam's shoreline restricts access of the beaches and reefs.

Access to certain beach and reef areas, particularly along the urban waterfront areas, is becoming increasingly restricted or impeded by strip commercial development. In other areas, private residents restrict access to beaches from the main highway through posting of signs alleging "ownership" of the beach. However, access is usually attainable from adjacent beach areas, approaching along the shoreline itself. Improvement of trails to certain bays and beaches and government land has enhanced accessability in these areas.

- Access to many recreational and scenic resources is restricted due to their location on military bases.

Prime recreational areas such as Tarague Beach, Fena Reservoir, Haputo Beach and Ritidian Beach are not freely accessable to the general public due to their location on military land. Agreements should be sought with the respective military commands to ensure more open access to these areas, while maintaining requisite levels of base security and cleanliness.

Policy

The public's right of unrestricted access shall be ensured to all non-Federally owned beach areas and all Territorial recreation areas, parks, scenic overlooks, designated conservation areas and their public lands; and agreements shall be encouraged with the owners of private and Federal property for the provision of reasonable access to, and use of, resources of public nature located on such land.

Legislatively enacted Public Rights Provisions, the Territorial Beach Areas and Seashore Protection Acts and the Subdivision Law all deal directly with issues of public access. (See Table 1.) Public Access to shoreline areas is discussed fully in Chapter VIII.

The GCMP, when approved, can assist in the following efforts related to public access:

a. Encourage the application of existing law relative to public rights of access to coastal and inland recreational areas and promote increased provision of public access through private properties by landowners.

b. Promote the establishment of organized sports facilities with locational siting that is responsive to community design, public access and environmental protection.

c. Encourage the use of Apra Harbor as a multiple-use area by maintaining public access to shoreline areas, minimizing high-intensity impacts and providing public recreation areas, including Luminao Reef, Piti Channel, a harbor of refuge and alternate yacht club location.

2. Agricultural Lands

o Development of prime agricultural lands for other than agricultural use reduces the possibility of agricultural self-sufficiency on Guam.

While not a major problem given the number of other impediments to rapid agricultural growth, imprudent development can jeopardize Guam's potentially valuable agricultural resources. Existing practices, such as agricultural and parental subdivisions, allow division of agricultural lands into unimproved lots as small as 2,500 square feet. These practices can pose a serious threat to these resources in the future. Those agricultural lands identified on the Land-Use Districting Map should be preserved solely for agricultural activities.

Policy

Critical agricultural lands shall be preserved and maintained for agricultural use.

Guam's Agricultural Lands policy is primarily effected through adherence to the Land-Use District Guidelines and implementation of the Land Conservation Act's Agricultural Preserve System. (See Table 1.)

Approval of the GCMP will allow it to assist in the following ways related to agricultural development:

a. Review district boundary changes or proposed development impacting upon agricultural lands for compliance with the Agricultural Lands Policy, through the SDRC process.

b. Encourage the designation of Agricultural Preserves or Agricultural Improvement Districts to preserve or utilize prime agricultural land.

c. Continue to support the government's Green Revolution Program directed toward improving the island's level of agricultural production and increased self-sufficiency.

d. Encourage increased aquaculture production in compliance with GCMP land-use policies and environmental protection standards.

TABLE NO. 1. GUAM COASTAL MANAGEMENT PROGRAM POLICIES AND AUTHORITIES

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
Governmental Processes Policy			
More effective administration of natural resource related laws, programs, and policies shall be achieved through: . revision of unclear and outdated laws and regulations, . improved coordination among local agencies, . improved coordination between territorial and federal agencies, . educational and training programs for local government personnel, and refinement of supporting technical data.	Comprehensive Planning Enabling Legislation (P.L. 12-200), as amended.	Sections 62020(a)(i)(5), (j)(3),(j)(4),(o)	All
Development Policies			
1. SHORE AREA DEVELOPMENT			
Only those uses shall be located within the Seashore Reserve which: (1) enhance, are compatible with or do not generally detract from the surrounding coastal area's aesthetic and environmental quality and beach accessibility; or (2) can demonstrate dependence on such a location and the lack of feasible alternative sites.	Public Law 12-200, as amended.	62020(a),(j)(5),(j)(3), (j)(4),(o)	BOP
	Territorial Seashore Projection Act	13416,13417	TSPC,DLM,BOP
	Territorial Beach Areas Act	13454,13456	DLM,DPR
	Zoning Law	17203(b)	TPC,DLM

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
	Land Conservation Act	12603(c)	DAg
	Territorial Parks	12609	DPR
	Underwater Historic Sites	13985.31,.34	DPR
	Submerged Land Permit	U.S. P.L. 93-435	DLM
	Public Rights Provision	13980-2	DLM
	Conservation Areas	12350	DAg
	Guam Constitution, Article IX	Sections 3 & 4	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC
	Wetlands Rules and Regulations	Executive Order 78-21	TPC
	Flood Hazard Area Rules and Regulations	Executive order 78-20	TPC,DPW
	Water Pollution Control Act	57044-57047	GEPA
	Soil Erosion and Sediment Control Regulations	Prom. 12/5/75	GEPA
2. URBAN DEVELOPMENT			
Uses permitted only within Commercial, Multi-Family, Industrial and Resort-Hotel zones; and uses requiring high levels of support facilities shall be concentrated within urban districts as outlined on the Land-Use Districting Map.	Public Law 12-200	62011(c),62020(a),(b),(o)	BOP,CPC
	Zoning Law	17100	TPC,DLM
	Guam Constitution	Article IX, Section 2	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC
	Toilet Facilities & Sewage Disposal	57061	GEPA

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
3. RURAL DEVELOPMENT			
Rural districts shall be designated in which only low density residential and agricultural uses will be acceptable. Minimum lot size for these uses should be one-half acre until adequate infrastructure, including functional sewering, is provided.	Public Law 12-200	62011(c), 6202(a),(o)	CPC, BOP
	Zoning Law	17100	TPC, DLM
	Guam Constitution	Article IX, Section 2	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC
	Land Conservation Act	12601(d)	DAg
	Toilet Facilities & Sewage Disposals	57061-3	GEPA
4. MAJOR FACILITY SITING			
In evaluating the consistency of proposed major facilities with the goals, policies and standards of the Comprehensive Development and Coastal Management Plans, the Territory shall recognize the national interest in the siting of such facilities, including those associated with electric power production and transmission, petroleum refining and transmission, port and air installations, solid waste disposal, sewage treatment and major reservoir sites.	Public Law 12-200	62011(f), 62020(a),(b),(e),(o)	CPC, BOP
	Zoning Law	17100	TPC, DLM
	Land-Use Districts	Executive order 78-23	TPC
5. HAZARDOUS AREAS			
Identified hazardous lands including floodplains, erosion-prone areas, air installation crash and sound zones and major fault lines shall be developed only to the extent that such development does not pose unreasonable risks to the health, safety, or welfare of the people of Guam, and complies with land-use regulations.	Public Law 12-200	62020(a),(k),(o)	CPC, BOP
	Zoning Law	17100	TPC, DLM
	Seashore Protection Act	13417(a)(3)(e)	TSPC, DLM
	Subdivision Law	18005(f)	TPC, DLM

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
	Flood Hazard Area Rules & Regs.	Executive Order 78-20	TPC, DLM
	Soil Erosion and Sedimentation Control Regs.	Promulgated 12/5/75	GEPA
6. HOUSING			
The government shall encourage efficient design of residential areas, restrict such development in areas highly susceptible to natural and manmade hazards, and recognize the limitations of the island's resources to support historical patterns of residential development.	Public Law 12-200	62011(d),(i) 62020(a),(b),(g),(h),(o)	CPC, BOP
	Zoning Law	17100, 17605	TSPC, DLM
	Seashore Protection Act	13416(c)(4),(c)(5)	TSPC, DLM, BOP
	Subdivision Law	18001	TPC, DLM
	Territorial Beach Areas Act	13450(e)	DPR
	Land-Use Districts	Executive Order 78-23	TPC
	Flood Hazard Area Rules & Regs.	Executive Order 78-20	TPC, DPW
	Toilet Facilities & Sewage Disposal	57063, 57064	GEPA
7. TRANSPORTATION			
The Territory shall develop an efficient and safe transportation system while limiting adverse environmental impacts on primary aquifers, beaches, estuaries, and other coastal resources.	Public Law 12-200	62011(g); 62020(a),(d),(o)	CPC, BOP
	Land-Use Districts	Executive Order 78-23	TPC
	Subdivision Law	18005(e); 18400(a),(b)	TPC, DLM
	Erosion and Sedimentation Control Regs.	Promulgated 12/5/75	GEPA
8. EROSION AND SILTATION			
Development shall be limited in areas of 15% or greater slopes by requiring strict	Public Law 12-200	62020(a),(i),(5),(o)	CPC, BOP

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
compliance with erosion, sedimentation, and land-use district guidelines, as well as other related land-use standards for such areas.	Seashore Protection Act	13417(a)(3)(e)	TSPC, DLM
	Subdivision Law	18400(c)	TPC, DLM
	Land-Use Districts	Executive Order 78-23	TPC
	Erosion and Sedimentation Control Regs.	Promulgated 12/5/75	GEPA
	Resource Policies		
1. CONSERVATION OF NATURAL RESOURCES - OVERALL POLICY			
The value of Guam's natural resources as recreational areas, critical marine and wildlife habitats, the major source of drinking water, and the foundation of the island's economy, shall be protected through policies and programs affecting such resources.	(See Text)	(See Text)	(See Text)
2. AIR QUALITY			
All activities and uses shall comply with all air pollution regulations and all appropriate federal quality standard in order to ensure the maintenance of Guam's relatively high air quality.	Public Law 12-200	62020(i),(o)	CPC, BOP
	Guam Constitution	Article IX, Section 1	GovGuam
	Air Pollution Control Act	57100-571015	GEPA
	Subdivision Law	18005(e)	TPC, DLM
3. WATER QUALITY			
Safe drinking water shall be assured and aquatic recreation sites shall be protected through the regulation of uses and discharges that pose a pollution threat to Guam's waters, particularly in estuarine, reef and aquifer areas.	Public Law 12-200	62020(a),(e),(i),(o)	CPC, BOP
	Seashore Protection Act	13416(c)(2)(b)-(d),(c)(4)(c)(2),(e)(4)(d);13417(a)(3)(i),(a)(3)(d)	TSPC, DLM,
	Subdivision Law	18400(d)	TPC, DLM, PUAG

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
	Conservation Areas	12350	DAg
	Guam Constitution	Article IX, Section 1 & 3	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC
	Water Resources Conservation Act	57020-57033	GEPA
	Water Pollution Control Act	57040-57051	GEPA
	Toilet Facilities and Sewage Disposal	57060-57094	GEPA, PUAG
4. FRAGILE AREAS			
Development in the following types of fragile areas shall be regulated to protect their unique character: historic and archaeologic sites, wildlife habitats, pristine marine and terrestrial communities, limestone forests, and mangrove stands and other wetlands.	Public Law 12-200	62020(a),(i),(j),(o)	CPC, BOP
	Seashore Protection Act	13416(c)(2),(c)(4)(c),(d) 13417(a)(3)(c)	TSPC, DLM, BOP
	Territorial Beach Areas Act	13451(b),(c)	DPR
	Land Conservation Act	12603(b),(c)	DAg
	Territorial Parks	26009-26009.1	DPR
	Historic Preservation Laws	13985-13985.35	DPR
	Coral Harvesting Law	12380-4	DAg
	Submerged Lands Permits	U.S. Public Law 93-435	DLM
	Conservation Areas	12350	DAg
	Endangered Species Act	12325	DAg
	Land-Use Districts	Executive Order 78-23	TPC
	Wetlands Rules and Regulations	Executive Order 78-21	TPC
	Water Pollution Control Act	57045-8	GEPA

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
5. LIVING MARINE RESOURCES			
All living resources within the territorial waters on Guam, particularly corals and fish, shall be protected from overharvesting and, in the case of marine mammals, from any taking whatsoever.	Public Law 12-200	62020(i),(o)	CPC, BOP
	Seashore Protection Act	13416(c)(2)(b)-(c)(4)(c)(2) 13417(a)(2)(a)	BOP
	Land Conservation Act	12603(b)-(c)	DAg
	Coral Harvesting Law	12380-4	DAg
	Game and Fish Laws	12303-12311-12385	DAg
	Conservation Areas	12350	DAg
	Endangered Species Act	12325	DAg
	Guam Constitution	Article IX, Section 3	GovGuam
6. VISUAL QUALITY			
Preservation and enhancement of, and respect for the island's scenic resources shall be encouraged through increased enforcement of and compliance with sign, litter, zoning, subdivision, building and related land-use laws; visually objectionable uses shall be located to the maximum extent practicable so as not to degrade significantly views from scenic overlooks, highways, and trails.	Public Law 12-200	62020(a),(o)	CPC, BOP
	Zoning Law	17100, 17400, 17426(d)	TPC, DLM
	Seashore Protection Act	13416(c)(2)(a)(e); 13416(c)(4)(c)(2),(3) 13417(a)(3)(b)	TSPC, DLM, BOP
	Subdivision Law	18005(e)	TPC, DLM
	Land Conservation Act	12629	DAg
	Territorial Parks	26009, 26009.1	DPR
	Guam Constitution	Article IX, Section 1	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC
	Litter Control	57170	GEPA

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
7. RECREATIONAL AREAS			
The Government of Guam shall encourage development of varied types of recreation facilities located and maintained as to be compatible with the surrounding environment and land uses; adequately serve community centers and urban areas, and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks and historic sites.	Public Law 12-200	62020(a),(b),(j),(o)	CPC, BOP
	Zoning Law	17100	TPC, DLM
	Seashore Protection Act	13416(c)(2)(e) 13416(c)(4)(c)(4) 13417(a)(3)(a)	TSPC, DLM, BOP
	Territorial Beach Areas Act	13450(d), 134151-5	DPR
	Land Conservation Act	12603	DAg
	Territorial Parks	26009, 26009.1, 26017	DPR
	Historic Preservation Laws	13985.2	DPR
	Conservation Areas	12350	DAg
	Guam Constitution	Article IX, Section 1	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC
8. PUBLIC ACCESS			
The public's right of unrestricted access shall be ensured to all non-federally-owned beach areas and all Territorial recreation areas, parks, scenic overlooks, desginated conservation areas and other public lands; and agreements shall be encouraged with the owners of private and federal property for the provision of reasonable access to, and use of, resources of public nature located on the such land.	Public Law 12-200	62020(a),(o)	CPC, BOP
	Seashore Protection Act	13416(c)(2)(e), (c)(4)(c)(3) 13417(a)(3)(a)	BOP
	Territory Beach Areas Act	13450,13451,13454-6	DPR
	Subdivision Law	18005(h)	TPC, DLM
	Public Rights Provisions	13980-2	DLM

Coastal Management Program Policies	Authorities	GCG Section (Unless Otherwise Noted)	Agency/ Commission
9. AGRICULTURAL LANDS			
Critical agricultural lands shall be preserved and maintained for agricultural use.	Public Law 12-200	62011(c), 52020(a),(o)	CPC, BOP
	Zoning Law	17100, 17607	TPC, DLM
	Land Conservation Act	12601-3	DAg
	Guam Constitution	Article IX, Section 1 & 2	GovGuam
	Land-Use Districts	Executive Order 78-23	TPC

NOTE: Guam Constitution scheduled for final voter ratification in August, 1979.

CHAPTER IV: BOUNDARIES

Subsection 305 (b)(1) of the Coastal Zone Management Act requires that:

> "The Management Program for each coastal State shall include. . . (1) An identification of the boundaries of the coastal zone subject to the management program."

The 306 Regulations divide the boundary requirement into four areas, pursuant to Section 304(1) of the CZM Act:

A. Inland boundaries (16 CFR 923.31)
B. Seaward boundaries (15 CFR 923.32)
C. Excluded lands (15 CFR 923.33)
D. Interstate boundaries (15 CFR 923.34)

A. Inland Boundary

Section 304(1) of the CZM Act states that: "The term Coastal Zone" means the coastal waters. . .and the adjacent shorelands. . . strongly influenced by each other and in proximity to the shorelines. The Zone extends inland from the shorelines only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters.

The 306 Regulations require that, in defining this coastal zone, States must include:

1. Those areas the management of which is necessary to control uses which have direct and significant impacts on coastal waters pursuant to Section 923.11 of these regulations.

2. Those special management areas identified pursuant to Section 923.21 (i.e., APC's);

3. Transitional and intertidal areas;

4. Salt marshes and wetlands;

5. Islands;

6. Beaches;

7. Waters under saline influence;

and may include:

8. Entire watersheds;

9. Waters under tidal influence;

10. Indian lands not held in trust by the Federal Government.

In determining Guam's inland boundary, it is difficult, if not impossible, to identify any potential major land uses which do not have some direct, significant impact on its coastal resources. Past experience has shown that development located miles from the land-water interface can have destructive impacts on coastal resources and that a limited boundary is ineffective in assuring protection of those resources.

Despite the fact that the island's resource use and development is heavily coastal oriented, proposed major "inland" developments such as the Ugum Dam in Southern Guam or the oil transshipment facility could have extremely serious coastal impacts.

These considerations, among others, support the early decision that an islandwide designation would be most beneficial in terms of those "particular needs and constraints of the island of Guam," mentioned in a 2/24/76 OCZM memo, insofar as the definition preferred in Section 304(1) of the CZM Act is concerned.

Designation of the entire island as the coastal zone, brings all special management areas (APC's), transitional and intertidal areas, salt marshes, wetlands and beaches, as required by 306 Regulations, under the management program. All offshore islands in their entirety, including Cocos Island, are included in the coastal management program under Section 923.31(a)(7) of the 306 Regulations which requires that:

> "Islands must be included in their entirety, except when uses of interior portions of islands do not cause direct and significant impacts."

Two of the areas identified in the Regulations for optional inclusion within the coastal zone, watersheds and waters under tidal influence, are also covered by the island-wide designation.

B. Seaward Boundary

Section 304(1) of the CZM Act establishes the seaward boundary as extending:

> "Seaward to the outer limit of the United States terriorial sea."

This places the seaward limit at three nautical miles for purposes of this program, under the terms of the Organic Act of Guam.

C. Excluded Lands

Section 304(1) of the CZM Act excludes from the coastal zone:

> "lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agenct."

On Guam, over 44,507 acres or 32.75% of its total land area is under Federal ownership. Jurisdiction of this Federal land is divided almost evenly betwee the U.S. Air Force and U.S. Navy, with the remaining 2.5% divided among the Federal Aviation Administration, Department of the Interior and the U.S. Coast Guard. (See Table No. 2 and Map No. 1; also, Guam Coastal Management Program Technical Reports, Volume I.)

While these Federal lands are geographically excluded from jurisdiction of the Coastal Management Program, this exclusion

> "does not remove Federal agencies from the obligation of complying with the consistency provisions for Section 307 of the Act when Federal actions on these excluded lands have spillover impacts that significantly affect coastal zone areas, uses, or resources within the preview of a State's management program." (Section 923.33(c). Further, "In excluding Federal Lands. . .a State does not impair in any way any of its rights or authorities over Federal lands that exist separate from this program." (Section 923.33(c)(2).)

Section 307(c)(1) of the CZM Act requires that:

> "Each Federal Agency conducting or supporting activities directly affecting the Coastal Zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved State management programs."

The mechanisms for determining whether such activities are consistent with the management program are outlined in the Federal Consistency portion of this document.

The submerged lands surrounding Guam out to the territorial sea limit of three miles, formerly under jurisdiction of the Federal government, were conveyed to Guam in 1974 under Public Law 93-435. One of several area categories excluded in this transfer was "all submerged lands adjacent to property owned by the United States above the line of mean high tide." Requests via the Coastal Zone Advisory Committee on April 28, 1976, to Air Force and Navy representatives were made to provide materials delineating those submerged lands over which Federal Agencies retained control. A copy of NAVFAC Drawing 7009 862 "Submerged Lands Jurisdiction" was provided for the Bureau in February 1978. Map 2:

Submerged Lands Jurisdiction indicates approximate boundaries from the official map. These submerged lands and the water column thereover must be considered as excluded from the "Coastal Zone" definition and subject only to those provisions of the CZM Act which apply to excluded lands and waters.

The effect on the program is that activities within large portions of Guam's coastal waters do not fall under the jurisdiction of the Guam's Coastal Management Program. While this fact has been recognized by both Federal and local agencies, on-island Federal agency personnel do not foresee any particular problems relative to accommodation of management programs for marine resources developed by GovGuam's Department of Agriculture, the Guam Marine Fisheries Advisory Council, the Western Pacific Regional Fisheries Management Council or other programs.

D. Interstate Boundaries

While Guam's Coastal Management Program boundary is not immediately adjacent to that of any other State or territory, it should be noted that the Commonwealth of the Northern Marianas has begun development of a coastal zone management program for their islands. Though the nearest island under jurisdiction of that program, Rota, is about 32 miles north of Guam, some consultation between the two programs has occurred, with more anticipated as the new program develops.

TABLE NO. 2

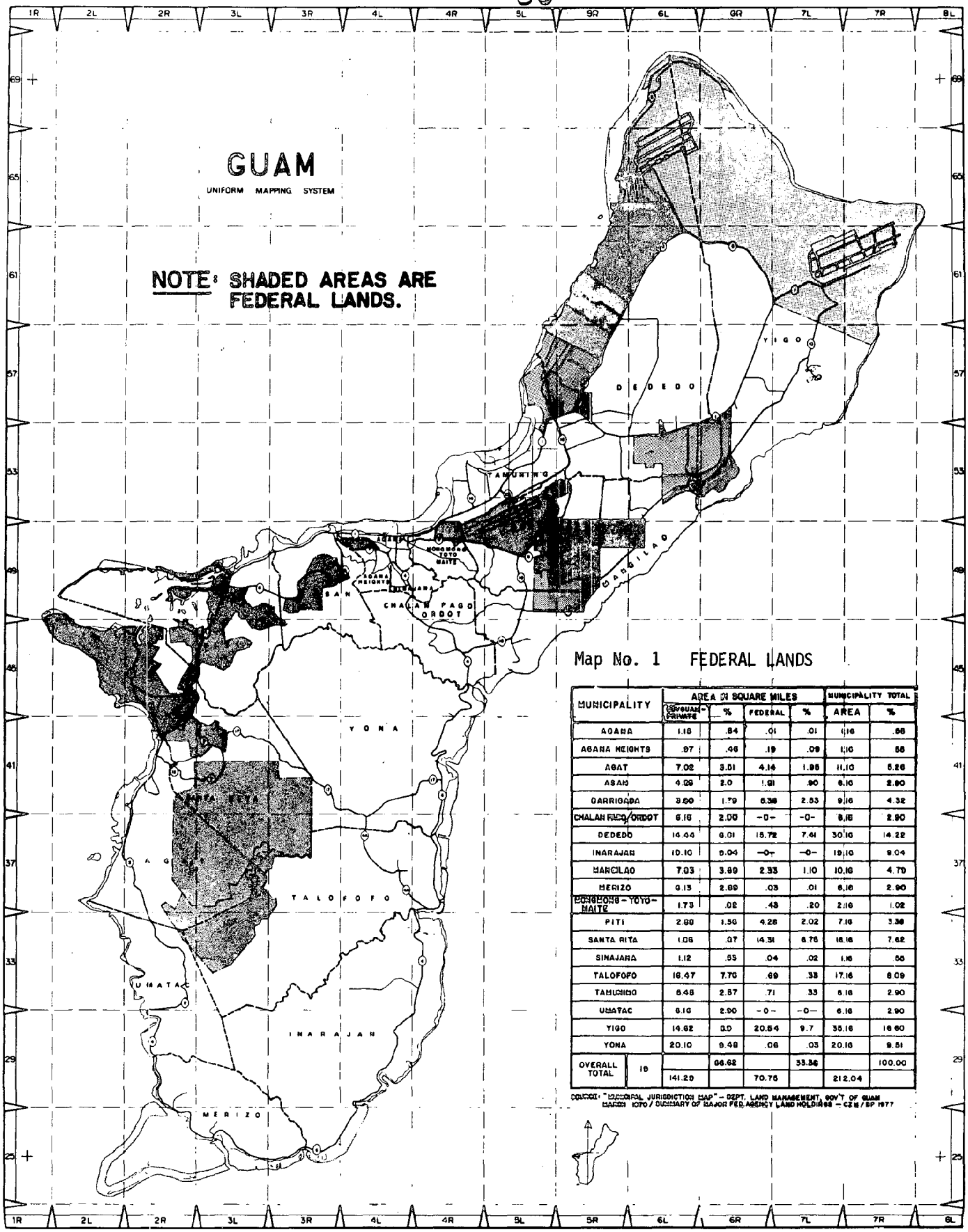
PATTERNS OF FEDERAL LAND OWNERSHIP

Agency	Acres	Sq. Meters	% of Federal Land Held	Est. % of Total Land Area [2]
A. Military				
Air Force	20,544.54	83,142,605	46.1%	15.1%
Navy	22,069.24	89,313,021	49.5%	16.3%
Coast Guard	71.99	291,340	.2%	.05%
Subtotal:	42,685.77	172,746,966	95.8%	31.45%
B. Non-Military (Federal)				
FAA	833.18	3,371,812	1.9%	.6%
Dept. of Interior	988.66	4,001,066	2.3%	.7%
Subtotal:	1,821.84	7,372,878	4.2%	1.3%
Grand Total (A&B) [3]	44,507.61	1,801,198.44	100.%	32.75%

*1 Total areas do not include submerged lands adjacent to property owned by the U.S.

*2 Assuming total acreage approximately 212 square miles x 640 acres/square miles, (calculated with acreage totals).

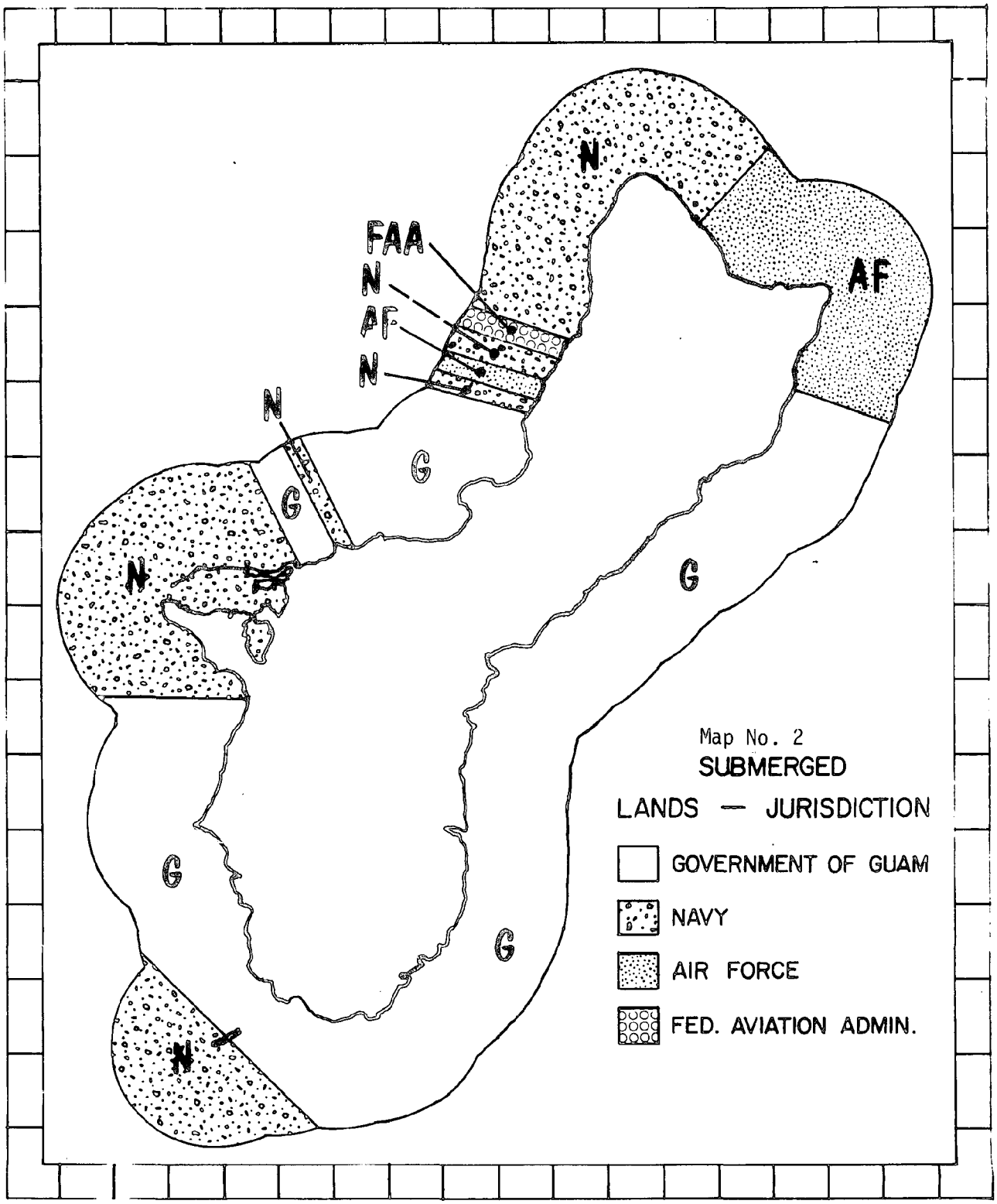
*3 Differences in conversion factors used account for approximately 5% error in acre/square meter comparison.



Map No. 1 FEDERAL LANDS

MUNICIPALITY	AREA IN SQUARE MILES				MUNICIPALITY TOTAL	
	GOVGUAM-PRIVATE	%	FEDERAL	%	AREA	%
AGANA	1.18	.84	.01	.01	1.16	.55
AGANA HEIGHTS	.97	.46	.19	.09	1.16	.55
AGAT	7.02	3.51	4.14	1.95	11.16	5.26
ASAN	4.09	2.0	1.91	.90	6.16	2.90
BARRIGADA	3.80	1.79	5.36	2.53	9.16	4.32
CHALAN PAGO/ORDOT	6.16	2.00	-0-	-0-	6.16	2.90
DEDEDO	14.44	6.01	15.72	7.41	30.16	14.22
INARAJAN	10.10	5.04	-0-	-0-	19.16	9.04
MANGILAO	7.03	3.89	2.93	1.10	10.16	4.70
MERIZO	6.13	2.89	.03	.01	6.16	2.90
MONGMONG-TOTO-MAITE	1.73	.02	.43	.20	2.16	1.02
PITI	2.80	1.50	4.26	2.02	7.16	3.38
SANTA RITA	1.06	.07	14.51	6.75	16.16	7.62
SINAJANA	1.12	.53	.04	.02	1.16	.55
TALOFOFO	16.47	7.76	.69	.33	17.16	8.09
TAMUNING	6.46	2.87	.71	.33	6.16	2.90
UMATAC	6.16	2.90	-0-	-0-	6.16	2.90
YIGO	14.62	6.0	20.54	9.7	35.16	16.60
YONA	20.10	9.48	.06	.03	20.16	9.51
OVERALL TOTAL 19		66.62		33.36		100.00
	141.20		70.76		212.04	

SOURCE: "MUNICIPAL JURISDICTION MAP" - DEPT. LAND MANAGEMENT, GOV'T OF GUAM
MAGEN 1070 / SUMMARY OF MAJOR FED. AGENCY LAND HOLDINGS - CIS / SP 1977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Map No. 2
SUBMERGED
LANDS — JURISDICTION
GOVERNMENT OF GUAM
NAVY
AIR FORCE
FED. AVIATION ADMIN.

CHAPTER V: USES SUBJECT TO MANAGEMENT UNDER THE GCMP

A. General

Section 305(b)(2) of the Federal Coastal Zone Management Act provides:

> "The management program for each coastal State shall include each of the following requirements:"
>
> ° ° °
>
> "(2) A definition of what shall constitute permissible land and water uses within the coastal zone which have a direct and significant impact on the coastal waters."

According to 15 CFR 923.3(b)(1), the Federal Office of Coastal Zone Management must determine that all uses with direct and significant impacts on coastal waters are addressed by the Program.

In the broadest sense, the uses subject to management under the GCMP include all activities that are under the authority of any Territorial agency. The reason for this is that Executive Order 78-37 requires that all executive agencies of the Government of Guam implement the GCMP Policies set forth in Chapter III within the scope of their authorities.

Not all Territorial agencies, however, have authority to regulate land and water uses effectively. The following discussion will focus upon those uses that are subject to significant regulation by Territorial agencies. These uses fall into eight major categories, each of which will be disucssed in turn. On the basis of this discussion, it should become apparent that the GCMP provides for effective regulation of all land and water uses significantly affecting the coastal waters of Guam.

1. Uses in Urban, Rural, and Agriculture Districts Requiring Building Permits or Licenses from Territorial Agencies

The regulation of land and water uses in the Urban, Rural, and Agriculture Land Use Districts established under Executive Order 78-23 relies upon implementation of the Zoning Law, GCG Title XVIII. The Zoning Law is enforced by designated building officials of the Department of Public Works in the first instance, and by the Territorial Planning Commission (TPC) on appeal from decisions of the building officials.

A proposed land or water use comes within the jurisdiction of a building official and the TPC under the Zoning Law only to the extent that it (a) requires a building permit, or (b) requires a license from a Territorial agency or officer. GCG §17450-17453. A building permit is required for "the construction of a new building or structure, or the

alteration, enlargement or moving of an existing building or structure." The term, "structure" is defined very broadly: "Anything constructed or erected which requires location on the ground or attached to something having a location on the ground." Even if a proposed use of land would not involve the construction or alteration of a building or structure, GCG §17453 provides that no license that may be required for that use may be issued by any Territorial agency unless the application has been approved by the building official as consistent with the Zoning Law. The building official's approval or disapproval of the application is subject to review by the TPC under GCG §17500. Teritorial licenses are required for a wide variety of activities and occupations, and these are all brought within the scope of the GCMP, to the extent that they require the use of land, by GCG §17453.

2. Development in Conservation Districts

In the Conservation Land Use Districts established under Executive Order 78-23, no zones will be formed under the Zoning Law. Instead, land and water use regulation will be carried out by the TPC under the standards and guidelines set forth in the Executive Order, and under other land use policies or standards and regulations adopted by the governor, the Legislature, or the TPC. Section VI(d) of the Order requires the TPC to "adopt such rules and regulations as necessary to ensure proper development within Conservation Districts consistent with these guidelines and approved government land-use plans and policies." The term, "development" is defined to mean:

> "on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or any gasseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of the use of land, including, but not limited to, subdivision of land and any other division of land including lot splits; change in the intensity of use of water, ecology related thereto, or of access thereto; construction or reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility, and the removal of major vegetation."

If the TPC considers it necessary, it may, under §VI(d) of the Order, adopt rules and regulations under which its approval would be required for any development, defined in the way just quoted, in Conservation Districts. Until the TPC adopts such rules and regulations, it will review those developments in Conservation Districts that require building permits and Territorial licenses to the same extent as for proposed uses in Urban, Rural, and Agricultural Districts. Under §VII of Executive Order 78-23, it may approve such development only if it

finds it to be compatible with the standards and guidelines of the Order itself, and with land use policies and standards approved by the Governor, the Legislature, or the TPC itself. These would include the GCMP Policies described in Chapter 3, and any applicable APC or Seashore Reserve standards.

3. Uses Requiring Subdivisions

Under the Guam Subdivision Law, GCG Title XIX, the TPC must approve all subdivisions, defined as "the division of any parcel of land into the six (6) or more lots." Any land and water uses requiring subdivisions are thus subject to management under the GCMP.

4. Development in the Seashore Reserve

Under GCG §13417, any person desiring to perform development within the Seashore Reserve must obtain a permit from the TPC, referred to for this purpose as the Seashore Protection Commission. The definition of "development" applicable to this requirement is the same as that appearing in Executive Order 78-23, quoted above.

5. Uses Subject to Air and Water Quality Statutes and Regulations

As noted in Chapter III, the GCMP is required by §307(f) of the Federal Coastal Zone Management Act to incorporate all requirements established pursuant to the Clean Water Act and the Clean Air Act. In Guam, these requirements are implemented under GCG Title LXI, Chapters I, III, IV and V. Any land and water uses that are subject to these provisions are thus subject to management under the GCMP.

6. Uses in Areas of Particular Concern

In the Flood Hazard and Wetlands Areas of Particular Concern (APC's) provided for by Executive Orders 78-20 and 78-21, and discussed below in Chapter VII, all proposed development must be approved by the Department of Public Works (for flood hazard zones) or the TPC (for wetlands). The definition of "development" that is applicable for these purposes is the same as that appearing in Executive Order 78-23, quoted above.

7. Uses Involving the Taking of Fish and Game

Under GCG §§12301-12321, the Department of Agriculture is vested with the control and regulation of fish and game in and about Guam, with broad rulemaking authority to effectuate this control and regulation. In exercising this authority, the Department is bound to the GCMP Policies under Executive Order 78-37. All activities involving the taking of fish and game are thus subject to management under the GCMP.

8. Uses of Public Lands and Waters

No use of land and water owned by the Territory, including submerged land, may take place without the approval of the responsible agency, usually the Department of Land Management. The Territory's proprietory authority over its land and water must be exercised consistently with the GCMP Policies, under Executive Order 78-37. Land and water uses on the public property are thus subject to management under the GCMP. Given the breadth of the range of land and water uses just discussed, it is extremely unlikely that any use directly and significantly affecting the coastal waters of Guam would not be subject to management under the GCMP.

B. Uses of Regional Benefit

Section 306(e)(2) of the Federal Coastal Zone Management Act requires:

> "Prior to granting approval, the Secretary shall also find that the Program provides
>
> . . .
>
> (2) for a method for assuring that local land and water use regulations within the coastal zone do not unreasonably restrict or exclude land and water uses of regional benefit."

Because of Guam's size and geographic isolation, most of the land and water uses that are subject to the GCMP are of regional, that is, island-wide, benefit or significance. Because Guam currently has no local governments, there is no danger that local land and water use regulations will unreasonably exclude uses of regional benefit.

C. Adequate Consideration of the National Interest in Siting Facilities that are Necessary to Meet Other Than Local Requirements

Section 306(c)(8) of the Federal Coastal Zone Management Act provides:

> "Prior to granting approval of a management program by a coastal State, the Secretary shall find that:
>
> . . .
>
> (8) The management program provides for adequate consideration of the national interest involved in planning for, and in the siting of, facilities (including energy facilities in, or which significantly affect, such State's coastal zone) which are necessary to meet requirements which are other than local in nature. In the case

finds it to be compatible with the standards and guidelines of the Order itself, and with land use policies and standards approved by the Governor, the Legislature, or the TPC itself. These would include the GCMP Policies described in Chapter 3, and any applicable APC or Seashore Reserve standards.

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C. Adequate Consideration of the National Interest in Siting Facilities that are Necessary to Meet Other Than Local Requirements

Section 306(c)(8) of the Federal Coastal Zone Management Act provides:

> "Prior to granting approval of a management program by a coastal State, the Secretary shall find that:
>
> . . .
>
> (8) The management program provides for adequate consideration of the national interest involved in planning for, and in the siting of, facilities (including energy facilities in, or which significantly affect, such State's coastal zone) which are necessary to meet requirements which are other than local in nature. In the case

of such energy facilities, the Secretary shall find that the State has given such consideration to any applicable interstate energy plan or program."

The major facilities serving greater than local needs in which there may be a national interest that was considered during development of the GCMP include:

(1) Regional water treatment plants;

(2) Transportation systems, including

(a) Highways;

(b) Seaports and airports;

(c) Aids to navigation;

(3) Energy production and transmission facilities;

(4) Major recreation areas and national defense and aerospace installations;

(5) Solid waste disposal facilities;

(6) Major reservoirs.

The selection of these facilities for consideration was guided by 15 CFR §923.52.

With the exception of those located on excluded Federal lands, the facilities just listed are subject to the land and water use policies, authorities, and conflict resolution mechanisms discussed in Chapters III and VI. Almost all of them are conditional uses in all zones under the Zoning Law, GCG Chapter XVIII. The agencies primarily responsible for determining their permissibility will be the Territorial Planning Commission and the Department of Public Works, which will follow the procedures described in Chapter VI, Part B, below. These provide opportunities for all interested persons to present what they believe to be the national interests involved in any proposed facility. In making their decisions, these Territorial agencies and any others which may be responsible will be bound by the GCMP Policies under Executive Order 78-37, by the land-use regulations established under Executive Order 78-23; and by any applicable Seashore Reserve and APC standards. The consideration of major facilities by Territorial agencies will be governed by GCMP Policy No. B(4), which provides:

> "In evaluating the consistency of proposed major facilities with the goals, policies, and standards of the Comprehensive Development and Coastal Management Plans, the Territory shall recognize the national interest in the siting of such facilities, including those associated with electric power production and transmission, petroleum refining and transmission, port and air installations, solid waste disposal, sewage treatment and major reservoir sites."

This provision not only recognizes and reflects the consideration of the facilities listed above that took place during development of the GCMP, but provides a judicially and administratively enforceable requirement that any identified national interest in such facilities not be disregarded by Territorial agencies.

CHAPTER VI: AUTHORITIES AND ORGANIZATION

Section 305(b) of the Federal Coastal Zone Management Act provides in part:

> The management program for each coastal State shall include. . .
>
> (4) An identification of the means by which the State proposes to exert control over the land uses and water uses (subject to the Program), including a listing of relevant constitutional provision, laws, regulations, and judicial decisions;. . .
>
> (6) A description of the organizational structure proposed to implement such management program including the responsibilities and inter-relationships of local, areawide, State, regional, and interstate agencies in the management process. . .

Section 306(d) of the Federal Act imposes the following requirement:

> Prior to granting approval of the management program the Secretary shall find that the State, acting through its chosen agency or agencies, including local governments. . .has authority for the management of the coastal zone in accordance with the management program. Such authority shall include power:
>
> (1) To administer land and water use regulations, control development in order to ensure compliance with the management program, and to resolve conflicts among competing uses; and
>
> (2) To acquire fee simple and less than fee simple interests in lands, waters, and other property through condemnation or other means when necessary to achieve conformance with the management program.

Section 306(c)(6) and (7) provides:

> Prior to granting approval of a management program submitted by a coastal State, the Secretary shall find that. . .
>
> (6) The State is organized to implement the management program. . .;
>
> (7) The State has the authorities necessary to implement the program, including the authority required under subsection (d) of this section.

The regulatory requirement, based on these statutory provisions are contained in 15 CFR §923.41 and §923.46.

Section 306(e)(1) of the Federal Coastal Zone Management Act provides that each program must provide for

> any one or a combination of the following general techniques for control of land and water uses within the coastal zone:
>
> (A) State establishment of criteria and standards for local implementation, subject to administrative review
>
> (B) Direct State land and water use planning and regulation, or
>
> (C) State administrative review for consistency with the management program of all development plans, projects, or land and water use regulations, including exceptions and variances thereto, proposed by any State or local authority or private developer, with power to approve or disapprove after public notice and an opportunity for hearings.

The specific requirements associated with each of these techniques are set forth in 15 CFR §923.42-.44.

The purpose of this Chapter is to outline the legal authorities, agencies, and procedures through which the Government of Guam will implement the GCMP. In doing this, it will demonstrate how the GCMP fulfills the Federal requirements just cited.

This Chapter is divided into three parts. Part A will describe how Territorial agencies will directly administer land and water use regulations in conformance with the polcies of the GCMP, controlling development to ensure compliance with the GCMP. Part B will describe how conflicts among competing land and water uses are to be resolved under the GCMP. Part C will focus upon the authority of Territorial agencies to acquire interests in land, water, or other property in order to achieve the objectives of the GCMP.

A. Territorial Land and Water Use Regulation and Control of Development Under the GCMP

The GCMP will rely for control of land and water uses solely upon the control technique provided for in §306(e)(1)(B) of the Federal Coastal Zone Management Act, quoted above: Direct Territorial land and water use planning and regulation. In contrast with most of the other States, Territories, and Commonwealths that are developing CZM programs under the Federal Act, Guam has no local governments. Land and water use regulation in Guam must therefore be carried out, if at all, at the Territorial level of government.

Detailed requirements that apply to programs utilizing the technique of direct State or Territorial land and water use regulation appear in 15 CFR §923.43. Perhaps the most important of these requirements, as expressed in §923.43(c)(2), is that each state must:

> "Bind each party which exercises statutory authority that is part of the management program to conformance with relevant enforceable policies and management techniques."

The Territorial statutes, regulations, and executive orders under which the various agencies of the Government of Guam are authorized and bound to regulate land and water uses in accordance with the policies of the GCMP can be divided into seven major categories. Each of these categories will now be discussed. In addition to the provisions of the various legal authorities themselves, the discussion will focus on the agencies responsible for implementation of each statute, regulation, and order and the procedures by which those agencies carry out their mandates. All of the authorities discussed in this Chapter are set forth in full in Appendix 1.

1. Executive Order 78-37: Compliance with the Guam Coastal Management Program Policies

Chapter III set forth a series of eighteen major land use policies, referred to as the Guam Coastal Management Program Policies [hereinafter "GCMP Policies"]. These policies were developed in the course of the comprehensive Territorial planning effort that was initiated by the passage of Guam Public Law 12-200, effective January 10, 1975. This statute established a Central Planning Council (CPC), now consisting of members of the Territorial Planning Commission (TPC). (The membership of the CPC has been determined on an informal basis due to questions about the validity of the CPC membership provisions of Public Law 12-200, as amended in November 1975). It also created within the Office of the Governor a Bureau of Planning (BP or "Bureau"), which technically serves as staff to the CPC and administers central planning functions. Among its othe duties, the CPC, through the Bureau, must prepare a Comprehensive Development Plan ("Plan"). The Plan is intended to provide long range guidance for the social, economic, and physical development of Guam, and must set forth development objectives, standards, and principles covering the desirability of various uses of land. It is required to include elements focusing on such subjects as transportation, community design, public services and facilities, urban redevelopment and, most significantly for purposes of the GCMP, land use.

After its development by the Bureau, the Plan was submitted to the CPC, which held public hearings on the Plan on October 12 and November 30, 1978. The CPC recommended to the Governor that he approve it. The Governor then forwarded the Plan to the Legislature for adoption by resolution. The 15th Guam Legislature has scheduled hearings on the Plan.

The GCMP Policies set forth in Chapter III were derived from similar policies that were included in the land-use element of the Comprehensive Development Plan, entitled The Land Use Plan: 1977-2000, which was published in August 1977. The GCMP Policies, in turn, formed the basis for the land use policies appearing in the summary of the entire Comprehensive Development Plan that was published by the Bureau of Planning in September 1978, and was the subject to the CPC public hearings.

Public Law 12-200 does not specify the legal effect that the policies of the Plan will have upon the adoption of the Plan by the Legislature. Because of this, and also because the GCMP Policies vary slightly in their wording from the policies of the Plan, the CZM Staff of the Bureau of Planning concluded that a new source of legal authority was necessary if the GCMP Policies were to be binding on Territorial agencies regulating land and water uses in Guam. Upon the recommendation of the Bureau, the Governor signed Executive Order 78-37, which requires all Territorial agencies to perform their functions consistent with the GCMP policies. It is from this Executive Order that the GCMP Policies derive their legally binding force.

Because of the importance of Executive Order 78-37, as well as the other executive orders that will be discussed below, for implementation of the GCMP, it is necessary that the legal basis for the Governor's authority to issue orders having such significant effects be described here.

This authority is derived primarily from 48 U.S.C. §1422c(b), a provision of the Organic Act of Guam, which states:

> "All officers shall have such powers and duties as may be conferred or imposed on them by law or by executive regulation of the Governor not inconsistent with any law." [Emphasis supplied]

This authority is also based on the provisions of 48 U.S.C. §1422 that

> "The executive power of Guam shall be vested in an executive officer whose official title shall be the 'Governor of Guam. . .'";

and that

> "The Governor shall have general supervision, and control of all the departments, bureaus, agencies, and other instrumentalities of the executive branch of the government of Guam."

Pursuant to these provisions of the Organic Act, the Governor has frequently imposed substantive standards on agency action like those contained in the executive orders discussed in this Chapter and in Chapter VII. This consistent, unchallenged practice provides a firm basis for the governor's issuance of these executive orders in support of the GCMP.

Executive Order 78-37 binds all executive agencies of the Government of Guam. The agency authorities under which each of the GCMP Policies can be implemented were listed in the discussion of each policy appearing in Chapter III. The binding applicability of the GCMP Policies also forms the background for the following, more detailed, discussions of the various authorities and of the agencies that administer them.

2. General Territorial Land-Use Regulatory Authority

Perhaps the heart of the GCMP is the system of land-use districts that was established pursuant to Executive Order 78-23, signed on September 8, 1978. The Order requires the Territorial Planning Commission to implement a set of land-use district guidelines attached to the Order. These Guidelines require that all land in Guam be placed by the TPC into one of four land-use districts: urban, rural, agricultural, and conservation. They set forth the types of land and water uses to be permitted in each of the districts, and specify that the initial district boundaries shall be those delineated on the Land-Use Districting Map included in the land-use element of the Comprehensive Development Plan. The Guidelines prescribe criteria and procedures for revision of these boundaries.

In issuing Executive Order 78-23, the Governor based his conclusion that the TPC has authority to implement the Land-Use Guidelines and to adopt the district boundaries on an opinion of June 20, 1978, rendered by the Office of the Attorney General to the Director of the Bureau of Planning. The opinion concludes that such authority is granted the TPC by two provisions of the Guam Subdivision Law, GCG Title XIX. The first of these, appearing in GCG §18001, provides:

> "The purpose of this Title and of any rules, regulations, specifications and standards adopted, pursuant thereto, is to control and regulate the development and/or subdivision of any land for any purpose whatsoever."

GCG §18003 provides, in part:

> "The [TPC] shall prescribe and adopt such rules and regulations. . .as are, in its judgement, necessary to effectuate the purposes and intent of this Title. . . . Such rules and regulations shall become effective upon approval by the Governor."

The opinion noted that the TPC had already promulgated broad land-use regulations to confirm the view that these statutory provisions provide authority for the land-use district system that was ultimately required by Executive Order 78-23. It also concluded that the district boundaries appearing on the map incorporated into the land-use element of the Comprehensive Development Plan could be adopted by the TPC even though the map had not yet been approved by the Legislature.

It is the TPC that administers the Guam Zoning Law, GCG Title XVIII. The Zoning Law authorizes establishment of the following zones:

R1 - single family dwelling;

R2 - multiple dwelling;

C - commercial;

H - resort hotel;

M1 - light industrial;

M2 - heavy industrial;

A - agriculture.

Executive Order 78-23 limits the kinds of zones that may be established in each district as follows:

Urban - R1, R2, C, H, M1, M2.

Rural - A, R1

Agricultural - A.

Conservation - no zoning.

The combination of the criteria for establishment of and zoning within land-use districts prescribed in the Executive Order with the district boundaries set forth on the land-use element map, together with the enumeration in the Zoning Law of the uses permitted in the various zones, constitutes a set of detailed, area-specific land and water use

standards allowing a high degree of predicability in public and private planning. These standards are independent of and in addition to the GCMP Policies, but have the same purpose of requiring that land and water uses be selected and carried out in ways that reconcile the completion of necessary development with avoidance of damage to the environment.

In lieu of zoning, development within conservation districts, (including all submerged lands) will be governed by TPC regulations that are consistent with the Order and with other approved land-use plans and policies, including the GCMP Policies. As will be discussed in Part B, the TPC must approve any development within a conservation district for which a building or grading permit is required.

The TPC may, according to the Order, approve development in conservation districts, and zone changes, variances, and other uses in agriculture, urban, and rural districts, only if these are found by the TPC to be compatible with "such standards and guidelines, land-use policies or other applicable standards as approved by the Commission, Governor or Legislature. . . ." This provision reinforces the TPC's obligation to comply in its actions with the GCMP Policies and the Land-Use District Guidelines.

3. The Territorial Seashore Protection Act

The Guam Territorial Seashore Protection Act, GCG §§13410-13420, was originally passed in 1974, and amended in 1975, 1976, and 1978. The Seashore Protection Act establishes a "Seashore Reserve" consisting of

> "that land and water area of Guam extending seaward to the ten fathom contour, including all islands within the Government's jurisdiction except Cabras Island and those Villages wherein residences have been constructed along the shoreline prior to March 11, 1974, and extending inland to the nearer of the following points:
>
> (1) From the mean high water line for a distance on a horizontal plan of ten (10) meters.
>
> (2) From the mean high water line, to the inland edge of the nearest public right-of-way."
>
> GCG §13412(c)

A bill, No. 68, that would enlarge the landward portion of the Seashore Reserve has been submitted to the 15th Legislature. It would provide that the Seashore Reserve include:

"that land and water area of Guam extending seaward to the ten fathom contour, including all offshore islands within the Government's jurisdiction in their entirety and extending inland to such boundaries as are delineated on the official Seashore Reserve Map.:

GCG §13412(c)

The Seashore Reserve Map, prepared by the Bureau of Planning, delineates an inland boundary located at the coastal cliff line in some areas, and at the public highway nearest the shoreline in others.

Under GCG §13417, any person wishing to perform any development within the Seashore Reserve must obtain a permit for such development from the Guam Territorial Seashore Protection Commission composed of the TPC members. No permit may be issued unless the TPC first finds that the proposed develpment will not have any substantial adverse environmental or ecological effect, and that it is consistent with the purpose and objectives of the Seashore Protection Act. In addition, of course, the development must be consistent with the GCMP Policies under Executive Order 78-37, and with the land-use standards established under Executive Order 78-23 and the Zoning Law. The applicant for a permit has the burden of proof on all issues. The procedures for consideration of Seashore Reserve permit applications by the Commission and for review of the Commission's decisions by the courts will be described in part B of this Chapter.

Under GCG §13416(c), the Commission is required to prepare, adopt, and submit to the Legislature for implementation the Guam Seashore Reserve Plan, described in Chapter III. This will be prepared on behalf of the Commission by the Bureau of Planning. When adopted by the Legislature, the policies of the Plan will be the primary basis for Seashore Reserve permit decisions, except in those cases where the development is proposed to be located in an Area of Particular Concern, discussed below in this Chapter and in Chapter VII.

Like the Commission's authority over conservation districts under Executive Order 78-23, its authority over the Seashore Reserve extends seaward of the shoreline. Under the Seashore Protection Act, the Commission has permit authority over all development seaward to a depth of ten fathoms. Together with the proprietary authority of the Department of Land Management over submerged lands, discussed below, the Commission's permit authority under the Seashore Protection Act can be expected to be the foundation for implementation of the GCMP seaward of the shoreline.

4. Authority Over Land and Water Uses in Areas of Particular Concern

The policies and authorities governing land and water use in Areas of Particular Concern (APC's) are discussed in detail in Chapter VII.

It is sufficient to note here that, pursuant to the requirement of §305(b)(3) of the Federal Coastal Zone Management Act, the GCMP provides for two currently designated APC's in addition to describing other areas that may be so designated in the future. The currently designated APC's are wetlands and flood hazard areas. Land and water uses in these APC's are subject to two Executive Orders signed during the summer of 1978. Executive Order 78-20, signed on August 28, 1978, designated flood hazard areas as an APC in the planning and management of Guam's land and water resources, and directed the TPC to promulgate rules and regulations necessary to meet the requirements of the National Flood Insurance Program and the GCMP in insuring that development in floodplains does not endanger the public's health, safety, and welfare; and to delineate as floodplains areas so delineated under the National Flood Insurance Program and other areas recommended by the Subdivision and Development Review Committee (SDRC). In response to the Order, the TPC adopted the rules and regulations that it required and delineated the floodplains (effective October 1, 1978).

In Executive Order 78-21, signed on September 7, 1978, wetlands were declared to be an APC in the planning and management of Guam's land and water resources. The TPC was directed to adopt rules and regulations necessary to insure balanced development, protection, and conservation of wetlands. In accordance with the Order, the TPC has identified the wetlands of Guam and promulgated the required rules and regulations (effective October 1, 1978).

Because certain proposed land and water uses may be subject to the land-use regulations adopted pursuant to Executive Order 78-23, to any Seashore Reserve Plan that may be adopted, and to APC rules and regulations, it was found necessary to establish a priority among these three regulatory systems in order to resolve possible conflicts among them in particular instances. Section VI(g) provides that the APC rules and regulations are first in priority, followed by Seashore Reserve and General Land Use Standards, in that order. If the TPC is unable to determine the applicable standard through use of this order of priority alone, it must determine the applicable standard by rule.

5. Proprietary Authority of the Territorial Government

The Government of Guam has ownership rights over a substantial portion of the land of the island. Under Executive Order 78-37, the Territorial agencies having responsibility for this land must use and dispose of it only in ways that are consistent with the GCMP Policies.

For purposes of the GCMP, some of the most important lands owned by the Territory are the submerged lands that were transferred to it by the United States under U.S. Public Law 93-435, 88 Stat. 1210 (October 5, 1974). These include all submerged lands within the three-mile territorial limit, with certain exceptions, the most important of which are (1) submerged lands adjacent to property owned by the United States

above the line of mean high tide; (2) lands under the control of a Federal agency other than the Department of the Interior; and (3) oil, gas, and other mineral deposits except coal, sand and gravel. Submerged coal, sand and gravel deposits are thus subject to GovGuam jurisdiction.

The disposition of public lands was formerly governed by Chapters VI, VII, VIII, and XI of GCG Title XIV. These provisions prescribed criteria and procedures for the sale of public land, and for the issuance of permits and leases for its use, by the Department of Land Management.

In February 1975, however, Public Law 12-226 repealed these provisions and established in their place a Chamorro Land Trust Commission. This Commission was to have exclusive juridiction over "available" public lands, consisting of all Government lands except those held under existing leases and permits, those dedicated by law to specific public uses, and those reserved for government use by the Department of Land Management with the concurrence of the Legislature. These "available" lands were to be designated "Chamorro homelands," and were to be leased for long terms at nominal rent for agricultural and residential use to persons whose ancestors inhabited Guam before 1898.

The Chamorro homelands program has not, in fact, been implemented. Because the previous statutory provisions governing sale, lease, and other disposition of public land have not been reenacted, however, a legal vacuum has resulted. The Department of Land Management continues to lease, and issue use permit for public land in much the same way as it did before 1975. As noted above, the Department's activites in this area are subject to Executive Order 78-37, and must, thus, conform to the GCMP policies. In addition, any uses carried out on these lands must conform to the general land use standards established under Executive Order 78-23, and to any Seashore Reserve and APC standards that may also be applicable. The same would be true of land and water uses carried out under Chamorro homeland leases, if any should be issued.

Under GCG §13251, the TPC is designated as the Guam Natural Resources Board, having the function of studying and evaluating any proposals to utilize Government land for natural resource development or exploitation. This function of the TPC will be described in more detail in Part B of this Chapter.

The Territory Beach Areas Act, Chapter V-B of GCG Title XIV, effective April 24, 1973, represents an attempt by the Territory to take advantage of any exisitng rights that it or the public might have to beach areas and access routes thereto. It asserts public ownership of all areas between the mean high tide and extreme low tide marks that had not been disposed of to others before January 1, 1972, and confirms all public rights or easements previously acquired in an "ocean shore" area extending 25 feet inland from the two-foot contour line. All of these public ownership rights are vested in a "territorial beach area" administered by the Department of Parks and Recreation to be used by the public for

recreational and fishing purposes. Alienation of the publicly-owned portions of the ocean shore is forbidden and, as discussed below in part C, the Governor is authorized to acquire additional interests in the ocean shore by condemnation, exchange, or negotiated purchase.

6. Authority for Maintenance of Air and Water Quality

As was noted in Chapter III, §307(f) of the Federal Coastal Zone Management Act requires that the policies of the GCMP include all requirements established pursuant to the Clean Water Act and the Clean Air Act. In Guam, these requirements are prescribed and implemented through GCG Title LXI and the regulations promulgated thereunder by the Guam Environmental Protection Agency (GEPA). GEPA administers a variety of permit and enforcement programs under the Guam Air Pollution Control Act and a number of water pollution control statutes. These are listed in Appendix 6.

7. Authority for the Conservation of Wildlife

GCG §12301 vests the control and regulation of fish and game in and about Guam in the Department of Agriculture. Section 12321 requires the promulgation of regulations to implement the fish and game statutes contained in Article I, Chapter IV of GCG, Title XIII, including rules to carry out the purposes of those provisions. The Department of Agriculture thus possesses broad authority to implement the GCMP Policies on Conservation of Natural Resources and on Living Marine Resources, as it is obliged to do under Executive Order 78-37. The statutory provisions themselves prescribe specific protective policies, including prohibitions on the taking of fish by explosives or poisonous or intoxicating substances and on the use of artificial light in hunting. Additional statutory provisions on the taking of live coral and on net fishing are contained in GCG §§12380-12385. Subject to these various statutory provisions, the general rule is that fish may be taken at any time except as prohibited by Departmental regulation (GCG §§12314-12315).

GCG §12325 was adopted on October 27, 1975. It declared the policy of Guam to be the conservation of endangered and threatened species by all Territorial agencies, and directs them to utilize their authority in furtherance of that purpose. It vested regulatory power for this purpose in the Department of Agriculture, requiring the Department to promulgate rules to determine which species were endangered or threatened and to "improve and enhance" the status of such species, protecting them, if possible, "from all probable deleterious causes." These provisions were subsequently amended by the 15th Guam Legislature to require a proposed list of endangered or threatened species to be submitted to the Legislature before final approval.

An additional means by which the Department of Agriculture might implement the GCMP Policies applicable to wildlife would be through the management and regulation of any land and water areas that may be designated as conservation areas by the Government of Guam, as provided in GCG §12350.

8. Other Authorities

In addition to the authorities that have just been discussed in detail, there are others that will play an important, if more limited, role in implementation of the policies set forth in Chapter III. GCG Title XXVII, Chapter I, and Title XIV, Chapter XIII, vest responsibility for Territorial parks, recreation, and conservation of historic and archaeological resources in the Department of Parks and Recreation. Section 26003(a) grants the Director of this Department broad authority to "establish rules and regulations to accomplish the purpose of the Department." The Department is responsible for the establishment and operation of a Territorial Park System. It also administers a program for the conservation of historic and archeological resources, focusing especially on those which are located on public land or are threatened by public projects.

Chapter VII of GCG Title XIII authorizes the Department of Agriculture to establish "agricultural preserves" after holding public hearings on 30 days notice. Once such a preserve is established, the Department may contract with the owners of land located therein to limit its use to agricultural or conservation purposes.

The Subdivision Law, GCG Title XIX, requiring TPC approval of the division of any parcel of land into six or more lots, provides the Commission with another mechanism for controlling land and water uses.

B. Procedures for Resolution of Conflicts Among Competing Land and Water Uses

A number of procedures are available to fulfill the requirement of §306(d)(1) of the Federal Coastal Zone Management Act and its implementing regulations that the GCMP include authority to "resolve conflicts among competing uses." The discussion of these procedures will be organized according to the eight major categories of uses subject to management under the GCMP, discussed in Chapter V.

1. Conflicts Involving Proposed Uses in Urban, Rural, and Agricultural Districts that Require Building or Grading Permits or Licenses from Territorial Agencies

The regulation of land and water uses in the Urban, Rural, and Agricultural Land Use Districts established under Executive Order 78-23 continues to rely heavily upon implementation of the Zoning Law, GCG Title XVIII. As was noted in Chapter V, the TPC and Territorial building officials have authority, under GCG §§17451-17453 and 17500, to approve or disapprove all proposed land and water uses that require either building permits or licenses from Territorial agencies. In making these decisions, the building officials and the TPC are bound not only by the Zoning Law and Executive Order 78-23, but also by the GCMP Policies (under Executive Order 78-37) and by any applicable Seashore Reserve and APC standards.

The procedures followed by building officials and the TPC in arriving at these decisions provide an important means for resolution of conflicts concerning a wide range of proposed uses. The initial application for a building permit is filed with the building official, who makes the initial decision whether or not to issue the permit in an informal manner. An equally informal procedure is followed by the building official in deciding whether or not to certify that a use proposed in a license application filed with another Territorial agency conforms to applicable land-use standards.

When the building official has rendered this initial decision, any adversely affected person may appeal it to the TPC under GCG §§31062 and 17500. The TPC must hold a hearing after adequate notice to all parties in interest, each of whom may appear in person or by a designated representative. The TPC must make its decision in writing and within a reasonable time. This decision is subject to review by the Superior Court under GCG §§17507 and 31071. The standard of review utilized by the Court would be similar to the "substantial evidence" or "arbitrary and capricious" standards provided for by the Federal Administrative Procedure Act.

2. Conflicts Involving proposed Development in Conservation Districts

In contrast with the situation in the Urban, Rural, and Agriculture Districts, the regulation of land and water uses in the Conservation Land Use Districts established under Executive Order 78-23 will not be carried out under the Zoning Law. Instead, Executive Order 78-23 requires that the TPC refuse a building permit or other authorization that might be required for any development (as defined in Chapter V) within a Conservation district that would not be compatible with the land use policies, standards, and guidelines prescribed in the Executive Order itself, or with any others approved by the Governor, the Legislature, or the TPC. These policies, standards, and guidelines would include the GCMP Policies and any applicable Seashore Reserve and APC standards. They would also include the rules and regulations that the Order requires the TPC to adopt as necessary to "ensure proper development within Conservation Districts consistent with these guidelines and approved government land-use plans and policies." The procedures for TPC consideration of permit applications for development in Conservation Districts, and for judicial review of the TPC's decision, are practically the same as those applicable to proposed uses in zoned areas, and offer the same opportunities for participation by interested persons.

3. Conflicts Involving Proposed Subdivisions

Under GCG Title XIX, the TPC must approve all subdivisions (as defined in Chapter V) of land. The procedure by which this function is performed by the TPC provides a focus for the resolution of any disputes that might arise concerning proposed subdivisions.

A person wishing to subdivide land must file an application, accompanied by tentative plans, to the Territorial Planner. Within three days of receiving the application, the Planner must transmit copies of the tentative plans to the Territorial agencies responsible for technical review. The applicant also meets with the SDRC. These agencies must transmit their written findings and recommendations to the Planner within 15 days after receiving the plans.

The Territorial Planner must then submit the tentative plans to the TPC at its next regularly scheduled meeting. Interested persons have the opportunity to present their views on proposed subdivisions to the TPC during its meetings. The TPC must thereafter approve, conditionally approve, or disapprove the tentative plans consistent with the Subdivision Rules and Regulations and the GCMP policies. If the tentative plans are disapproved, they may not be reconsidered until they are modified and a new application is filed. If the TPC approves the tentative plans, final plans must be submitted by the applicant to the Territorial Planner within one year. These must be presented to the TPC at its next meeting, and must be approved if they comply strictly with the tentative plans. If they are not in strict compliance, the TPC must, within 15 days, either approve the final plans or issue a written determination specifying the work that will be necessary before the TPC will grant approval. Once again, interested persons will have the opportunity to present their views to the TPC.

Under GCG §18003, the TPC has prescribed by regulation those specifications and standards for subdivision development as are, in its judgment, necessary to carry out the purposes of the Subdivision Law. Under this broad rulemaking authority, which was discussed in Part A as one of the bases for the TPC's adoption of the Land Use District regulations under Executive Order 78-23, interested persons are afforded another opportunity to affect the incidence of subdivisions through the rulemaking procedure that the TPC must follow under the Administrative Adjudication Law.

4. Conflicts Involving Proposed Development in the Seashore Reserve

Under GCG 13417, no development (as defined in Chapter V) may take place within the Seashore Reserve without a permit from the Territorial Seashore Protection Commission (TSPC). (Exceptions are provided for certain repairs and improvements to existing single-family residences and for certain maintenance dredging of existing navigation channels authorized by the U.S. Army Corps of Engineers.) The TSPC may not issue such a permit unless it first finds that the proposed development will have no substantial adverse environmental or ecological effect; that it is consistent with the purpose and objectives of the Seashore Protection Act; that it is consistent with the GCMP Policies (as required under Executive Order 78-37); and that it is consistent with any Seashore Reserve Plan or APC standards that may be applicable.

The procedures under which permit applications for development in the Seashore Reserve are considered by the TSPC are prescribed in GCG §13417(b) and in special procedural rules adopted by the TSPC itself. The TSPC must conduct at least one public hearing on each permit application in the municipal district within which the proposed development would be located. The notice of the time and place of this hearing must be published in a newspaper of general circulation at least ten days before the hearing, and mailed to the Commissioner of the municipal district. The hearing may occur neither less than 21 nor more than 90 days after the application is filed. All interested persons may present their views on the proposed development at the public hearing. The application must have been submitted to the Subdivision and Development Review Committee (SDRC) before the public hearing, and the SDRC's comments on and evaluations of the proposal should be presented during the hearing. Within 60 days after the hearing concludes, the TSPC must approve or disapprove the application. Any person aggrieved by the TSPC's decision has a right to obtain judicial review thereof by filing a petition for a writ of mandamus within 60 days after the TSPC's decision.

In addition to the permit procedure, there are other ways in which interested persons may present conflicts over land and water uses in the Seashore Reserve for resolution. GCG §13417(b)(5) allows any person, including any Federal or Territorial agency, to maintain an action for declaratory and equitable relief to restrain violations of the Seashore Protection Act. GCG §13417(b)(6) authorizes any person to maintain an action for certain civil penalties of violation of the Seashore Protection Act that are provided for in GCG §13418. Persons prevailing in such actions may recover their costs, including reasonable attorneys' fees.

Under GCG §13416, the TSPC must adopt a comprehensive Seashore Reserve Plan for submission to the Legislature. Public hearings during which all interested persons may present their views will be held by the TSPC in the development of this Plan, providing another focus for resolution of conflicts among competing uses in the Seashore Reserve.

5. Conflicts Involving Proposed Uses That Are Subject to Territorial Air and Water Quality Statutes and Regulations

Land and water uses that are subject to regulation under the air and water quality provisions of GCG Chapter LXI and its implementing regulations are the responsibility of the Guam Environmental Protection Agency (GEPA), headed by a Board of nine directors appointed by the Governor with the advice and consent of the Legislature, and an Adminsitrator appointed by and subject to the supervision of the Board. In carrying out its statutory functions, GEPA provides opportunities for the resolution of land and water use conflicts based on environmental considerations. Perhaps the most important of these opportunities is provided for by GCG §57005, authorizing the Board to adopt rules and regulations implementing the environmental statutes for which GEPA has responsibility. The Board's consideration of these rules and regulations is governed by the rulemaking

provisions of the Administrative Adjudication Act GCG Title XXV, Chapter III, which provide for participation by interested persons. In addition, GEPA rules and regulations must be presented for approval to the Legislature.

GCG §57047 authorizes the Board to classify the waters of Guam and establish standards of quality for each class of waters. It requires that the Board conduct public hearings on two weeks notice before adopting such classifications and standards.

The most important permit programs administered by GEPA are those provided for in the water pollution control provisions of GCG Title LXI, Chapter III, and the provisions on air pollution control contained in GCG Title LXI, Chapter V. GCG §57045 requires that a permit be obtained from the Administrator before construction of any new outlet for the discharge of sewage, industrial waste, or other wastes into any sewage system or into the waters of Guam. No hearing on permit applications is required by the statute, but interested persons have the opportunity to participate in the Administrator's consideration of permit applications. No permit may be issued that would violate GEPA water quality standards. Persons adversely affected by a decision of the Administrator on a water quality permit application could bring the matter to the attention of the Board and, in addition, seek judicial review through such generally available proceedings as a petition for a writ of mandamus.

Under GCG §57105, GEPA must issue a permit before any stationary source of air pollution may be constructed or modified and before any equipment or device which may contribute to air pollution or is intended to present or control the emission of air pollutants may be installed. GEPA must issue such a permit within 90 days of receiving a permit application unless the proposed construction or modification would not be in accordance with GCG Title LXI, Chapter V, or with rules and regulations promulgated therunder. Persons adversely affected by the denial of a permit are entitled to a hearing in accordance with GEPA rules.

Under GCG §57110, GEPA may grant variances from the air quality rules and regulations after a public hearing on due notice. All GEPA air pollution control orders are reviewable by the Superior Court under an "arbitrary and capricious" standard of review.

GEPA must hold hearings on proposed air and water quality enforcement actions, upon the request of the alleged violator. Interested persons who qualify as witnesses would be eligible to participate in these hearings.

6. Conflicts Involving the Taking of Game and Fish

The game and fish permit procedures of the Department of Agriculture generally concern large numbers of small-scale uses, and these procedures do not, as a rule, involve public hearings. The most appropriate

forum for the resolution of conflicts concerning hunting and fishing thus appears to be provided under the broad rulemaking authority granted to the Director of the Department under GCG §12321. The hunting and fishing regulations authorized by this provision must be adopted under the rulemaking provisions of the Administrative Adjudication Act, which require an opportunity for participation by interested persons. Those concerned with the taking of game and fish and its relationship to other land and water uses can thus express their views to the Director. It should be noted here that, in addition to the various land-use standards that were noted above as binding on agency decisionmaking, the decisions reached under the various procedures discussed must also conform to any endangered species regulations promulgated by the Director under GCG §12325, as amended.

7. Conflicts Involving Proposed Uses in Areas of Particular Concern

Procedures for resolving conflicts involving uses in areas of particular concern are provided in Executive Orders 78-20 (Flood Hazard Areas) and 78-21 (Wetlands). These procedures are described in Chapter VII.

8. Conflicts Involving Proposed Uses of Publicly-Owned Lands and Waters

The Department of Land Management is responsible for the disposition and use of land owned by the Territory. The Department's procedures are not adapted to broad participation by interested persons in its individual lease, sale, and permit decisions. Because uses proposed for public lands and waters will be subject to the procedures already described in this Part to the same extent as if they were proposed for privately held land, there should be ample opportunity for the orderly resolution of conflicts concerning these proposed uses.

Under GCG §§ 13251-13253, all proposals for the use, lease, or purchase of Territorial land for commercial mining or the removal of minerals, rocks, or sand for processing must be presented to the Guam Natural Resources Board, composed of the members of the TPC. The Board must determine whether each proposal is consonant with the public interest and in keeping with proper conservation practices, formulating a recommendation to the Governor concerning disposition of the proposal. The Board's proposal must include a public hearing, with notice of the hearing and a description of the proposal published at least ten days in advance. In formulating its recommendation, the Board must take into account the GCMP policies and any applicable Seashore Reserve, APC, and Land Use District standards.

9. The Subdivision and Development Review Committee - A Supplemental Conflict Resolution Mechanism

On February 2, 1978, the Governor signed Executive Order 78-2, repealing previous related orders and establishing the Government of Guam Subdivision and Development Review Committee (SDRC). The SDRC is composed of representatives of the following Territorial agencies:

(1) Planning Division, Department of Land Management (Chairperson);

(2) Building Permit Section, Department of Public Works;

(3) Department of Public Works Other than the Building Permit Section

(4) Guam Environmental Protection Agency;

(5) Department of Parks and Recreation;

(6) Public Utility Agency of Guam;

(7) Bureau of Planning;

(8) Department of Agriculture through a subsequent Gubernatorial directive).

These members may designate the heads of other agencies whom they determine should be involved in the SDRC's activities.

Among the duties of the SDRC is that of reviewing and coordinating official position statements of Territorial agencies on applications for all subdivisions requiring improvements, all zone changes, all zone variances allowing more than ten percent variance from the applicable zoning provision, such agricultural subdivisions as the TPC or SDRC deems appropriate for review, such conditional use applications as the TPC or director of Land Management deems appropriate for SDRC review, and development within the resort-hotel zone. In addition, the SDRC is responsible for

> "[a]ssisting government agencies in the establishment and adoption of policies, standards, rules and regulations relating to land use. . . ";

and for

> "[p]romoting and assuring the compliance of land development with all appropriate governmental land-use policies and plans."

The Executive Order authorizes SDRC to establish rules and regulations necessary to carry out these duties effectively.

Because of its authority to review a wide range of land-use decisions and its duty to assure compliance with all Territorial land-use policies, including the GCMP Policies and the area-specific policies embodied in the land-use districting system, SDRC is a convenient forum for productive consultation among agencies on implementation of the GCMP. While SDRC itself lacks final decisionmaking authority, it brings together representatives of the agencies primarily concerned with land and water use, allowing resolution of difficulties and differences of opinion

before final agency action is taken. It is thus an important supplement to the conflict resolution procedures previously described in this part.

C. Authority to Acquire Interests in Lands, Waters, and Other Property When Necessary to Achieve Conformance with the GCMP

It is not anticipated that the actual acquisition of lands and waters by the Government of Guam will be necessary for enforcement of the great majority of the policies of the GCMP. There are, however, two sets of statutory provisions granting the Territory acquisition authority that may prove useful for the full attainment of the GCMP's purposes.

GCG §§13985.4-13985.14 outline the authority of the Department of Parks and Recreation to acquire ownerships interests necessary for the protection and preservation of historical resources, consisting of either real or personal property. Because the Territory exercises strong authority only over historical resources located on public lands or in public waters, it is likely that this acquisition authority may at some point have to be relied upon for the protection of an important historical resource. The Department is authorized to acquire only the ownership interest that it considers reasonably necessary for the protection and preservation of historic real property. Thus, if a leasehold would be sufficient for this purpose, the fee simple should not be acquired.

GCG §13456, part of the Territorial Beach Areas Act, authorizes the Governor to acquire, by condemnation, exchange, or negotiated purchase, ownership of or interests in any part of the ocean shore that has passed into private ownership. This authorization does not extend to unregistered areas where frequent and uninterrupted use by the public has resulted in public rights and easements (primarily for access) confirmed under GCG §13455. If the interest acquired is less than full ownership, it must be sufficient to allow the Department of Parks and Recreation to administer the land as a Territorial Beach Area.

Table No. 3. TERRITORIAL COASTAL MANAGEMENT PROGRAM AUTHORITIES

Commission/Agency and Authority	Citation: GCG (Unless Otherwise Noted)
Central Planning Council - Bureau of Planning	
Comprehensive Planning Enabling Legislation	Title LXV, Chapter III
Territorial Planning Commission - Department of Land Management	
Zoning Law	Title XVIII
Subdivision Law	Title XIX
Territorial Seashore Protection Act	Title XIV, Chapter V-A
Subdivision and Development Review Committee	Executive Order 78-2
Natural Resources Board	Sections 13251-3
Government Land Sale and Lease	Title XIII, Chapter VI, VII, XI
Public Rights Provisions	Title XIV, Chapter XII-B
Submerged Land Permits	U.S. Public Law 93-435
Land-Use Districts	Executive Order 78-23
Wetlands Rules and Regulations	Executive Order 78-21
Department of Public Works	
Flood Hazard Area Rules and Regulations	Executive Order 78-20
Department of Parks and Recreation	
Parks and Recreation	Title XXVII, Chapter I
Historic Objects and Sites	Title XIV, Chapter XIII
Territorial Beach Areas Act	Title XIV, Chapter V-B
Guam Environmental Protection Agency	
Water Resources Conservation Act	Title LXI, Chapter II
Water Pollution Control Act	Title LXI, Chapter III
Toilet Facilities and Sewage Disposal	Title LXI, Chapter IV
Air Pollution Control Act	Title LXI, Chapter V
Guam Pesticides Act	Title LXI, Chapter VI
Solid Waste Management and Litter Control	Title LXI, Chapter VIII
Guam Safe Drinking Water Act	Title LXI, Chapter XII
Soil Erosion and Sediment Control Regs.	Promulgated 12/5/75
Department of Agriculture	
Game and Fish Laws	Title XIII, Chapter IV, Art. I
Wildlife Conservation	Title XII, Chapter IV, Art. III
Live Coral and Fishing Nets	Title XIII, Chapter IV, Art. V
Endangered Species Act	Title XIII, Section 1235, as amended
Guam Land Conservation Act	Title XIV, Chapter VII
Government of Guam	
Guam Constitution	Awaiting Voter Approval
Guam Land-Use Policies	Executive Order 78-37

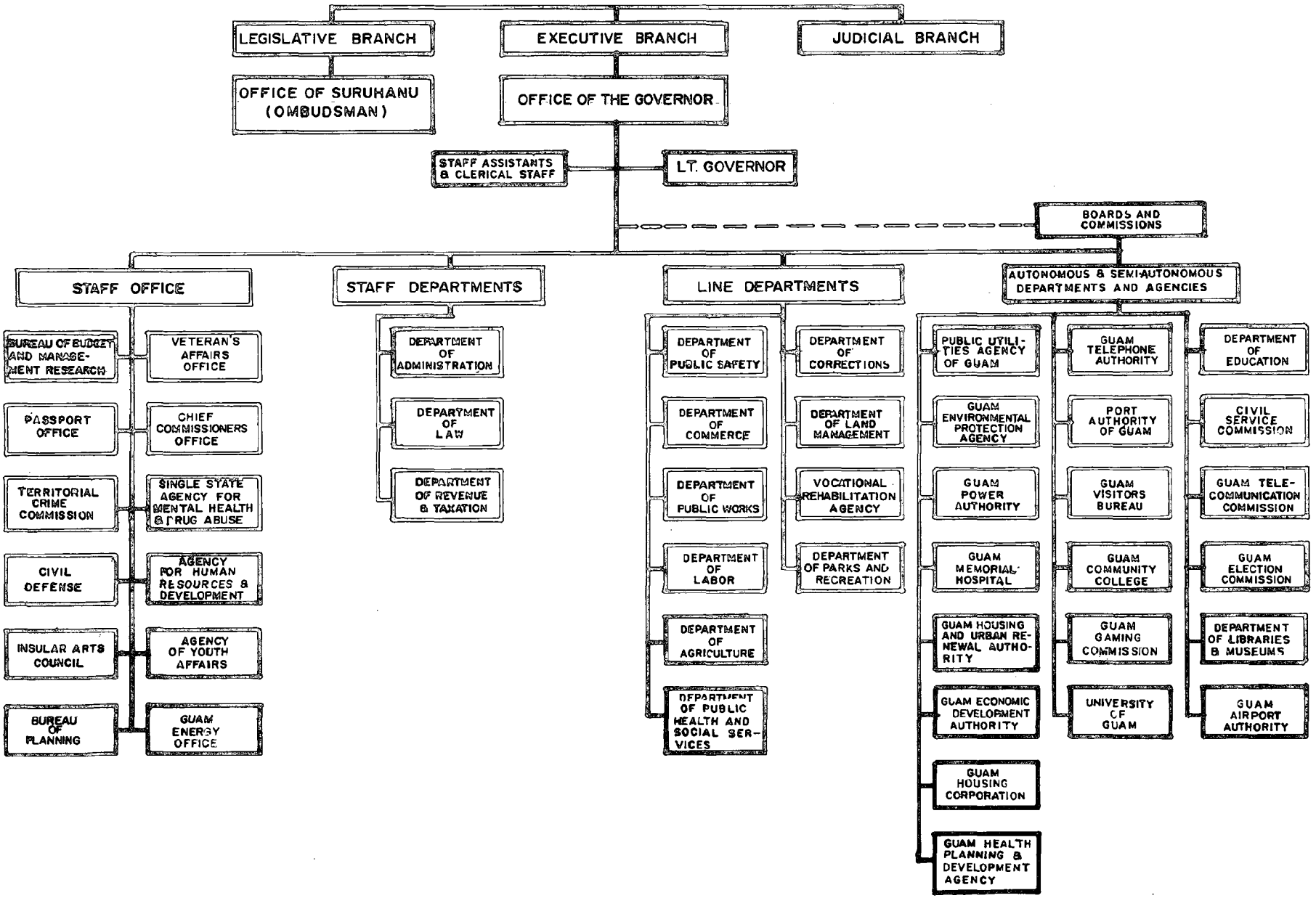
Table No. 4 Authorities for Principal Agency Coastal Management Activities

AUTHORITY	CITATION (Government Code of Guam unless otherwise noted)	ACTIVITIES
Central Planning Council-Bureau of Planning		
Public Law 12-200	Title LXV, Chapter II	Review and approval of all elements of the Comprehensive Development Plan and determination of consistency of certain land and water uses with Comprehensive and Coastal Management Plans.
Territorial Planning Commission-Seashore Protection Commission Department of Land Management		
Zoning Law	Title XVIII	Review and approval of zone maps, changes, variances, conditional uses, signs, planned unit developments, appeals relating to building permits.
Subdivision Law	Title XIX	Review and approval of subdivisions, variances, lot parelling, improvements required thereon.
Territorial Seashore Protection Act	Title XIV, Chapter V-A	Review and approval of all development within the Seashore Reserve Area.
Subdivision and Development Review Committee	Executive Order 75-2	Review of all zone changes, subdivisions and major variances.
Natural Resources Board	Sections 13251-3	Review of proposals for use, lease, or purchase of government land for commercial mining or mineral, rock or sand removal.
Government Land Sale and Leases	Title XIII, Chapters VI-VIII and XI	Sale or lease of government land.
Public Rights provisions	Title XIV, Chapter XII-B	Study of public use of land to determine ownership.
Submerged Land Permits	U.S. P.L. 93-435	Approval of development on submerged lands.
Land-Use Districts	Executive Order 78-23	Review and approval of all development in Conservation Districts and Areas of Particular Concern; establishment and enforcement of zoning law in urban, rural and agriculture districts.
Wetlands	Executive Order 78-21	

AUTHORITY	CITATION	ACTIVITIES
DEPARTMENT OF PARKS AND RECREATION		
Parks and Recreation	Title XXVIII, Chapter I	Designation and management of Territorial Parks and Community Recreation Facilities.
Historic Objects and Sites	Title XIV, Chapter XIII	Identification and management of historic sites, land and underwater archaelogic sites.
Territorial Beach Areas Act	Title XIV, Chapter V-B	Acquisition and management of territorial beach areas.
GUAM ENVIRONMENTAL PROTECTION AGENCY (see Appendix 8)		
DEPARTMENT OF AGRICULTURE		
Game and Fish Laws	Title XIII, Chapter IV, Article I	Rules and regulations for hunting of game and fish.
Wildlife Conservation	Title XIII, Chapter IV, Article III	Identification and management of wildlife conservation areas.
Live Coral and Fishing Nets	Title XIII, Chapter IV, Article V	Rules and regulations for coral harvesting and net fishing.
Endangered Species	Section 12325	Identification and management of endangered plant and animal species.
Guam Land Conservation Act	Title XIV, Chapter VII	Identification and management of agricultural preserves.
DEPARTMENT OF PUBLIC WORKS		
Building Codes	Title XXXII	Enforcement of standards for structural developments.
Flood Hazard Areas	Executive Order 78-20	Enforcement of rules and regulations for flood hazard areas and issuance of building permits.
APPLICABLE TO ALL ACTIVITIES		
Guam Constitution	Awaiting Voter Approval	All activities

Figure No. 3

GOVERNMENT OF GUAM
ORGANIZATIONAL CHART
FISCAL YEAR 1979



CHAPTER VII - AREAS OF PARTICULAR CONCERN

Sections 305(b)(3) and 305(b)(5) of the CZM Act require an identification of areas of particular concern (APC's) together with "broad guidelines" on priorities of use within those areas including specifically those uses of lowest priority. In the generic or site-specific designation, "states must indicate the nature of concern (which shall) (i) indicate why areas or types of areas have been selected for special management attention and (ii) provide a basis for appropriate management policies and use guidelines." 15 CFR 923.21(b)(3). In order to provide a basis for management of APC's, a reference point for conflict resolution, as well as to articulate further the nature of interest in designated APC's states or Territories must provide guidelines regarding priorities of uses in these areas, including guidelines on uses of lowest priority. (15 CFR 932.21(b)(5))

Purpose and Intent

The purpose of designation of APC's through a land-use or coastal management plan is to call attention to the importance of the area designated, as well as to provide an additional management capability to ensure responsible development in areas either that have a high degree of environmental sensitivity or that are, or will be, subject to intense development pressure in the near future. Such a special designation can reserve appropriate sites for future economic development as well as protect fragile natural areas. Effective administration of APC's involves management of uses or activities in the designated areas to assure protection of the values recognized in assigning the APC status. In certain very fragile or hazardous areas, adequate protection of the resource values and the public interest therein may require strict limitations on use or development.

Chapter V-B of Land-Use Plan, Guam 1977-2000 identifies a series of potential Areas of Particular Concern, including for each a descriptive synopsis, statements of envisioned expansion, and suggested performance guidelines. Two of these potential APC's, flood hazard areas and wetlands, have actually been designated as APC's by the Governor in Executive Orders 78-20 and 78-21, signed on August 28 and September 7, 1978, respectively. Because they have already been designated formally by the Governor, and because the TPC has, in accordance with the Executive Orders, adopted rules and regulations governing development in these areas, flood hazard areas and wetlands are considerd to be the APC's of the GCMP for purposes of Federal consideration and approval of the

Program. These two APC's will be discussed in Part A of this Chapter. Part B will briefly describe the other potential APC's identified in the Land-Use Plan.

A. Designated Areas of Particular Concern: Flood Hazard Areas and Wetlands

1. Flood Hazard Areas. (Map No. 3)

As surface drainage patterns on steep slopes merge into rivers, the amount of water flow and concentration of sediments increases. The course of rivers inevitably leads to the ocean along coastal lowlands. Dispersal of water over a floodplain area retains freshwater resources and some sediments are distributed over land rather than into the sea.

During periods of adverse weather conditions that bring persistent rainfall, the natural and developed drainage systems can overflow even further into adjacent flat terrain at the base of a drainage slope. The dispersal of flood water is often confined to natural wetland habitats, but in some cases, can overflow into developed areas of human settlement. If improperly used, floodplains can become problem areas as a result of deterioration of flood-damaged structures and the recurrence of public expense for relief and repair of flood-damaged facilities. When floodplains are left open, practically no flood losses occur. However, because floodplains are level and level land is in high demand on a small island, much development has already occurred in flood hazard areas or further encroaches upon flood-prone areas. Rules and regulations for development in historically proven flood hazard areas seek to prevent damage to property and the quality of human life. Floodplain management is not only vital for the protection of both the environment and population, but also the economy as the Federally-subsidized National Flood Insurance Program requires local delineation and management flood hazard areas in order to be qualified for reasonable flood insurance rates.

Performance Guidelines

See Appendix 1. Page 1-110.

In Executive Order 78-20 (contained in Appendix 1), the Governor declared flood hazard areas to be an area of particular concern in the planning and management of Guam's land and water resources. He directed the TPC to promulgate such rules and regulations as might be necessary to meet the requirements of the National Flood Insurance Program and the GCMP in insuring that development in floodplains does not endanger the public's health, safety, and welfare. He also required the TPC to identify as floodplain APC's those areas delineated as floodplains under the National Flood Insurance Program and such other areas as might be recommended by the Subdivision and Development Review Committee. The flood hazard areas that have been so identified are indicated on the

accompanying rules and regulations adopted by the TPC in response to the Executive Order require the approval of the Department of Public Works before any development that is proposed for flood hazard areas may proceed. The term "development" is defined very broadly to mean:

> "The placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including but not limited to, subdivision of land and any other division of land including lot parcelling; change in the intensity of use of water, ecology related thereto, or of access thereto; construction or reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility, and the removal of significant vegetation."

The rules and regulations also prescribe the procedures that must be followed to secure this approval. While these primarily involve technical analysis and evaluation of the proposed development plan by the Department of Public Works and other concerned Territorial agencies, all interested persons will have the opportunity to comment on each proposal, and the site of the proposed development must remain open for inspection by all interested parties and agencies during all phases of the application procedure and development. Substantive standards for flood hazard management are prescribed in the rules and regulations. The TPC may grant variances from these standards only to the extent that zoning variances would be legally permissable under the same circumstances. The variance procedure would involve public hearings before the TPC in which all interested persons could make their views known.

2. Wetlands. (Map No. 4)

Wetlands are unique components of the island ecosystems. They are the swamps, marshes, mangroves, and river valleys. These are areas that are constantly inundated with water and provide a wildlife habitat for aquatic species of plants and animals. Many wetlands also act as a source of freshwater supply or assist in recharging the aquifer. They primarily provide a nursery ground for many juvenile species of animals until the organism reaches a stage of growth when it can venture into another ecological niche. Wetlands are one of the most biologically productive areas on the island. They provide aesthetic scenery and are valuable locations for scientific research or sensitive aquaculture development. In areas at the coast, there is a transition from freshwater to saltwater wetlands with zonations of vegetation delineating the changes in salinity. A diversity of plant life is found in these

areas, many of which assist in maintaining the balance of the habitat, supply nutrients to the water, and have ethnobotanical value as food, medicine, or material culture. Wetland areas are often in floodplain areas and absorb excess overflow from rivers during periods of excessive rainfall. The mangrove fringe, represented in only two major locations on Guam, is not only an ecological habitat, but also functional as a shoreline stabilization mechanism which prevents erosion during periods of stormwave inundation. Mangroves are particularly resistent to typhoon force winds. Wetlands studies include the appendix of the Atlas of Reefs and Beaches of Guam and Survey and Inventory of Wetland Vegetation in Guam, Tinian and Saipan, Mariana Islands.

Performance Guidelines

See Appendix 1, Page 1-100.

Executive Order 78-21, which appears in Appendix 1, declares wetlands to be an area of particular concern in the management of Guam's land and water resources. The Governor directed the TPC to promulgate the rules and regulations necessary for balanced development, protection, and conservation of wetlands, and also required the TPC to officially designate those wetlands, consistent with the Land-Use Plan and the GCMP. The designated wetland APC's are indicated on the accompanying map.

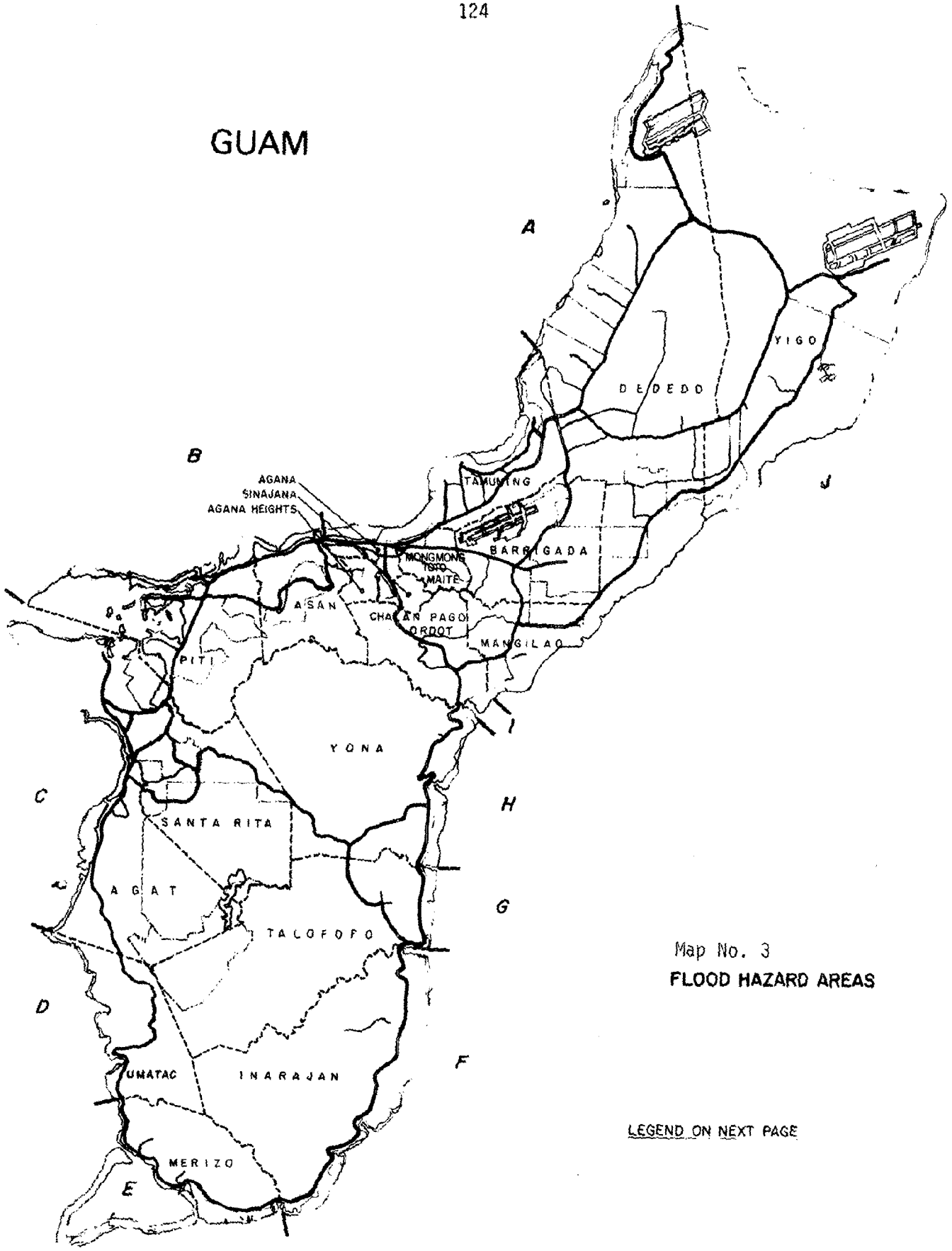
The TPC rules and regulations that were adopted in response to the Executive Order require that no development take place in any wetland without a wetland permit from the TPC. For this purpose, the term "development" is defined in the same way as in the Flood Hazard rules and regulations.

The rules prescribe the procedures to be followed in obtaining wetland permits from the TPC, including the filing of a detailed comprehensive plan for each proposed development, and review of the plan by the SDRC, as well as by the TPC. The rules and regultions also set forth substantive standards for development and conservaton of wetland APC's. The TPC may grant variances from the standards and procedures for wetland development under the same conditions for which it may grant variances under the Zoning Law.

The priorities of use for flood hazard areas and wetlands are established by the standards and procedures contained in the TPC rules and regulations. The normal priorities that would be accorded various uses in these two APC's are reflected in Figure 4.

Table keyed to Map No. 3 : Areas which are susceptible to flooding as designated by the COE, USGS, DPW, DLM and BOP.

A.	Dededo	-	Sinkholes
B.	Asan-Piti	-	Atantano River Valley Aguada River Masso River Taguag River Matgue River Asan Village Piti Village
C.	Agat-Santa Rita	-	Taelayag River Taleyfac River Chaligan Creek Auau Creek Gaan River Finile Creek Salinas River Togcha River Namo River
D.	Umatac	-	Madog River Lae Lae River La Sa Fua River Cetti River Sella River Asmafines River Agaga River
E.	Merizo	-	Toguan River Bile River Pigua River Geus River Achang Bay Area
F.	Inarajan	-	Inarajan River Basin Agfayan River
G.	Talofofo	-	Ugum River Talofofo River Mahlac River Maagas River Sagge River Asalonso River
H.	Yona	-	Togcha River Ylig River
I.	Chalan Pago	-	Pago River
J.	Yigo	-	Sinkholes



Map No. 3
FLOOD HAZARD AREAS

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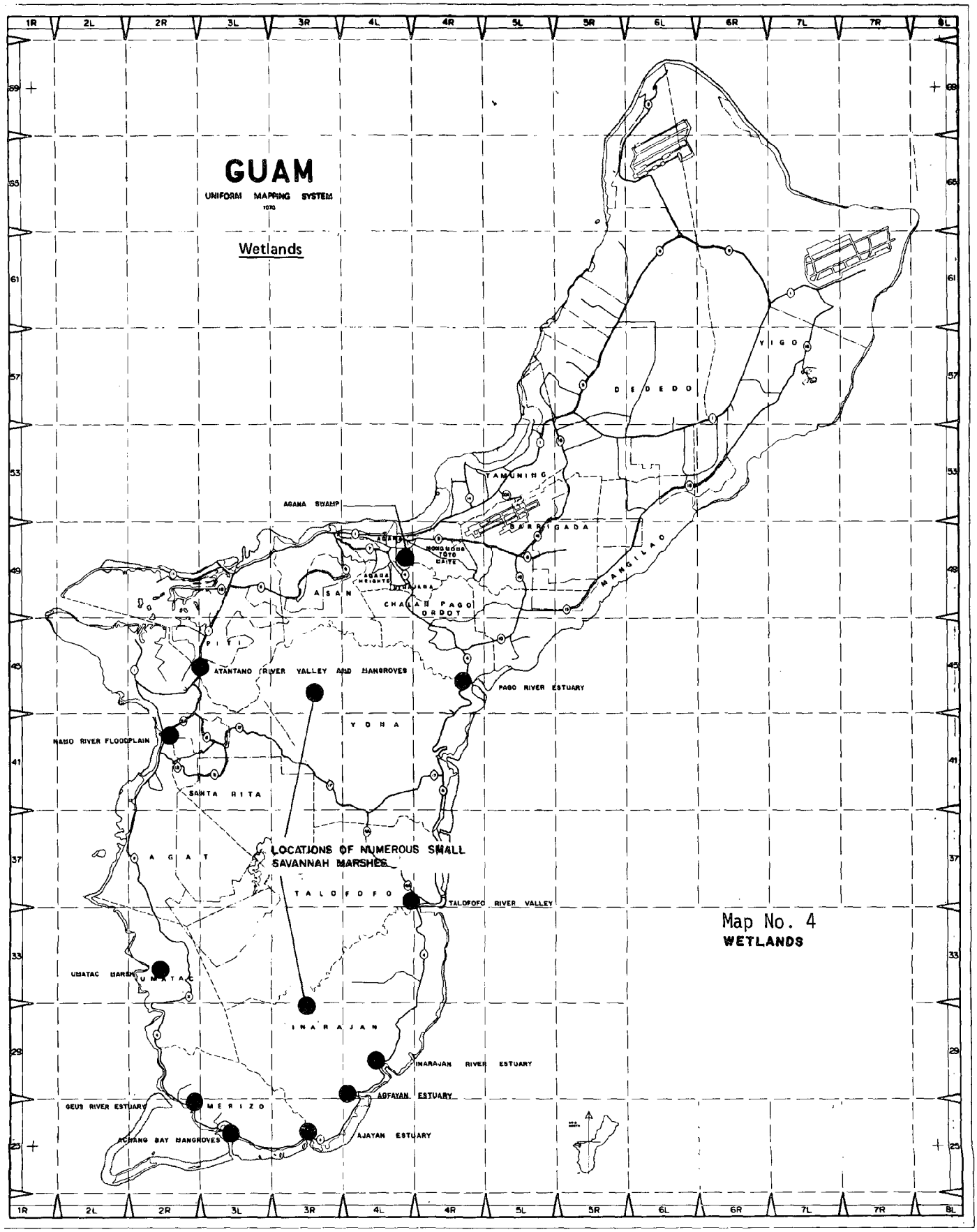

GUAM
UNIFORM MAPPING SYSTEM
1970
Wetlands
AGANA SWAMP
ASAN
PITI
ATANTANO RIVER VALLEY AND MANGROVES
PAGO RIVER ESTUARY
YONA
NAMO RIVER FLOODPLAIN
SANTA RITA
AGAT
LOCATIONS OF NUMEROUS SMALL SAVANNAH MARSHES
TALOFOFO
TALOFOFO RIVER VALLEY
UMATAC MARSH
UMATAC
INARAJAN
INARAJAN RIVER ESTUARY
AGFAYAN ESTUARY
GEUS RIVER ESTUARY
MERIZO
AJAYAN ESTUARY
YIGO
DEDEDO
TAMUNING
BARRIGADA
MANGILAO
CHALAN PAGO
ORDOT
Map No. 4
WETLANDS

Figure 4 Priorities of Use Within Existing and Proposed Areas of Particular Concern (APC)

	APC / Use Classifications and Specified Activities	Open Space (a)	Wildlife Reserves (a)	Schools, Hospitals, Churches, Educational Institutions, Cemeteries	Major Highway Transportation Corridors	Parks (Includes park facilities)(a)	Historic Preservation (a)	Cultivation (Field Farming)	Grazing (Livestock)	Aquaculture	"Limited" Residential (Rural, 1/2 acre min.)	Low Density Residential	Med-High Density Residential	Hotels and Resorts	Commercial Activities	Light Industry	Heavy Industry	Specific Activities	Dredging / Filling (b)	Dams	Port Related, Piers, Bulkheads, and Related Major Structures	Mineral Extraction	Marinas	Clearing/Grading/Filling	Blasting	Energy Facilities	Discharges-Point Source	Commercial Forestry	Restoration (a)					
	Mineral Extraction Sites (a)	2	2	3	3	2	2	1	2	2	2	3	3	3	3	2	2	1		3	3	NA	1	NA	1	1	2	2	2	1					
	Industrial and Commercial Support Areas (a)	2	2	3	2	1	1	1	2	2	2	3	3	3	2	1	1	1		1(c)	NA	1	2	1	1(c)	1(c)	1	2	2	1					
	Urban Waterfronts (a)	1	1	2	2	2	1	1	2	NA	2	2	2	2	2	2	3	3		2	NA	2	3	2	2	2	3	2	NA	1					
	Air Installation Compatible Use Zones (AICUZ)	1	1	3	1	2	1	1	1	1	1	2	2	3	3	2	2	2		NA	NA	1	1	1	2	2	2	2	1	1					
e	Flood Hazard Areas	1	1	3	3	2	1	1	1	1	1	2	3	3	2	3	3	3		2	2	2	2	2	2	2	3	2	1	1					
	Slide and Erosion Prone Areas	1	1	3	3	3	1	1	2	1	NA	2	2	3	2	3	3	2		NA	2	NA	2	NA	2	2	3	3	2	1					
	Seismic Faults	1	1	3	1	2	1	1	1	1	2	2	2	3	3	3	2	2		2	3	NA	2	NA	2	2	3	2	1	1					
	Pristine Ecological Communities (Terrestrial)	1	1	3	3	3	1	1	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3	3	3	3	1					
	Critical Habitats	1	1	3	3	3	1	1	3	2	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3	3	3	3	1					
	Limestone Forests	1	1	2	3	3	1	1	3	3	NA	3	3	3	3	3	3	3		NA	NA	NA	3	3	3	3	3	3	3	1					
f	Wetlands	1	1	3	3	3	1	1	2	2	2	3	3	3	3	3	3	3		3	2	3	3	3	3	3	3	2	NA	1					
	Karst Topography	1	1	2	2	2	1	1	1	1	1	2	2	3	3	3	3	3		NA	3	NA	3	NA	2	3	3	2	NA	1					
	Pristine Ecological Communities (Marine)	1	1	3	3	3	1	1	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3	3	3	NA	1					

LEGEND:

1	HIGH PRIORITY
2	LOW PRIORITY
3	UNACCEPTABLE (d)
NA	NOT APPLICABLE

NOTES:

(a.) Certain uses such as open space, parks, conservation, cultivation, reforestation, etc., while not a "high priority" use within Development oriented APC'S are certainly acceptable and encouraged within multiple use development plans and upon termination of the specified activity. Such post-development use is included in the "Restoration" activity category.

(b.) Dredging and filling means water related dredging and filling on the same site. "Filling" alone is covered under. "clearing, grading, filling."

(c.) Uses are necessary but not encouraged as "high priority."

(d.) Exception permitted only for facility in which an overriding national interest can be demonstrated. (15 CFR 923.52)

e. Officially designated by Executive Order No. 78-20

f. Officially designated by Executive Order No. 78-21

B. Potential Areas of Particular Concern Identified in the Land-Use Element of the Comprehensive Development Plan.

The Land-Use Plan and the Comprehensive Development Plan, of which the former is the required land use element, identify a number of other potential APC's as provided under 15 CFR 923.23. For the purpose of initial delineation, four basic criteria were applied to the land areas of Guam in order to formulate a list of potential APC's:

- Transitional areas where further development or restoration is called for, or intensely developed areas requiring particular scrutiny for further development;
- Areas having significant natural values;
- Areas which have definite and identifiable hazardous characteristics, if developed without proper consideration; or
- Areas having significant value for public use or well-being.

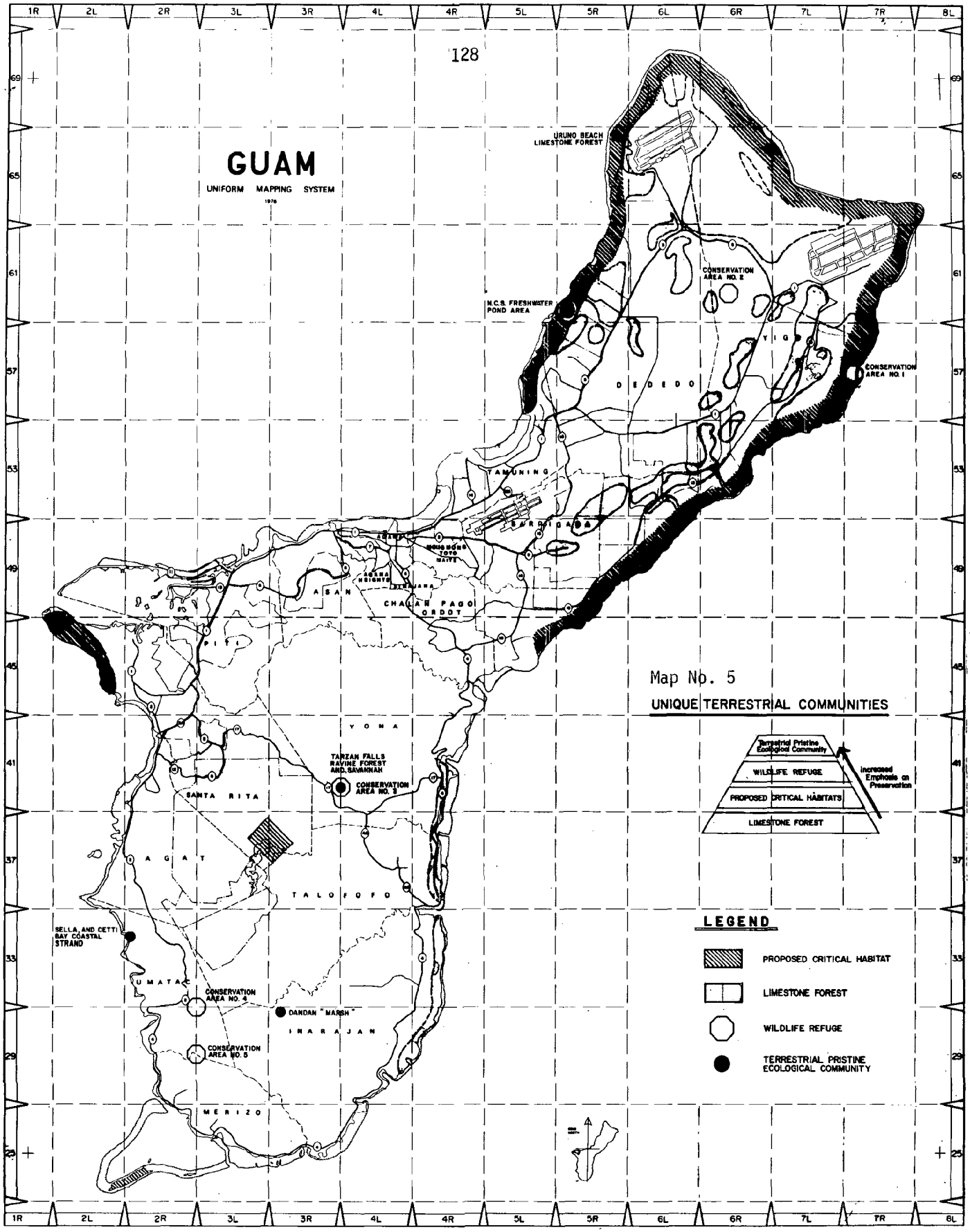
Each of the nine major categories of potential APC's will now be identified, briefly described, and located on maps of the island. As potential APC's, and not currently subject to any extraordinary Territorial regulation or management, these maps denote areas on both non-federal and federal properties. Any eventual specific regulation, of course, will be applicable only to non-federal lands and waters.

1. Unique Terrestrial Ecosystems. (Map No. 5)

There are four major categories of these:

(a) Terrestrial Pristine Ecological Communities

These are the most untouched representatives of the specific habitats known as the limestone forest, ravine forest, savannah, coastal strand, and wetlands. Though each of these areas has its own performance standards, the most scientifically valuable representative requires a more strict control of permissable uses in order that it be preserved for the study of its unique ecology. Ecology is the relationship between the plants, animals, and natural features of an area. Being the least developed, they are usually the most aesthetically pleasing or beautiful examples of the different natural communities. Pristine ecological areas often contain the highest incidence of endangered and threatened species of plants and animals. These are species that are in immediate danger of extinction or would reduce to a critically low number if adverse land uses were permitted to operate. The specific sites together with flora and fauna identification appear in a CZM study, An Ecological Survey of Pristine Terrestrial Communities on Guam.


GUAM
UNIFORM MAPPING SYSTEM
1976
URUNO BEACH LIMESTONE FOREST
CONSERVATION AREA NO. 2
N.C.S. FRESHWATER POND AREA
CONSERVATION AREA NO. 1
D E D E D O
Y I G O
TAMUNING
BARRIGADA
ASAN
CHALAN PAGO ORDOT
PITI
YONA
TARZAN FALLS RAVINE FOREST AND SAVANNAH
CONSERVATION AREA NO. 3
SANTA RITA
AGAT
TALOFOFO
SELLA AND CETTI BAY COASTAL STRAND
UMATAC
CONSERVATION AREA NO. 4
DANDAN "MARSH"
INARAJAN
CONSERVATION AREA NO. 5
MERIZO
Map No. 5
UNIQUE TERRESTRIAL COMMUNITIES
Terrestrial Pristine Ecological Community
WILDLIFE REFUGE
PROPOSED CRITICAL HABITATS
LIMESTONE FOREST
Increased Emphasis on Preservation
LEGEND
PROPOSED CRITICAL HABITAT
LIMESTONE FOREST
WILDLIFE REFUGE
TERRESTRIAL PRISTINE ECOLOGICAL COMMUNITY

(b) Wildlife Refuges

Pristine ecological communities, delineated through ongoing research, often overlap with other larger, unique wildlife habitats. As pristine areas are more specific in location, the larger Government of Guam Conservation Areas are maintained for the preservation of large tracts of wildnerness land. They are precisely delineated in the Community Design Plans.

(c) Proposed Critical Habitats

Even more expansive are critical habitats for more resident birds. The majority of bird species on Guam are threatened or endangered and the Division of Aquatic and Wildlife Resources has delineated critical habitats for possible consideration by Federal Fish and Wildlife regulations. Critical habitats are the natural areas where particular species find the requirements for survival and protection from predators. The largest areas include much of the limestone forest around the northern coastal clifflines. The Fena Reservoir area, Orote Peninsula, and Cocos Island are additional critical habitats. For example, Orote Island is the only nesting site on Guam for the brown booby and the ironwood trees on Cocos Island provide the nesting site for white fairy terns. Many of these habitat areas are currently owned by the Federal government.

(d) Limestone Forest

The limestone forests of Guam are so named because they grow in minimal soil upon the northern limestone plateau, Orote Peninsula, and areas of the southeast coastline. They are a finite resource as land development has cleared many forested areas. Unlike mainland forests, reforestration is not possible because introduced "invader" species of vegetation prohibit the re-establishment of native flora. Limestone forests are characterized by medium-size trees that provide a canopy over understory shrubs, herbs, and lianas. Numerous epiphytic ferns, mosses and orchids cover the rocks and larger trees. Due to periodic typhoons, the limestone forest never reaches a climax stage of maximum growth potential.

The importance of forested areas is multiple when weighing the public benefits of preservation and developmental needs. They provide a wildlife habitat for many unique and endangered species of plants and animals. They also provide an area for collection of medicinal plants and edible animal life such as the popular coconut crab. As an aesthetic resource, they are of value for hiking, nature observation and scientific investigation. Of less visibility, but not of less importance, much of the limestone forest lies over areas of the lens system. In areas with significant vegetation, surface runoff is negligible and natural areas inhibit the infiltration of pollutants that are associated with urban development.

2. Unique Marine Ecological Communities: Marine Pristine Ecological Communities. (Map No. 6)

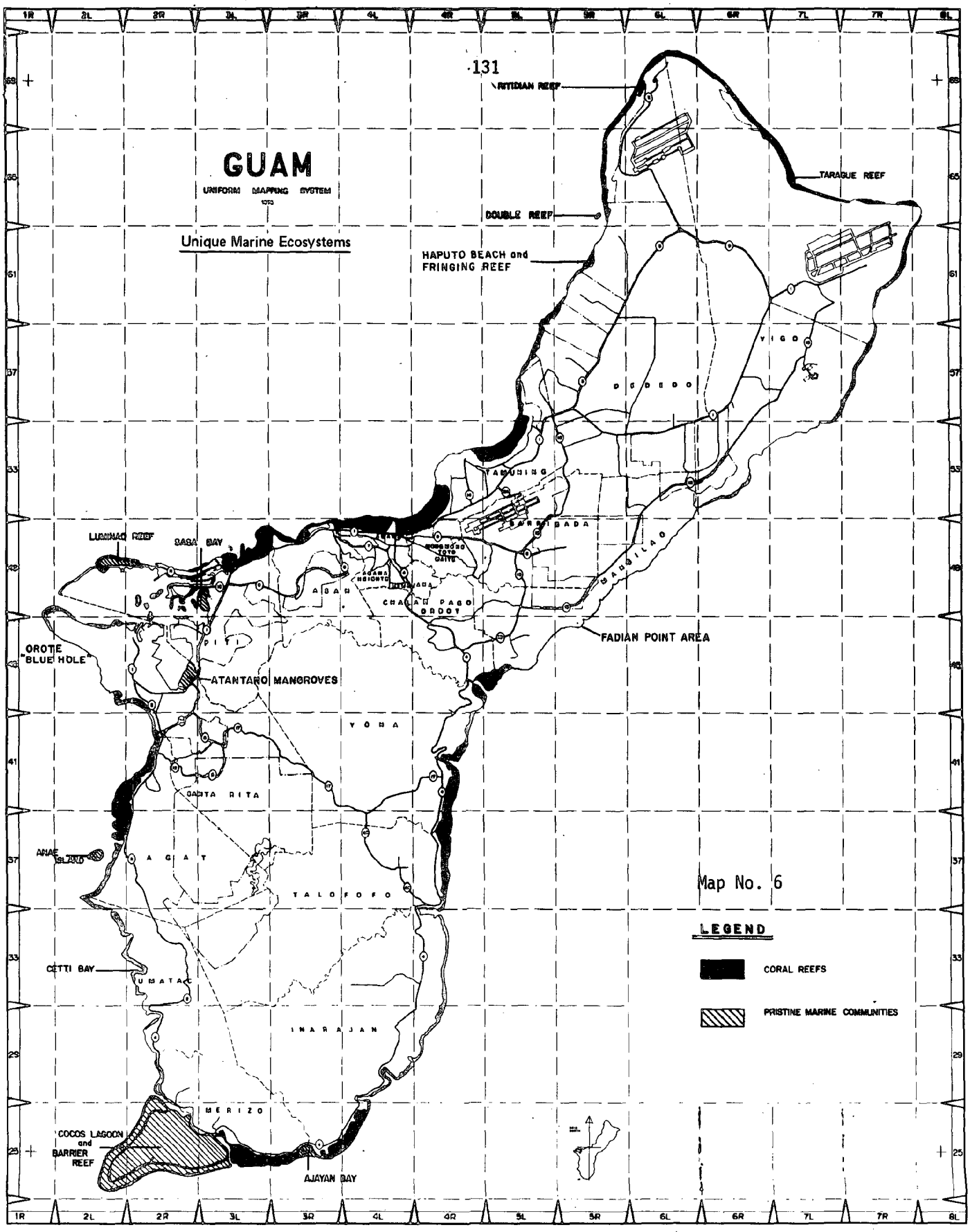
Marine Pristine Ecological Communities include a typical representative of each of the major marine ecological communities on Guam, including: estuaries, fringing reefs, barrier reefs, patch reefs, barrier reef channels, fringing reefs, channels, mangrove swamps, seagrass beds, cut benches and submarine cliffs. Each of the selected representative areas has retained its natural character or successfully re-established it after disturbance. This natural character includes biotic, and to a lesser extent abiotic, components of scientific, educational and aesthetic value. Of specific interest are the preservation of the natural ecological stability through diversity and the protection of critical habitats for rare, uncommon, threatened or endangered species. Although many of these areas are included in the coral reef category of APC's, these most valuable areas require stricter control of permissible uses. Performance standards can be developed using the baseline data presented in a CZM study entitled, Survey and Species Inventory of Representative Pristine Marine Communities on Guam.

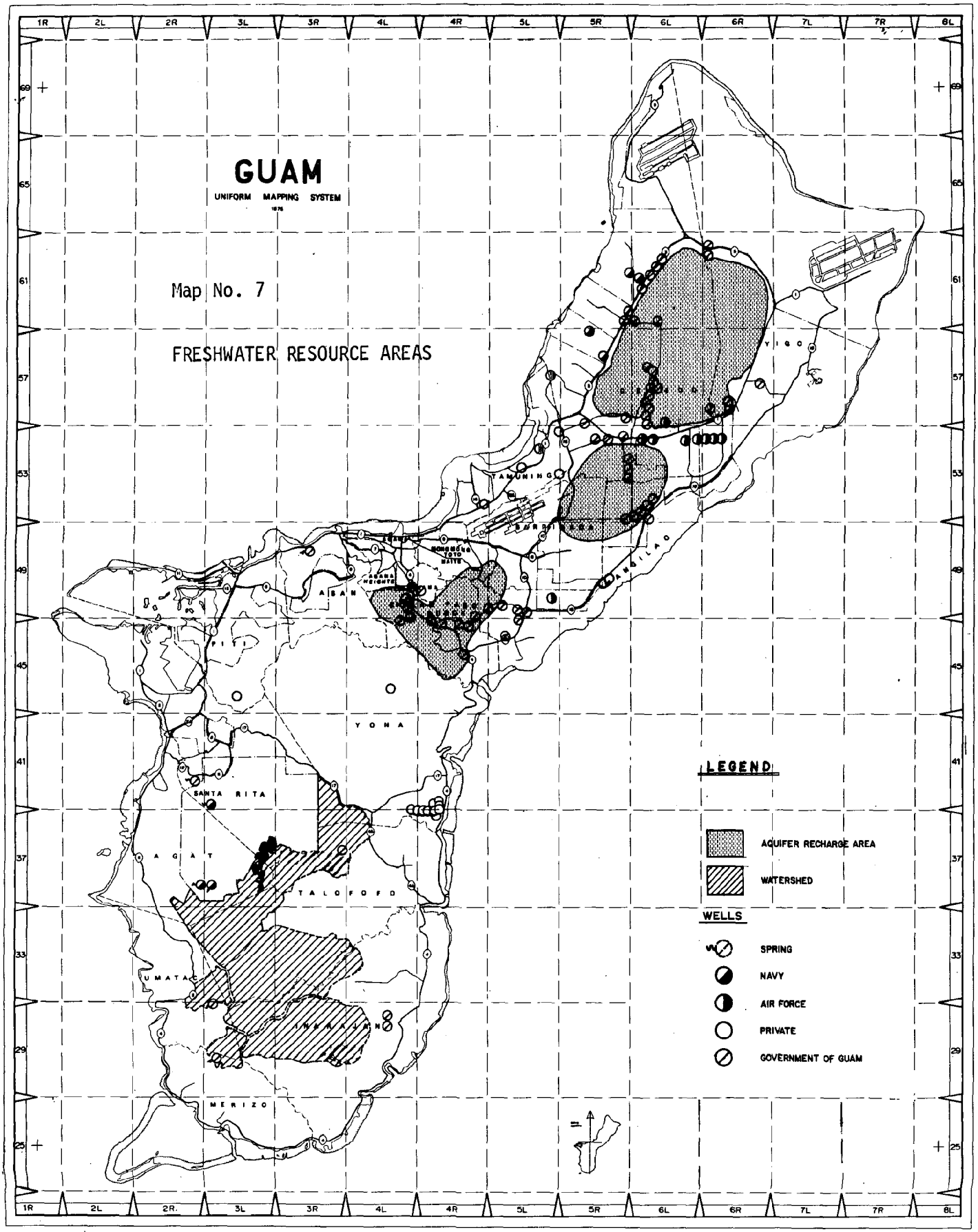
3. Freshwater Resources (Map No. 7)

The underground aquifer system of Northern Guam provides the bulk of the island's freshwater supply. A layer of freshwater floats upon saltwater and forms a basal lens. The lens is replenished by rainfall percolation through the limestone of the northern plateau. There are three main aquifer areas - Dededo-Yigo, Barrigada, and Chalan Pago-Ordot in Central Guam. In the area over the two northernmost aquifers, numerous sinkholes cause rapid injection of water into the lens system. These areas are particularly critical in terms of pollution of underground supplies as even partial filtration is not in effect. Where urban development surfaces the land over aquifer recharge areas, ponding basins are sometimes needed to assist in rainwater recharge of the underground lens.

In the Central Guam aquifer area, where southern volcanic uplands meet the northern limestone plateau, the topography is intersected by low-lying basins that appear as grassy fields that are flooded during periods of rainfall in the wet season. These natural low-lying basins, like the northern sinkholes, assist in aquifer recharge and are depicted on more detailed maps in the Community Design Plans.

Performance guidelines for land use over aquifer systems may ease as ongoing research of the nature of groundwater resources further defines the extent of supplies and the capacity to absorb pollutants. Currently, the most comprehensive study, Groundwater Resources of Guam: Occurrence and Development, by John F. Mink, has been published by the University of Guam Water Resources Research Center as their Technical Report No. 1.


GUAM
UNIFORM MAPPING SYSTEM
Unique Marine Ecosystems
RITIDIAN REEF
TARAGUE REEF
DOUBLE REEF
HAPUTO BEACH and FRINGING REEF
YIGO
DEDEDO
TAMUNING
BARRIGADA
MANGILAO
LUMINAO REEF
SASA BAY
ASAN
CHALAN PAGO ORDOT
FADIAN POINT AREA
OROTE "BLUE HOLE"
PITI
ATANTANO MANGROVES
YONA
SANTA RITA
ANAE ISLAND
AGAT
TALOFOFO
CETTI BAY
UMATAC
INARAJAN
MERIZO
COCOS LAGOON and BARRIER REEF
AJAYAN BAY
Map No. 6
LEGEND
CORAL REEFS
PRISTINE MARINE COMMUNITIES


GUAM
UNIFORM MAPPING SYSTEM
1976
Map No. 7
FRESHWATER RESOURCE AREAS
YIGO
TAMUNING
BARRIGADA
ASAN
PITI
YONA
SANTA RITA
AGAT
TALOFOFO
UMATAC
INARAJAN
MERIZO
ANGILAO
LEGEND
AQUIFER RECHARGE AREA
WATERSHED
WELLS
SPRING
NAVY
AIR FORCE
PRIVATE
GOVERNMENT OF GUAM

In the southern half of the island, rainfall does not penetrate the volcanic rock as rapidly as limestone and surface water gathers in the form of rivers, streams and wetlands. Surface drainage from watershed areas can be directed into reservoirs such as the existing Fena Reservoir.

4. Industrial and Commercial Support (Map No. 8)

(a) Power Production and Transmission Facilities

A recently completed study, Future Power Production and Transmission Alternative Plans U.S.A., indicates that Cabras Island will, in all probability, be the site for future power production facilities. The existing Government of Guam site has sufficient land area for two additional steam plants. Thereafter, the adjacent site of the existing Piti plants can be utilized as the present production facilities will probably be going offline in 1994. Considerations of alternative production methods such as thermal gradient, solar, and wind generation are being considered, but are still too experimental to be subejct to a great degree of planning consideration.

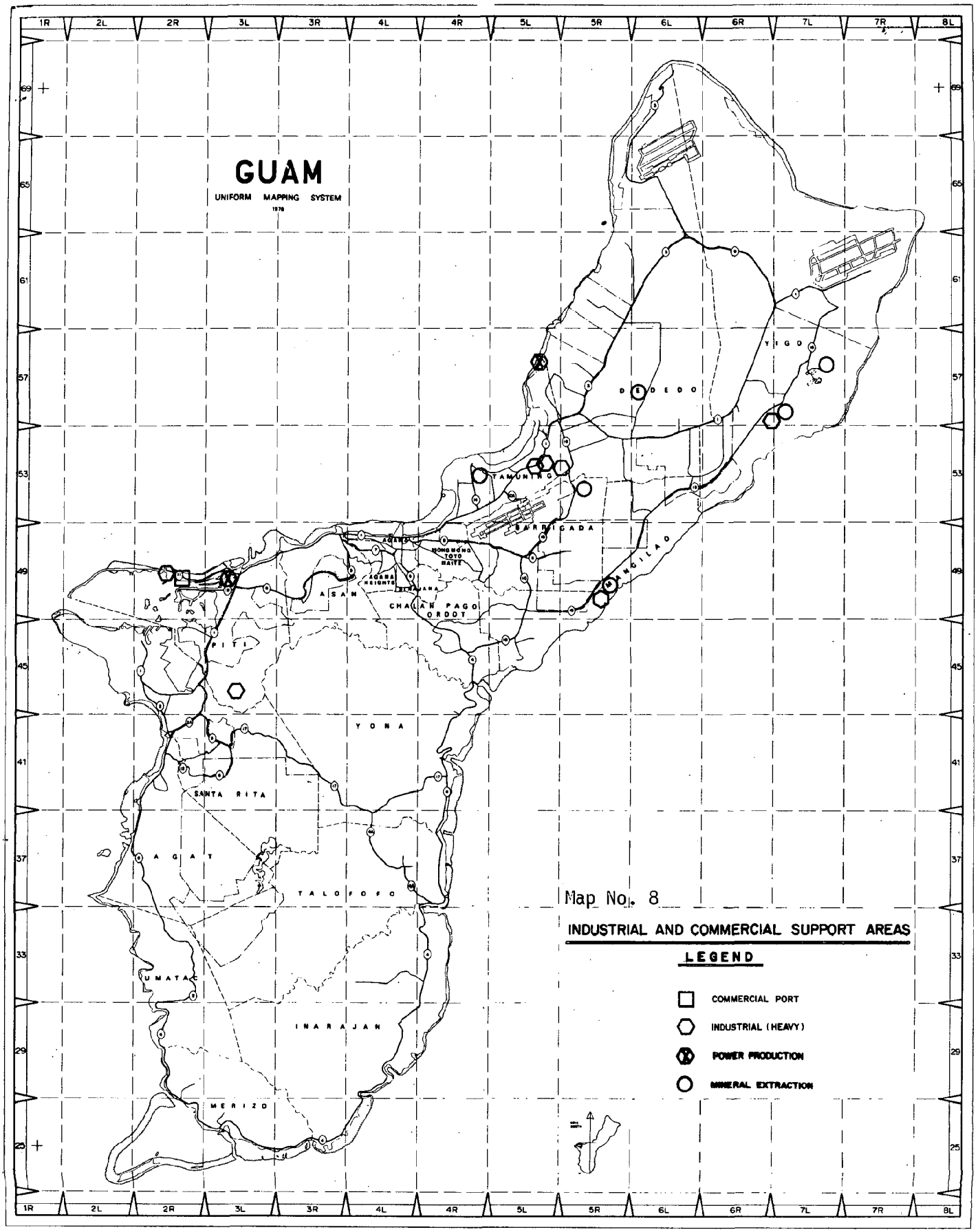
It is indicated in the above mentioned study that GPA's present land holdings are adequate for expansion of bulk fuel oil storage tanks adjacent to the existing pair of 268,000 gallon tanks. Additional tanks will be required at the time Tank No. 4 is programmed for installation at the Cabras site. According to the study, no major changes or additions are required for fuel oil delivery, or transfer of pipeline systems for power plant fueling needs up to the year 2000. The existing 115KV transmission line and planned expansion will provide adequate voltage for Guam's power needs to the year 2000. Right-of-way widths depend on a conductor configuration which will probably remain in a two-circuit, vertical configuration (100 feet or greater) depending upon the span and height of the towers.

(b) Commercial Port

The Commercial Port of Guam is located on Cabras Island and occupies 33 acres deeded to the Government of Guam by the Navy. Only nine acres are presently used as a container and marshalling yard, while 90 percent of the cargo off-loaded is in containers. The present area, the two gantry cranes, and 27,000 linear feet of pier are inadequate for present activity which, over the last three years, has averaged around 700,000 tons of cargo off-loaded per annum.

Plans for expansion include:

- Immediate development of 11 acres opposite the present port facility for additional container handling space;


GUAM
UNIFORM MAPPING SYSTEM
1976
DEDEDO
YIGO
TAMUNING
BARRIGADA
MANGILAO
ASAN
AGANA HEIGHTS
AGANA
HONG KONG TOYO MAITE
CHALAN PAGO ORDOT
PITI
YONA
SANTA RITA
AGAT
TALOFOFO
UMATAC
INARAJAN
MERIZO
Map No. 8
INDUSTRIAL AND COMMERCIAL SUPPORT AREAS
LEGEND
COMMERCIAL PORT
INDUSTRIAL (HEAVY)
POWER PRODUCTION
MINERAL EXTRACTION

- Redesign and relocation of the access road to the northern edge of Cabras Island;

- Leveling of terrain in and around the area of proposed expansion;

- Development of an additional 800 feet of docking space to the east of the present docking facilities and relocation of the feed mill;

- Long-range development of approximately 4,000 feet of additional dock space to the west of the existing Commercial Port (opposite the Marianas Yacht Club anchorage and oil storage tanks).

- Relocation and expansion of the Yacht Club facilities to the area east of the proposed 800 foot pier/dock extension;

- Shifting of some of the existing industry for more efficient use of the area;

- Erection of additional warehousing facilities;

- In addition, several new industrial-use locations are being considered for location in the Commercial Port area;

  - Tuna transshipment facility

  - Cannery

  - Storage and warehousing

Map No. 9 delineates some of the existing and proposed heavy industry in the port area.

(c) Superport

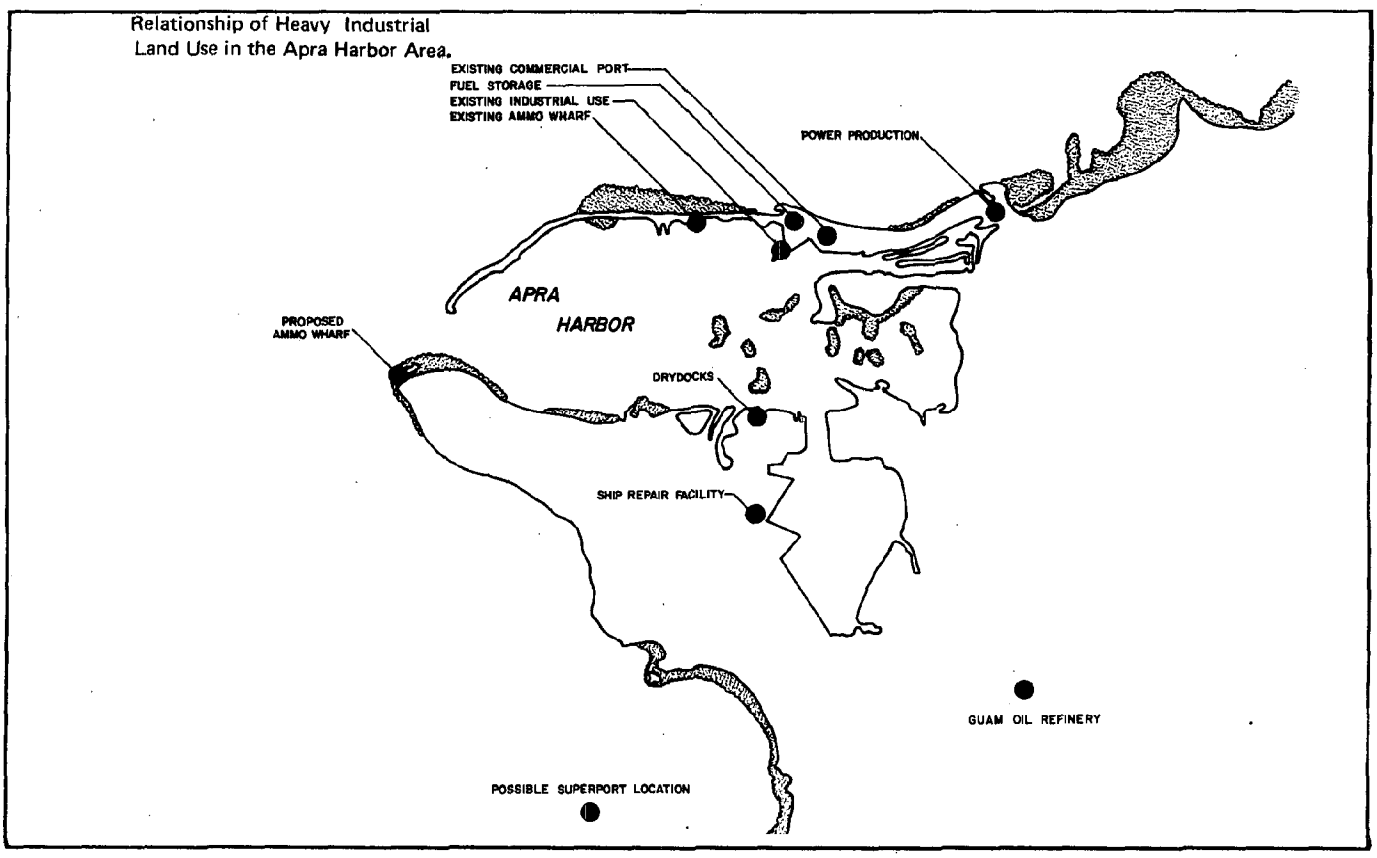
Synopsis and Possible Development

Guam has been considered as a possible site for the location of a transshipment and storage facility for a 90-day supply of oil for Japan. A thorough examination of any proposal must weigh the economic benefits to Guam against the sizeable irreversible commitments that such a massive development project would demand. Consideration must address:

- The location and impacts of off-loading and support facilities, such as a fixed mooring island and tug/supply boat staging areas;

Map No. 9

Relationship of Heavy Industrial
Land Use in the Apra Harbor Area.



- The impacts of a major oil spill, the ability of local agencies to manage the effects, and spill prevention measures at all stages of the operation;

- A detailed analysis of the real impact on employment, e.g., will outside labor or local hire be used in the construction and maintenance of facilities;

- The increased demand and impacts of secondary industrial development, especially oil refining, accompanying such development;

- The impacts of increased activity and tremendous land area, both on the Agat shoreline and the land surrounding present GORCO facilities, required for off-loading and storage;

- The increased demand for island infrastructure and public facilities (roads, power, water and communications);

- The life span or active life of the storage facilities due to a declining world oil supply, in comparison with the permanent and irreversible commitment of both shoreside and inland land and water resources, e.g., will the commitment of land for such facilities be worth the 20-40 years it will be in operation;

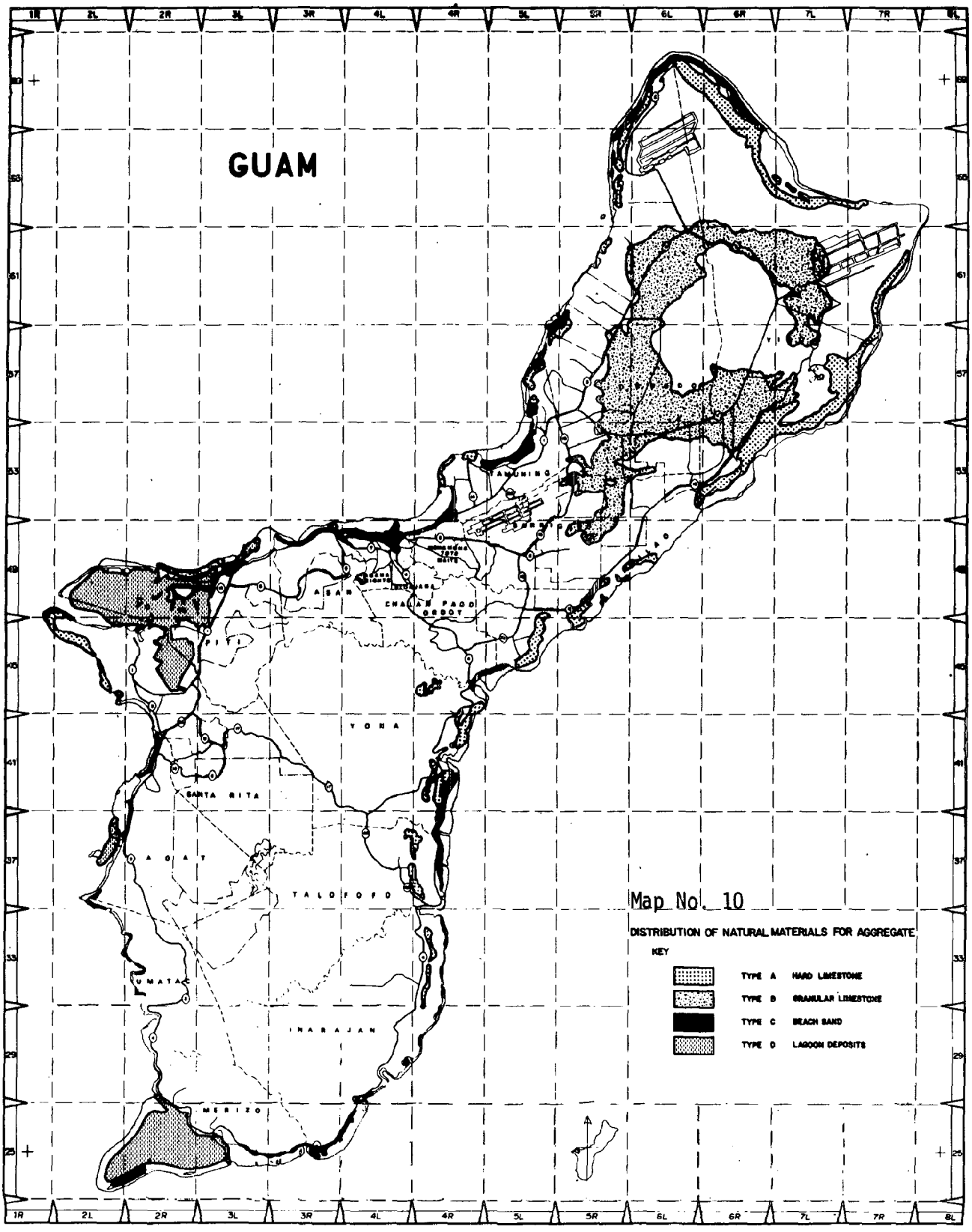
- The strategic impact for location of such a facility on defense capabilities of the island.

5. Mineral Deposits (Map No. 10)

Comprised primarily of limestone, sand and a potential for limited hard volcanic aggregate deposits, the island's mineral deposits have already been significantly developed. Major extraction activities are presently located on the northeast coastline of the island. Illegal extraction of beach sand from several areas, however, still occurs.

According to studies currently underway and discussions with producers, supplies of limestone and sand are adequate to meet the island's needs for the next 20 years without significantly expanding extraction operations to other areas of the island.

Short-term operations such as repair of the Glass Breakwater, using the Cabras Island quarry, can be expected. The Department of Public Work's Skid Reduction Program is presently engaged in an analysis of potential extraction sites for hard aggregate (basalt) in the southern part of the island. Initial geologic investigations of volcanic aggregate resources are encouraging in relation to the occurrence of a superior


GUAM
AGAT
SANTA RITA
YONA
TALOFOFO
INARAJAN
MERIZO
ANUMING
Map No. 10
DISTRIBUTION OF NATURAL MATERIALS FOR AGGREGATE
KEY
TYPE A HARD LIMESTONE
TYPE B GRANULAR LIMESTONE
TYPE C BEACH SAND
TYPE D LAGOON DEPOSITS

grade of unweathered basalt in the Northern Marianas (Pagan Island). A report was released in October, 1977, addressing the specifics of these issues: "Resources and Projections: Availability of Sand as Fine Aggregate for Engineering Construction in Guam and Memo on Basalt Quality on Guam."

6. Shoreline Development Areas (Map No. 11)

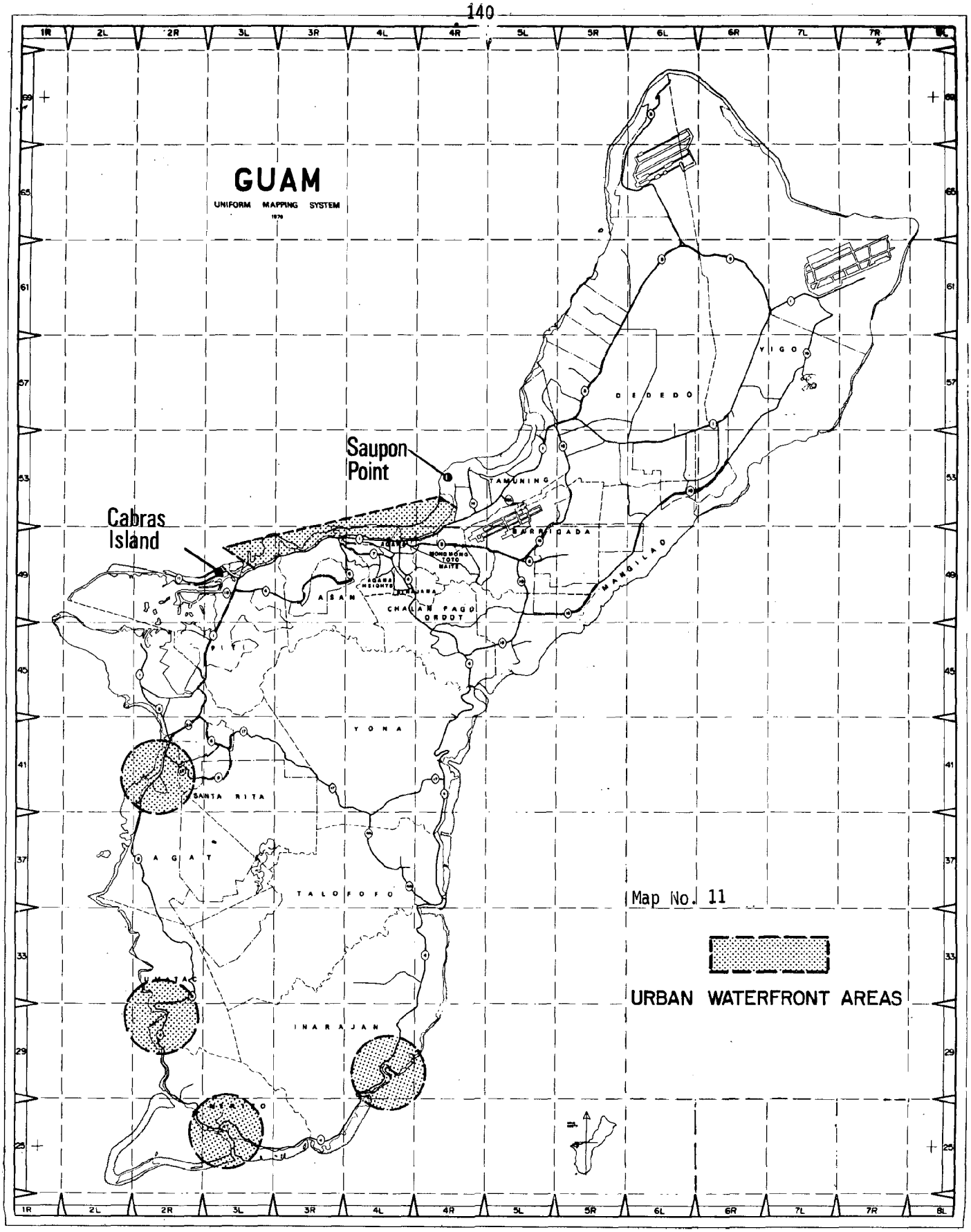
In relation to Development Policy 1, relative to the location of facilities adjacent to the shoreline, certain areas of the shoreline were considered potential APC's for the purpose of ensuring compatible growth without destroying the character or accessibility of the shore. While it is recognized that there will always be pressure for the location of private dwellings adjacent to the shore, it is the high-intensity uses of a nature not complimentary to the immediate use of the shore which are of the greatest concern. The following categories were considered as having a priority for location, adjacent to the shore, not including power production or port facilities:

- Resort Areas
- Boating, fishing, aquaculture and associated activity areas
- Marine Educational Institution locations
- Park and beach areas
- Surfing areas
- Wastewater Disposal sites
- Urban Waterfront Areas.

Development in these areas is regulated adequately by the regulatory mechanisms discussed in Chapter VI and in Part A of this Chapter. Special attention should be given, however, to the urban waterfront areas.

The villages of Umatac, Merizo, Inarajan, and the urban strip from Cabras Island to Saupon Point face serious problems discussed in detail in the Land-Use Plan and Community Design Plans, as elements of the Comprehensive Development Plan. For the purposes of designation of APC's, these areas, which are indicated on Map No. 11, are considered as areas of future APC designation and restoration for which additional management techniques have yet to be developed.

The National Park Service has established a park which provides the opportunity to depict the epic story of WWII in the Pacific. Once


GUAM
UNIFORM MAPPING SYSTEM
1970
Saupon Point
Cabras Island
DEDEDO
YIGO
AMUNING
BARRIGADA
MANGILAO
ASAN
CHALAN PAGO ORDOT
YONA
SANTA RITA
AGAT
TALOFOFO
INARAJAN
Map No. 11
URBAN WATERFRONT AREAS

completed, the War in the Pacific National Historical Park will emphasize the Battle for Guam as a classic example of the island to island fighting in the Pacific theater.

The 883-acre park is being developed at sites in Asan and Piti (see Map No. 12) where, on July 21, 1944, American Marine and Army forces led an attack on Japanese shore installation. Present exploration of these areas of the island reveals that much of the historic sites are undisturbed and undeveloped. To preserve a representative portion of many of these sites and to provide a manageable park area, five separate units were established. These include Agat, Asan, Mount Tenjo/Mount Chachao and Mount Alifan units. Recreational activites being developed for these areas includes trail hiking, shoreline recreation and interpretive displays.

An initial plan for redevelopment of the Agana Urban waterfront is currently being prepared. This area, from Adelup Point to just south of Sleepy Lagoon, will be declared an APC and subject to extensive scrutiny in the near future.

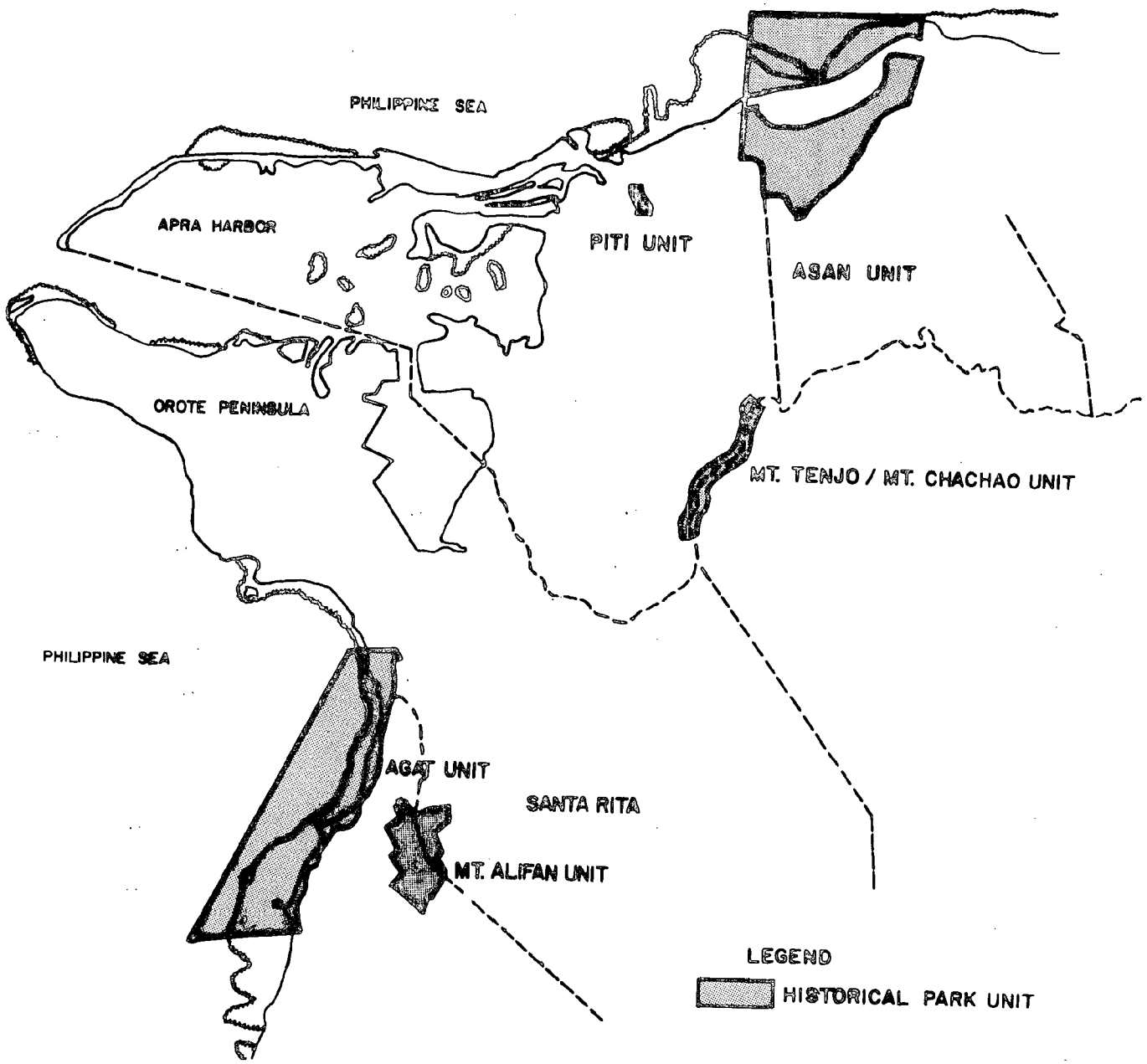
7. Airport Accident Potential and Sound Zones (Maps No. 13 and 14)

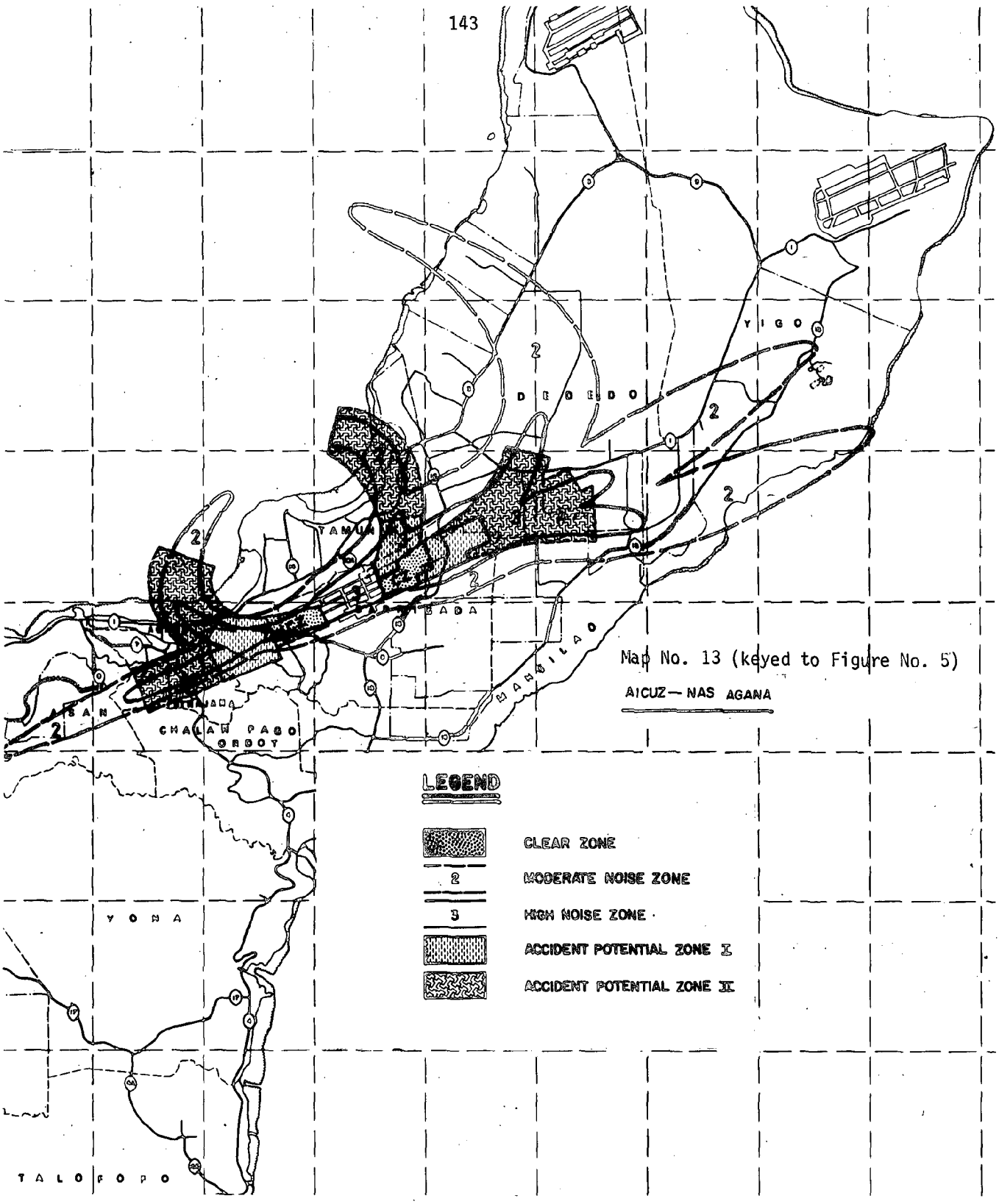
Accident potential and airport and sound zones, unlike most areas of particular concern, are not areas to be preserved for their ecological or historical significance. The nature of airport technology has produced noise levels and accident potential zones that require specific performance standards. Noise levels can be incompatible with human activity and wildlife preservation, and hazard zones can necessitate low-population density oriented land-use activities in certain areas adjacent to airfields. The Guam International Airport and its adjacent areas of specific noise levels and accident potential zones comprise this area of particular concern. Because a military airfield adjoins the Guam International Airport, Federal Consistency is of major importance in this area. Coordination of local and Federal planning involves both the Bureau of Planning and the U.S. Navy Program of Air Installation Compatible Use Zones (AICUZ).

8. Slide and Erosion Zones (Map No. 15)

With a few exceptions, large-scale development has not yet occurred on steep lands. In the future, however, population increase and demands for more housing (urban expansion) may seek hillsides as development occupies available level terrain (ex. Barrigada Heights). Often homebuilders and resort developers wish to take advantage of the vistas

Map No. 12 **WAR IN THE PACIFIC NATIONAL HISTORICAL PARK**



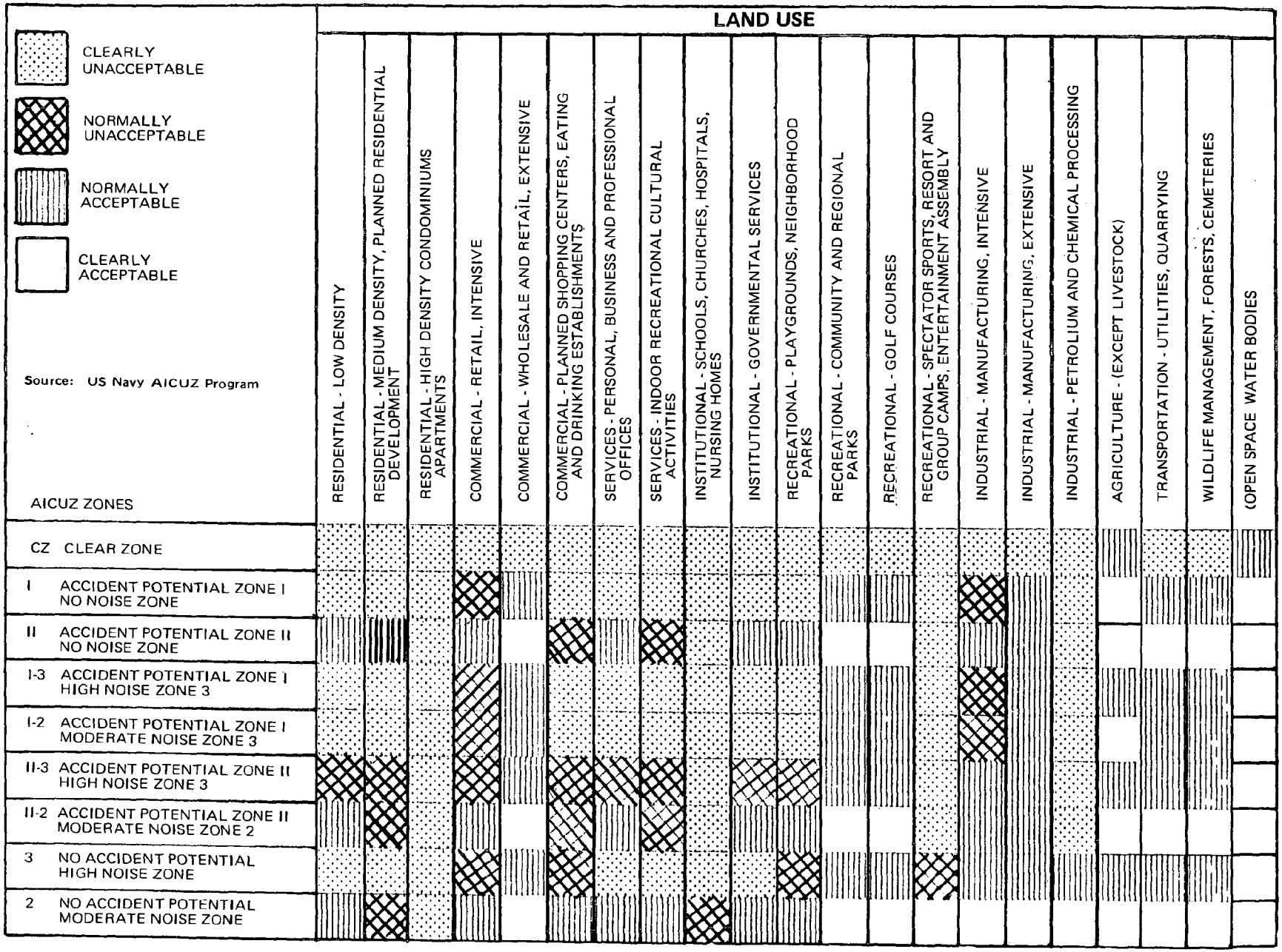


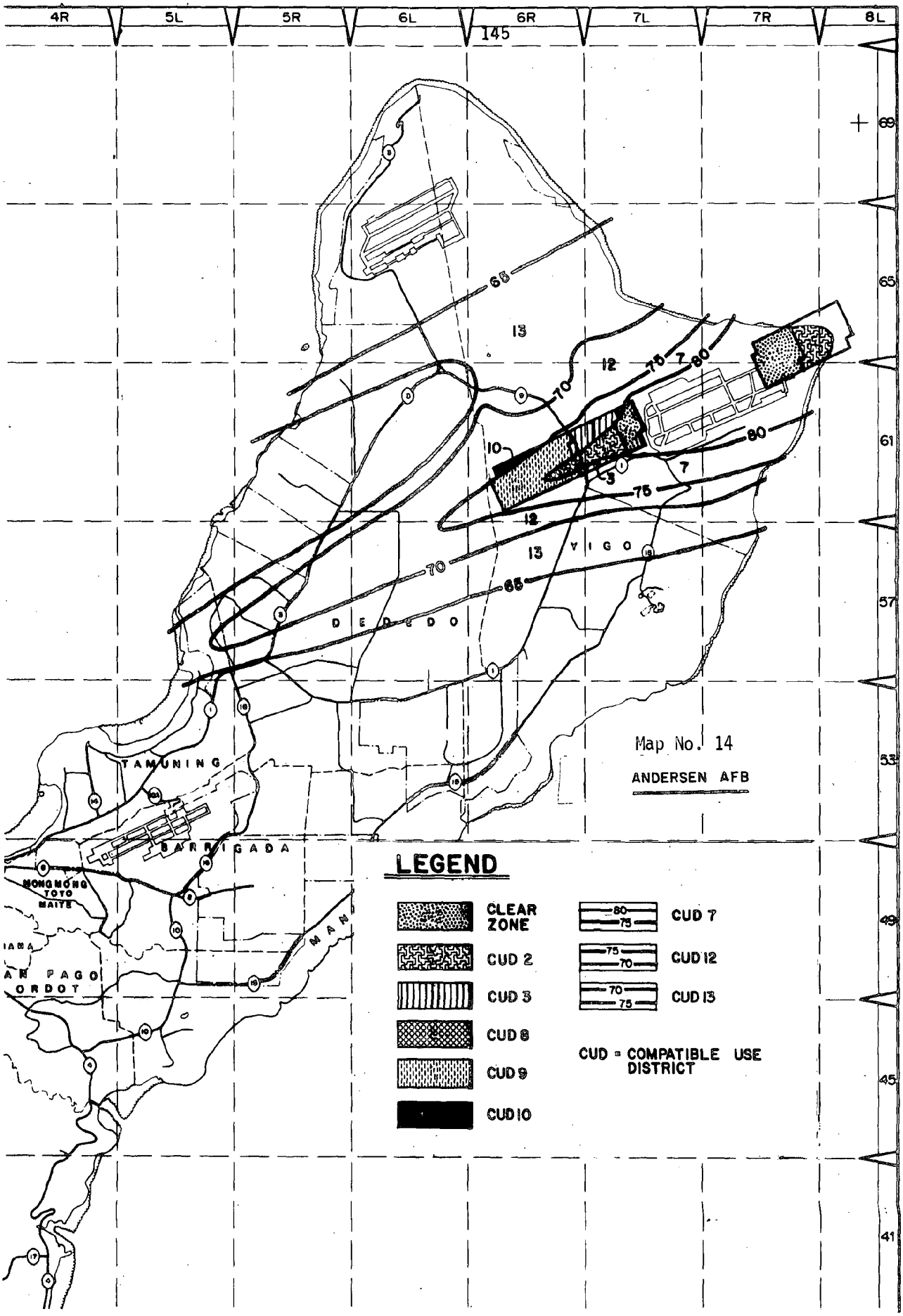
Map No. 13 (keyed to Figure No. 5)

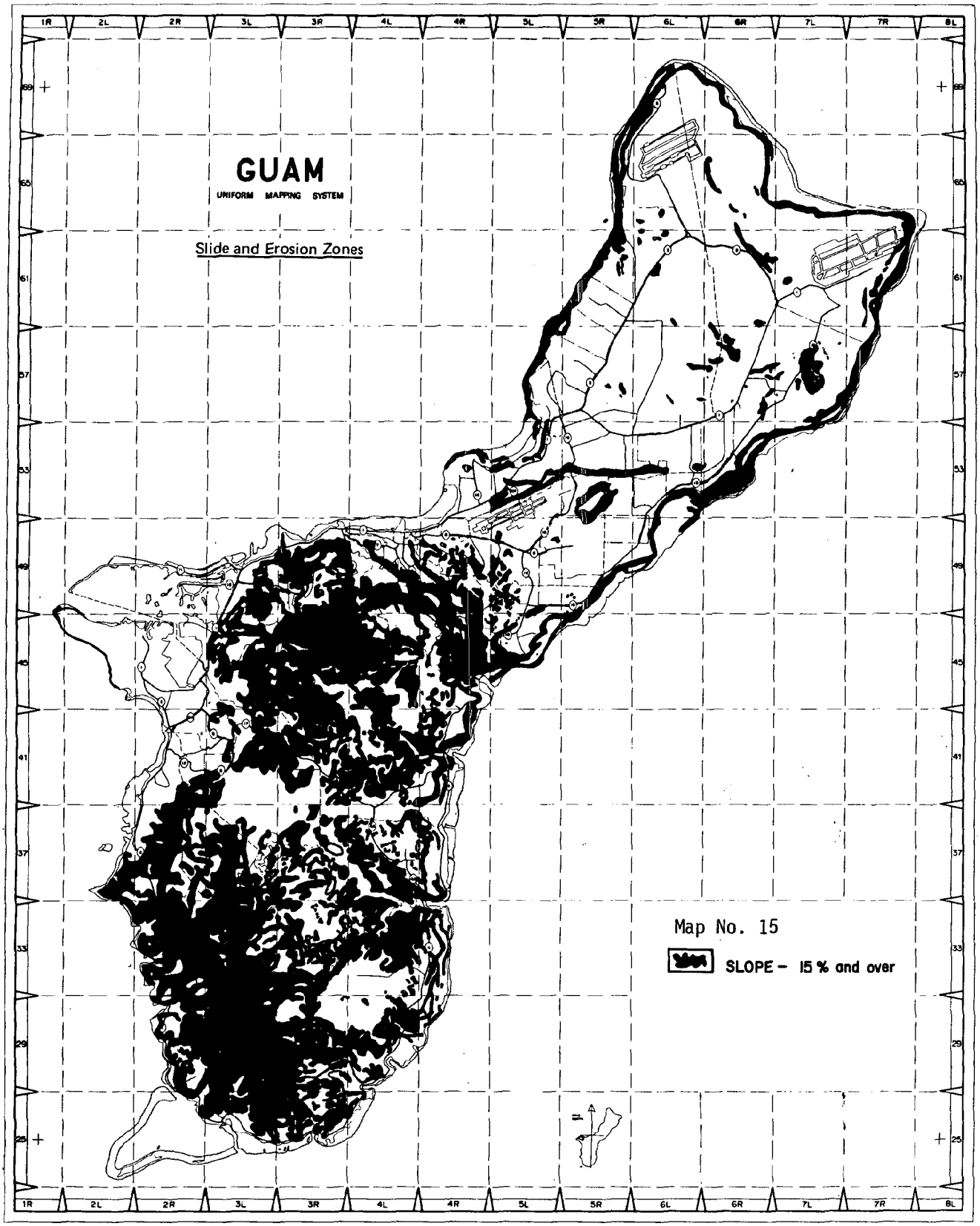
AICUZ— NAS AGANA

90%

Figure No. 5 **LAND USE COMPATIBILITY MATRIX FOR AIRPORT SOUND AND HAZARD ZONES**




4R
5L
5R
6L
6R
7L
7R
8L
145
69
65
61
57
53
49
45
41
65
70
75
80
13
12
10
7
5
VIGO
DEDEDO
TAMUNING
BARRIGADA
HONGMONG
TOTO
MAITE
MANG
AN PAGO
ORDOT
Map No. 14
ANDERSEN AFB
LEGEND
CLEAR ZONE
CUD 2
CUD 3
CUD 8
CUD 9
CUD 10
80
75
CUD 7
75
70
CUD 12
70
75
CUD 13
CUD = COMPATIBLE USE DISTRICT


GUAM
UNIFORM MAPPING SYSTEM
Slide and Erosion Zones
Map No. 15
SLOPE - 15 % and over

obtained from higher terrain. An historical preference for flatland as being more feasible for development could change as a result of economic pressures for use of land once considered marginal as far as development potential. Therefore, performance guidelines must facilitate protection of slopes as an extremely important area of particular concern.

Approximately half of Guam's total acreage (43 percent) has a slope in excess of 15 percent. Steep terrain generally occurs on the savannah grasslands of the southern half of the island and on coastal cliffs and terraces. Because of a multiplicity of problems that can occur with land-use activity on hillsides and clifflines, open space is encouraged as the predominant land use. The majority of sloping terrain has been designated as conservation districts because the terrain and vegetation constitutes a natural watershed, an aesthetic resource, and an important area for recreational activities such as hiking and observation of ecological habitats. The vegetation, wildlife, drainage patterns, soil conditions, and underlying geology all suggest an emphasis on open space rather than urban or agricultural development in steep areas.

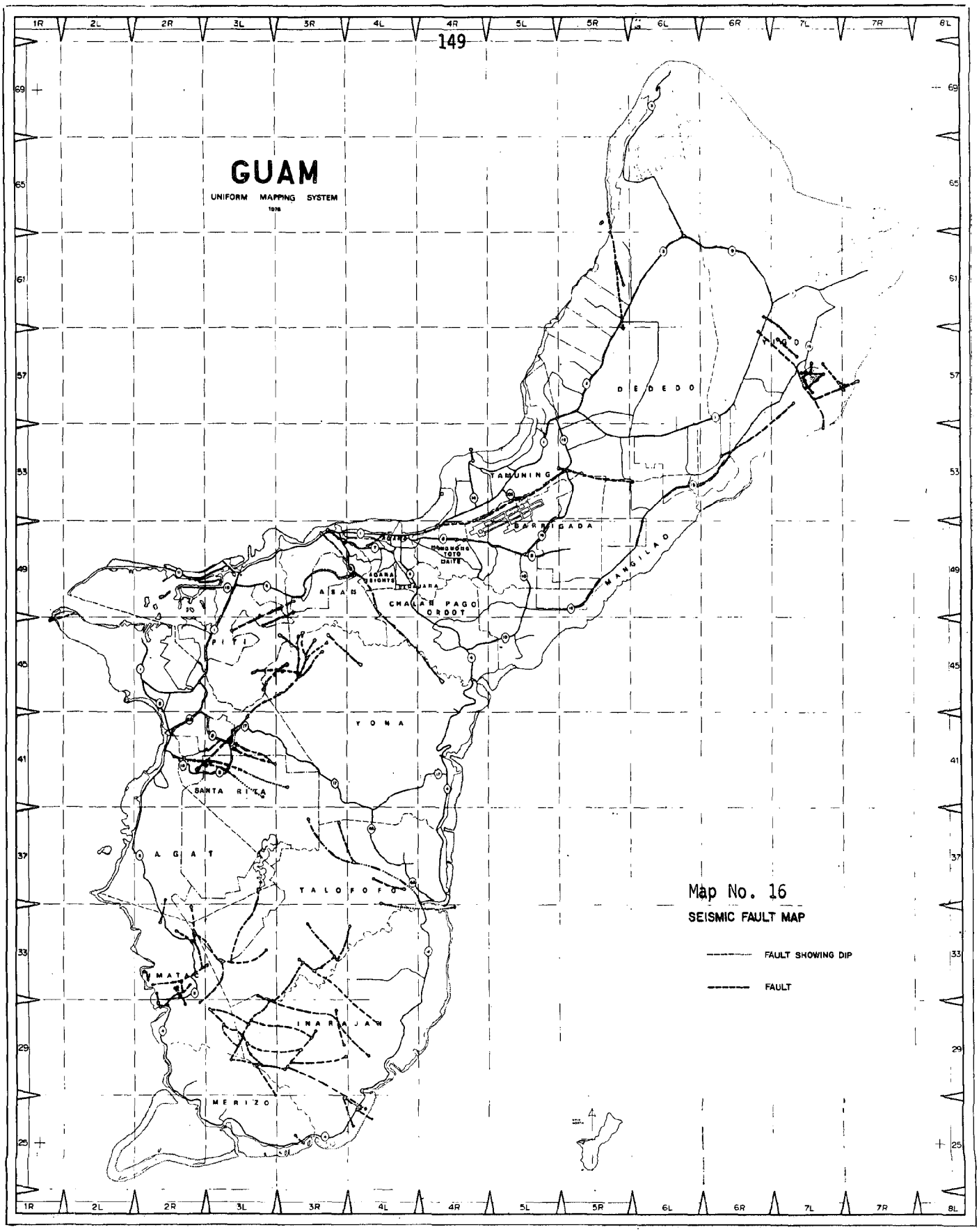
Construction on hillsides can promote erosion which destroys protective vegetative cover, limits land use, and degrades water quality and visual appearance. Unplanned development can also lead to landslides and increases flood hazard areas. The weight of structures on steep hillsides can cause unstable soils to "slump" and weaken foundations. In extreme cases, mud slides may cause building damage and/or threat to human life. When ground cover is disturbed or removed during development, exposing the soil, potential for erosion has been introduced. As the surface area available for absorption of rainwater is reduced by impervious surfaces (roofs, roadways, parking lots, etc.), runoff is increased and the potential for erosion increased along with it. As a rule, slopes are more easily eroded than level lands; the extent of erosion during construction and prior to soil stabilization is substantially increased on steep slopes which are more subject to failure than similar installations in more level landscapes. Where provision is made for public power, water, telephone, or sewage systems, the difficulties and costs are significantly greater on steep slopes. In addition, the acreage requirements for roads and even for structures increases in slope. In short, land area cannot be used as efficiently on steep slopes as on level land. Efficiency is related to cost and some costs of developing land on steep slopes have to be borne by the public, as local government must maintain roadways or other utilities or when erosion, water sedimentation, or slide damage occurs.

9. Seismic Fault Zones (Map No. 16)

During eras of the island's geologic development, different blocks of land have uplifted and subsided. The six blocks are divided by fault lines or geologic structural subdivision zones. In case of seismic or earthquake activity, the most potentially hazardous areas are along these

zones. Major geologic activity occurs over such a long expanse of time, though, that the potential hazard along fault lines is slight. The land is stable enough for most land uses. The six major blocks have been mapped and described in the Military Geology of Guam, published in 1959 as a joint effort of the U.S. Army Corps of Engineers and the U.S. Geological Survey. Further geologic and seismological studies are needed before a more precise determination of the extent of the hazards associated with fault lines is known and more precise guidelines can be established. Until further study suggests otherwise, the development of major energy facilities, high-rise structures, hospitals, schools, fire and police stations or emergency services should be discouraged on defined fault zones.

Some of these potential APC's, particularly the Unique Territorial Ecosystem, Marine Pristine Ecological Communities, and Urban Waterfronts, can also be considered "areas for preservation and restoration" (APR's) of the kind provided for in 15 CFR 923.22. All potential APC's are discussed in the Land Use Plan, and this will provide the definitive criteria for selection of the APC's and APR's that are ultimately designated. The procedure for designating APC's and APR's will be that followed by the Governor in designating Wetlands and Flood Hazard Areas as APC's, the issuance of executive orders making the designation, and requiring the TPC or another competent Territorial agency to delineate the areas concerned and promulgate rules and regulations for their management.


GUAM
UNIFORM MAPPING SYSTEM
1976
DEDEDO
TAMUNING
BARRIGADA
MANGILAO
ASAN
CHALAN PAGO ORDOT
PITI
AGANA HEIGHTS
YONA
SANTA RITA
AGAT
TALOFOFO
INARAJAN
MERIZO
Map No. 16
SEISMIC FAULT MAP
FAULT SHOWING DIP
FAULT

CHAPTER VIII - ADDITIONAL PLANNING REQUIREMENTS

A. ENERGY FACILITY PLANNING PROCESS

Section 305(b)(8) of the CZM Act requires that the management program for each State or Territory include:

> "A planning process for energy facilities likely to be located in or which may significantly affect, the coastal zone, including but not limited to a process for anticipating and managing the impact from such facilities."

NOAA regulations (15 CFR 923.13) require such a process to include:

> (1) An identification of energy facilities which are likely to locate in, or which may significantly affect, the coastal zone;
>
> (2) A procedure for assessing the suitability of sites for such facilities;
>
> (3) Articulation of State policies for managing energy facilities and their impacts, including a clear articulation of policies that may be imposed on site location and facility development;
>
> (4) An identification of how interested and affected public and private parties may be involved in the planning process, and a means of continued consideration of the national interest in the planning for and siting of energy facilities after program approval; and
>
> (5) An identification of legal authorities and other management techniques that will be used to accomplish state policies and procedures.

The following areas of discussion correspond to the requirements listed above.

> (1) On the basis of findings included within two reports prepared for the Guam Bureau of Planning entitled Future Power Production and Transmission Alternative Plans (1978) and Planning for the Impacts of Guam Energy Facilities Expansion (1979), it can be concluded that future location of nearly all energy facilities will occur on, or adjacent to, the current Cabras Island sites. The construction of two additional steam plants at this location, coupled with the projected on-line termination of the Piti plant in 1994, should sufficiently accommodate Guam's anticipated 3-5 percent yearly increase in power demand. Another foreseeable facility other

than these plants would be construction of a proposed ocean thermal energy conversion (OTEC) plant, again or or adjacent to Cabras Island. Other development under discussion for Guam includes expansion of the Guam Oil Refining Corporation (GORCO) facilities at Agat. GORCO has indicated that expansion is necessary to accommodate increased production or storage demands, or to redevelop certain aspects of its operations that are nearing the end of their economic life. GORCO is a principal supplier to the military installations on Guam and its production forecast and siting needs are closely associated with the level of military activity on the island. The possible repowering of the Tanguisson Power Plant at NCS Beach has also been mentioned.

(2) Suitability of sites for such facilities is determined in advance by using the general zoning and land-use districting system in conjunction with the Community Design Plans. Nearly all of Apra Harbor is (excluded) military land. However, Commercial Port facilities are on industrially-zoned lands owned by the Government of Guam. Existing power facilities and proposed expansion of these facilities are on lands leased from the U.S. Government of their present uses. Future expansion of the GORCO facilities may involve infringement upon the Atantano wetland, a designated Wetland Area of Particular Concern. An attempt would have to be made to balance alternative site availability and economic feasibility, national interest and impact on the ecosystem before expansion could be permitted. Land-Use district designations, data collection and updating of Community Design Plans is a continuing process and the future location of suitable sites for energy facilities will be part of the comprehensive approach to land-use management that is being undertaken by the Goverment of Guam. Map No. 9 indicates the probable location of such facilities.

If current mechanisms such as zoning and land-use district guidelines prove inadequate to address proposed major energy facility development, a "development APC" can be designated through Executive Order by the Governor. Such a situation might arise in a case, for example, in which an essential facility would be excluded by the strict standards applicable to construction in the Seashore Reserve. In such a case, the TPC could be directed to promulgate such rules and regulations as necessary to implement the APC designation and address the impact of the facility. Examples of such performance standards are found in the Land-Use Plan. The study entitled, Planning for the Impacts of Guam Energy Facility Expansion developed the following methodology for evaluating the impacts of proposed development. The following factors could be utilized by the TPC or Governor in determining if a site or facility should receive special management attention under an APC designation.

A. Economic

1. Government fiscal condition: Net external change.
2. Employment: Long term, short term, percent change.
3. Land values: Changes in a) Surrounding use
   b) Right-of-ways
   c) Aesthetics, pollution

B. Environmental

4. Air quality: Change in ambient conditions.
5. Water quality: Change in ambient conditions.
6. Audio-electromagnetic: Change in ambient noise and electromagnetic radiation levels.
7. Open space/green areas: Change in existing vegetation.
8. Rare and endangered species: Changes in number of types.
9. Wildlife, vegetation: Major changes in existing abundance or diversity.
10. Disaster: Susceptibility of expanded facility to natural disaster.

C. Social

11. Landmarks: Cultural, historic or scientific landmarks destroyed, significantly altered, or made inaccessible.
12. Recreation: Destruction, or change in "usability" or pleasantness or recreational facilities.
13. Transportation: Change in duration of severity of congestion.
14. Housing: Change in locational demand for nearby housing units.
15. Education: Change in demand for schools, specific courses, student density.
16. Community self perception: Number of people whose community living conditions will be significantly altered.
17. Shortages: Improvement of living conditions caused by previous shortage of energy such as brownouts or forced outages.

(3) Siting of energy facilities is governed by the same land-use district zoning and building requirements to which all other development is subject. Energy facilitly development also is subject to those GCMP policies outlined in Chapter III and those relevant authorities discussed in Chapter VI.

The TPC, in entertaining requests for variance or conditional use permits for energy facilities, may impose on such development such conditions as required to mitigate anticipated adverse impacts.

An effort to reduce demand for energy and energy facilities was intiated with the passage by the Guam Legislature of Public Law 12-100, which created the Guam Energy Office (GEO) in the Office of the Governor and vested GEO with energy planning functions:

> "It is hereby declared to be the public policy of the territory that there exists a Guam Energy Office to mobolize local resources to work with the Federal Government and the private sector in order to best allocate fuels available to the Territory of Guam; and to determine which energy conservation measures and practices best slow the rate of growth of energy consumption, assure adequate supplies of energy and fuels for necessary uses, reduce energy waste, preserve natural resources and protect the environment."

The major functions of the Guam Energy Office focus on energy conservation practices, fuel price stabilization and emergency fuel allocation procedures in the event of potential fuel shortages. However, GEO is also responsible for the assurance of "adequate supplies of energy and fuels for necessary uses ... (and to) preserve natural resources and protect the environment." This portion of the law provides the authority for GEO to participate in the determination of needs for specific facilities. To date, GEO has been involved in studying the feasibility of an Ocean Thermal Energy Conversion plant (OTEC) to be located on the northside of Cabras Island near the existing Piti and Cabras steam units. Since siting requirements for this type of plant are quite specific in terms of required depth and temperatures of ocean waters (thermal gradients), GEO will be working closely with the Guam Power Authority, Bureau of Planning, and other relevant parties in the designation of a site for such a facility.

(4) In addition to the above-discussed functions, the Guam Energy Office has addressed energy issues within a chapter of the Comprehensive Development Plan for Guam. Further, the Governor is establishing a citizen advisory committee to the Guam Energy Office. One of the listed duties of this committee is the development of a 20-year energy plan for the Territory and an annual update of the plan. Included in this plan will be a discussion of energy facility development and siting issues. The Guam Coastal Management Program will be involved in review of the plan prior to submittal for approval, as will the general public during hearings on the plan.

Public participation in the energy facility siting process is provided for in several respects. All requests for zone changes, variances from the zoning law and conditional use permits are dealt with by the Territorial Planning Commission in open public meetings and hearings. The Subdivision and Development Review Committee in its advisory capacity to the TPC, also conducts its meetings with applicants open to the general public.

Revisions to the Land-Use Community Design and Comprehensive Development Plans are made subsequent to public hearings. Any person may request changes in the Land-Use District boundaries and, again, such revisions are made following required public hearings. Unless granted waivers or variances as provided for in law, such facilities must comply with those requirements which are outlined in the Zoning Law and other statutes discussed under Authorities in Chapter VI.

(5) The combined effect of zoning and districting is to concentrate new facilities that may be needed for energy conversion, storage, transfer, or transportation in industrialized areas whenever possible. M-1 or M-2 (industrial) zoning standards address specific landscaping, yard area, height and parking requirements. Location of such facilities outside urban areas can be achieved through special exceptions to Conservation District Development Standards or through the designation of "development" APC's. In such cases, the TPC would be required to balance the need for establishment of new energy facilities at a particular proposed site against the potential adverse environmental impacts resulting from its location in an area of questionable suitability. In addition, a district boundary modification may occur to accommodate an energy facility in which there is a demonstrated national interest. In the event of such a redistricting proposal, an accompanying public hearing would provide ample opportunity for input into the specific siting decision. Program authorities are discussed in full in Chapter VI.

B. SHORELINE ACCESS AND PROTECTION PLANNING

Section 305(b)(7) of the CZMA requires a definition of the term "beach" and a planning process for the protection of, and access to, public beaches and other coastal areas of recreational, historical, aesthetic, ecological or cultural value. The Coastal Program Approval Regulations (15 CFR 923.24) require specifically:

(1) A procedure for assessing public beaches and other public areas requiring access or protection and a description of appropriate types of access and protection.

(2) A definition of the term "beach" and an identification of public areas meeting that definition.

(3) An identification and descirption of enforceable policies, legal authorities, funding programs and other techniques that will be used to provide such shorefront access and protection that the State's planning process indicates is necessary.

(1) The approach developed for assessing those shoreline areas requiring management attention for public access or protection included:

(a) Analysis of available data relative to shoreline and reef physiography, shoreline use, proposed development, recreation, military lands and public opinion,

(b) Data-base development including on-site physiographic study of all shore and reef areas within the definition of "beach",

(c) Coordination with the Department of Parks and Recreation for identification of public, private, and military beaches, projected demands for beach recreation areas, plans for expansion of public facilities and criteria for evaluation of publicly-owned beaches with development potential, and

(d) Analysis of existing legal authorities for provision of public access and shoreline protection.

This planning approach resulted in the preparation of a study by the GCMP entitled, Beach Access on Guam. The study identified all of the island's beaches and classified them in respect to public access: open access, access with owner's permission and restricted access. Beach availability statistics derived from the study are summarized below and the Beach Strand Inventory is found in Table 5.

Access Category	Number of Beaches	Length
Beaches Adjacent to GovGuam Lands with Open Access	14	8.5 Kilometers 5.1 Miles
Beaches Adjacent to Private Lands with Access by Owner's Permission	49	39.5 Kilometers 23.7 Miles
Beaches Adjacent to Federal Lands with Open Access	6	5.5 Kilometers 3.3 Miles
Beaches Adjacent to Federal Lands with Restricted Access	13	13.0 Kilometers 7.8 Miles
Total Beach Strand	82	66.6 Kilometers 39.9 Miles

TABLE 5 BEACH STRAND INVENTORY

Place Name	Length (Meters)	Width (Meters)	Ownership	Inland Access
1. Amantes Pt.-Biji Pt.	594	1-15	Private	None
2. Fafai Beach	366	8-32	Private	Secondary Road
3. Gogua Beach	220	3-10	Private	Through Okura
4. Naton Beach	1775	8-27	Private	Secondary Road
5. Ypao Beach	671	5-8	GovGuam	Secondary Road
6. Ypao Pt.	40		Private	None
7. Alupang	27		Private	None
8. Dungcas	846	3-8	Private	Secondary Road
9. Dungcas-Trinchera Gap	1844	3-16	Private	Through Private Property
10. Trinchera Beach	693	3-16	GovGuam	Marine Drive
11. Naval Cemetary	175	16	GovGuam	Marine Drive
12. Agana	1619	3-16	GovGuam	Marine Drive
13. Anigua-Pigo	213	3-12	Private	Through Private Property
14. Adelup	667	3-19	GovGuam	
15. Asan	594	319	Private	Marine Drive
16. Asan Pt.	853	6-19	Private	Marine Drive
17. Piti	1585	10-20	Federal	Marine Drive
18. Tapungan Channel	149	3-10	Federal	Marine Drive
19. Hotel Beach	244		Federal	Paved Road
20. Atantano River	1020		Federal	Restricted
21. Orote Peninsula #1	80	3-10	Federal	Restricted
22. Orote Peninsula #2	202	3-16	Federal	Restricted
23. Orote Peninsula #3	65	3-16	Federal	Restricted
24. Gabgab Beach	524		Federal	Base Pass
25. Tipalo Beach	236		Federal	Base Pass
26. Dadi Beach	1330	2	Federal	Base Pass
27. Rizal Beach	1330	2	Federal	Primary Road
28. Togcha Beach	1505	15	Private	Primary Road
29. Salinas Beach	1505	15	Private	Primary Road
30. Gaan Pt.	1909	19	Private	Primary Road
31. Bangi Pt.	1909	19	Private	Dirt Road
32. Chaligan	1798	23	Private	Primary Road
33. Nimitz Beach	1798	23	Federal	Primary Road

34.	Taleyfac River	1798	23	Private	Dirt Road
35.	Taelayag Beach	1402	15	GovGuam	Dirt Road
36.	Sagua Beach	1006	27	Private	Foot Trails
37.	Facpi	1062	12	Private	Foot Trails
38.	Acgugao Pt.	472	12	GovGuam	Foot Trails
39.	Sella Bay & Abong	1457	34	GovGuam	Foot Trails
40.	Cetti Bay	610	3-16	Private	Foot Trails
41.	Fouha Bay	100		Private	Foot Trails
42.	Umatac Bay	229	23	GovGuam	Primary Road
43.	Machadgun Pt.	457		Private	None
44.	Mamatgun Pt.	457		Private	Dirt Road
45.	Toguan Bay	966	9	Private	Primary Road
46.	Ajmo Beach	381	9	Private	Primary Road
47.	Bile River South	53	5-14	Private	Primary Road
48.	Pigua River	136	5-20	Private	Primary Road
49.	Cocos Island	524	5-25	Federal	None
50.	Cocos Island	1247	5-25	Private	None
51.	Cocos Sand-Islet	118	34	GovGuam	None
52.	Pigua Beach-Ada	975	1-5	Private	Primary Road
53.	Aang Beach	1303	3-10	Private	Primary Road
54.	Liyog River Mouth	137		Private	
55.	Ajayan Bay	213	124	Private	Primary Road
56.	Aga Bay	122	3-5	Private	Primary Road
57.	Guijen Pt.	701	5-15	Private	Primary Road
58.	Atao Beach-Acho Pt.	610	15	Private	Dirt Road
59.	Acho Pt.	427	20	Private	
60.	Agfayan Bay	118	20	Private	Primary Road
61.	Inarajan Bay & Guae	678	2-60	Private	
62.	Paulilluc Bay	457	1-20	Private	Foot Trails
63.	Perez Beach	412	to-50	Private	Primary Road
64.	Asiga Beach	107		Private	
65.	Asalanso River Mouth	141	15	Private	
66.	Talofofo Bay	335	46	GovGuam	Primary Road
68.	Cruz Beach	123	42	Private	Dirt Road
69.	Jones Beach	823	42	Private	Dirt Road
70.	Ipan Beach	480	23	GovGuam	Park
71.	Togcha	427	15	Private	Dirt Road

72. Ylig Bay	290	27	Private	Dirt Road
73. North Ylig	109	15	Private	Dirt Road
74. Tagachan	118	30	GovGuam	Park
75. Pago Bay	1543	15	Private	Dirt Road
76. Tagua Pt. Mouth	4938	69	Federal	Restricted
77. Tarague	572	61	Federal	Restricted
78. Jinapsan	2065	38	Private	Through AAFB
79. Ritidian	1562	46	Federal	Restricted
	1734	46	Federal	Restricted
	255	23	Federal	Restricted
80. Uruno Beach	2084	34	Private	Through Base
81. Falcona Beach	594	27	Private	Through Base
82. Haputo Beach	310	19	Federal	Restricted
83. Tilaan-Tanguissan	412	38	Federal	Secondary Road

(2) The preceding table identifies those areas that are defined as "beach" in the definition developed in another GCMP study entitled Atlas of Reefs and Beaches on Guam. The definition utilized in the context of shoreline access and protection is:

> An accumulation of unconsolidated deposits along the shore with their seaward boundary being at the low-tide or reef flat platform level and extending in a landward direction to the strand vegetation or first change in physiographic relief to topographic shoreline.

(3) Enforceable policies and legal authorities for shoreline access and protection are detailed in Chapter III, "Coastal Management Program Policies", and Chapter VI, "Authorities". The overall GCMP policy regarding public access states:

> The public's right of access shall be ensured to all non-Federally-owned beach areas and all territorial recreation areas, parks, scenic overlooks, designated conservation areas and other public lands; agreements shall be encouraged with the owners of private and Federal property for the provision of reasonable access to, and use of, resources of a public nature located on such land.

Policies for Shore Area Development, Urban Development, Hazard Areas, Housing, Fragile Areas, Visual Quality and Recreational Areas also collectively support requirements for shorefront access and protection. Chapter VI, "Authorities", specifically outlines the regulatory mechanisms and agencies concerned with shoreline access and protection. Appendix 1 contains the complete text of referenced authorities.

Public Law 14-41, established a resort-hotel zone with height, setback and design regulations and provides support for shorefront access consideration within resort areas. Flood Hazard Areas and Regulations preclude the development of flood control measures which would impair public access within shoreline areas. The regulations generally inhibit creation of hazardous conditions which would restrict shorefront access. Wetland Rules and Regulations also encourage open space within coastal wetlands and mangrove areas, thus promoting open access to such lands.

The Territorial Beach Areas Act (GCG, Section 13451), declares as the public policy of the Territory, that:

> "It is the public right to have unrestricted access to the ocean shores of Guam for common use by all the people of Guam, and therefore that strip of public land above the high mean watermark must be preserved and protected for generations to assure free access to the

> beaches of the Territory to the maximum extent, to preserve the natural beauty of Guam's beaches, and to alleviate the health problems caused by construction near tidal areas. It is, therefore, the purpose of this Chapter to forever preserve and maintain the sovereignty of the Territory heretofore legally existing over the ocean shores of the Territory so that the public may have the free and uninterrupted use thereof; to protect, settle and confirm the public rights the use of the ocean shore heretofore acquired by public dedication, prescription, or otherwise and to authorize the reacquisition of the ocean shore where a portion thereof has been lost to private ownership and no public rights exist therein as a result of dedication, prescription, or otherwise.

(4) The Conservation District designation of shoreline areas on the Land-Use Districting Map further ensures their protection and encourage their accessibility to the public. Either site specific locations or the beach areas as a general class can be designated as APC's through the Governor's authority to issue Executive Orders, by the TPC through their rule-making authority or specifically so designated within the Seashore Reserve Plan.

(5) The Territorial Seashore Protection Act (P.L. 12-108) provides the primary legal mechanism for shoreline management. This legislation requires issuance of permits for development within the Seashore Reserve and preparation of a Seashore Reserve Plan. Applications for development within the Seashore Reserve Plan are reviewed by the Territorial Seashore Protection Commission. Currently, the Seashore Reserve extends only 10 meters inland from the mean high watermark having been reduced from the original 100 meter boundary in the wake of Supertyphoon Pamela to facilitate shoreline reconstruction.

Consistent with the original intent of the Act, and to facilitate development of the required Seashore Reserve Plan, the GCMP has proposed amendment of this 10 meter boundary. Utilizing roadways and natural clifflines and assessing potential impacts of future development along Guam's coastline, the GCMP has prepared a series of maps outlining a broader and more useful inland boundary. Legislation submitted to the Guam Legislature, if adopted, would recognize these maps as the amended Seashore Reserve boundary and provide an excellent tool for shoreline management. Shoreline areas outside the Seashore Reserve are subject to the other authorities identified in Chapter VI.

C. SHORELINE EROSION AND MITIGATION PLANNING

Section 305(b)(9) of the CZMA requires a planning process for assessing the effects of shoreline erosion, and studying and evaluating ways to control

or lessen the impact of such erosion, and to restore areas adversely affected by such erosion. The following discussion explains why shoreline erosion is not a significant problem on Guam. Briefly, the geological structure of Guam is such that the entire island is surrounded by coral reef and is not generally subject to damaging wave assault and subsequent shoreline erosion. Even during major typhoons, shore erosion is slight.

SHORELINE CLASSIFICATION

Comprised of 212 square miles of land area, the entire island of Guam is considered a "coastal zone". 116.5 miles of shoreline circumscribe the island. To address existing or potential shoreline erosion problems, the immediate coastline or ocean-land interface is classified into rocky coastline, sandy beaches, mangrove mudflats and river estuaries.

ROCKY COASTLINE

The rocky coastline constitutes 59 percent of Guam's shoreline, approximately 68.5 miles. It is characterized by steep slopes, cliffs, headlands, uplifted limestone terraces, benches cut into limestone or into volcanic rock slightly above sea level and low exposed beach rock. The cut benches are the most extensive type of rocky coastline on Guam and have been formed by erosion of the adjacent elevated rocky shores, often with secondary construction by marine worms and algae of rims, forming pools on top of the benches. Indentations, called "nips", formed by extremely slow erosion of limestone rock by algae, limpets and chitons, are typically present at existing and former sea levels. In some parts of the southwest coast, volcanic lava formations occur at the shoreline adjacent to eroded flat lava benches at sea level, similar in shape to the coral reef flats. Small areas of low rocky shoreline, consisting of reef limestone and beach rock raised slightly above high tide level, are scattered through certain beach areas in all parts of Guam. Noticeable shoreline change is almost non-existent along the rocky shore, with the exception of slumping or fracturing of parts of steep slopes and cliffs due to solution, earthquakes, or storm waves. This occurrence is unpredictable and limited to areas that are not developed on the northeast and northwest coast and minor localities in the southeast of Guam. No serious, immediate or imminent problems exist in the rocky coastline areas.

SANDY BEACHES

The sandy beaches of Guam comprise approximately 34 percent of the shoreline or 39.9 miles. They are sloping landforms composed of unconsolidated sand, gravel, broken shells, coral and forminifera. They are characterized by high permeability and volcanic detritus or reef bioclastic composition, or a mixture of the two. They extend landward from the water's edge to a distinct break in the landform or to a point where terrestrial vegetation covers the substrate and extend seaward as far as the sandy

bottom is appreciably affected by tide, currents and wave movements. Most of the sandy beaches of Guam are protected from the erosive effects of average weather conditions by an expanse of shallow reef flat that extends seaward to a reef front or fringing reef that suppresses the force of all but the largest of storm waves. During typhoons, an excess buildup of sand is lifted from the floor of the reef flat and a sandy beach may be expanded further inland. Erosion of beach areas during storms is minimal and limited to small areas where a channel or reef cut allows storm waves to penetrate the reef flat buffer zone. Post-typhoon redistribution of sands can naturally correct limited adverse effects.

The major potential for erosion of sandy beaches exists with the influence of man. The practice of sandmining for construction, landfill and golf course purposes has degraded several beach areas' ecological complexity, aesthetic appearance and recreational potential. Increased enforcement and identification of alternative sources of sand resources must be utilized to deter these activities. Since the inception of Guam's Coastal Management Program, and coordination of enforcement and public information programs, the incidence of sandmining has diminished.

In the past, Guam has been free of the erosive effects of beach groins constructed perpendicular to longshore currents. Recently, however, Guam has seen the construction of a concrete groin on a sandy beach on Cocos Island -- a southern offshore portion of a barrier reef lagoon with longshore currents affecting sand formation. The effects have been a noticeable sand buildup on one side of the groin with a subsequent sand loss on the opposite side. This groin, the base of a small boat pier, was constructed without the required Federal and local permits. In coordination with the Guam Coastal Management Program, Guam Environmental Protection Agency and the Department of Agriculture, the U.S. Army Corps of Engineers has required the developers to remove the concrete groin, construct a more environmentally suitable pier, and pay a fine imposed for the violation. Proper adherence to, and enforcement of, the Seashore Protection Act permit process will preclude development adversely effecting natural shoreline processes.

MANGROVE MUDFLATS

The appendix to the Atlas of the Reef and Beaches of Guam contains maps and descriptions of Guam's mangrove areas. The U.S. Army Corps of Engineers has also conducted studies to define the nature of the mangrove communities. Presently, mangrove mudflats are represented in only two locations on Guam. An extensive stand of several mangrove species has been increasing in size along 4.5 miles of the inner shore of Apra Harbor along the central western coast. Apra Harbor is the island's major deep-water port and is characterized by a breakwater that was built upon the barrier reef of a natural lagoon. The expanse of mangroves has noticeably increased in the past ten years because increased sedimentation from inland erosion, carried by the Laguas, Agueda and Atantano

Rivers, has increased the mudflat area. The mangroves themselves further assist in the buildup of shoreline areas. The Apra mangroves are rarely frequented by man, usually to catch mangrove crabs. They are encompassed by Federally-owned property and restricted areas. Shoreline erosion is non-existent in this area. Rather, shoreline buildup is in effect.

The other area of mangrove shoreline is along the extreme southern coastline between Merizo and Inarajan along the inner area of Cocos Lagoon. The strand of mangroves fringe 3.5 miles of shoreline and assists in shoreline stabilization. These mangroves have proved extremely resistant to typhoon winds and waves and represent a unique ecological community. The only potential for shoreline degradation would occur if the mangroves were removed to enhance visual and public access. Due to their limited occurrence on Guam and ecological importance, they have been designated official wetlands subject to the Wetlands Rules and Regulations enforced by the Territorial Planning Commission. The U.S. Army Corps of Engineers also protects these mangrove communities with their permit system controlling development within wetlands.

RIVER ESTUARIES

Approximately forty rivers constitute the surface drainage pattern covering the southern half of the island. Thirty-three of these have mouths at the seashore, nine having extensive estuarine areas. Major rivers flowing into shoreline embayments are most often the site of urban village centers because of the relatively flat terrain that borders the coastline river mouths. Inland erosion is a persistent problem and clouds many estuaries and reef areas with silt-laden deposits.

Shoreline erosion, however, is noticeable only at Talofofo Bay along the southeast coast of Guam. In a detailed project report entitled, Talofofo Beach, Territory of Guam, published in June, 1974, the COE defined the nature of shoreline erosion in this area and outlined a plan for shore protection. The plan has never been implemented. The following description is adapted from their report.

Talofofo Bay

The shoreline at Talofofo Beach changes with the wet and dry season. During the dry season, the river flow is relatively low and a sandbar develops at the northern side of the river mouth. The sandbar diverts a great deal of riverine materials to the beach area. In addition, sand from offshore deposits is carried by waves, through the reef opening in the bay, onto the shore. During the wet season, the river flow increases and increased deposit of riverine material occurs, however, since the tradewinds are low, a smaller amount of sand is transported by wave action. During the wet season, the incidence of typhoons or tropical storms is the erosive factor at Talofofo Bay. Shoreline above

five feet which is eroded by stormwave action does not build back. Since the early 1940's, 1.6 acres of land have been claimed by shoreline erosion. A revetment, at an initial (1974) cost of $525,000 with an annual charge of $29,900 for interest, amortization and maintenance would be required to implement the selected plan. Based on the extent of the problem, the economic feasibility and existence of higher priority needs, the plan seems likely to never be implemented.

ADDITIONAL CONSIDERATIONS

In addition to Federal Coastal Zone Management Program interests in shoreline erosion, the U.S. Congress enacted the Shore Erosion and Control Demonstration Act (P.L. 93-251, Section 54) in 1974. This act gave the COE authorization to initiate a shore erosion control demonstration program, and created the Shore Erosion Advisory Panel. The Advisory Panel, through the COE District Engineer, Hawaii Office, invited Guam to submit site location proposals. The Bureau of Planning, in consultation with the University of Guam Marine Laboratory and the Guam Environmental Protection Agency, concluded that no existing sites on Guam warrant study for demonstration projects.

CONCLUSION

Numerous shoreline studies by the GCMP, COE, University of Guam Marine Laboratory and Guam Environmental Protection Agency have defined the nature of shoreline resources and extent of shoreline erosion. Only one problem area has warranted study for consideration of shore stabilization. Primarily as a result of the unique characteristics of Guam's shoreline, further emphasis, funding, and study is of low priority. On an island the size of Guam, future problems concerning shoreline erosion can easily be recognized and considered for study. Currently, shoreline erosion areas are not proposed areas of particular concern on Guam.

Other than the COE Talofofo study, there are no recent or projected studies addressing shoreline erosion on Guam. However, if an identified problem area were to become evident through study or otherwise, and existing authorities were insufficient to address the problem, such an area could be designated an APC through executive order. A non-interference approach is currently favored by the GCMP because of the limited extent of natural and manmade erosion problems. As previously discussed, the natural erosion at Talofofo Bay is too small to justify the expense for control and the man-induced problems on Cocos Island have been addressed through regulatory procedures.

The Land-Use Policies, Land-Use Districting System, and Seashore Reserve regime, as well as the Wetlands and Flood Hazard Areas Rules and Regulations all discourage manmade erosion to a significant extent. Particularly, Wetlands Rules and Regulations prohibit removal of protective

mangrove strands and Flood Hazard Areas Rules and Regulations prohibit shoreline development which would adversely affect natural sand processes or cause shoreline erosion to occur. The legal authorities discussed in Chapter VI are adequate to enforce these provisions. Overall potential significant shoreline erosion problems are thwarted in their early stages through review of the proposed use or cause by the TPC, TSPC or SDRC.

CHAPTER IX - FEDERAL CONSISTENCY

A. Introduction

Guam's procedures for federal consistency respond to the requirements of the Coastal Zone Management Act of 1972, as amended, as specified in 15 CFR Part 930 (43 FR 10510, March 13, 1978). The basic consistency requirement of the Act is that federally conducted or supported activities which directly affect the coastal zone be consistent to the maximum extent practicable with an approved state management program. Also, applicants for federal licenses and permits and state or Territorial recipients of federal funding will be required to determine whether their projects which affect the coastal zone are consistent with the Program. The Territory generally will be able to prevent actions (with exceptions as explained in this section and regulations) which are not consistent with the Program.

The Bureau of Planning, in the Office of the Governor, will be the lead agency designated pursuant to 15 CFR 923.53(a)(1) and 15 CFR 930.18. As noted in Chapter IV, "Boundaries", Guam's "coastal zone" includes all non-federal property on the island, including such areas on all offshore islands and the submerged lands and waters extending seaward from such property to a distance of three miles. While federal lands are excluded from the coastal zone, activities on federal lands that directly affect GovGuam or private properties must be consistent to the maximum extent practicable with the GCMP.

While the area seaward of the territorial sea is legally excluded from Guam's coastal zone, there is a potential for impacts to occur within the zone which would result from activities occuring on the seaward, or excluded, side of the three mile limit. Federal activities seaward of the three mile limit which have impacts inside the three mile limit must be consistent with GCMP, at least as far as the impacts are concerned.

Though the entire federal consistency procedures are not required to be approved or established prior to implementation of the GCMP, consistent with 15 CFR 923.53, the following guidance is provided to apprise affected parties, including federal agencies and programs, of the GCMP's consistency mechanisms which will take effect upon such approval. These procedures can be altered or amended by agreement of the affected agencies and GovGuam, independent of the program approval procedures, though the basic substantive requirements as outlined in the CZMA and accompanying regulations cannot.

A Federal agency, in attempting to assert its consistency with the GCMP prior to conducting one of the four types of activities subject to these procedures, must understand the essential elements of the GCMP that are the basis of a consistency review. Though not inclusive of all program authorities (see Chapter VI), the following list of authorities and policies includes those components of the GCMP that should be the principal focus of a consistency review:

(1) The eighteen GCMP policies prescribed under Executive Order 78-37;

(2) Executive Order 78-23 regarding Land Use Districts;

(3) Executive Order 78-20 and accompanying TPC regulations regarding Flood Hazard Areas;

(4) Executive Order 78-21 and accompanying TPC regulations regarding wetlands;

(5) The objectives, policies, and standards of the following laws:

a) Territorial Seashore Protection Act, as amended;
b) Territorial Beach Areas Act;
c) Zoning Law;
d) Subdivision Law;
e) Historical Objects and Sites;
f) Game and Fish Laws;
g) Endangered and Threatened Species;
h) Public Rights Division;
i) Those administered by the Guam Environmental Protection Agency (Title LXI, GCG)

(6) Requirements established pursuant to the Federal Clean Air Act, as amended, and Clean Water Act, as amended.

As the Federal consistency procedures are intended to provide a means to resolve possible conflicts between a proposed activity and the management program, the GCMP will assist agencies in identifying problem areas and alternatives in projects or activities, and aspects of the program with which consistency is in question.

Another important assessment required of the Federal agency is that of determining whether the proposed activity "directly affects" Guam's coastal zone. 15 CFR 930.33 considers

> "all development projects within the coastal zone to be activities directly affecting the coastal zone. All other types of activities within the coastal zone are

> subject to Federal agency review to determine whether they directly affect the coastal zone."

In conducting the "other" types of activities mentioned above, Federal agencies should determine whether a Federal activity outside of the coastal zone -- that is, an activity on Federal lands or waters -- directly affects coastal zone resources by considering the location, magnitude and type of activity contemplated. An effect usually will be found when the proposed activity is large in magnitude and is adjacent or in close proximity to the coastal zone. The smaller the magnitude of the activity and the further it is from the coastal zone, the less likely is the potential for effects on coastal zone resources.

However, even in cases where a proposed activity is a great distance from the coastal zone, an unlikely event in Guam, the Federal agency must still make a consistency determination and notify BP of such determination if the proposed activity will significantly affect the coastal zone (e.g., upland stream modification significantly affecting the quality of coastal waters).

The following text provides an outline of the proposed procedures for determining Federal activities' consistency with the GCMP. Bureau of Planning staff will discuss with each agency its respective activities in an attempt to clarify classes of activities that would be expected, routinely, to "directly affect" the "coastal zone."

B. Federal Activities

Sections 307(c)(1) and (c)(2) of the Coastal Zone Management Act state, respectively, that:

> Each federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs.
>
> Any federal agency which shall undertake any development project in the coastal zone of a state shall ensure that the project is, to the maximum extent practicable, consistent with approved state management programs.

Two terms are critical here: "federal activity" and "to the maximum extent practicable". 15 CFR 930.31(a) defines a federal activity as "any functions performed by or on behalf of a Federal agency in the exercise of its statutory responsibilities."

This would include, for example, private construction of a Federal military installation. A Federal development project is a Federal activity involving the planning, construction, modification, or removal of public works, facilities, or other structures, and the acquisition, utilization, or disposal of land or water resources. (15 CFR 930.31(b))

Complete consistency is required of these activities unless compliance is prohibited based upon the requirements of existing law applicable to the Federal agency's operations. If a Federal agency asserts that compliance with the management program is prohibited, it must clearly describe to the GCMP the statutory provisions, legislative history, or other legal authority which limits the Federal agency's discretion to comply with the provisions of the management program. (15 CFR 930.32(a))

The word "practicable" as used in CZMA §307(c) (1) and (2) means capable of being done. When modified by the phrase "to the maximum extent," the complete term means to the fullest degree permitted by existing law. (15 CFR 930.32(a)) The term "Federal activity" here does not include the issuance of a Federal license or permit to an applicant or person or the granting of Federal assistance to an applicant agency.

Federal agencies must notify the Territory at the earliest practicable time of existing or planned federally conducted or supported activities directly affecting the coastal zone. The Federal agency shall notify the Bureau of Planning directly of all activities subject to consistency. If the Federal agency would normally send copies of plans or designs to other particular local agencies for review, they must at least send a copy of the transfer letter and the consistency determination to BP. Federal agencies should notify the Territory of pending actions at least 90 days before the federal activity reaches a decision stage likely to restrict the use of alternative measures. The notification will include a determination that:

- the action is and will be undertaken in a manner consistent to the maximum extent practicable with the Program; or

- the action is not or will not be undertaken in a manner consistent to the maximum extent practicable with the Program but, in the view of the Federal agency, is necessary and justified because of some circumstances unforeseen at the time of program approval; or

- the action is not consistent, but is necessary in the interest of national security.

Relevant local agencies will be requested by BP to assist in review of Federal determination of consistency, and BP will agree or disagree with the determination within 45 days. If BP is unable to evaluate adequately the activity within 45 days, BP will, within the 45 days, request a 15-day extension. Federal agencies are required to grant one such extension if requested. Whenever BP receives notification directly from the Federal agency, it will forward either a status report or a response on the consistency review within 45 days of receipt of notification. The status report will inform the Federal agency of the:

- status of the matter;
- basis for further delay;
- approximate date expected for development of a response.

If the activity is determined by BP to warrant project evaluation, the Federal agency will be informed and invited to participate and both parties

may agree to extending the review period because of the magnitude or complexity of the project. In no case, however, may final Federal action be taken sooner than 90 days from the issuance of the consistency determination to the Territory, unless BP and the Federal agency agree to an alternative notification schedule.

C. Federal Licenses and Permits

Federal agencies issuing licenses or permits to non-federal applicants for proposed activities in the coastal zone may do so only for activities that will be conducted in a manner consistent with the approved Guam coastal management program.

A summary of the procedures that BP will use for review of Federal license or permit activities is:

(1) Applicant submits the license or permit application and consistency certification to the Federal agency and to BP. The "consistency certification" certifies that proposed activity complies with the GCMP and will be conducted in a manner consistent with the program.

(2) BP insures timely public notice of the project or activity pursuant to 15 CFR 930.61. (BP will attempt to establish agreements with relevant Federal agencies for the publication of joint public notices.) BP, at its discretion, may hold one or more public hearings on the proposed license or permit activity in accordance with 15 CFR 930.62 and the Guam Administrative Adjudication Act.

(3) BP circulates the application and certification to affected local agencies and collects comments. In the meantime, the permitting agency may continue processing, but not issuing, the pending license or permit, in order to avoid delay upon issuance of a consistency concurrence by BP.

(4) The GCMP staff reviews the comments, and recommends concurrence with or objection to the applicant's consistency certification to the director of BP. Any recommendation to object will include reasons and suggested changes which would allow the proposed project or activity to be conducted in a manner consistent with the GCMP.

(5) BP responds in writing to the Federal agency and the applicant informing them of its findings. In accordance with 15 CFR 930.63(b) and (c), BP responds at the earliest practicable time. If no decision has been reached within three months, BP reports on progress and the reason for delay. BP will make a finding within six months of initial receipt of the Federal license or permit application and consistency certification, or the Territory may be presumed to have concurred with the certification.

(6) If the Territory objects to a consistency certification, the Federal agency may not issue the subject license or permit until the reason for the objection has been corrected, and a concurrence obtained. If the Territory concurs with the certification, the Federal agency may issue the license or permit, but is not bound to do so if the subject activity fails to meet the agency's review standards under Federal law.

(7) In the event of a dispute, BP initiates negotiations between disagreeing Territorial and Federal agencies and, if necessary, the applicant. Mediation procedures will follow the process detailed in 15 CFR Part 930, Subpart G.

The Federal licenses and permits that BP will review for consistency with the GCMP are as follows:

Federal Agency	Permit Description	Citation
DEPARTMENT OF COMMERCE		
National Marine Fisheries Service	taking of marine mammals	Marine Mammal Protection Act; 16 U.S.C. 1361-1407
DEPT. OF DEFENSE		
U.S. Army Corps of Engineers	construction of dams or ditches across navigable waters	River and Harbor Act of 1899: Section 9, 33 U.S.C. 401
	obstruction or alteration of navigable waters	Id. Section 10, 33 U.S.C. 403
	establishment of harbor lines	Id. Section 11, 33 U.S.C. 404, 405
	temporary occupation of sea wall, bulkhead, jetty, dike, level, wharf, pier or other work built by the U.S.	Id. Section 14, 33 U.S.C. 408
	discharge of dredged spoil into waters of the U.S.	Federal Water Pollution Control Act of 1972: Section 404, 33 U.S.C. 1344
	approval of plans for improvements made under Corps supervision at private expense	River and Harbor Act of 1902: 33 U.S.C. 565
	transportation of dredged spoil for the purpose of dumping it in ocean waters	Marine Protection, Research, and Sanctuaries Act of 1972 Section 103, 33 U.S.C. 1413
DEPT. OF ENERGY	prohibition and construction orders	Energy Supply and Environmental Coordination Act
DEPT. OF THE INTERIOR		
Fish and Wildlife Service	endangered species permits	Endangered Species Act 16 U.S.C. 153a
National Park Service	construction of visitor centers on National Park Service land	16 U.S.C. 3
	construction of electric and communication lines across National Park Service	16 U.S.C. 5

Federal Agency	Permit Description	Citation
U.S. DEPT. OF TRANSPORTATION		
U.S. Coast Guard	permits for private aids to navigation	14 U.S.C. 83
	permits for construction or modification of bridges or causeways in navigable waters	33 U.S.C. 401, 491, 525
	authorization for handling of dangerous cargo by vessels in U.S. ports	46 U.S.C. 170
	authorization for handling of flammable or combustable liquids by bulk in U.S. ports	46 U.S.C. 391(a)
	deepwater port permits	Deepwater Ports Act of 1974 33 U.S.C. 1501
Federal Aviation Administration	approval of airport development project applications	49 U.S.C. 1716
ENVIRONMENTAL PROTECTION AGENCY	permits for underground injection	Safe Drinking Water Act Section 1421(c)(1), 42 U.S.C. 300h
	permit to operate underground injection wells in designated areas	Resources Recovery and Conservation Act of 1976 42 U.S.C. 300h-3
	permits for handling and disposal of hazardous substances	Resources Recovery and Conservation Act of 1976 42 U.S.C. 3257
	approvals under prevention of significant deterioration (PSD) regulations	Clean Air Act of 1976 Section 110, 42 U.S.C. 1857c-5
	new source construction/operations permits	Id. Section 111, 42 U.S.C. 1857-6
	approvals under National Emission Standards for Hazardous Air Pollutants (NESHAPS) Regulations	Id. Section 112, 42 U.S.C. 1857c-7
	NPDES permits for federal installations	Federal Water Pollution Control Act of 1972, Sections 401, 402, 33 U.S.C. 1341, 1342
	NPDES permits for discharges into the contigous zone and ocean waters	Id. Section 402, 403 33 U.S.C. 1342, 1343
	sludge runoff permits	Id. Section 405, 33 U.S.C. 1342, 1343

If, through its monitoring of unlisted licenses and permits through National Environmental Policy Act Statements, State Clearinghouse, or other forums, BP determines such a licensed or permitted activity to have an effect upon the coastal zone, it will notify the applicant and the Federal agency. Notification will be made within 45 days of the public notice or sooner. Once notified, the applicant and Federal agency must comply with the procedures outlined above. The Territory's six month review period for the license or permit will begin as of the date of the original public notice for the license or permit.

D. Federal Assistance and Programs

Section 307(d) of the Coastal Zone Management Act states that state and local governments applying for Federal program assistance affecting the coastal zone shall indicate the views of appropriate state or local agencies on the relationship of such activities to the approved coastal management program. Federal agencies may not approve proposed assistance programs which are inconsistent with the approved coastal management program. Federal assistance is defined as grant or contractual arrangements, loans, subsidies, guarantees, insurance, or other forms of financial aid.

Guam's A-95 Clearinghouse, within the Lt. Governor's Office, insures that appropriate local (Territorial Government) agencies or entities are notified of applications for Federal assistance. BP will use this process for review of Federally assisted projects on Guam.

The proposed procedures for review of Federally assisted projects are:

(1) The applicant sends to the clearinghouse the application for Federal assistance and a certification that the project being undertaken is consistent with the GCMP.

(2) The application and certification are transmitted to the BP.

(3) Using established clearinghouse procedures, local agencies are notified and asked to submit comments within thirty days to the Territorial clearinghouse.

(4) GCMP and BP staff analyzes comments received and recommends concurrence with, or objection to, the applicant's consistency certification to the Director of BP. Any recommendations to object will include the reason, and suggested changes which would allow the proposed project to be conducted in a manner consistent with the GCMP.

(5) The BP Director transmits the Bureau's consistency determination to the clearinghouse chairman.

(6) The Clearinghouse notifies the applicant and funding agency of the consistency determination and proceeds with discussions with the applicant and funding agencies.

Federal grant programs subject to review include:

Department of Agriculture

Federal Catalog No.	
10.405	Farm Labor Housing Loans and Grants
10.409	Irrigation, Drainage, and Other Soil and Water Conservation Loans (exception: loans to grazing associations to develop additional pasturage and loans for purchase of equipment)
10.410	Low to Moderate Income Housing Loans
10.411	Rural Housing Site Loans
10.414	Resource Conservation and Development Loans
10.415	Rural Rental Housing Loans
10.418	Water and Waste Disposal Systems for Rural Communities
10.419	Watershed Protection and Flood Prevention Loans
10.422	Business and Industrial Development Loans (Exception: loans to rural small businesses having no significant impact outside community in which located.)
10.423	Community Facilities Loans
10.424	Industrial Development Grants
10.658	Cooperative Forest Insect and Disease Control
10.901	Resources Conservation and Development (Exception: small projects costing under $7500 for erosion and sediment control and land stabilization and for rehabilitation and consolidation of existing irrigation systems.)
10.904	Watershed Protection and Flood Prevention

Department of Commerce

11.300	Economic Development-Grants and Loans for Public Works and Development Facilities
11.303	Economic Development-Technical Assistance
11.304	Economic Development-Public Works Impact Projects (Procedural variation)
11.305	Economic Development-State and Local Economic Development Planning
11.306	Economic Development-District Operation Assistance
11.307	Economic Development-Special Economic Development and Adjustment Assistance Program
11.308	Grants to States for Supplemental and Basic Funding of Title I, II, and IV Activities (Basic grants only)
11.407	Commercial Fisheries Research and Development
11.417	Sea Grant Support
11.419	Coastal Zone Management Program Administration
11.420	Coastal Management - Estuarine Sanctuaries
11.421-424	Coastal Energy Impact Program

Department of Health, Education and Welfare

Federal Catalog No.	
13.237	Mental Health-Hospital Improvement Grants
13.240	Mental Health-Community Mental Health Centers
13.261	Family Health Centers
13.286	Limitation on Federal Participation for Capital Expenditures
13.340	Health Professions Teaching Facilities-Construction Grants
13.369	Nursing School Construction - Loan Guarantees and Interest Subsidies
13.378	Health Professions Teaching Facilities - Loan Guarantees and Interest Subsidies
13.392	Cancer-Construction
13.408	School Assistance in Federally Affected Areas-Construction
P.L. 93-318	(Section 161) Construction of Academic Facilities
P.L. 93-641	(Section 1516) Planning Grants to Health Agencies; (Section 1601 et seq, Title XVI Public Health Service Act) Assistance for moderation, construction or conversion of medical facilities. These programs will replace Catalog 13.206, 13.220, 13.249, and 13.253.

Department of Housing and Urban Development

14.001	Flood Insurance (applications for community eligibility)
14.146	Public Housing-Programs (New construction and acquisition)
14.203	Comprehensive Planning Assistance
14.207	New Communities-Loan Guarantees
14.218	Community Development Block Grants-Entitlement Grants
14.219	Community Development Block Grants-Discretionary Grants
14.702	State Disaster Preparedness Grants

Department of the Interior

15.400	Outdoor Recreation-Acquisition, Development and Planning
15.501	Irrigation Distribution System Loans
15.503	Small Reclamation Projects
15.605	Fish Restoration
15.611	Wildlife Restoration
15.904	Historic Preservation

Department of Transportation

20.102	Airport Development Aid Program
20.103	Airport Planning Grant Program
20.205	Highway Beautification-Control of Outdoor Advertising, Control of Junkyards, Landscaping and Scenic Enhancement
20.500	Urban Mass Transportation Capital Improvement Loans (planning and construction only)
20.505	Urban Mass Transportation Capital Improvement Loans (planning and construction only)

20.505	Urban Mass Transportation Technical Studies Grants (planning and construction only)
20.506	Urban Mass Transportation Demonstration Grants
20.507	Urban Mass Transportation Capital and Operating Assistance Formula Grants

Water Resources Council

Federal Catalog No.	
65.001	Water Resources Planning

Environmental Protection Agency

66.001	Air Pollution Control Program Grants
66.005	Air Pollution Survey and Demonstration Grants
66.027	Solid Waste Planning Grants
66.418	Construction Grants for Wastewater Treatment Works
66.419	Water Pollution Control-State and Interstate Program Grants
66.426	Water Pollution Control-Areawide Waste Treatment Management Planning Grants
66.432	Grants for State Public Water System Subdivision Programs
66.433	Grants for Underground Injection Control Programs
66.505	Water Pollution Control Demonstration Grants
66.506	Safe Drinking Water Research and Demonstration Grants (demonstration only)
66.600	Environmental Protection-Consolidated Program Grants
66.602	Environmental Protection-Consolidated Special Purpose Grants.

CHAPTER X - CONSULTATION AND PARTICIPATION

A. A Summary of Consultation Efforts

As base documents for the development of the Guam Coastal Management Plan, the draft Land-Use Plan, Community Design Plans and numerous technical documents were distributed among relevant Federal agencies, local agencies, local military commands, as well as to members of the 14th Guam Legislature, interest groups and staff aides for the Constitutional Convention. Extensive consultation, coordination and input provided exceptionally valuable refinement and support of these documents. A Summary of Major Federal Land Holdings in the Territory of Guam received the widest circulation of all the technical supportive documents as it provides the first comprehensive identification of Federally-owned or controlled lands on Guam. The main intent of the document is to assist in the determination of the boundaries of Guam's coastal zone, however, it has been of value to other agencies' needs for a data base on Federal lands. Technical documents of a specific nature, used for APC delineation, received relevant agency input and distribution. Technical documents are also made available to private developers who require base data for specific operations. All documents have been placed in the island's libraries.

The preparation of the above listed plans and numerous technical documents (listed in Appendix No. 7) involved input from the following interests.

Distribution List

Federal Government

Office of Coastal Zone Management
U.S. Department of Commerce
Washington, D. C.

Coordinator for Coastal Zone Mgmt. Affairs
Federal Energy Regulatory Commission
Washington, D. C.

Office of Policy Analysis -- Study Staff
Department of Interior
Washington, D. C.

National Marine Fisheries Service
Southwest Region
Terminal Island, California

National Park Service
Western Region
San Francisco, California

Federal Aviation Admin.
Pacific-Asia Region
Honolulu, Hawaii

Operational Planning Staff
General Services Admin.
Region 9, San. Fran., Calif.

Planning Staff, Pacific Div.
Naval Facilities Engineering
Command
Hawaii

Division of Ecological Services
Fish and Wildlife Services
Honolulu, Hawaii

Office of Community Planning and Development
Housing and Urban Development
Region IX
San Francisco, California

Department of Energy
Region IX
San Francisco, California

Base Environmental Coordinator
Andersen Air Force Base
Guam

U.S. Geological Survey
Guam Office

U.S. Army Corps of Engineers
Guam Operations Office

U.S. Coast Guard
14th District
Commanding Officer
Marianas Section Hdq.
Guam

Staff Office
Commander
U.S. Naval Forces
Marianas, Guam

Local Government

Office of the Governor

Guam Legislature
Committee on Manpower, Resources and Economic Development

Staff Aides
Constitutional Convention

Territorial Planning Commission

Department of Land Management

Department of Public Works

Department of Agriculture
(Division of Aquatic and Wildlife Resources)

Guam Environmental Protection Agency

Guam Economic Development Authority

Attorney General's Office

University of Guam
Water Resources Research Ctr.

Public Utilities Agency of Guam

Department of Commerce

Dept. of Revenue and Taxation

Dept. of Parks and Recreation

Guam Housing and Urban Renewal Authority

Guam Power Authority

Guam Airport Authority

Guam Port Authority

Guam Visitor's Bureau

Guam Energy Office

University of Guam
Marine Laboratory

Special Interest Groups

Chamber of Commerce

Guam Realtor's Association

American Institute of Architects
Guam Chapter

Editor, Pacific Daily News

Hotel Owner's Association

Guam Surfing Association

Guam Science Teacher's Assoc.

B. The GCMP Advisory Committee

At the inception of Guam's Coastal Management Program, it was recognized that various individuals within the Government of Guam, Federal agencies, interest groups and educational institutions possess specific area expertise relating to land and water use on Guam. An advisory committee of key individuals was formed in order to receive input pertaining to the progress of the program. Meetings, conducted on a bimonthly basis, were comprised of representatives of the below listed agencies and groups. Being a loosely-knit organization, agency participants other than regular members often attended and provided additional input or developed an awareness of program developments. Occasionally, subcommittees met to discuss specific projects. At other meetings, presentations by agencies other than the Bureau of Planning provided an overview of specific programs relating to land and water use. Agendas, minutes and attendance lists are available in the files of the Bureau of Planning. Representatives of the following groups have participated at advisory committee meetings:

U.S. Navy
U.S. Air Force
U.S. Army Corps of Engineers
U.S. Geological Survey
U.O.G. Marine Laboratory
U.O.G. Water Resources Research Center
Department of Land Management
Department of Parks and Recreation
Guam Environmental Protection Agency
Division of Aquatic and Wildlife Resources
Division of Forestry and Soil Resources
Guam Airport Authority
Department of Public Works
Department of Education, Environmental Education
Guam Science Teacher's Association
Guam Housing and Urban Renewal Authority

The GCMP Advisory Committee, cont'd.

Guam Landowner's Association
American Institute of Architects
Guam Society of Professional Engineers

C. A Summary of Public Participation and Information

Inherent in the planning process of any program is the need for public participation. The Guam Coastal Management Program recognizes that the public has a right to provide input into essential plans and be made fully aware of decisions, policies, plans, etc. as they are achieved. A general lack of public awareness of the importance of responsible land and water use was addressed through presentations, lectures, television programs, newspaper articles, brochures, newsletters, public hearings and a land-use opinion survey. These public participation and information activities are outlined below:

Presentation of the Coastal Management Program was given to the following groups:

Guam and the Ocean, a joint civilian and military forum on Guam's future use of the ocean.
Society of American Military Engineers
Guam Chamber of Commerce
Guam Board of Realtors
University Classes and Seminars
Guam Science Teacher's Association
All Related Government of Guam Agencies
The Press Club
Village Commissioners
The Governor of Guam
Guam Surfer's Association
Three Diver's Clubs
Guam Society of Professional Engineers
Hotel Owner's Association
Overall Economic Development Plan Committee
American Institute of Architects
Youth Conservation Corps
Guam EDA Program

The CZM newsletter, I Tano Yan I Tasi, (The Land and the Sea) has received the widest attention of any public participation mechanism. It is distributed to a mailing list of 250 subscribers with a remaining 750 copies being distributed through commissioner's offices and the Office of the Bureau of Planning. It is often in demand as a source material by secondary schools and the University of Guam. During the first year of the CZM Program, the newsletter was formulated and discussed general topics pertaining to land and water use and related programs. During

the second year, more in-depth discussion of various areas of particular concern preceded planning notes which addressed the specifics of program developments. Major issues of the newsletter were:

Volume 2, Nos.

1. Wetlands
2. The Seashore Reserve
3. The Coral Reef
4. Historical Preservation
5. The Planning Process
6. Water Resources
7. Agricultural Land Use
8. Land-Use Plan and CEIP
9. Man and the Island Ecosystem
10. Planning Notes
11. Agricultural Leases and Water Conservation
12. Territorial Fishery Resources

Volume 3, Nos.

1. The Guam Coastal Management Program
2-3. The Proposed Territorial Seashore Park
4. U.S. Army Corps of Engineers Permits
5. Floodplains

In addition to newsletter distribution, three separate printings of an information brochure were made, with distribution through commissioner's offices, at public hearings and during presentations. The brochures outlined the objectives of the Guam Coastal Management Program; defined areas of particular concern, the districting process and community design, and discussed the need for public participation in the planning process.

Media programs included slide presentations and several showings of a CZM film which preceded a series of 30-minute television programs on land and water use planning and related planning issues. The series was entitled Island Interface and was produced in coordination with KGTF, the local educational television network. Programs included:

- Introduction to Coastal Management
- Land-Use Districting
- Areas of Particular Concern
- Panel Discussion on the Seashore Reserve
- The Reefs on Guam
- Disaster Preparedness Planning
- GEPA 208 and CZM Water Resource Planning
- The Bureau of Planning's Overall Planning Effort
- Land-Use Legislation and Highlights of Previous Programs

Major newspaper articles were published in the Pacific Daily News. These were titled:

- Our Link With the Sea
- Seashore Spectrum: The Pros and Cons of Land-Use Planning
- Umatac's Choice
- Is Downtown Shoreline Dying?

During January 1977, the Bureau of Labor and Statistics administered a Land-Use Opinion Survey to identify certain local attitudes toward land and water use. The questionaire was prepared by the Coastal Management Program and the results analyzed by the staff of the Bureau of Planning. A total of 931 residents were surveyed. The details of the survey can be seen in Guam Coastal Management Program Technical Reports, Volume I, published October, 1977.

D. GCMP Public Meetings

At a series of village meetings, the Land-Use Districting Map and Community Design Plans were presented to area residents for essential public input. The CZM Program's objectives, land-use districting system and areas of particular concern were presented as elements of comprehensive land-use planning. The APC's were depicted on the community design plan maps. Concepts and boundaries were explained to area residents so that the maps would be fully understood and residents could perceive how planning specifically related to their property ownership and community objectives. The most valuable input was in identification of more exact boundaries of land uses on the topographic base maps. For example, area farmers provided expertise in delineation of prime agricultural lands.

Prior to each meeting, commissioners were notified of the meeting's, intent, importance, time and location. Copies of meeting notices were provided for distribution by commissioners or hand-delivered to residences in outlying areas by members of the CZM staff. Depending upon the of commissioners, most meetings were also announced in schools, by loudspeaker or on church programs. Notices of all meetings were published in the Pacific Daily News. After receiving public input, maps were revised and returned to commissioner's offices for display and further comment. Map return dates were also published in the Pacific Daily News and publicized by commissioners. Minutes of all meetings were recorded and can be viewed in the files of the Bureau of Planning.

Attendance at the meetings was best in southern village communities, as compared to within the highly developed northern areas where residential subdivision, commercial development or urban renewal has already dictated long-range land use. A cross-section of local homeowners, businessmen and special interest group representatives interacted at meetings. At times, differences in opinion were voiced; however, the need for responsible planning and management of resources was generally recognized by

all concerns. Major discussion expectedly centered around the APCs or unique features within individual community areas. For example, in Umatac the congested housing along the Seashore Reserve and relocation into a government subdivision dominated discussion. In Merizo, residents wished to change a rural area to urban because of increasing residential density and infrastructure needs. In Asan-Piti, an impending urban renewal project was discussed and Mongmong-Toto-Maite residents were understandably concerned with airport sound and hazard zones. Residents of Central Guam generally expressed a desire to preserve agricultural lands in the South and farmers in Yigo were concerned with the relationship of agricultural land use to aquifer protection. Residents of Mangilao and Barrigada primarily provided input into delineation of commercial land use within urban districts in relationship to a need to stimulate a depressed local business economy in their communities.

Table No. 6. Public Meeting and Map Review Schedule

Community	Attendance	Public Meeting Dates	Map Review Dates
Asan-Piti	19	March 29, 1977	August 17 - 31, 1977
Agat-Santa Rita	30	March 22, 1977	August 17 - September 8, 1977
Umatac	90	February 2, 1977	June 6 - 20, 1977
Merizo	60	February 22, 1977	May 27 - June 10, 1977
Inarajan-Malojloj	30	March 1, 1977	July 12 - 26, 1977
Talofofo	18	March 8, 1977	August 17 - 31, 1977
Yona	15	March 15, 1977	August 17 - 31, 1977
*Central Guam	13	April 12, 1977	August 24 - September 20, 1977
	30	April 19, 1977	
	7	April 26, 1977	
Tamuning	8	February 15, 1977	March 23 - June 2, 1977
Dededo	4	May 3, 1977	August 19 - September 2, 1977
Yigo	50	May 31, 1977	June 3 - 17, 1977
Pagat	10	May 10, 1977	August 24 - 31, 1977

Note: Minutes of the public meetings can be viewed in the Office of Bureau of Planning, Coastal Management Section.

*Barrigada, Mangilao, Chalan Pago-Ordot, Agana, Agana Heights, Sinajana, Mongmong-Toto-Maite, and Maina

E. 306 Program Public Hearings

On March 2, 1978, the first of three public hearings on the Draft 306 Program Document was held, pursuant to the requirements of the CZMA, subsections 306(c)(1) and (c)(3), section 311 of the Act and the associated requirements of §923.58. A minimum of 30 days public notice was provided by the announcement (see below) which appeared in the January 30, 1978 edition of the Pacific Daily News. At the hearing, the total scope of the program was presented to attending residents. All agency materials pertinent to the hearing were made available for public inspection and comment. These primarily included the Draft 306 Document, the Land-Use Plan, Community Design Plans, APC maps and Technical Reports. Attendance was primarily comprised of related Government of Guam agency staff, a representative of the Guam Science Teacher's Association and a land realtor. A representative of the U.S. Fish and Wildlife Service, Hawaii Office was sent to Guam for the purpose of attending the hearing and providing input. Minutes of the hearing and comments can be viewed in the files of the Guam Coastal Management Program, Bureau of Planning. No major substantive input was received at the hearing. Most oral comments were very general questions or statements. Written comments received from the below-listed agencies provided the most valuable and specific input:

U.S. Dept. of Commerce, National Marine Fisheries Service
U.S. Dept. of Commerce, Office of Coastal Zone Management
U.S. Dept. of Agriculture, Soil Conservation Service
U.S. Dept. of Interior, Geological Survey
U.S. Dept. of Transportation
Department of Energy (Region IX)
General Services Administration (Region IX)
Department of Housing and Urban Development (Region IX)
U.S. Fish and Wildlife Service
Department of Parks and Recreation, Government of Guam
Guam Environmental Protection Agency
Department of Agriculture, Government of Guam
Guam Environmental Protection Agency
Department of Agriculture, Government of Guam
University of Guam Marine Laboratory
Office of the Attorney General, Government of Guam

PUBLIC HEARING

GUAM COASTAL MANAGEMENT PROGRAM

The public is invited to attend the public hearing for presentation of the Guam Coastal Management Draft 306 Program Document. The Program outlines management activities for land and water resources on Guam, under the provisions of the Coastal Zone Management Act of 1972. The hearing will be held at the Office of the Bureau of Planning, Conference Room, 4th Floor, PDN Bldg. on Thursday, March 2, 1978, 7:30 P.M. For further information, call the Coastal Management Section, Bureau of Planning: 472-8711, 477-9502 or 477-9639.

BUREAU OF PLANNING

NOTICE OF PUBLIC HEARING

A public hearing on proposed rules and regulations for development within wetlands and floodplains will be held by the Territorial Planning Commission following its regular meeting on August 10, 1978 at 9:30 a.m. in the conference room 2nd floor of the Administration Bldg. Copies of the proposed rules and regulations may be obtained at the Bureau of Planning, 4th floor, PDN Bldg. or by calling 477-9502.

Ha kumbibida hamyo i Territorial Planning Commission para madiskuti i maprupoponi na areklamento pot it ma'usan i sesonyan siha giya Guam gi alas nuebi i media gi ogga'an, huebes, dia dies gi Agusto, 1978. Para makondukta este gi conference room, 2nd floor, Administration Building. Sina manmanule' hamyo kopian este na areklamento gi Bureau of Planning, 4th floor, PDN Building o sino agang ham gi 477-9502.

On April 19, 1979, two public hearings were held at 2:00 and 7:30PM at the Sagan Dinana, Agana, Guam on the GCMP and DEIS. Public notices of the hearings were published twice weekly in the Pacific Daily News beginning approximately 30 days before the hearing date. Two large notices were published several days before the hearing (reproduced below), and public service announcements concerning the hearing aired as well.

Approximately 30 people attended the two hearings, with the Guam Department of Commerce and Guam Surfing Association presenting written testimony. These comments and responses to them are summarized in Section J of this Chapter. Questions posed at the hearing concerned the involvement of the GCMP in establishing parks in Southern Guam and the relationship between the GCMP and the Federal government.

Represented at the hearings were:

Federal Highway Administration
Commander, Naval Forces Marianas (Dept. of Navy)

Office of the Governor
Bureau of Planning
Micronesian Area Research Center
Dept. of Land Management
Public Utility Agency of Guam
Dept. of Parks and Recreation
Dept. of Public Works
Dept. of Agriculture, Division of
Aquatic and Wildlife Resources
University of Guam Marine Laboratory
Guam Environmental Protection Agency
Department of Commerce
Guam Housing and Urban Renewal Authority

Also in attendance were representatives from the Commonwealth of the Northern Marianas Coastal Zone Management Program, Venture Development and Management Resources, Inc. and the above-mentioned Guam Surfing Association.

PUBLIC HEARING

The federal Office of Coastal Zone Management will hold two public hearings on the Guam Coastal Management Program and Draft Environmental Impact Statement (DEIS).

Date:	Thursday, April 19, 1979
Time:	2:00 p.m. and 7:30 p.m.
Place:	Sagan Dinana, near the Public Market in Agana

The public is encouraged to provide written or oral comments on the program which involves development and implementation of local policies and management programs in 18 major resource-related areas including:

- Shoreline development
- Major facility siting
- Air and Water quality
- Marine resources
- Public access
- Recreational areas
- Agricultural lands
- Development in hazardous and fragile areas

Copies of the DEIS, which includes a comprehensive description of the program, may be obtained at the Bureau of Planning, 4th floor, Pacific Daily News Bldg. For further information, contact the Bureau at 477-9502, 477-9639 or 472-7811.

BETTY S. GUERRERO
Director
Bureau of Planning

I federat ofisinan Coastal Zone Management para huna guaha dos na hunta para i publiku gi huebes, dia desi nuebi di Abrit, gi alas dos gi talo'ani yan alas siete i media gi pupuengi, guato gi Sagan Dinana gi fion i metka'on publiku, Hagatna. Man ma e eppok i publiku para ufan man ofrece apinion ni umafefekta siha i adelanton yan i areklamento in mayot siha na sitio, i kanton tasi siha, kualidat i aire yan i hanom, i gunahan i tasi, entradan publiku, lugat dibestion yan i tano agrikutura.

Guaha siha kopian i dokumento gi ofininan i Bureau of Planning, 4th floor, Pacific Daily News Building giya Hagatna. Para mas infotmasion, agang i Bureau gi numeru 477-9502, 477-9639 pat 472-8711.

F. Wetlands and Flood Hazard Areas Rules and Regulations Public Hearing

Subsequent to an analysis of the capability of existing regulatory controls to manage the APCs, identified by the CZM Program, wetlands and flood hazard areas were determined to be in the most need of immediate and additional management attention. Sufficient baseline data were available for official mapping, and rules and regulations were drafted by the CZM Program for promulgation by the Territorial Planning Commission, associated with Executive Orders which were drafted and submitted to the Office of the Governor. Pursuant to requirements of the Administrative Adjudication Act, GCG, a public hearing was held on August 10, 1978. The below-shown public notice appeared in the Pacific Daily News on July 30, 1978. Written comments were also received from relevant local government agencies, the CZM Advisory Committee, USGS and COE.

G. Mechanisms for Continued Consultation and Public Participation

Public participation and relevant agency and group input must obviously continue during implementation of a Coastal Management Program on Guam, as implementation will be more visible and have greater impacts than the program's planning phase. The changing nature of resource use, unanticipated impacts or radical variation in status quo assumptions such as population growth require a continued reliance upon both governmental and public coordination and input. In fact, the widest opportunity for public participation and consultation efforts should be in effect as an essential element of program implementation.

There will be a continuation of newsletters, brochures, lectures and presentations with the development of citizens', students' and developers' handbooks on land and water use. This will be the responsibility of the Coastal Management Program.

The Coastal Management Program will also continue to receive input from the CZM Advisory Committee. It is anticipated that the CZM Advisory Committee will take a greater role in land-use issues by reviewing development projects for Federal consistency and comment in addition to the regular discussion and update on program developments. The Committee provides an ideal setting as a cross-section of Federal, local and special interest group representatives are present. A more formal and structured membership will be formed with a consistent delegate from each relevant interest. A voting procedure may be needed for decision-making and comment on some issues.

H. Federal Coordination

Throughout the development of the Guam Coastal Management Program, a high degree of interaction was maintained with various Federal agencies

concerned with land and water use on Guam. Some local agencies, such as GEPA's administration of USEPA-funded programs, represent Federal interests. The prevalent military presence on Guam necessitated a close liaison with the U.S. Navy, Air Force and Coast Guard. Federal coordination ranged from participation in public hearings and advisory committee meetings to discussion in numerous informal meetings and correspondence. Though some interaction, such as comments on COE permit applications, were very specific in nature, all actions were reviewed in relation to CZM policies, Federal agency responsibilities and national interest. The continuous and timely involvement of Federal agencies in program formulation assisted in Federal agencies' familiarization with program developments and Federal consistency requirements.

Coordination efforts have resolved many minor conflicting issues and prevented the emergence of/or demonstrated the absence of major conflicts to date. This is best exemplified in HUD's adoption of the Land-Use Plan, prepared by the CZM Program, as a required companion element of the HUD-funded Residential Development Policy Report (Housing Element of the CDP). Also, the land-use discussion in EPA/GEPA's 208 Water Quality Management Plan utilizes the Guam Coastal Management Program's policies, land-use districting system and APC breakdown verbatim.

The January, 1978 Review Draft 306 Program Document was formally submitted to the following Federal agencies for review and comment pursuant to the requirements of the CZMA:

Department of Agriculture
Department of Commerce
Department of Defense
Department of Energy
Department of Health, Education and Welfare
Department of Housing and Urban Development
Department of Interior
Department of Transportation
Environmental Protection Agency
Nuclear Regulatory Commission
General Services Administration

The Department of Defense was consulted through all local military commands and GEPA represents the Federal EPA on Guam through memoranda of understanding. The Department of Health, Education and Welfare provided no comment and there are no present or projected nuclear developments on Guam, thus the Nuclear Regulatory Commission provided no input. All other above-listed Federal agencies provided written and/or verbal comments which were incorporated into revision of the 306 Document Review Draft or constituted support of the data, programs activities or policies within.

I. Summary of Federal Agency Comments on January 1, 1978, Review Draft

U.S. Coast Guard, Department of Transportation, 14th District

The agency is pleased that the program does not create new levels of government, but utilizes existing controls. The program recognizes the value of Federal coordination, but should provide procedures for such coordination. The program should better define permissible and non-permissible uses of resources. Acreage of Federal lands should be included in the document and information on Coast Guard land holdings is provided.

National Marine Fisheries Service, Department of Commerce

There is a lack of specific guidance to ensure adherance to land-use policies. Guam needs a comprehensive coastal act rather than basin authority on various existing laws. Establishment of guidelines to regulate shoreline development should be a program activity. The agency agrees with multiple-use concepts within areas chosen for major economic development. More information is needed on how the program will encourage fisheries development. The energy facility planning process should be developed and integrated into the program.

Soil Conservation Service, Department of Agriculture

Designation of the entire island as a coastal zone is appropriate. Specific information regarding the importance of length of slope in erosion-prone areas is provided. There is a need for ongoing soil studies and further identification of agricultural lands as program activities. Background information on erosion control standards is provided.

Department of Energy, Region IX

The program provides an adequate approach to energy facility planning.

General Services Administration, Region IX

The Federal consistency procedures within the document are reasonable.

Department of Housing and Urban Development, Region IX

Comments are the same as for the Land-Use Plan. The Land-Use Plan was approved by HUD, in conjunction with Residential Development Policy Report (housing element) for Guam, for purposes of their programs.

U.S. Geological Survey, Department of Interior

The agency provided background information on the functions and organization of the USGS for use in program development.

U.S. Department of Interior, Pacific Southwest Region Planning Office, National Park Service, Bureau of Land Management and Heritage Conservation and Recreation Service

An additional goal is suggested for the preservation of significant natural and cultural resources for future generations. The War in the Pacific National Historic Park and Proposed National Seashore be reflected in the document.

Properties on the National Register of Historic Places should be listed in the appendix. Revisions to Federal consistency procedures are suggested. Major issues related to parks and recreation have been addressed and the document is consistent with the Guam Comprehensive Outdoor Recreation Plan. High priority should be given to protection of water resources.

U.S. Department of Transportation

If the entire island is considered to be a coastal zone, all construction will have to adhere to local and Federal laws, and projects will be hindered by too much paperwork. The rationale for an island-wide designation is questioned. The placing of roadways along shoreline areas is balanced by the erosion problems created by inland roads through sloping terrain.

Fish and Wildlife Service, Department of Interior

The agency supports the island-wide designation of the coastal zone. It is generally felt that most policies are vague and should be strengthened. Information concerning wetlands classification, endangered species, stream alteration guidelines and the functions of the Fish and Wildlife Service are provided.

Department of the Air Force, AAFB

More information on land-use compatibility in AICUZ should be incorporated into the document. A Federal consistency procedure separate from the A-95 process should not be established.

U.S. Naval Forces, Marianas, Department of Defense

Extensive comments on site specific aspects of the program are provided. The overall concern is that the program references Federal lands and activities in many parts of the document which should be deleted as infringements on Federal planning and management authority. It is felt the program may create new layer of authority and reduce the authority of existing regulatory agencies.

J. March, 1979 P/DEIS Comments and Responses

Comments on the GCMP Program and DEIS are summarized in Attachment 1. Responses are provided to each comment.

TABLE NO. 7

List of GCMP/Federal Agency Coordination Efforts

Date	Form of Interaction	Agency	Subject
Mar. 17,1975	Comments Submitted	COE	Mobil Petroleum Fuel Handling Operations
Oct. 8, 1975	Comments Submitted	COE	Shoreline Erosion Control Demonstration Site Proposals
Nov. 5, 1975	Official Comments Presented at Public Hearing	COE	Apra Harbor Study
Nov. 21, 1975	Federal Regional Council Workshop	USEPA	Misc. Environmental Topics
Jan. 20, 1976	Correspondence	GSA	CZM/GSA/PBS Coordination
Feb. 20, 1976	Comments Submitted	GEPA/USEPA	CZM/208 Coordination Draft 208 Plan
Mar. 22, 1976	Comments Submitted	GEPA/USEPA	Classification of Cocos Lagoon Waters.
Mar. 23, 1976	Comments Submitted	USEPA	Water Quality Standards
Apr. 28, 1976	Public Hearing	GEPA/USEPA	201 Wastewater Facilities-Umatac
Apr. 29, 1976	Public Hearing	GEPA/USEPA	201 Facilities Plan
May 2, 1976	Meeting	GEPA/USEPA	208 Program Review
May 10, 1976	Site Visit	COE	Project Area
July 8, 1976	Comments Submitted	GEPA/re. AF	EIS, Access Easement Across USAF Lands, Seibu Liesure Uruno Point
July 13, 1976	Meeting	GSA	Agana Boat Basin
Aug. 5, 1976	Public Hearing	GEPA/USEPA	201 Facilities Plan-Talofofo
Sept. 8, 1976	Meeting	GEPA/USEPA	CZM/208 Coordination
Sept. 23, 1976	Meeting	GEPA/USEPA	CZM/208 Coordination
Sept. 28, 1976	Meeting	GEPA/USEPA	CZM/208 Coordination
Oct. 1, 1976	Correspondence	USGS	Directory of USGS Program Activities in Coastal Areas
Oct. 1, 1976	Comments Submitted	COE	Pier Construction, Mamoan Channel, Mr. J.Q. Acfalle
Oct. 3, 1976	Meeting	U.S. Coast Guard	Coast Guard Involvement in Mapping and Permitting
Oct. 5, 1976	Meeting	National Park Service	War in the Pacific National Historic Park
Oct. 7, 1976	Meeting	National Park Service	War in the Pacific National Historic Park

Date	Form of Interaction	Agency	Subject
Nov. 3, 1976	Meeting	GSA	Functions of New GSA Office
Nov. 9, 1976	Meeting	COE	Urban Studies
Nov. 10, 1976	Meeting	GEPA/USEPA	CZM/208 Coordination
Nov. 23, 1976	Meeting	US Navy	CZMAC and Aquifer Designation
Nov. 27, 1976	Information Request	National Marine Fisheries Services	Offshore Fishery Resources
Dec. 2, 1976	Comments Submitted	GEPA/USEPA	201 Program Rural Designation, Merizo
Dec. 7, 1976	Meeting	NOAA Data Center	Deepwater Temperature Profiles for Alternative Energy Project
Jan. 4, 1977	Comments Submitted	GEPA/USEPA	Soil Erosion and Sedimentation Control Handbook
Jan. 11, 1977	Meeting	GEPA/USEPA	CZM/208 Coordination
Jan. 17, 1977	Correspondence	US Navy	AICUZ Program
Jan. 28, 1977	Comments Submitted	COE	Interim Report of Harbors and Rivers
Feb. 1, 1977	Correspondence	US Coast Guard	Federal Lands Survey
Feb. 15, 1977	Info Request	GSA	Federal Lands Survey
Feb. 15, 1977	Info Request	US Dept. of Int. Fish and Wildlife	Federal Lands Survey
Feb. 15, 1977	Info Request	US Navy	Federal Lands Survey
Feb. 15, 1977	Info Request	National Park Service	Federal Lands Survey
Feb. 15, 1977	Info Request	Federal Aviation Administration	Federal Lands Survey
Feb. 23, 1977	Correspondence	COE	Listing of Illegal Activities
Feb. 28, 1977	Public Hearing	GEPA/USEPA	Revision of Cocos Lagoon Water Classification
Feb. 28, 1977	Board Meeting	GEPA/USEPA	Board of Directors Regular Meeting
Feb. 28, 1977	Comments Submitted	GEPA/USEPA	Water Quality Standards
Mar. 10, 1977	Correspondence	US Navy OICC NAVENGCOM	Destruction of Atantano Wetland, Construction of U.S. Army Reserve Center
Mar. 23, 1977	Public Meeting	Dept. of Parks and Recreation/ National Park Service	Inarajan Village Historic Architectural District Grant-in-Aid Program

Date	Form of Interaction	Agency	Subject
April 7, 1977	Comments Submitted	COE	Unauthorized Pier Construction, Merizo Shores Developers
April 7, 1977	Meeting	USEPA	CZM/208 Coordination
April 11, 1977	Correspondence	COE	Increasing Violations and Lack of Enforcement
April 12, 1977	Comments Submitted	GEPA/USEPA	Guam Safewater Drinking Act
April 13, 1977	Meeting	COE	Ugum Dam Proposal
April 15, 1977	Meeting	COE	Ugum Dam Proposal
April 22, 1977	Conference	AirForce/ GovGuam	Guam Parks and Recreation
April 26, 1977	Comments Submitted	COE	Agana Sewage Treatment Plant
April 29, 1977	Meeting	US Navy	Orote Point Ammo Wharf
May 9, 1977	Meeting	US Navy	Orote Point Ammo Wharf
May 10, 1977	Meeting	US Navy	AICUZ Program
May 11, 1977	Meeting	US Navy	AICUZ Program
May 19, 1977	Meeting	US Navy	AICUZ Program
May 19, 1977	Comments Submitted	US Navy	DEIS Orote Point Ammo Wharf
May 19, 1977	Comments Submitted	US Dept. of Interior, Fish and Wildlife	Orote Point Ammo Wharf
May 23, 1977	Board Meeting	GEPA/USEPA	Board of Directors Regular Meeting
May 27, 1977	Meeting	COE	Ugum Dam Proposal
June 1, 1977	Comments Submitted	COE	Agat Fish Habitat
June 8, 1977	Meeting	Air Force	USAF Study of Agricultural Lands
June 9, 1977	Comments Submitted	US Navy	AICUZ Program
June 9, 1977	Public Hearing	GEPA/USEPA	Sewer Construction Grant Priority List
June 9, 1977	Comments Submitted	Dept. of Parks and Rec./ BOR	Draft Guam Comprehensive Outdoor Recreation Plan
June 24, 1977	Meeting	Air Force	Federal Consistency and Land-Use Planning
June 26, 1977	Comments Submitted	COE	Ugum Dam Study
June 27, 1977	Comments Submitted	COE	Agat Small Boat Harbor
June 27, 1977	Project Advisory Committee Meeting	COE	Ugum Dam Project
July 1, 1977	Meeting	COE	Ugum Dam Project
July 1, 1977	Meeting	National Park Service	War in the Pacific Park and National Landmarks

Date	Form of Interaction	Agency	Subject
July 9, 1977	Meeting	U.S.Navy 208 Team	CZM/208 Coordination
July 10, 1977	Meeting	U.S. Navy 208 Team	CZM/208 Coordination
July 11, 1977	Comments Submitted	TPC/GHURA/HUD	Asan Community Redevelopment
July 13, 1977	Correspondence	USGS	Mapping Coordination
July 14, 1977	Meeting	GEPA/USEPA	Environmental Management Study
July 14, 1977	Public Workshop	COE	Agat Small Boat Harbor Study
July 15, 1977	Planning Meeting	GEPA/USEPA	CZM/208 Coordination
July 30, 1977	Meeting	US Coast Guard	CZM Coordination and Harbor Range Light Placement
July 30, 1977	Meeting	COE	Ugum Dam Project
Aug. 4, 1977	Meeting	US Coast Guard	CZM Coordination
Aug. 8, 1977	Comments Submitted	US Navy	Draft Report on Installation Data
Aug. 9, 1977	Comments Submitted	COE	Ugum Dam Project Hydrological Study
Aug. 11, 1977	Comments Submitted	US Navy	DEIS Orote Point Ammo Wharf, Addendum No. 1
Aug. 17, 1977	Meeting	COE	COE/CZM Coordination
Aug. 19, 1977	Correspondence	US Navy, OICC NAVFACENG	Project Review Process for Repair of Glass Breakwater
Aug. 22, 1977	Request for Comment	National Marine Fisheries Service	Draft Land-Use Pla
Aug. 22, 1977	Request for Comment	PACDIVNAVFACENGCOM Federal Planners Hawaii Office	Draft Land-Use Plan
Aug. 23, 1977	Request for Comment	GSA, Operational Planning Staff	Draft Land-Use Plan
Aug. 23, 1977	Request for Comment	US Dept. of Int. Fish and Wildlife Service	Draft Land-Use Plan
Aug. 23, 1977	Request for Comment	HUD	Draft Land-Use Pla
Aug. 23, 1977	Request for Comment	COE	Draft Land-Use Pla
Aug. 23, 1977	Request for Comment	Studies Staff of Analysis, Washington	Draft Land-Use Pla
Aug. 23, 1977	Request for Comment	USAF, AAFB	Draft Land-Use Pla

Date	Form of Interaction	Agency	Subject
Aug. 23, 1977	Request for Comment	US Navy	Draft Land-Use Plan
Aug. 31, 1977	Comments Submitted	Dept. of Land Mgt. re. Navy Lands	Agricultural Leases in Sasa-Laguas-Aguada Acres
Sept. 1, 1977	Meeting	HCRS	CZM Program Discussion
Sept. 6, 1977	Meeting	COE	COE/CZM Coordination
Sept. 8, 1977	Meeting	GEPA/USEPA	Environmental Mgt. Study
Sept. 9, 1977	Conference	US Navy	AICUZ Program
Sept. 9, 1977	Comments Submitted	Staff Civil Engineer/NAS	AICUZ Program
Sept. 13, 1977	Comments Submitted	COE	Boat Basin Permit, Tachog Creek, Merizo
Sept. 19, 1977	Comments Submitted	Staff Civil Engineer/NAS	AICUZ Program
Sept. 22, 1977	Comments Received	COE	Draft Land-Use Plan
Sept. 23, 1977	Comments Received	U.S. Dept. of Interior, Fish and Wildlife Service	Draft Land-Use Plan
Sept. 27, 1977	Meeting	COE	Cases of Illegal Filling of Wetlands
Oct. 5, 1977	Comments Submitted	DPW/USEPA	Wastewater Facilities Plan
Oct. 5, 1977	Public Meeting	COE	Navigation Study, Apra Harbor
Oct. 11, 1977	Comments Received	U.S. Dept. of Interior, Fish and Wildlife Service	Draft Land-Use Plan
Oct. 28, 1977	Comments Received	HUD	Draft Land-Use Plan
Oct. 31, 1977	Comments Submitted	COE	Boat Ramp Construction Permit, Merizo
Oct. 31, 1977	Comments Submitted	COE	Pier Construction Application, Cocos Is.
Nov. 10, 1977	Comments Submitted	DPR/HCRS	Guam Comprehensive Outdoor Recreation Plan
Nov. 28, 1977	Correspondence Sent	HUD	Draft Land-Use Plan
Dec. 14, 1977	Workshop	GEPA/USEPA	Environmental Mgt. Study
Jan. 9, 1978	Conference (Hawaii)	HUD	Residential Development Policy Report and Land-Use Plan
Jan. 9, 1978	Comments Submitted	DPW/USEPA	Wastewater Facilities Plan
Jan. 10, 1978	Corresondence Sent	NOAA	Financial Report
Jan. 17, 1978	Corresondence Sent	National Wildlife Federation	Clean Water Report

Date	Form of Interaction	Agency	Subject
Jan. 18, 1978	Advisory Committee	U.S. Air Force	Draft 306 Document
Jan. 18, 1978	Advisory Committee	U.S. Navy	Draft 306 Document
Jan. 27, 1978	Correspondence Received	Defense Mapping Agency	Street Atlas and Atlas of Reefs and Beaches of Guam
Jan 31, 1978	Corresondence Received	Defense Civil Preparedness Agency	Map Request
Feb. 1, 1978	Comments Requested	U.S. Navy	Prefinal AICUZ Report
Feb. 7, 1978	Corresondence Sent	NOAA	Certification Statement of CZM Program Activities
Feb. 8, 1978	Correspondence Received	USGS	General Statement for CZM Programs
Feb. 13, 1978	Comments Submitted	US Navy	AICUZ Study
Feb. 15, 1978	Correspondence Received	U.S. Army	Exclusion of Army Installations in State CZM Programs
Feb. 15, 1977	Information Received	U.S. Dept. of Interior, Fish and Wildlife Service	Interim Hierarcical Regional Classification Scheme for Coastal Ecosystems
Feb. 21, 1977	Comments Received	NOAA	Draft 306 Document
Feb. 21, 1978	Correspondence Received	COE	Peformance of Silt Curtains
Feb. 22, 1978	Comments Received	U.S. Air Force	Program Coordination Memorandum of Understanding
Feb. 27, 1978	Comments Received	HUD	Draft 306 Document
Feb. 28, 1978	Comments Requested	NOAA	Obnibus Territory Act
Feb. 28, 1978	Information Received	Defense Mapping Agency	Landsat Photography
March 2, 1978	Public Hearing	Fish and Wildlife Service	Draft 306 Document
March 3, 1978	Meeting	U.S. Fish and Wildlife Service	Draft 306 Document
March 16, 1978	Comments Received	U.S. Fish and Wildlife Service	Draft 306 Document
March 17, 1978	Comments Sent	U.S.A.F.	Program Coordination Memorandum of Understanding
March 17, 1978	Comments Received	U.S. Dept. of Transportation	Draft 306 Document
March 20, 1978	Comments Sent	U.S. Fish and Wildlife Service	Ecological Characterization Study

Date	Form of Interaction	Agency	Subject
March 22, 1978	Meeting	GEPA/USEPA	Proposed Operators Certification
March 29, 1978	Comments Received	U.S. Dept. of Commerce, NMFS	Land-Use Plan
March 29, 1978	Comments Received	U.S. Dept. of Interior, Office of the Secretary	Draft 306 Document
March 30, 1978	Correspondense Sent	U.S. Dept. of Transporation	Draft 306 Document
April, 1978	Newsletter Distributed	COE	Army Corps Permits
April 3, 1978	Comments Received	U.S. Dept. of Agriculture	Draft 306 Document
April 5, 1978	Meeting	U.S. Navy	Guam Land-Use Plan
April 6, 1978	Correpondence Sent	U.S. Dept. of Agriculture	Draft 306 Document
April 6, 1978	Correpondence Sent	U.S. Dept. of Interior	Draft 306 Document
April 12, 1978	Comments Sent	U.S. Navy	Guam Land-Use Plan
April 17, 1978	Correspondence Received	U.S. Navy	AICUZ Study
April 18, 1978	Correspondence Received	Civil Defense Preparedness Agency	1:75,000 Scale Maps
April 20, 1978	Public Hearing	GEPA/USEPA	Bottle Bill
April 20, 1978	Advisory Committee	COE	Army Corps Permits
April 20, 1978	Advisory Committee	U.S.A.F.	CZM/USAF Coordination
May 2, 1978	Comments Submitted	COE	Storm Drain Outlets, Tumon Bay
May 12, 1978	Comments Submitted	U.S. Fish and Wildlife Service	Interim Hierarchical Regional Classification Scheme
May 16, 1978	Correspondence Received	COE	Land and Water Regulations Enforcement
May 18, 1978	Comments Sent	COE	Tanguisson I,II Power Plant Intake and Discharge Channels
May 18, 1978	Comments Sent	U.S.A.F.	Program Coordination
May 25, 1978	Comments Sent	COE	Dept. of Agriculture Reef Fish Study
Jun. 13, 1978	Meeting	GEPA/USEPA/ U.S.N./U.S.A.F.	208 Plan
Jun. 29, 1978	Correspondence Received	U.S.A.F.	A-95 Clearinghouse Process
July, 1978	Newsletter Distributed	COE	Floodplains
Aug. 2, 1978	Advisory Committee	U.S.N./ U.S.A.F.	Wetlands and Flood Hazard Areas
July, 17, 1978	Comments Received	HUD	Flood Hazard Maps
Aug. 1, 1978	Comments Requested	U.S.G.S./ COE	Wetlands and Flood Hazard Area Rules and Regulations

Date	Form of Interaction	Agency	Subject
Aug. 2, 1978	Comments Sent	COE	Small Boat Ramp Application, Merizo
Aug. 3, 1978	Comments Requested	HUD	Flood Hazard Areas Rules and Regulations
Aug. 7, 1978	Comments Received	USGS/COE	Flood Hazard Areas Rules and Regulations
Aug. 8, 1978	Meeting	USGS/COE	Flood Hazard Maps
Aug. 10, 1978	Correspondence Received	COE	Pier Construction, Merizo
Aug. 11, 1978	Comments Received	COE	Flood Hazard Areas Rules and Regulations
Aug. 15, 1978	Public Hearing	DPW/USEPA	201 Wastewater Facilities Plan, Talofofo
Aug. 16, 1978	Public Hearing	DPW/USEPA	201 Plan, Inarajan
Aug. 18, 1978	Comments Sent	GEPA/USEPA	State Clearinghouse Application for Surface Impoundment Study
Aug. 18, 1978	Correspondence Sent	COE	Flood Hazard Areas Rules and Regulations
Aug. 23, 1978	Seminar	GEPA/USEPA	EIA/EIS Seminar
Aug. 30, 1978	Public Hearing	COE	Ugum Dam Project
Aug. 31, 1978	Public Hearing	COE	Apra Harbor of Refuge

CHAPTER XI - FUTURE ISSUES

Section 923.71(c)(2) of the Coastal Zone Management Program approval regulations suggests "a brief discussion of those issues and problems ... which will be taken into consideration during program implementation and/or future program refinements."

A number of future issues and problems to be dealt with by the GCMP developed during the CZM, Land-Use, and Community Design planning process. Some of these topics will undoubtedly become major issues in respect to implementation of the GCMP.

A. AGANA BAY URBAN WATERFRONT REDEVELOPMENT

Urban use of the shoreline has created land-use problems in various central and southern communities. The most intensely blighted urban shoreline stretches from Alupang Cove (Sleepy Lagoon) to Adelup Pt., including portions of Tamuning, East Agana and Anigua between Marine Drive and the coral reef. A complex of problems emerges from improper zoning, fractionalized lot ownership by the private sector and unsurveyed government land. The entire waterfront is a flood hazard area and randomly-built structures are found in strip development which blocks both visual and physical public access to the beach, and fairly obliterates any natural terrestrial landscape. Point source discharges of stormwater, numerous public health hazards, sign violations and transportation problems add to the degree of urban blight. In short, uses are generally incompatible with one another and the nature of shoreline ecology.

The GCMP has identified the many problems along this portion of shoreline in its Draft Agana Urban Waterfront Redevelopment Plan. The Plan, slated for initial implementation during the Program's 306 phase, outlines action-oriented strategies for needed federal funding, further planning and better enforcement, amendment to or development of regulatory mechanisms.

The GCMP will hold workshops for public input into the plan and seek an executive designation of the Agana Bay Urban Waterfront as an official area of particular concern to mandate implementation of the Plan's strategies by a multiple-agency Urban Waterfront Task Force.

B. MARINE FISHERIES DEVELOPMENT AND MANAGEMENT

Exploitation of sustainable yields of fishery resources in Guam's territorial waters represents an economic sector with high growth potential. Presently, only a small amount of commercial and recreational fishery is practiced, primarily due to constraints to industry development. There are inadequate facilities for the local fishing cooperative; and larger-scale industry, such as tuna transshipment or a cannery, are precluded through federal land ownership of properties in Guam's only deep-water port. The establishment of the 200-mile Fishery Conservation Zone

and regional planning also requires Guam to become more involved in planning for responsible management and development of fishery resources.

The GCMP has prepared a report entitled, Marine Fisheries Development and Management on Guam: Its Current Status. The report defines the Territory's need for more precise policies in respect to fishery resources and has led to the Governor's issuance of Executive Order No. 79-6 creating the Guam Marine Fisheries Advisory Council. The Council, comprised of 11 representatives of relevant agencies, a regional commission, special interest groups and the public-at-large, is now addressing major Territorial fishery issues, formulating policies, and preparing a Fisheries Management and Development Plan for Guam. Preparation of this Plan foreshadows the increasing utilization and management of fishery resources. Federal cooperation will be sought in evaluating the magnitude of the fishery's commercial potential.

C. OCEAN THERMAL ENERGY CONVERSION (OTEC) ELECTRIC POWER GENERATION

Studies prepared under the Coastal Energy Impact Program (CEIP) have shown that existing power plants at Cabras Island will have to be supplemented to meet the island's power demand in another decade. This will necessitate the construction of another unit, adjacent to the current plant and/or construction of an OTEC plant. An OTEC plant would involve significant environmental impacts either as a small land-based demonstration plant at Cabras Island or a large sea-based plant. Guam has been shown to be an ideal location for such a development, as OTEC requires thermal gradients at sufficient depths in offshore seawater. The outfall of cold water would be the greatest impact of an OTEC power plant.

The desirability of OTEC power generation is increasing as Guam feels the economic hardship of its total dependency on petroleum fuel for power generation and seeks economically attractive alternate energy sources. A forthcoming CEIP study addressing the environmental impacts and socio-economic considerations of OTEC development on Guam is being prepared.

D. SOLE SOURCE AQUIFER CAPACITY

An ample supply of freshwater will be the key to the growth of agriculture and some specialized industries, such as fish cannery. Freshwater is also of critical importance for drinking water, domestic, commercial and industrial use. Although Guam is blessed with a large underground aquifer, little is known of the lens' capacity to absorb pollutants from urban land use or its optimum sustainable yield for pumping without saltwater intrusion. Until such time as more information is obtained from a thorough study of the aquifer system, Guam is forced to take stringent measures to ensure protection of its sole source of freshwater. The rocks of southern Guam only offer a limited amount of potential for expensive reservoir construction. Therefore, development of an accurate computer model of the

aquifer system will become increasingly needed and will represent a key factor in land-use planning in the future. The official Federal designation of the northern water lens as a principal-source aquifer, together with the regulations effected by such a designation, will assist in protection of the resource. Designation of the aquifer area as a "conservation district" under the Territorial land-use system, and proposed designation of the lands as an APC, provide further protection to this critical resource.

E. FEDERAL LANDS ACQUISITION

Presently, a third of the island is under federal ownership and management, thus falling outside the jurisdiction of the GCMP, except in respect to "spillover" impacts on non-federal properties. Efforts are underway for the Government of Guam to obtain unutilized federal lands, not critical to military missions, for various purposes. Should such lands be acquired, the resource base under management by GovGuam could significantly increase, thus necessitating further land-use districting, community design planning and assessment of resource characteristics and development potentials within a relatively short time frame. Some federal lands are unique and require strict conservation, while others are highly suitable for intensive development. Considering the large area of land under federal ownership, the military's current use of such lands, and GovGuam's potential use of acquired lands, the need for additional planning and management will unquestionably be an issue of increasing attention under the GCMP.

F. MUNICIPAL LEVEL GOVERNMENT

The proposed Guam Constitution states in Article VI that "procedures for the creation of counties, cities and other political subdivisions shall be provided by law." Despite the fact that local ordinances developed shall not be inconsistent with law, zoning, and maintenance of local improvement projects," it is not difficult to foresee certain problems with land and water use as a result of local efforts to achieve objectives that do not coincide with those of the island as a unit.

G. COORDINATED NATURAL RESOURCES MANAGEMENT

Recommendations developed by the inter-government departmental Resources Management Task Force regarding GovGuam management of natural resources will certainly be of future consequence. Coordinated by the GCMP, the Task Force's Study is expected to identify a number of areas, including enforcement, government land leasing and planning, surveying, coordination and possible agency consolidation, in which new approaches could streamline GovGuam natural resources management. Any initiatives pursuant to Task Force recommendation would be likely to have a direct effect on the GCMP.

PART THREE: DESCRIPTION OF THE ENVIRONMENT AFFECTED

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The Guam Coastal Management Program text (Part Two of this document) notes that the GCMP is applicable to the entire island of Guam, excluding Federal lands and waters pursuant to the Federal Coastal Zone Management Act. The Federal CZMA does impose certain responsibilities on Federal agencies to conform their activities, financial assistance and regulatory processes "to the maximum extent practicable" to the substance of an approved coastal program. Upon Federal approval of the GCMP, the "environment affected," therefore, will be the entire island of Guam, including its Territorial waters to three miles offshore.

The physical and institutional environments of Guam are discussed in considerable detail in Part Two of this document. The relationship with Federal agencies, particularly regarding excluded lands and waters and consideration of the national interest, is also addressed in Part Two. The reader is referred to that section of this document for the information normally contained in this section of an environmental impact statement.

PART FOUR: PROBABLE IMPACTS OF THE PROPOSED ACTION ON THE ENVIRONMENT

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The Federal action is the proposed approval of the GCMP as having met the requirements of the CZMA and, after approval, the awarding of Federal grants-in-aid to assist Guam in implementing and administering its program. Approval places an obligation on the Territory to manage its resources in accordance with the policies, priorities and processes described in the Program. Approval, in turn, obliges Federal agencies to carry out their functions in a manner consistent, to the maximum extent practicable, with the approval program, significantly influencing the Federal decision-making process as it relates to land and water use activities and funding in Guam.

This part of the GCMP/DEIS combined document focuses on the environmental consequences of approving and implementing Guam's Coastal Management Program. Discussion includes both the benefits and costs of implementing the Program, as they relate to the natural and socio-economic environment of Guam. The fundamental criterion for assessing these impacts should be the CZMA's declaration of policy that coastal programs should strive "to achieve wise use of land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic and esthetic values, as well as to needs for economic development (CZMA §303). While intelligent management of coastal resources may be viewed as beneficial to the human environment and public welfare for many reasons, the following discussions show that some essential activities that benefit the Island economically may come at some environmental cost. Conversely, limitations on certain resource uses in the interest of natural resource conservation and long-term productivity or utility, may have adverse economic effects to certain individuals or interests.

Impacts associated with the Program fall into two principal categories: (1) the impacts of Federal approval, and (2) the impacts of application of the Program policies, priorities and processes to resources management needs in Guam. These consequences will be addressed in turn.

A. Impacts Resulting Directly From Federal Approval

Federal approval of the GCMP will affect Guam, its resources and its residents in four ways. These are: (1) program funding; (2) Federal consistency; (3) national interest consideration; and (4) eligibility for other coastal management assistance.

1. Program Funding - Federal approval will permit the Office of Coastal Zone Management to award program administration grants, as provided for under Section 306 of the Federal Coastal Zone Management Act, to the Territory of Guam. This funding will allow increased employment and training of specialists such as planners, scientists, and permit review and enforcement officials in the Government of Guam. The effect will be to raise the professional level of resource management decision-making for coastal resources. The presence of additional staff for coastal resources management should improve coordination

and enforcement by GovGuam agencies in planning and siting decisions. The Guam coastal program identifies a number of specific Program activities to which Federal funding could be applied to assist in implementation of the Program. Included are:

- support to the Guam Department of Agriculture for development and implementation of a fisheries development and management plan;
- identification of appropriate sites for water-dependent economic development;
- continuing assessment of marine resources and development of management programs, with potential for designation as areas of particular concern;
- development of restoration plans for blighted urban shorelands;
- support for the negotiation of additional cooperative use agreements with Federal agencies for use of Federal lands, especially for agriculture and recreation;
- support of beach beautification activities;
- research on more effective erosion control standards or regulations for sediment control;
- technical support for updating of the Guam Comprehensive Highway Plan;
- full implementation of the National Flood Insurance Program.

This list of proposed activities represents efforts that could be undertaken only selectively, at a much more limited scale or comprehensiveness, or not at all, without Federal support through the Office of Coastal Zone Management.

2. Federal Consistency - The approval of the Guam Program will mean that all Federal agencies must follow the provisions of Sections 307(c) and (d) of the CZMA. These provisions will require close cooperation between Territorial and Federal government agencies involved in coastally-related activities and management. This impact of approval is one of the principal objectives of the Federal CZMA.

The Program has evolved with the considerable assistance of numerous Federal agencies with responsibility for activities affecting coastal resources. No activities of relevant Federal agencies are specifically excluded from Guam as a result of policies in the GCMP. These activities are subject to the same environmentally protective policies as non-Federally-sponsored activities, however, particularly when such activities involve shoreline locations.

When Federal agencies are undertaking any development projects on non-Federal lands in Guam, or are involved in other activities that significantly affect the coastal zone (that is, non-Federal lands and waters of Guam), they must notify GovGuam of the proposed action. The parties will then have an opportunity to consult with one another in order to ensure that the proposed action not only meets Federal requirements, but also is consistent, to the maximum extent practicable, with Guam's management program. In the event of a serious disagreement between the Territory and a Federal agency, either party may seek Secretarial mediation to assist in resolving the disagreement. These procedures will provide all parties with an opportunity to balance environmental concerns along with other national and Territorial interests.

In cases where Guam determines that applications for Federal licenses, permits, grants or loans are inconsistent with the GCMP, Federal agencies are required to deny the approval of the applications. GovGuam objections must be based upon the substantive requirements of the Program such as the protection of air and water quality, land use districts, and the protection of valuable wetlands. Territorial objections may cause Federally-regulated and assisted projects to locate in alternative sites where development is encouraged because of favorable physical features, adequate local public works and services, and sufficient transportation, communication and financial networks.

The consistency requirements do place new legal requirements upon Federal agencies. To the extent that new procedural requirements to comply with the Federal consistency provisions cost time and money, applicants and Federal agencies will be impacted negatively. The long-term effect of the consistency procedures will be positive on two counts, however. Federal-Territorial coordination procedures must be adhered to, thereby keeping lines of communication open and available. In Guam, where the relative Federal presence is so significant, such contact can only be a positive factor. Secondly, because the Federal agencies are bound to the Program, activities which they carry out or regulate will be authorized only in cases in which those activities are consistent with the Territory's priorities. Again, this consequence is especially important in Guam, where Federal development or Federally-authorized development can have Island-wide repercussions on associated patterns of land use.

3. National Interest - Federal approval of the Program is dependent, in part, on a finding that the Territory provides for adequate consideration of the national interest involved in the planning for and in the siting of facilities necessary to meet requirements that are other than local in nature. The national interest in such facilities as highways and energy production facilities is much harder to discern in Guam than in a continental state. To the extent that such facilities supply the needs of military installations in Guam, such facilities may have a national security interest. Otherwise, the lack of any interstate ties seems to limit the national interest in these facilities. Notwithstanding these

considerations, the GCMP lists as national interest facilities regional water treatment plants, transportation systems, energy production and transmission facilities, major recreation areas, national defense and aerospace installations, solid waste disposal facilities, and major reservoirs.

This policy requirement of the CZMA is intended to assure that national concerns related to facility siting are expressed and dealt with in the development and implementation of a coastal management program. The requirement should not be construed as compelling states and territories to propose a program that accommodates certain types of facilities. It works to assure that such national concerns are not arbitrarily excluded or unreasonably restricted in the management program.

This provision might have two impacts. First, it insures that the Territory has a process and program that does not prohibit or exclude any use or activity dependent on the coastal zone. In the absence of a comprehensive program such considerations might simply be ignored by oversight or default. This requirement will insure they are specifically considered. On the other hand, the existence of a consultative procedure should lead to more deliberate and cooperative decision-making concerning the siting of facilities in the coastal zone.

4. Other Management Assistance - Federal approval will also assure Guam continued eligibility for funds available under other coastal management assistance programs, including the Coastal Energy Impact Program (Section 308), research and training (Section 310), beach access and the preservation of islands, and establishment of estuarine sanctuaries (Section 315). Eligibility for each of these programs will augment the management capability of GovGuam in the subject areas. Improved ability to plan for and manage the impacts of major energy facilities, to assure access to beaches and to preserve fragile island or estuarine ecosystems are clearly positive impacts of continued eligibility for funding of these activities that is associated with Program approval.

B. Impacts Resulting from Guam's Implementation of the Program

The proposed management program is founded on statutory and regulatory authorities, some of which have been in place for some time, and some of which are new for the GCMP. Legislation (P.L. 12-200, 1975) called for, among other things, the creation of a land use planning-by-district system. The draft Constitution of Guam, already approved by the Constitutional Convention and scheduled for a popular vote in mid-1979, also calls for creation of land-use districts. Such a districting system is being implemented by the Territorial Planning Commission in response to Executive Order 78-23. The people of Guam have indicated repeatedly, both directly and through their legislature, that an improved resource management capability is clearly in the Island's interest. The question that must be addressed by this DEIS, then, is whether the proposed coastal

management program, in conjunction with other resource management plans and authorities in the Territory, speaks adequately to the specific problems and their resolution, and does it in a manner that is effective, efficient and sensitive to the social and economic, as well as the environmental needs of the Territory of Guam.

This program was designed to benefit the people of Guam by proposing policies that address recognized resource issues, and give the several resource agencies of the territory a clearer basis upon which to make the decisions assigned to them by law. The single policy base is intended to provide a more consistent and predictable approach to resource management than in the past, which benefits the private citizen and general public, and development and conservation interests alike.

Management of Guam's resources may be viewed as beneficial to the natural environment and, therefore, to the public welfare for many reasons. Such management also may have positive or negative socio-economic effects on property owners whose plans may be affected by the implementation of the program's policies and the more effective enforcement of existing authorities. As noted earlier, Guam historically has recognized in law both the value of its resources and the need for planning to accommodate competing demands for limited land and water resources. This coastal management program seeks to coordinate existing authorities for their more effective implementation. The policies herein are enforceable only to the limits of the legal authorities on which those policies are based.

Private property rights are unaffected by this program, although the limits to absolute discretion are recognized. This distinction is an important one. A legal system such as Guam's, that has authorities such as zoning and subdivision laws, acknowledges that the exercise of discretion in the use of any parcel of land is limited by the extent to which such use causes adverse effects on the general public or adjacent property owners. In recent years, the courts have supported the concept that a private property owner does not have absolute discretion over the use of property. On the other hand, legal limits to the public right to restrict use of private property do exist, and are clearly stated in Section VIII of the Land Use District Guidelines appended to Executive Order 78-23:

> This Executive Order is not intended, and shall not be construed as authorizing the (Territorial Planning) Commission to exercise their power or grant or deny a permit in a manner which will take or damage private property for public uses, without the payment of just compensation therefore. This Executive Order is not intended to increase or decrease the rights of any owner of property under the Constitution of the Territory of Guam or the United States.

This coastal management program does not intend, nor is it empowered to extend government jurisdiction beyond the limits recognized in the cited provision.

Each of the policies for the coastal program are listed in this chapter and the probable beneficial and adverse impacts of the administration of each policy are discussed. Impacts associated with implementation of Guam's program in general and with any specific policy, can be viewed as physical impacts, socio-economic impacts, and institutional impacts. Physical impacts are those related to a resource itself, such as improved erosion control and reduced sedimentation of reef flats. Socio-economic impacts are often the reason for and consequence of a management effort. For example, apart from their biological value, reefs around Guam serve an important economic function by protecting the Island from the costs of wave assault and erosion. On the other hand, land use controls that attempt to reduce erosion to protect those reefs may limit owner discretion over the uses of erodible land in order to serve the large public welfare. Finally, institutional impacts will occur which will affect the long-term success or failure of the Program. These impacts include anticipated management efficiencies and Federal funding for Territorial programs. Each of these classes of impacts is examined, where meaningful, under each of the proposed policies. Clearly, each of the policies affects many of the others. The effort has been made, however, to isolate impacts.

Certain overall impacts can be expected; other possible impacts will be more subtle. The theory behind improved management and coordination is that decisions can be made more effectively and efficiently, by private parties and public agencies, if policies are clearly defined, and interested parties provided the opportunity to participate in decision making early in the process. Improved coordination itself takes time and money, however, so the focus of this program has been to provide a setting in which the total incremental cost of coordinating the administration of existing authorities and regulations will be repaid in savings to the component administrative costs, with a net environmental benefit. For the convenience of the reader, the issues and problems, as well as the policy, as discussed in detail in Chapter III are restated before the discussion of impacts of each policy.

GOVERNMENTAL PROCESSES

A. Issues and Problems

- Current administration of existing laws and regulations at times does not adequately result in the most effective management of the Island's resources. Coordination difficulties create significant confusion among enforcement agencies as to the limits of their jurisdiction.

- The lack of a sufficient data base, both for projecting population and describing specific characteristics of various land and water areas, hinders effective planning, management and development of the Island's resources.

- Inadequate analysis or consideration of current laws results in a large number of proposed bills which conflict with the policies or provisions in existing legislation.

Policy

More effective administration of natural resource related laws, programs, and policies shall be achieved through:

- revision of unclear and outdated laws and regulations,

- improved coordination among local agencies,

- improved coordination between territorial and Federal agencies,

- educational and training programs for local government personnel, and

- refinement of supporting technical data.

Impacts

More effective administration of natural resource-protection measures will undoubtedly yield benefits to the environment, as that is the focus of these measures. The crux of the matter is that certain valuable cultural, historical and environmental resources are being lost. Current zoning practice has been admittedly weak due to its sometimes inconsistent administration and coordinative difficulties. This tool will be strengthened once coordination is assured and Guam agencies get Federal funding to implement the intent of these policies, improving their ability to administer resource-specific laws and policies. The administration of zoning in the context of the land use districting system will strictly limit the availability of variances for non-conforming uses. The predictability of the process, and its ability to manage resource use will be greatly improved.

The institutional impacts are intended to be significant. With the onset of comprehensive planning, and following the resource inventory and mapping efforts of the Section 305 phase of the CZM program, certain laws have been found to be outdated or unclear. Improved specificity, updating to reflect comprehensive versus single-purpose planning objectives or improved scientific understanding and revision for consistency

with the coastal program and Comprehensive Development Plan should lead to more predictability through a uniform body of law that reflects contemporary resource interests and economic needs. Such a code of law should allow for more effective administration towards the achievement of resource and development policy goals. At the same time, such predictability, clarity, and consistency should contribute to public understanding and compliance.

Increased coordination, both among Territorial agencies and between the Territorial and Federal governments is expected to improve efficiency of administration by eliminating inconsistent planning or management approaches, thereby reducing the likelihood for conflicts in siting decisions or resource use. It is expected that the costs to government for time spent coordinating activities and plans with other units and levels of government will be at least partly repaid by the subsequent conflict-resolution-time saved by such coordination. The increment of preparation time for permit applications or project proposals that will result from the required attention of applicants to the policies of the proposed program will have their costs. Some or all of the work-hours so expended should be recaptured by the time saved, in public and private planning or development proposals, when clear definition of policies and regulations lends certainty to standards and data requirements. In addition, time and money that might otherwise be spent on proposals that are inconsistent with Territorial planning objectives and, therefore, unacceptable, can be saved or redirected to a proposal with greater certainty of approval when carefully prepared in recognition of clearly stated policies and regulations.

Social and economic impacts are inseparable. Because of the compensating costs and gains of improved coordination, any net cost to government, and in turn cost to taxpayers, should be minimized once the processes are well-established and routine. Federal funding assistance (Section 306) will be used initially for the costs of identifying ways to make the desired coordination a part of normal permit review procedures. The social impacts of improved administration of existing legislation and statutory authorty are more difficult to define. Society should benefit from enforcement of management policies which provide a balanced management perspective that aims to preserve valuable natural resources and accommodate the needs of an expanding population and economy. Achieving this balance involves trade offs which include some of the short-term positive and negative effects discussed above. Long-term benefits from enhanced productivity of renewable resources would also be realized.

B. Development Policies

The impacts associated with Development Policies and Resource Policies, for the most part, are those generated by the Land Use Districting

System and Policies to the administration of existing Territorial authorities and by the adoption and implementation of the Comprehensive Development Plan and Community Design Plans The specifics of the districting, and provisions for special management of areas of particular concern, are included in the Governor's Executive Order 78-23 and TPC regulations. More specific policies for the implementation of these plans and procedures are provided by the coastal management program. Further, approval of the program will release Federal funds which will improve Guam's capability to enforce the applicable laws and administer the program. Program approval also assures that Federal activities will be carried out, to the maximum extent possible, in a manner consistent with the Program. Conversely, approval will commit the Territory to consider the national interests that may be affected by the administration and enforcement of its rather stringent and specific resource management policies. The following discussion highlights the expected impacts of each of the eight development policies of the Program.

1. Shore Area Development

Issues and Problems

- Land resources adjacent to coastal waters have been used with little consideration of the suitability of such land for development or the water-dependency of the uses.

- Several coastal communities lack full sewering and typhoon-proof housing, and suffer from substandard lot sizes, increasing population, poor road conditions, and are in constant danger from severe storm and flood damage.

Policy

Only those uses shall be located within the Seashore Reserve which:

(1) enhance, are compatible with or do not generally detract from the surroundng coastal area's aesthetic and environmental quality and beach accessibility; or

(2) can demonstrate dependence on such a location and the lack feasible alternative sites.

Impacts

The Shore Area Development policy essentially is a restatement of the findings and intent of the Guam Legislature in passing the Guam Territorial Seashore Protection Act of 1974 (regarding shoreline development) and the

Territorial Beach Areas Act of 1973 (regarding public access). The Comprehensive Planning Enabling Legislation (P.L. 12-200), in addition, identified that an objective of the comprehensive planning effort is to "reappraise the total land in terms of the Territory and provide guidelines for relocation of inefficient or inappropriate major uses" (§62011(f)). The accomplishment of these objectives would provide significant environmental, and likely social and economic benefits to the people of Guam.

The urban waterfront from Apra Harbor to Tamuning has experienced a proliferation of inappropriate uses. Planning and management capabilities available with Section 306 funds will be directed towards reversal of this trend. Possible approaches include rezoning and broadening the Seashore Reserve or development of an urban waterfront restoration program. The negative physical impacts of the inappropriate shoreline uses are being documented in an urban waterfront planning effort that is now underway, since the visual impact of the present conditions are glaring and unacceptable to most residents of the territory.

Redevelopment of the Apra Harbor-Tamuning strip will beautify the area, allow urban access to the waterfront and benefit residents and tourists alike. Economic benefits to tourism, while possibly not major in themselves, cannot be discounted.

The assurances for public access and natural resource protection in the narrow shoreline strip restrict incompatible development and thus may adversely affect private economic interests in certain locations while protecting the value of the shoreline as a resource for public welfare. Restrictions on waterfront development redirect growth and increase the pressure on and value of developable land elsewhere. In the context of comprehensive planning, that growth can be guided to areas that can accommodate the development because of resource capability and availability of services and infrastructure without causing significant alternative adverse impacts.

Public access is assured by law and is not a currently significant problem in Guam. Administration of this policy will maintain the present condition of free access to the beaches, a declared public resource.

2. Urban Development

Issues and Problems

- Location of high-intensity development areas has been determined in many cases, by historical patterns of major facility and infrastructure placement.

- High impact development, especially intensive residential, commercial and industrial uses, continue to locate in a random pattern interspersed with residential, recreational, and fragile ecological areas.

Policy

Uses permitted only within Commercial, Multi-Family, Industrial, and Resort-Hotel zones, and uses requiring high levels of support facilities shall be concentrated within urban districts as outlined on the Land-Use Districting Map.

Impacts

Implementation of the districting system mandated by P.L. 12-200 and provided by Executive Order 78-23 will concentrate urban development uses in urban districts and restrict random proliferation of incompatible urban uses elsewhere. CZM funding has been used to classify lands in the Territory according to their current use and according to the most suitable use, considering the resource constraints and potential. Section 306 funding would contribute to the implementation of the districting mainly by funding development of district guidelines and resolution of zoning, coordination and enforcement problems.

Environmental impacts should be significant and beneficial, but will accrue gradually over the long term. Each urban use that is sited in an urban district which would otherwise have been located in a rural, agricultural or open space setting will represent a net gain for the environmental quality of Guam. Each residential or commercial development which is guided to suitable lands and away from aquifers and excessive slopes benefits water quality and water supply. In particular recognition of the limited land resources available on Guam, concentration of urban uses preserves inter-urban open space in the face of island-wide growth pressures and can protect residential areas from the intrusion of commercial and industrial development.

Concentration of urban development, however, also concentrates air and water quality impacts. Despite the greater concentration of potential impacts, the government's ability to control those effects at an acceptable cost is greater when the control system need not be broadly dispersed. The result can be a reduced cost to the government for public services and infrastructure, with more effective delivery of those services. Concentration of development offers opportunities for improved efficiency in transportation, including the possibilities for mass transit, with the accompanying energy savings. (See the discussion accompanying the policy on Transportation).

One social impact of this policy that must be addressed is the effect of concentration of urban development on traditional lifestyles. The program is sensitive to the type of random development and village cluster patterns in traditional housing. Dispersed housing would be a permissable use in urban, rural and agricultural districts, and villages such as Umatac and Inarajan, are appropriately districted urban. The policy to concentrate development in urban districts focuses on commercial and industrial development, and is sensitive to the distinction between "sprawl" and transitional scattered housing. The intent is to protect both fragile resources and the government budget against the demands for public services and utilities created by housing and commercial "developments" in areas adjacent to urbanized areas but with no available infrastructure. By limiting such sprawl and guiding needed urban expansion to areas that can be provided public services in a cost effective manner, the policy provides for growth while shielding taxpayers from the excessive costs of sprawl, or the resource costs of inappropriate expansion in the absence of public services.

The impacts of this policy on land values are difficult to project, but certain to occur. By clearly designating areas for future urban expansion, land values could be expected to increase but speculation should be limited. On the other hand, land ownership in newly designated urban areas would seem to assure a significant real estate profit. In addition, land values in non-designated areas would be expected to remain relatively low and protected from induced development pressures brought about by leap-frogging development. The exact net effect on land values is uncertain, and may be controllable, with thoughtful administration of the planning and regulatory aspects of the Program.

3. Rural Development

Issues and Problems

- Uncoordinated and random expansion of high intensity urban development areas having the physical characteristics for future urban use severely limits alternatives for future development and places unnecessary pressures on the ecological as well as financial resources of Guam.

Policy

Rural districts shall be designated in which only low density residential and agricultural uses will be acceptable. Minimum lot size for these uses would be one-half acre until adequate infrastructure, including functional sewering, is provided.

Impacts

The consequences and reasoning associated with rural districts parallels those of the urban districts. Reference should be made to the foregoing discussion. By promoting efficiency, and therefore economy of services, of future urban expansion, the policy discourages random sprawl in rural areas, increases the likelihood of urban expansion into certain rural areas, and protects the rural character of other undesignated "rural" areas, including agricultural and conservation districts. By permitting only low-density residential and agricultural uses in designated rural districts, traditional lifestyles can be protected against unplanned urbanization.

4. Major Facility Siting

Issues

- The unavoidable siting of electric power plants and associated energy facilities in shoreline locations will continue to cause negative environmental impacts upon coastal waters.

- Projected expansion of Guam Commercial Port, the Navy Ammo Wharf, the Naval shipyard facilities, and related support uses, although essential for port operations, may reduce potential recreation areas, destroy marine habitats, threaten the declining bird population, and reduce access to shore areas. Present port development plans are somewhat uncoordinated, resulting in random expansion.

Policy

In evaluating the consistency of proposed major facilities with the goals, policies, and standards of the Comprehensive Development and Coastal Management Plans, the Territory shall recognize the national interests in the siting of such facilities including those associated with electric power production and transmission, petroleum refining and transmission, port and air installations, solid waste disposal, sewage treatment, and major reservoir sites.

Impacts

Consistency with the policies and standards of the Comprehensive Development Plan and land use plan of Guam restrict random siting of major facilities, while protecting non-urban areas and recreation areas from the impacts of such facilities. The above coastal management policy emphasizes Guam's recognition of the need to consider the Nation's interest

in certain major facilities when evaluating the compliance of such facilities in the resource conservation policies.

The restrictions on the siting of major facilities offer considerable protection to the physical and biological resources of Guam. This national interest provision does allow for a situation, however, in which facilities with substantial environmental impacts could be located in a sensitive area if a clear demonstration can be provided of a lack of alternative sites and a national need that exceeds the local interests (cultural, environmental) in restricting siting. The occasions for such exceptions are anticipated to be very few for two reasons. First, most major projected facilities will be sited in the Apra Harbor area, a location already highly developed. The need for sites elsewhere is expected to be small. Secondly, clear demonstration of the national interest is a difficult test to meet in Guam for other than air and water port shipping, and military activity. Guam's isolated location seems to remove even electric power stations and principal highways from the class of national interest facilities, since there are no interstate effects.

A policy that leaves open the possibility of non-conforming siting of major facilities does pose a risk to local resource or local interests in the face of countervailing national interest. Conversely, the restrictions inherent in the major facility siting authorities of Guam may result in increased costs of facility construction or siting to a developer.

5. Hazardous Area Development, Housing

Issues and Problems

- Guam's geographical location and geological structure is such that major natural hazards are a way of life rather than occassional occurrences. Despite this fact hazard areas are not well regulated or protected.

Policy

One of the principal issues with respect to housing in Guam is its location in hazardous areas. These policies, therefore, are addressed in combination.

(Hazard Areas)

Identified hazardous lands including floodplains, erosion-prone areas, air installation crash and sound zones and major fault lines shall be developed only to the extent that such development does not pose unreasonable risks to the health, safety, or welfare

of the people of Guam, and complies with relevant land-use regulations.

(Housing)

The government shall encourage efficient design of residential areas, restrict such development in areas highly susceptible to natural and manmade hazards, and recognize the limitations of the island's resources to support historical patterns of residential development.

Impacts

Guam plans to use its Section 306 funds to improve coordination between the Bureau of Planning, the Disaster Preparedness Planning Program and the Department of Land Management to assure consistency of approach, respectively, in land use policy development, disaster prevention and relief, and land use regulation through zoning. In addition, designation of hazard areas as APC's will limit development, and associated risk, in flood hazard areas, seismic and fault zones, Karst areas and Air Installation Compatible Use Zone (AICUZ). Further work at hazard area identification and creation of development standards which designate appropriate uses will be continued.

Full implementation of the hazards policy should bring about significant reductions in injury and loss of property which would normally be associated with imprudent use of hazardous areas. Furthermore, the intent of the housing policy is not only location in areas relatively free from hazards, but also efforts at community design that emphasize efficiency of transportation, delivery of services and use of resources. Both policies potentially conflict with traditional housing patterns and must be implemented if hazard impacts are to be minimized.

Housing on Guam traditionally has been mostly scattered around the island, but concentrated at bays and river mouths in seaside villages. These areas are among the most flood and storm susceptible locations on the island. Suggestions of relocation behind a shoreline setback is resisted, even after the destruction of a major storm. In addition, some of the villages have existed for hundreds of years. Streets are narrow and housing is of variable quality. However rational recommendations of redesign for the sake of transportation efficiency or storm protection, for example, do little to counter emotional attachments. The territorial government cannot afford repeated disaster assistance, and so some cultural and budgetary compromise must be struck. Federal Flood Insurance Administration funds for flood plain mapping can complement CZM and Guam funds for the solution to this issue.

6. Transportation Network

Issues and Problems

- Expansion of major roads poses a threat to certain beach areas and the primary aquifer.

Policy

The Territory shall develop an efficient and safe transportation system while limiting adverse environmental impacts on primary aquifers, beaches, estuaries, and other coastal resources.

Impacts

Guam's highway transportation problems are mainly twofold: (1) lack of alternate forms of transportation has led to a major dependence on automobiles that exceed highway capacity; and (2) the principal highway is circumferential and adjacent to beaches and shores, inducing inappropriate shoreline development, producing non-point runoff, and threatening further the shoreline areas with each highway expansion to accommodate the large number of autos. Guam's construction options are terrain-limited by the aquifer in the north and the rugged volcanic hills in the south. The Program plans to cooperate with Territorial and Federal transportation agencies in plan review and policy-option development to assure consideration of coastal resources. Mass transit (bus) systems have been proposed and examination of the economic feasibility and environmental and transportation benefits of such potential solutions is warranted. Concentration of urban development emphasized in other policies will increase the feasibility of mass transit.

Efficiency of transportation may itself cause additional environmental impacts. Expanded roadways or alternative highway construction that add to transportation efficiency likely will induce greater use of autos. Efficiency of transportation as a goal may demand new cross island links which may dissect open-space and induce strip development and jeopardize fragile resources that are presently protected by their inaccessibility. Appropriate roadway siting and construction guidelines, and other application of the comprehensive land management policies can reduce impacts on open space and fragile resources. Increasing transportation options and limiting location options for transportation facility construction will have economic and social impacts. The transportation policies will encourage changes in personal transit habits, and increases in direct costs may be incurred by the careful siting of facilities. In evaluation of planning and specific construction projects, the relative economic and environmental merits will have to be carefully weighed.

7. Erosion and Siltation

Issues and Problems

- Onshore construction practices in areas of overburden, steep slopes, and sinkholes have created serious (and well-documented) erosion problems.

Policy

Development shall be limited in areas of 15 percent or greater slope by requiring strict compliance with erosion, sedimentation, and land-use district guidelines, as well as other related land-use standards for such areas.

Impacts

This policy could be expected to have significant impact on future construction and land-use practices on Guam, since a large part of the island (as much as one-third) has steep slopes. The impacts would be only gradually felt, however, since there is currently limited development pressure in most of the steep inland terrain. Erosion from these areas threatens streams and reef flats with sedimentation, however, and this policy limits the potential damage from imprudent development in erosion-prone areas.

Increased costs of development likely will be caused by conditions placed on construction on steep slopes in order to prevent erosion and sedimentation from building sites. As a result, the value of such land may be adversely affected. The inherent limitations on such land for development may reduce the significance of this impact. Any policy that concentrates development in non-sloping lands, however, can be expected to increase the value of such lands.

In return for the anticipated costs, water quality will be protected from runoff burden and damage to fragile areas, including reef flats, can be minimized. Public and private costs brought about by disaster or property damage associated with slope failure or excessive erosion can be reduced, and financial and environmental costs of dredging to keep channels and harbors passable can be kept to a minimum.

C. RESOURCES POLICIES

Conservation of Natural Resources -- Overall Policy

The value of Guam's natural resources as recreational areas, critical marine and wildlife habitats, the major source of drinking water, and the island's economy, shall be protected through policies and programs affecting such resources.

Impacts of specific resource policies are discussed below.

1. Air and Water Quality

Issues and Problems

The large number of motor vehicles, the main solid waste disposal site at Ordot, electrical generating plants, petroleum refinery, and high numbers of air installation takeoffs and landings contribute to Guam's air pollution.

The high overall quality of Guam's coastal water is being threatened by polluting discharges from various sources. Some water areas are in transition to a less acceptable state due to pollution from sewer outfalls, storm drains, septic tanks and storm-water runoff. The island's
aquifer in Northern Guam could be polluted from uncontrolled residential development, a lack of functioning sewers or extensive use of pesticides and herbicides. Saltwater intrusion and high coliform counts are evident in some drinking water wells.

Policy

(Air Quality)

All activities and uses shall comply with all local air pollution regulations and all appropriate Federal air quality standards in order to ensure the maintenance of Guam's relatively high air quality.

(Water Quality)

Safe drinking water shall be assured and aquatic recreation sites shall be protected through the regulation of uses and discharges that pose a pollution threat to Guam's waters, particularly in estuarine, reef and aquifer areas.

Impacts

Guam is currently pursuing programs in response to Federal and territorial legislation related to air pollution control, water pollution

control, water resources conservation, and safe drinking water, among others. Institutionalization of these programs has required fundamental changes in approach by all involved institutions. Coastal program activities will support and enhance implementation of established programs, including the Federal air and water quality requirements as specified by the Federal coastal management regulations (15 CFR 923).

The coastal program will support public awareness and research of air and water quality problems. The public's understanding of environmental protection programs will improve. Heightened public awareness would lead to more prompt attention and response to problems. Funding research of selected issues and problems, inadequately addressed at present will encourage solutions and alternatives developed within the framework of existing programs.

Financial assistance will be provided to improve implementation and enforcement of existing air and water quality programs. Regulatory capabilities will be strengthened where gaps or weaknesses are identified. The coastal program can encourage rigorous enforcement of standards relating to waste disposal siting for example. The program will also support reclassification of certain water areas from "polluting discharges allowed" to "no polluting discharges allowed". The impact of both of these program activities likely will be improved water quality in problem bays, lagoons and rivers and improved air quality. Costs of such improve ments born by the public and private sectors likely would be outweighted by benefits of protecting existing economic and recreational uses of water and air.

Coastal program activities related to air and water quality protection will be closely coordinated with other relevant local and Federal agencies. For example, planning land use over the freshwater aquifer can be coordinated with air and water quality agencies to assure conformance with regulatory standards and prevent contamination and overdraft of the aquifer while providing for development.

The coastal program will assume an advocacy role in monitoring, reviewing, and recommending changes and additions to air and water quality progams and regulations which impact the environment. Currently there are issues for which a single voice at the local and Federal levels will encourage faster resolution or prevention of the problem. For example, in coordination with other relevant agencies, the coastal program will advocate the close monitoring of drinking water wells susceptible to saline water intrusion. In addition the coastal program will support development of a process by which complaints by individuals concerning development activities of a questionable nature can be dealt with in an efficient manner. And the program can identify at an early date why a potential source of air pollution should meet certain emission standards. The impact of the advocacy role may be difficult to separate from other

programs but will depend on the timing and merit of the coastal program's expression of concern. The net impact will likely be awareness of problems and opportunities which deserve more prompt and thorough action.

This assessment concludes that program activities related to air and water quality will not affect fundamental institutional changes, rather incremental improvement existing mechanisms. In response to problems, better coordination, enforcement and planning are likely. Costs are already born by public and private sectors. Additional costs due to adjustments are likely to be minimal relative to benefits of preservation of safe, clean water and air which protects public health and recreation opportunities, scenic qualities which in turn contribute generally to quality of life and specifically to tourism and its associated economic benefits.

2. Fragile Areas

Issues and Problems

- Development into unique terrestrial habitat areas has seriously depleted unique floral and faunal communities.

- There is presently no coordinated program for the protection of unique marine habitats, while pressures for development increase daily.

Policy

Development in the following types of fragile areas shall be regulated to protect their unique character: historic and archaeologic sites, wildlife habitats, pristine marine and terrestrial communities, limestone forests, mangroves and other wetlands.

Impacts

Two different levels of management of fragile areas will be applied to the Island following the approval of the GCMP. The first is the land use district system, which will provide a "conservation district" classification that will not be zoned, and will require Territorial Planning (Land Use) Commission approval for any development activity which requires a building or grading permit. The district classification is not prohibitive, but does recognize the reasonable limits imposed on development by the resource conditions themselves. Each development has impacts on resources that are particular to the facility and its proposed location. The concept of the conservation district classification is that, given the fragile resource conditions of most of Guam, the development that must be

associated with a growing population and economy must carefully be designed and constructed in a manner sensitive to the resource limitations. In this way, necessary development can be accommodated at the least environmental cost.

Although the designation of conservation districts as such is a new approach, the principal impact will be the coordination of existing statutory protection of public and fragile lands. Much of the land is government land. In addition, the five presently designated and controlled "conservation areas" are included, as are the aquifer recharge areas which were protected by legislation as recently as December, 1977. The site of the recently established Territorial Seashore Park, flood prone areas, and areas of severe slope are also included. Legislation addressing concerns over the use of these areas largely exists, and designation as Conservation District will provide a means to coordinate planning and development among the responsible agencies.

Inclusion of a land parcel in the conservation districts is intended to protect the resource and the people of the Guam from ill-planned use; inclusion does not necessarily imply preservation, although certain park lands
and endangered habitat lands, for example, may be "preserved" in a conservation district. The district standards are expected to be divided into nine categories: open space, low-density, historical sites, parks, recreation, wetlands, lowland basins and sinkholes, watersheds, and wildlife reserves. Development standards will be appropriate to the designation. These standards are being developed by the Bureau of Planning, for approval by the Territorial Planning Commission and Governor. Standards will be in force prior to program approval.

The second management approach for fragile areas is the designation of Areas of Particular Concern (APC's). As described in Part Two, Chapter VII of the program document, the purpose of APC designation is to "call attention to the importance of the designated area, as well as to provide an additional management capability to ensure responsible development in areas either that have a high degree of environmental sensitivity or that are, or will be, subject to intense development pressure in the near future. Such a special designation can reserve appropriate sites for economic development as well as to protect fragile natural areas." APC identification is a site-specific and generic approach to resource management, designating a site and applying performance guidelines approved by the Commission and Governor at the time of designation. Seven categories of resource uses or values, listed in Executive Order 78-23, identify types of resources that are eligible for an APC classification. A matrix of priorities of uses in APC's is provided in Figure 4.

Both the conservation district and APC designations depend largely on existing authorities, although the permit review provisions of the new TPC regulations for the conservation districts, and the management activities for APC's are new resource management techniques. Federal funds will be used for the development of management systems for the APC's.

To the extent that the two types of land and water use areas reflect existing authorities and public lands, social impacts of program approval should be limited. The environmental benefits of careful management and protection of fragile resources, or reservation for development of lands with development potential, will accrue to all residents of Guam. The specific benefits are described in greater detail in the "Impact" discussions associated with the other resource policies. Details of resource development or protection areas eligible for APC designation are described in Chapter VII of the program document (Part Two).

3. Living Marine Resources

Issues and Problems

- The potential for exploitation of Guam's fisheries has not, to date, been developed.

- No local policy or regulations have existed for the taking of marine mammals given the limited level of fishing activities in territorial waters.

Policy

All living resources within the territorial waters of Guam, particularly corals and fish, shall be protected from overharvesting and, in the case of marine mammals, from any taking whatsoever.

Impacts

The policy is permissive insofar as marine fishes and animals are concerned, while restrictive insofar as marine mammals are concerned. It will allow and encourage development of a fishery and generate positive economic impacts in the recreation and commercial sectors. Investigation, development and exploitation of potential commercial and recreational fisheries necessitates building an institutional capability for management of fishery resources. The coastal program will provide financial assistance for the planning and implementation of a fisheries management program and support coordination and implementation. Costs

of overharvesting will be prevented by restrictions which maintain economic yields. Coordination of users and regulators will reduce the costs of conflict resolution and assist other agencies to efficiently carry out their missions. The coastal program will encourage development of fishery activities. An advocacy role will assist entrepreneurs in developing practices consistent with objectives of fishery resource management policy. Advocacy in the review of proposed actions expected to have impacts upon fishery resources will protect investments as well as opportunities. Providing the territorial government with a marine resource orientation in general will effect a positive institutional addition.

The coastal program will cooperatively develop legislation and regulations designed to preserve marine mammals. Restrictions designed to protect mammals will result in increased costs for users in terms of harvest methods and techniques; benefits of preserving mammals are not quantifiable yet significant.

Protection of corals serves to protect the island shoreline from severe erosion and flood hazards while reducing a source of raw material for tourist souvenirs and jewelry companies. The latter costs are insignificant relative to the benefits of the former.

Finally, the coastal program will conduct public awareness programs with appropriate agencies relative to the need for conservation of living marine resources. This will heighten public awareness and strengthen and support management of economically important resources.

4. Visual Quality

Issues and Problems

- The scenic quality of the shoreline, particularly the ocean view from coastal roads, is rapidly deteriorating in urban areas.

Policy

Preservation and enhancement of, and respect for the island's scenic resources shall be encouraged through increased enforcement of and compliance with sign, litter, zoning, subdivision, building and related land-use laws; visually objectionable uses shall be located, to the maximum extent practicable, so as not to degrade significantly views from scenic overlooks, highways, and trails.

Impacts

Much of Guam is naturally scenic, and the high rock cliffs that border the ocean in the north, as well as the interior hills and

shoreline drive in the south provide numerous scenic vistas. Conditions described in the program document detract from the attractiveness of urbanized areas and public open space when viewed close-at-hand. Efforts stressed in other policies to redirect development from hazard areas should reduce the problem of abandoned dilapidated structures, thereby improving the appearance of these areas. Efforts at public education about solid waste control and littering will continue, using Section 306 funds, and maintenance of public areas may be an eligible cost under the program implementation grants.

Adverse impacts of a policy on visual quality are few and are principally related to costs of enforcement and public education efforts. Public purchase of land for park development in scenic areas could affect private land holders. Public acquisition would necessitate local public support, however, in order to make funding available. Acquisition of land is not an eligible cost to a Section 306 grant under Federal regulations.

5. Recreational Areas, Public Access

Issues and Problems

- Parks, conservation areas, wildlife refuges and open-space public lands often lack basic amenities. Communities strongly feel the lack of active sports facilities, while certain parks and beaches have support facilities which are often poorly maintained.

- Increasing development along Guam's shoreline restricts access to the beaches and reefs.

Policy 1 - Recreation Areas

The Government of Guam shall encourage development of varied types of recreation facilities located and maintained so as to be compatible with the surrounding environment and land uses, adequately serve community centers and urban areas, and protect beaches and such passive recreational areas as wildlife and marine conservation areas, scenic overlooks, parks, and historic sites.

Policy 2 - Public Access

The public's right of unrestricted access shall be ensured to all non-Federally owned beach areas and all Territorial recreation areas, parks, scenic overlooks, designated conservation areas and other public lands; agreements shall be encouraged with the owners of private and Federal property for the provision of reasonable access to, and use of, resources of a public nature located on such land.

Impacts

Shoreline recreation sites are not in short supply in Guam. About one-third of the island is bordered by reef-protected beaches. Existing law (the Guam Territorial Seashore Protection Act of 1974, the Territorial Beach Areas Act, the Public Rights Provisions of the GCG, and Subdivision Laws) provides for the public's declared right of access to public lands including beaches. Implementation of the policy on public lands merely assures that this right will be upheld, and will have no other identifiable impact. Gov. Guam's efforts to achieve public access to Federal and private lands bearing resources of public interest will have no impact that private and Federal landholders are unwilling to accept, but may provide additional access to lands presently inaccessible. A major consideration in acquiring access to private lands of public interest is the concern that the values of the resource, such as solitude and cleanliness, may be endangered by general use. Agreement conditions make this as a significant obstacle. The magnitude of shoreline and beach area that is accessible to the public, and the absence of coastal water quality problems, eliminate any immediate concern over such typical recreation planning concerns as "carrying capacity".

Maintenance of public lands and provision of visitor facilities is an expressed interest of Guam's citizens (see CZM Program Document, Chapter II). Public funds may not be available immediately for purchase or construction of such amenities, although Guam acknowledges the need. The coastal program "encourages" development and maintenance of additional facilities and recreation areas, but acknowledges that the positive impacts of this policy may well be limited by budgetary considerations. Should available monies be identified for these purposes, however, Guam's citizens and visitors would benefit from the improved utility and variety of recreation lands. The use of Section 306 funds for acquisition of trash receptacles and a collection vehicle will be examined against other priorities for the use of those funds.

6. Agricultural Lands

Issues and Problems

- Development of prime agricultural lands for other than agricultural use could reduce the possibility of agricultural self-sufficiency on Guam.

Policy

Critical agricultural lands shall be preserved and maintained for agricultural use.

Impacts

Terrain and geological conditions limit the amount and quality of agricultural land. While loss of prime agricultural land to other uses is not a widespread problem, it is a significant one because of the scarcity of the resource. Revisions, under the auspices of this program, of "agricultural subdivision" laws that allow division of agricultural lands into unimproved lots as small as 5,000 square feet could remove a major threat to the resources.

While agricultural self-sufficiency is unlikely on Guam, reduction of imports and the quality advantages of fresher local foods, are attractive benefits of increased local productivity. Any locally grown food that is sold for use by the tourist trade or military installation double the economic benefits to the local population. In addition, the preservation of farming as a viable lifestyle is to the Territory's cultural benefit. Agricultural production would further provide a means to curb urban sprawl.

Gov. Guam is examining means to relieve pressures on the owners of agricultural lands for subdivision of their properties. Limitations on non-agricultural uses because of the district standards will contribute to this end.

Other direct approaches, such as favorable taxing provisions, could be examined using Section 306 funds.

As has been addressed elsewhere, any strengthening of law or regulation or administration of laws and regulations in such a way as to limit the discretion of an individual owner over the use of his land that goes beyond the limits of existing zoning may be considered an adverse impact. Policies that protect farmland from development pressures, to the advantages of the individual farmer and the general public, may also limit the investment or speculative value of a parcel of land.

The development of agriculture should be done in recognition of the effects these activities can have on coastal waters or aquifer recharge areas. Overgrazing, improper forestry and farming practices can result in high levels of non-point pollution, erosion, and downstream siltation. In addition, habitat alteration for agricultural activities can result in deleterious impacts on endangered species of plants and animals.

PART FIVE: THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AREA

PART FIVE: THE RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AREA

As noted elsewhere in this document, the Guam Coastal Management Program is closely related to the Comprehensive Development Plan for the Territory that was published in September, 1978. Both the GCMP and the CDP were developed pursuant to Guam's comprehensive planning legislation, Public Law 12-200. Because the GCMP has defined an island-wide boundary, and the land use districting system and guidelines developed pursuant to P.L. 12-200 are the principal basis of each effort, the GCMP and CDP are complementary. In addition, the Community Design Plans, one for each of the 13 defined "communities" (geographically defined) and part of the Comprehensive Development Plan, provide specific guidance to the application of the land use districting system in the identified local areas.

One essential difference between the two derives from the fact that the comprehensive planning enabling legislation does not specify the legal effect of the policies of the Comprehensive Plan on planning and resource management in Guam, even once the Plan is adopted by the legislature. The coastal program, on the other hand, must have clearly-defined authorities as a basis for implementation before Federal approval may be granted. To this end, Executive Order 78-37 was issued by the Governor of Guam in November, 1978, directing all Territorial agencies to implement the appended policies (the GCMP policies) within the scope of their authorities. This Executive Order supplements Executive Order 78-23 that directs the Territorial Planning Commission (TPC) to implement the land use districting system that is the core of both the GCMP and CDP structure. These authorities are discussed fully in Part II, Chapter VI of this document.

One further distinction between the GCMP and the CDP is in the breadth of the applicable authorities and standards. While the land use policies generated by the Bureau of Planning for both the Plan and the coastal program provide a basis for decision-making in Guam, the actual coastal program authorities are broader in scope, including as they do the zoning and subdivision laws, the wetland and floodplain executive orders, the Seashore Protection Act and Territorial Beach Areas Act, and other authorities cited in the Program and included in the authorities appendix to the GCMP.

Certain Federally-required or supported resource planning and management programs have also been closely coordinated with the GCMP during its development. Particularly noteworthy is the fact that the land use plan, prepared as one element of the Comprehensive Development Plan in association with the development of the GCMP, was adopted by the Federal Department of Housing and Urban Development as meeting the requirements

of the Section 701 program, and Guam was the first state or territory to attain such approval. Similarly, the land use discussion in EPA/GEPA's Section 208 Water Quality Management Plan uses the GCMP policies and organization verbatim. In addition, the Governor's Executive Order on Flood Hazard Areas (E.O. 78-20) directs the TPC to "promulgate such rules and regulations as are necessary to meet the requirements of the National Flood Insurance Program" and to designate floodplains as areas of particular concern under the GCMP.

PART SIX: ALTERNATIVES TO THE PROPOSED ACTION

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The alternatives to approving the Guam Coastal Management Program are to delay or deny approval. These alternatives would be appropriate if the program is deficient in meeting one or more of the requirements of the Coastal Zone Management Act. Section 305(d) of the Act permits preliminary approval of the program if the program meets the requirements of Section 305 of the Act, but is deficient in meeting one or more of the requirements of Section 306. Preliminary approval allows additional funding for implementation of the approvable parts of the program but not Federal consistency, while unapprovable parts are remedied. It should be noted that Congressional authorization of funding under Section 305(d) expires on September 30, 1979, so that preliminary approval under Section 305(d) would, as a practical matter, support further program development only for a very limited time.

The Assistant Administrator has made a preliminary determination that the GCMP is not deficient in any of the requirements necessary for program approval. In response to the circulation of the review draft, a few concerns were raised concerning certain aspects of the Program, although the majority of the comments commended the thoroughness of the Program. If any of the questions raised reflected significant deficiencies of the GCMP pursuant to the requirements of the CZMA, and if these potential problems were not remedied, the Assistant Administrator would be required to delay or deny approval. The Assistant Administrator is satisfied that significant deficiencies under the CZMA do not exist in the Guam Coastal Management Program, but wishes to elicit public review and comment to assure that his preliminary determination is correct.

The following discussion presents certain questions raised about the Program that, if substantial and unresolved, could be the basis for delaying or denying approval of the program. The impacts of not approving the program are: the loss of Federal funds necessary to implement the program, the inability to assure continued consideration of the national interests in siting facilities necessary to meet more than local needs, the inability to apply Federal consistency, and the lack of eligibility for certain other Federal funds. These points are fully discussed in Part Four.

The Assistant Administrator could delay or deny approval of the Guam Coastal Management Program:

1. <u>If the Program Boundary is Inadequate</u>

While most reviewers supported an island-wide boundary for the GCMP, certain respondents questioned the reasonableness of such a

comprehensive designation. As Part Two, Chapter IV of this document explains in considerable detail, activities occurring "inland" on Guam (never more than five miles from the sea) can significantly affect coastal waters in most parts of the island because of a range of topographic, geologic and other physical factors. While there are a few locations that might reasonably be excluded by a "likely-significant-effect" test, these areas would appear as isolated spots in an otherwise comprehensive management approach. Such an approach would complicate management greatly, both in its administration and in the public's understanding of the Program. The island-wide boundary, therefore, has been found to be adequate and reasonable.

2. If Federal Lands Are Not Specifically Excluded from the Coastal Zone

Federal reviewers of the preview draft, in certain cases, asked for greater documentation of Federal land holdings in Guam and clearer explanation of their excluded status. The presentation in the document has been expanded, and excluded Federal lands have been described in a map and a table. Excluded submerged lands off Guam are mapped as well. References are made in the document to the interests of GovGuam in access to and use of certain Federal lands (for example, for agriculture or recreation). Such references, however, make no pretensions of regulatory authority over the excluded lands, but only encourage discussion, negotiation and cooperative agreements concerning such access. This approach is an entirely appropriate expression of management concerns in a coastal program document.

3. If the Program Authorities Are Not Sufficiently Comprehensive, Specific or Enforceable

One reviewer of the preview draft of the GCMP suggested that Guam needs a comprehensive coastal act for Program adequacy. Such a single-authority approach is not required by the Federal CZMA or regulations (15 CFR 923). The Territory has established policies for the GCMP that are applicable to all uses that might affect coastal resources. The several existing statutory authorities related to coastal resources that are a part of the GCMP authority-base must be implemented in conformance with these Program policies. This network of authorities is described in detail in Part II, Chapter VI of this document.

Two reviewers of the preview draft questioned the specificity of the Program policies. In responding to this concern, it is important to recognize that, while the Program policies guide activities of coastal significance, they are able to do so through the application

of the Program authorities to those uses. Guam has the ability, through its zoning and subdivision laws, beach access statutes and seashore protection law, to carry out the policies of the Program and apply those policies to specific activities. These authorities provide further direction and specificity to the Program policies in two ways. First, the land use districting system and maps make this aspect of Program authorities geographically specific. The other authorities of the GCMP include further substantive standards that, when applied in the context of the Program policies, the combination of the GCMP policies and authorities provide the Program its considerable specificity.

Finally, the Program acknowledges that the consistent enforcement of existing laws has been a major management problem historically in Guam. The Program policies address this need, however, the document describes how this weakness in resource management will be remedied through improved coordination, funding of staff positions in GovGuam regulatory agencies as well as increased awareness of coastal resources values. There is no question that the Program as described is enforceable. Federal support to the GCMP will greatly augment GovGuam's ability to implement the authorities that are the basis of the Program.

PART SEVEN: PROBABLE ADVERSE IMPACTS THAT CANNOT BE AVOIDED

PART SEVEN: PROBABLE ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

The focus of the Guam Coastal Managerment Program has been the accommodation of essential economic growth and development while maintaining and enhancing the quality of the living environment. The Program has been designed to be environmentally beneficial; environmental impacts that are at once adverse and unavoidable are few.

The GCMP recognizes the need for the siting of facilities for defense, energy, commerce and other activities that may have significant adverse environmental impacts. The Program policies and authorities are intended to strictly limit the impacts of such facilities, both through the enforcement of environmentally sensitive standards of development as well as by isolating such facilities, whenever possible, from residential areas and fragile or hazardous natural areas. Efforts to aggregate such heavy commercial or industrial activities, on the other hand, may aggravate environmental deficiencies in such areas. It is important to note, however, that under the applicable Territorial and Federal laws, the impacts of such major facilities would be carefully reviewed prior to siting, and appropriate mitigative measures required.

In certain cases, Program policies and authorities will be unable to eliminate one adverse impact without generating another. An example of such a situation would occur in the siting of a highway. For purposes of shoreline access, aesthetic consierations, non-point source pollution and other reasons, it would be desirable to locate highways in away from the shoreline. Inland location, particularly in the steep hills of southern Guam, however, may cause serious and possibly unavoidable erosion that will not only muddy streams, affecting fisheries, but also may flood reef flats with sediments that endanger the life of the reef. Inland habitat dissection is also a cost of constructing roads in inalnd locations. In such circumstances, careful siting in some inland, some shoreline locations may be the best answer. While the Program is unable, in such a case, to eliminate adverse impacts, it provides guidance and a forum by which to minimize the unavoidable impacts.

PART EIGHT: RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

PART EIGHT: RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The Program is not designed to induce short-term uses of the environment at the expense of long-term productivity. Its purpose is to enhance and maintain the long-term productivity of the coastal environment while meeting the current and future needs of the residents of Guam and the Nation.

In certain instances the approval of the proposed Program will restrict local short-term uses of the environment. It will also provide a long-term assurance that the natural resources and benefits of Guam will be available for future use and enjoyment.

Without the implementation of the Program, intense short-term uses and gains, such as provided by piecemeal residential, industrial and commercial development might be realized. These gains would accrue to a certain segment of the private sector. For the most part, this would result in long-term restrictions on coastal resource use and benefit because of degradation to the environment and loss of basic coastal resources. Without coastal resource management, and a rational land and water use plan, the traditional conflict between coastal resources users will continue.

The Program provides a sound basis for decision-making, protects the important natural systems and directs uses to areas with natural capabilities and infrastructure capabilties to absorb growth. As such, the Program will contribute to the long-term maintenance of the environment.

PART NINE: IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

PART NINE: IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The proposed action is the approval by the Assistant Administrator of the Guam Coastal Management Program. Unlike the authorization for a physical change in a natural resource, such as the filling of a wetland or mining of a mineral, the approval does not generate any resource use or development activity that irreversibly affects man's environment. The Program is a collection of policies, priorities and processes for the prudent management of resources and carries with it Federal financial support of the GCMP and the Territory's commitment to implement the Program as approved.

Federal financial support of the Program could be viewed as an irretrievable commitment of resources under any reasonably likely circumstances. Under extreme circumstances, such as illegal use of the Program funds, expenditures for disallowed costs could conceivably be retrieved. The Federal expenditure is most resonably treated as irretrievable.

The action, and the associated commitments are not irreversible, however. Participation in the Federal coastal zone management program is voluntary for states and territories. Guam could decide at some future date to terminate its participation in the Federal Program, thereby forfeiting the benefits of Federal support and Federal consistency. Conversely, should some action be taken that significantly weakens the authority base of the Program, the Federal approval could be withdrawn. Once again, however, the Territory's long efforts to develop a coastal program that meets Federal standards indicates a concern for the resources and an intention to carry out the Program as described. Federal approval, while not absolutely irreversible, reflects two firm commitments to the implementation of the Guam Coastal Management Program.

PART TEN: CONSULTATION AND COORDINATION

PART TEN: CONSULTATION AND COORDINATION

The coordination and consultation involved in developing the Guam Coastal Management Program has been extensive. As noted in Part Two, Chapter X, consultation with Territorial and Federal agencies has been an active and ongoing aspect of Program development. A preview draft of the GCMP was circulated to the general public and government agencies for comment in January, 1978, and the concerns raised are addressed in the present draft. Certain Program components, particularly the policies developed for the Land Use and Community Design elements of the Comprehensive Development Plan, were subject to extensive consultation, as documented elsewhere in this volume. Furthermore, management problems and implementation strategies for the GCMP were developed in close coordination with other GovGuam entities, especially the Department of Land Management. This close coordination with other GovGuam agencies and with the Federal establishment is a keystone to the effective implementation of the Program, and will continue after Program approval.

ATTACHMENT I

RESPONSE TO COMMENTS RECEIVED ON THE GUAM COASTAL MANAGEMENT PROGRAM AND DRAFT ENVIRONMENTAL IMPACT STATEMENT

Response to Comments Received on Guam Coastal Management Program Draft Environmental Impact Statement

The following section summarizes the written comments received on the draft combined document and provides OCZM's response to these comments. Generally, the response to the comments is provided in one or a combination of forms:

1) expansion, clarification, or revision of the Territory of Guam Coastal Management Program by the Bureau of Planning Coastal management staff;

2) expansion, clarification, or revision of the EIS by OCZM; or

3) brief responses by OCZM to detailed comments received from each reviewer.

The Territorial and Federal responses to these comments have been coordinated between the BP and OCZM. Abbreviations used include: P/EIS - the combined Guam Coastal program document and Federal environmental impact statement; P/DEIS - the draft version of the P/EIS; P/FEIS - the final version of the P/EIS; GovGuam - the Government of the Territory of Guam; and, BP - the GovGuam Bureau of Planning.

Federal Energy Regulatory Commission
(Carl N. Shuster, Jr., 5/4/79)

Comment: The key offshore islands should be identified on the coastal boundary maps and their role relating to GCMP should be discussed in the document.

Response: The only islands offshore from Guam are mapped in each of the maps in the document based on the "uniform mapping system". With the exception of Cocos Island, off the south coast of Guam, which is just over one mile long, the offshore islands of Guam are generally only a few acres or less in size. These islands are identified as conservation districts on the land-use maps and are designated conservation areas in the proposed constitution of Guam.

Comment: Complete source information should be included in the document on references addressing energy facility demands and probable impacts. Copies are requested.

Response: The text has been revised as suggested. GovGuam has been notified of FERC's interest in these reports.

Comment: Existing and future power plants discussed in the GCMP/DEIS should be mapped on Map Nos. 8 and 9.

Response: These facilities are mapped on the cited maps in the P/DEIS, but were not suitably labelled for FERC's purposes. On Map No. 8, the electric generating stations were mapped as heavy industrial uses. The legend has been revised in the P/FEIS to differentiate generating stations from other heavy industrial uses. Map No. 9 labels the power production site as such. The Cabras Island and Piti facilities are at the mapped site. Map No. 9, therefore, has not been revised.

Environmental Protection Agency, Region IX (EPA)
(Deanna M. Wieman, 4/27/79)

Comment: EPA's comments on the Guam Coastal Management Program have been classified LO-1 (lack of objections to the proposed action; adequate evaluation of the impacts of the proposed action and alternatives thereto).

Response: Comment accepted.

Comment: The FEIS should discuss in more detail the principal source designation (§1424(e), Safe Drinking Water Act) of the Northern Groundwater System (43 FR 81, 4/26/78).

Response: The text has been revised to reflect the cited principal source designation as well as local (Territorial government) authorities available to protect the northern aquifer system. These authorities include water quality standards, designation of the area as a conservation district in which development is restricted and provisions in the Community Design Plans of Guam's Comprehensive Plan limiting inappropriate development.

Department of the Interior/General Comments (DOI)
(Larry E. Merierotto, 5/10/79)

Comment: We are impressed with the improvements that have been made in the GCMP since publication of the January 1978 draft. The program appears to be well structured. We are particularly pleased that the coastal management program is to be implemented as an integral element of Guam's comprehensive land use program and that the entire island has been designated as coastal zone.

Response: Comment accepted.

Comment: In view of the unique natural environment of Guam and the development pressures which necessarily occur in such a small space, we believe that it is especially important to recognize the "national interest" in Guam's environment and natural resources, and to articulate strong policies for their protection.

Response: We agree that the size and isolation of Guam from the remainder of the country and alternative sources of goods, resources and open space make especially important a program of thoughtful resources management. We disagree, however, that these pressures supply some particular national interest to such management. On the contrary, while the importance to the Territory's interests of reasoned, efficient resource management is demonstrable, the benefits of such management to the several States or the Nation as a whole are less easily demonstrated for Guam than for one of the contiguous States with its interstate relationships, or even for Hawaii, which is more closely tied in travel and trade to the mainland than Guam.

Comment: We believe that the Program could be improved by increased specificity in the areas of flood hazards, APC designation and location, and uses subject to management.

Response: OCZM finds these topics to be treated adequately. A more detailed response is provided to DOI's specific comments.

Comment: The program's standing would clearly be enhanced by legislative action to adopt the Comprehensive Development Plan and/or its component parts.

Response: This comment suggests a misunderstanding of the relationship between the coastal program and the Comprehensive Development Plan. We do not believe the Program's standing "would clearly be enhanced" by the legislative action suggested. OCZM's position in this regard is discussed in detail in responses to DOI's specific comments.

Comment: Another concern involves Federal consistency procedures. Although efforts have been made to consult with Federal agencies during program development and the program policies provide guidelines for Federal action, no procedures have been established for Federal consistency review. We do not believe that the GCMP should be approved until these deficiencies have been remedied.

Response: Procedures for consistency review are provided in Part Two, Chapter IX of the P/FEIS.

Department of the Interior/Specific Comments (DOI)

Comment: Of particular importance in Guam's regulatory scheme are Executive Orders. Since this control mechanism has not yet been judicially tested, any future litigation involving the authority of Guam's Governor to regulate through Executive Order should be followed closely.

Response: As discussed in Part Two, Chapter VI of the P/DEIS, the authority of the Governor of Guam to issue executive orders has been reviewed carefully and determined to have a strong legal basis. Possibly as a hold-over from the near-absolute authority of the earlier Naval governors of the island, the Governor's authority under the Organic Act appears to be stronger than that of most states. In light of this fact, and the consistent, unchallenged use of the authority for similar executive regulation, OCZM is confident that the authority is defensible in the face of legal challenge and therefore an adequate basis for the program matter to which it is applied.

DOI/Specific Comments (cont'd.)

Comment: The Comprehensive Development Plan (CDP) appears to be a pivotal document both in terms of Guam's growth in general and in the administration of the GCMP in particular. What measures will be employed to fill any "gaps" that may exist in the GCMP, lacking Legislative approval of the CDP?

Response: We agree that the CDP is an important planning document for Guam's future growth. The magnitude of the effort and level of detail of supporting data and mapping of information is a significant accomplishment. We disagree, however, that the Plan is "pivotal ... in the administration of the GCMP." As the P/DEIS explains (Part Two, Chapter VI, Section A.1), the GCMP direction and authority base reflect a recognition by the Guam Bureau of Planning and OCZM that the legal effect of the CDP policies is unclear even if the Plan is adopted by the Legislature. This determination provided the impetus for the Bureau of Planning to seek an executive order that would assure that the GCMP policies were enforceable on all GovGuam agency activities, including permitting and spending. Legislative approval of the CDP is therefore irrelevant to the enforceability or Federal approvability of the GCMP as submitted to OCZM.

Comment: In a similar vein, the possible consequences of a failure to enact Bill 923 [Bill 68 in the current legislative session], which would enlarge the landward portion of the Seashore Reserve, should be delineated.

Response: As noted in the discussion of alternatives in Part Two, Chapter II of the P/DEIS, a "shoreline-strip" boundary was rejected early in the development in the Guam program because (1) the advantages to an island-wide approach were evident in integrating previously-mandated Guam land-use "planning require ments under P.L. 12-200 with the coastal management objectives and (2) the reduction of the Seashore Reserve to ten meters inland amid reconstruction efforts following Typhoon Pamela left the Reserve too small to meet the requirements of Federal regulations concerning the ability to control uses affecting coastal waters. With the development of island-wide resource management authority under the coastal program, the significance of the Seashore Reserve to the GCMP was reduced to that of an APC of added protection along the shoreline. Expansion of the Seashore Reserve as proposed in Bill 68 may enhance the management control over that area, but the Program as submitted by the Guam Bureau of Planning is in no way dependent on such legislative action for Program adequacy.

Comment: The document indicates that Guam agencies have experienced past difficulties with administration of natural resource management programs. Though the document speaks of coordination and training of natural resource staff, no policy of this program speaks specifically to enforcement. Such a policy should be promulgated.

Response: The GCMP recognizes that consistent enforcement has been a problem in resource management in the past. For that reason, the program establishes a set of uniform enforceable policies, and plans to train or employ staff to carry out the requirements of the program. In addition, the program implementation grant under CZMA Section 306 after approval of the GCMP will fund additional enforcement and resource management positions. Furthermore, one of the major efforts of the GCMP during program development was the development of a detailed and reliable data base, much of which was transferred to detailed maps available to the public and to public officials for permit decisions. Each of these accomplishments or objectives will improve the capability of the Territorial government to enforce the GCMP. OCZM's periodic review of the Program will help to assure that the CMP is being enforced as proposed in the program document and in the work program for its implementation grant.

Comment: Historic and archeological resources should be addressed separately from natural resources, and should be considered a separate heading under "Resource Policies." Provisions should be made for (1) inventory of historic and archeological resources in areas to be affected by permitted actions, (2) evaluation of the significance of these resources, (3) assessment of adverse effects on significant resources, and (4) protection of the resources by mitigation of adverse effects on them.

Response: The authorities of the Territory to protect historical objects and sites, archeological resources, and underwater historic property and sites (GCG §13985) are included in the

DOI/Specific Comments (cont'd.)

"Authorities" appendix in Volume 2 of the P/DEIS. Beyond expressing the concern of the Territorial government over such resources, Chapter XIII of the Guam Code prohibits Government actions that would adversely affect such sites or resources; provides for condemnation or acquisition to protect the resources; requires a permit for any activity that might affect such a designated site; and requires any private landowner or lessee who "discovers remains or objects which may be of historic significance" to report the location of such remains or objects to the Department of Parks and Recreation without disturbing the find. These requirements provide considerable protection to historic properties and objects. Through an ongoing program, the Department of Parks and Recreation (DPR) has been surveying and designating for protection resources of Guam that are of historic or archeological importance. Appendix 3 (P/DEIS, Volume 2) lists sites that are included or nominated for inclusion on the National Register of Historic Places and the Guam Register of Historic Places. The "Guam Historic Preservation Plan", published by the Guam DPR in January 1976, provides an historical background of Guam, an inventory of historical and archeological resources, and a preservation plan. Inventory of these resources continues, and their protection is assured under the laws cited above.

Comment: We suggest, as a problem and issue statement for the policy recommended above, the following language: "To date, Guam's comprehensive program of historic preservation has made little progress in inventorying and evaluating her historic and archeological resources. As such, many unknown resources are being altered or destroyed in Guam's rapid social and economic development."

Response: In light of our response to the preceding comment, this issue statement is an incorrect characterization of Guam's historic preservation efforts. On an island of 212 square miles, some fifty sites are presently on the National Register, and twice that number are on the Guam Register.

Comment: We suggest the following policy on historic resources: "Development in areas in which sites of historic and archeological significance are found shall be regulated to protect these resources."

Response: As noted above, these resources are protected under existing law. That law is part of the GCMP authorities and, as such, will extend the requirements to Federal activities and permit and assistance programs through consistency requirements. A separate policy is not necessary.

Comment: Program activities under the GCMP should include: (1) support of efforts to identify Guam's historic and archeological resources and nomination of such resources to the Federal and local lists, (2) review and comment to appropriate authorities of all proposed development affecting such resources, and (3) encouragement and support, through financial and technical assistance, of activities and programs designed to restore or protect historic sites.

Response: The suggested types of activities will be included in the GCMP. The Program intends to support a park manager position for the new Territorial Seashore Park that includes much of southern Guam. The park area includes many pre-contact Chamorro archeological sites, as well as post-contact settlements and historic sites from World War II. Among the manager's principal responsibilities will be the protection of these sites. Existing Guam law, furthermore, requires developers to allocate a certain percentage of their development costs to the identification and protection of historic objects or sites. With such resources protected under the GCMP, the Bureau of Planning could act, in its lead agency role to assure conformance with the program, to recommend such a cost assessment to the Territorial Planning Commission when it is reviewing permit applications. We believe historic and archeological resources are well protected under the GCMP.

Comment: Some of the policies and activities in Part Two, Chapter III of the GCMP are vague or permissive. Guam's limited size and resources require stringent control measures in keeping with the narrower "margin of error." We suggest the following changes to Executive Order 78-37 to assure tighter control.

Response: OCZM will respond to the specific suggestions that follow.

DOI/Specific Comments (cont'd.)

Comment: Rather than "encouraging" GovGuam and private interests to locate major commercial and industrial activities in areas with adequate public services and minimal impact on resources, such locations should be "required" (Activity 'c' under major facilities policy).

Response: Through the land-use district regulations, zoning, APC regulations and other laws and regulations of the program, such consolidation is, in fact, required under Guam law unless no practicable alternative exists. Text has been revised.

Comment: Reword the "Hazardous Areas" policy to prohibit, rather than limit, development in hazardous areas unless proof can be provided that the proposed action does not pose "any substantial risk," rather than "unreasonable risk", as the policy presently reads. We find the policy adequate as written.

Response: The "Hazardous Areas" policy of the GCMP takes into account 1) that hazardous areas exist; 2) that development in such areas should be limited to the extent that such development poses unreasonable risks; 3) that, while exclusion of development from such sites would preclude risks, construction and design measures may sufficiently reduce those risks if there are no alternative locations, and 4) that on an island the size of Guam, avoidance of all sites with any hazards for any reason is impracticable. The policy has not been revised.

Comment: The GCMP should coordinate with the Department of Land Management to rezone hazardous areas to prohibit certain uses, rather than "limit" uses, as the activity now reads.

Response: Limitation of uses may include prohibition if the risks are great enough. By developing criteria specific to particular hazards, such as the flood hazard regulations, appropriate safeguards can be applied to the use of areas in which hazards may occur without unreasonably restricting, through policies based on blanket prohibition, the use of the limited land area available.

Comment: In the discussion of the "Housing" policy, reference is made to "review" of subdivision design by the TPC and SDRC to assure efficient design. Review of plans is insufficient if project redesign or relocation are not required if necessary.

Response: The text has been revised to reflect the comment.

Comment: The policy on water quality should require "prohibition" rather than "regulation" of uses that pose a pollution threat to Guam's waters.

Response: "Regulation" is a broad term that includes prohibition of a use, if necessary, but also allows for design, construction or process changes that sufficiently reduce or eliminate any potential for harm. The "regulation" referred to in this standard involves the land use districting system, APC regulations, the Seashore Protection Act, the "principal source" designation of the Northern Acquifer under the Federal Safe Drinking Water Act, as well as Territorial and Federal water quality standards. We believe that these authorities can cope with a threat to water quality.

Comment: The "Fragile Areas" discussion should include criteria whereby a particular location would be designated a "fragile area". If "fragile areas" was defined generically for terrestrial and aquatic habitats, in addition to providing a comprehensive list of areas, the degree of program predictability would be improved.

Response: Fragile areas are not defined generically because the categories of fragile areas under consideration are listed in the policy itself, and each fragile area type is described in some detail in the "proposed APC" discussion. Each of the fragile area types is mapped on 1:400 scale maps (72 maps of each set are required to cover the entire island). A comprehensive list of the areas, many of which are unnamed, or maps that show these areas, are of no practical value in reviewing the GCMP. As areas that are only proposed for protection, comment would be sought on the areas under consideration before designation and promulgation of regulations. Circulation of the P/DEIS, for example, prompted questions about the technical basis for the seismic and slope APC's. The various Interior bureaus will have an opportunity to comment on the designation of additional APC's, including fragile areas, as the program is implemented.

DOI/Specific Comments (cont'd.)

Comment: The policy on living marine resources speaks of protecting such resources by protecting them from overharvesting. Protection of fish and wildlife habitat is of equal importance.

Response: The GCMP recognizes this fact, and provides such protection through the various other policies and authorities of the program.

Comment: In light of the language of Congressional findings in the CZMA concerning the need for fish and wildlife conservation, we recommend listing maintenance and restoration of balanced populations of fish, shellfish and wildlife among the Program's objectives.

Response: The objectives of the GCMP are broadly defined goals regarding improved resource management, administration and enforcement on Guam. The Program's policies speak more directly to particular resource areas and needs. Living resources and their habitats are addressed adequately in those policies to be responsive to the spirit of Sections 302 and 303 of the CZMA.

Comment: The section dealing with Flood Hazard Areas (p. 117, P/DEIS) is adequate as it relates to floods caused by river/stream overflow during storms. However, we believe that the discussion should be expanded to flood hazards due to storm waves and tsunamis. In Guam, storms can have devastating effects on beaches through pileup of water on the reefflats, permitting direct wave attack on the shore and resulting in flooding of adjacent areas. During later stages of the storm, a great amount of sand is transported inland from the beaches which are often severely eroded by the storm. Another kind of storm effect not discussed involves very heavy rainfall that can occur during cloudbursts as well as wet typhoons and may cause local flooding almost anywhere, including uplands. A detailed map (or maps) should be included which clearly delineates floodprone areas, areas subject to oceanic storm waves, and areas which may suffer tsunami inundation.

Response: We take issue with several technical aspects of the suggested storm effects on Guam, including severe beach erosion and devasting effects of wave attack. Severe typhoon conditions may bring on certain of these effects but to characterize these as simply "storm" conditions is to exaggerate the problem. Local flooding in areas of poor drainages is a problem, however, and typhoons do occur that cause shoreline damage. The Bureau of Planning has mapped these areas (1:400 scale) including shoreline areas to six feet above mean high water; sinkholes and low-lying basins; and recent flood-control projects, and is presently attempting to have these maps accepted by the Federal Emergency Management Agency for purposes of the National Flood Insurance Program. As for tsunamis, the risk on Guam of tsunami is considered small by experts in Guam because of ocean-bottom characteristics around the Island. OCZM will pursue this issue with technical components of NOAA, however, in support of the Territory's efforts to revise its flood hazard maps.

Comment: Detailed wetland maps are also needed, as well as more definitive maps of all APC categories.

Response: Each designated and proposed APC category has been mapped at 1:400 scale. These maps are far too large in size and volume to accompany the P/EIS, and are on file in the Bureau of Planning offices.

Comment: Some APC categories are not shown on Figure 4, which indicates priorities of use. Specifically, wildlife refuges, freshwater resources and shoreline development areas are omitted.

Response: The cited categories of proposed APC's are indeed omitted from Figure 4. These are areas for which authorities exist in law to protect these areas without APC regulations. Wildlife refuges can be protected by a conservation district designation and hunting regulations; freshwater resources by water quality standards and the EPA principal source acquifer designation; and shoreline development areas by the Seashore Protection Act. Future drafts of the figure, possibly following designation of additional APC's, will be revised to include these categories.

DOI/Specific Comments (cont'd.)

Comment: The commercial port discussion should also be accompanied by detailed maps. Steps should be taken to insure protection of adequate lands for port use in light of the particular importance of the port to an island Territory.

Response: The port has been mapped at 1:400 scale; maps are on file at the Bureau of Planning. A port plan is under development. First year Section 306 monies under the coastal program have been targetted for the completion of the plan. Port officials are working closely with the coastal program staff on their respective and mutual concerns.

Comment: Shoreline development areas may serve a variety of purposes which would be governed by the water-dependency policy. We offer definitions of water-dependent, water-related and water-oriented uses in order to more clearly delineate the need for waterfront siting of a particular facility.

Response: The text has been adopted in full.

Comment: The discussion of "seismic fault zones" in the proposed APC discussion does not reflect a thorough understanding of earthquake hazards. Damage is unlikely to be associated with the geologically old, well-healed faults as mapped, but rather from landslides associated with seismic shock waves. The mapped faults may be geologically important for construction purposes, however, as planes of weakness within soils and rocks and as materials with different foundation characteristics are juxtaposed.

Response: The source for the challenged material was Military Geology of Guam, considered the definitive text on the local geology. In light of differences of opinion on this issue, however, we suggest more detailed examination of the significance of the seismic fault zones among concerned and informed sources before any action is taken on designation of an APC for these sites.

Comment: We believe that the Seashore Reserve should be included as a specific APC.

Response: OCZM sees no specific value in the designation as an APC of an area that is already addressed by a Territorial statute with standards that strictly protect the reserve, particularly since that law is among the program authorities.

Comment: We support the expansion of Cabras Island generating plants to meet Guam's future electrical needs in order to have minimal environmental effect.

Response: Comment accepted.

Comment: In order to make long-range energy planning feasible, the status of existing GovGuam leases of military lands in Apra Harbor must be specified. Included should be 1) time remaining on existing leases; 2) possibility of renewal; 3) amount of land in existing leases and adequacy for future plant expansion and 4) the possible need for leasing additional lands and whether such additional leases could be effected.

Response: A port master plan is under development for Apra Harbor, including Cabras Island. The Guam Port Authority, the Bureau of Planning and Department of Commerce, as well as private interests represented by the Guam Growth Council, are assessing port capacity and expansion needs, including that for energy facilities. The conclusions of the study will be discussed with the appropriate Federal representatives in order to negotiate renewal of the present long-term leases and GovGuam acquisition of any surplus Federal land that may be essential to port expansion.

Comment: The current and future status of the Tanguisson power plant should be clarified.

Response: The Tanguisson Power Plant is currently in operation, with a projected economic life of about ten more years, according to Bureau of Planning staff. Discussion has occurred concerning the repowering of the facility to expand its capacity and extend its economic life. No definite plans to do so have been adopted to date.

DOI/Specific Comments (cont'd.)

Comment: The proposed Guam Oil Refining Corporation (GORCO) expansion should be discussed since it could affect an established APC.

Response: The possible expansion of the GORCO facility is mentioned briefly. Since the expansion is not certain, and any additional land requirements are uncertain as well, detailed discussion would be mere conjecture. What is recognized, however, is that the decision regarding expansion that could affect a protected wetland is a classic example of the need for trade-offs in resources management and discretion in planning. Expansion of the GORCO facility that would affect adjacent wetlands would be subject to program policies, particularly those on urban development, major facility siting, and fragile areas. Yet in a case such as the one proposed, the objectives of the cited policies may compute. Expansion of the facility could involve serious questions about Guam's economy and national defense, since refined products can serve military needs. Expansion at the site would consolidate the impacts and therefore may be desirable. Continued protection of the wetland by requiring additional facilities to locate elsewhere may mean significantly greater environmental,impacts, as well as the costs of providing duplicative services or facilities. Yet the wetland was protected in the first place because of its environmental significance and cannot be abandoned lightly.

Comment: The discussion of Federal consistency is misleading in suggesting that the process is a simple one. The text suffers from lack of detail.

Response: The text has been revised to include an expanded consistency discussion.

Comment: We consider it unacceptable that consistency guidelines have not been provided. Consistency procedures, including lists of activities subject to consistency review, must be made available prior to approval of the GCMP.

Response: The list of licenses and permits subject to review was included in the P/DEIS as an errata sheet to follow page 162. The revised discussion in Chapter IX of the P/FEIS meets the other requirements of Federal regulations (15 CFR 923.53).

Comment: The discussion of future issues should include a discussion of the conversion of proposed APC's to designated APC's in the coming years. A discussion of a possible expansion of the list of APC categories should be included.

Response: Proposed ACP's will be studied for their desirability and value in protecting or using the designated resource. The process will be an open one, and the comments of the Department of the Interior are welcome. If designation is deemed appropriate, a recommendation will be made to the Governor to do so through Executive Order. The TPC would then consider regulations to accomplish the intent of the designation, and the proposed regulations would be available for review. Interior's suggestions for expansion of the list of categories will be accepted by the Bureau of Planning.

Comment: It is essential that Guam's groundwater be protected from pollution. Destruction of the resource from pollution would not be mitigated through desalinization plant construction, since such plants are expensive, high-energy consumptive and often environmentally unsound.

Response: Comment accepted. Text has been revised in Chapter XI to discuss groundwater resource protection.

Comment: The GCMP should consider a water quality monitoring effort for both ground and surface water.

Response: Such a monitoring effort is carried on in Guam by the Guam Environmental Protection Agency.

Comment: Although the boundaries of the Seashore Reserve are included on page 100 of the P/DEIS, it would reduce confusion if they were also mentioned in the policy sections of the document.

Response: The text has been revised.

DOI/Specific Comments (cont'd.)

Comment: The text detailing the submerged lands that were transferred to the Territory is very confusing, especially concerning mineral rights.

Response: The text has been revised.

Comment: Part Four does not contain a reference list or bibliography to substantiate any source of information from which analyses of probable impacts were made. There is no indication as to whether the background materials listed in Appendix 7 were used as the basis for preparing the DEIS.

Response: Environmental analyses of the impacts of federal approval of coastal management programs in other states and territories were used as a basis of generic coastal program approval and funding impacts on government processes, costs and resources. Specific impacts of the Guam Coastal Management Program were based on the background materials prepared during the program development phase and, in certain instances, the considered judgement of staff specialists.

U.S. Commander Naval Forces Marianas
(M.L. Duke, 5/7/79)

Comment: National defense or military facilities are not included in the list of major facilities. GCMP should recognize that siting of facilities for defense and national security purposes is of paramount importance and among highest priorities in management of Guam's coastal zone. Such recognition is required under 15 CFR §923.52(b) definition of "adequate consideration" and the national interest.

Response: Listing of major facilities in the P/DEIS, Part Two, Chapter V is not intended to exclude national defense or military facilities. The subject list includes national defense installations as one category of facilities in which a national interest was considered under terms of 15 CFR §923.52. While recognizing the importance of such facilities, priorities of uses are established under the local laws, rules and regulations which constitute the GCMP. To the extent that military or national defense facilities proposed for location on non-federal property are constructed and sited in accordance with these locally-established priorities, no conflict with GCMP arises. Where such facilities are proposed in locations where the proposed use is not otherwise permitted or of a low priority, the local (Territorial) authority reviewing such development shall recognize the national interest in siting of such facilities.

However, the fact that the facility is defense-related does not, in itself, require its siting in a location even if in conflict with Territorial land use laws or regulations. If after adequately considering the national interest in the siting of such a facility in that particular location, the proposed project is disapproved or conditioned to assure Program compliance, the applicant is entitled to pursue those conflict resolution mechanisms available to all developers as outlined in the GCMP.

Under the federal consistency regulations pursuant to the CZMA (15 CFR 930.33), all federal development projects within the coastal zone are considered to directly affect the coastal zone and must, therefore, be consistent to the maximum extent practicable with the approved management program. Non-compliance with these conditions can be permitted only 1) when the federal agency clearly demonstrates that compliance is prohibited based upon the requirements of existing law applicable to the federal agency's operations (15 CFR §930.32) or 2) upon a finding by the Secretary of Commerce that such inconsistency is permissible because a national defense or other national security interest would be significantly impaired if the activity were not permitted to go forward as proposed. If, in the opinion of the Secretary, based on information submitted by the Department of Defense, the impairment is not significant, the local program's finding that the project, as proposed, is not consistent to the maximum extent practicable with the GCMP, will be upheld and the project disapproved or conditioned, as appropriate, to assure compliance.

U.S. Commander Naval Forces Marianas (cont'd.)

Comment: GCMP does not indicate the sources relied upon for a description of the national interest in the planning for and siting of facilities.

Response: Sources from which the national interest in planning and siting of facilities was derived are referenced in the respective authorities or programs constituting the GCMP. The national interest in wetland and flood hazard area development, as expressed by the President through Executive Orders 11990 and 11988, is indicated in the Governor of Guam's Executive Orders 78-21 and 78-20 directing promulgation of local regulations consistent with the federal initiative. The national interest in ensuring high air and water quality, as reflected in federal legislation, is cited in the enabling legislation establishing the several regulatory programs administered by the Guam EPA. In certain cases, however, the basis for a national interest designation for facilities that is appropriate in the contiguous states is not applicable in the Territory. As an example, Guam's roads, port facilities, and electrical transmission systems serve no interstate functions and, therefore, are less arguably "national interest facilities." To the extent that these facilities are essential to support national defense facilities or activities on Guam, the Territory recognizes their national significance.

Comment: The chapter on federal consistency does not adequately explain federal consistency and should be rewritten.

Response: Text has been revised as suggested.

Comment: Any federal activities on Federal property need be consistent with the GCMP only if they have a "spillover" effect onto private property and such effect is significant.

Response: Because Guam's "coastal zone" includes all non-federal private and Government of Guam-owned property, any such federal activities directly affecting adjacent private or local government properties must be conducted in a manner consistent to the maximum extent practicable with the GCMP. The term "spillover" is only illustrative and not technically a standard for triggering the federal consistency mechanism as implied in the comment. Section 930.32 defines and explains the "maximum extent practicable" test.

Comment: Federal activities and development projects need only be "consistent to the maximum extent practicable" with the GCMP.

Response: The comment is correct. The "maximum extent practicable" test is a stringent one, however. As stated in 15 CFR 930.32(a): "When read together, [CZMA] section 307(c)(1) and (2) and 307(e) require Federal agencies, whenever legally permissible, to consider State management programs as supplemental requirements to be adhered to in addition to existing agency mandates."

Comment: A list of those Federal license and permit activities which will be subject to review for Federal consistency under GCMP is required before the program may be approved (15 CFR §923.53).

Response: Such a list was included as an addendum to the P/DEIS and is in the text of the P/FEIS.

Comment: Federal land exclusion is adequately explained in the text and excluded Federal land areas are shown on Map No. 1 and Map No. 2.

Response: Comment accepted.

Comment: Chapter VII should be revised to remove all references to federal property areas, implying through the map presentations that APC's on federal property are subject to the GCMP.

Response: Only wetlands and flood-hazard aras are currently designated as APC's. All other APC's referenced in Chapter VII are, as indicated on page 124 of the P/DEIS, potential APC's. Map No. 4 has been revised to indicate only those wetlands on non-federal property. The eleven other proposed

U.S. Commander Naval Forces Marianas (cont'd.)

APC's outlined in Figure 4 and presented on maps 5-16 are, as potential APC's, so designated under the terms of 15 CFR 923.23(a). These areas are "known to require additional or special management" but escape designation as current APC's because no such extraordinary management mechanisms or authorities have been formally established. Because it is possible that at the time of establishment of such authorities, some or all of these future APC's presently on excluded lands may be included within Guam's "coastal zone", the distinction at this time between those potential APC's currently on federal property and those that are not on federal property is not necessary. In mapping these potential APC's, it is the intent to accurately portray the resources felt by the GCMP to require additional management attention irrespective of their current ownership. The mapping of the proposed APC's does not indicate any change in the status of these areas regarding Federal or Territorial land and water use controls at the time at which such resources may be generically designated through executive order as APC's, they will be mapped, as have the wetlands and flood hazard areas, to indicate only those sites subject to direct GCMP control. The GCMP will continually recognize the status of Federal property in all guidance to other agencies and to the public.

Comment: Future use of federal property by the territory is contingent upon such property being declared surplus by the federal government, made available through joint land use agreements, or otherwise made available by the federal government.

Response: Comment accepted. Discussion under "Future Issues", Chapter XI, supplemented accordingly.

Department of Transportation, Region IX
(Norman H. Emerson, 5/10/79)

Comment: More visual aids would greatly assist the reader. A flow chart of the process for determining consistency with the GCMP is an example. This would be helpful in clarifying coordination channels for territorial and Federal agencies.

Response: The discussion of the Federal consistency process has been expanded in this document from that in the P/DEIS. This new text should clarify coordination channels as requested. Without more specific identification of places in the document that would benefit from "more visual aids", we are unable to respond directly to DOT's general request. The document as presented contains a considerable number of maps, tables and figures to enhance reader understanding.

Comment: The transportation portion should be presented in a more comprehensive manner, showing present and future use of highway, seaport and airport facilities. Population, visitor, industrial, fishing, and allied growth parameters could be similarly displayed.

Response: Information of the requested detail may be found in the Guam Comprehensive Development Plan and the specific subject plans — including those on highways, airports and ports — that have been developed or are under development (ports) by GovGuam. All facilities developed in the future to meet transportation needs on Guam must be in conformance with the policies and authorities of the GCMP.

Comment: Increased tourism should be discussed.

Response: Increased tourism is discussed explicitly in the GCMP in Part II, Chapter II. Concern about shorefront access, policies on shore area development, visual quality, recreation areas and public access, and identification of urban waterfront restoration as a major future issue interest in the growth of tourism.

Comment: Information is needed on Guam's financial resources and ability to implement and manage the program.

Response: Under the Omnibus Territories Act of 1977 (P.L. 95-134), the 20 percent local match of Federal funds required of other participating States has been waived for Guam. The Program, therefore, is 100 percent Federally funded. The application and work program submitted in request for funding under Section 306 of the Coastal Zone Management Act following approval must detail the need for and proposed use of the requested funds. Through its review, and any subsequent revisions to the application before awarding the grant, OCZM must determine that the use of Program funds carries out the Program described in the program document.

Department of Transportation (cont'd.)

Comment: The EIS should contain information why all lands in Guam are included rather than a limited designation such as the Hawaii plan.

Response: Alternative boundary designations are discussed in Part Two, Chapter II.C of the P/EIS.

Comment: In the listing of Federal licenses and permits subject to notification and review for consistency there appears to be an error in the identification of 33 USC 419 as applicable to hazardous substances and materials.

Response: The listing has been revised to reflect the proper citation (46 U.S.C. 170).

Comment: The anticipated costs and likely benefits of the proposal should be addressed.

Response: A qualitative discussion of the anticipated costs and benefits of approval and implementation of the GCMP is provided in the P/EIS, Part Four.

Department of the Army - Corps of Engineers
(Maximilian Imhoff, 5/4/79)

Comment: Overall, we find that the Program and DEIS are clearly and informatively written. We anticipate that the merging of Guam's land use planning and coastal management program into an integrated, comprehensive island-wide program will aid in reducing policy, implementation, and enforcement conflicts within the local government organization.

Response: Comment accepted.

Comment: We request that the Corps of Engineers be involved in the development of local federal consistency guidelines and procedures.

Response: The GCMP will provide opportunity for all interested federal agencies to review and comment on any subject guidelines where flexibility exists under Federal regulations to be responsive to Federal agencies' procedural needs.

Comment: We hope that through effective implementation of GCMP authorities and more clearly defined enforcement procedures or centralization of enforcement responsibilities, CZM objectives will be successfully accomplished.

Response: A study is being prepared currently by the GCMP, as chairman of a local agency Resource Management Task Force, outlining GCMP enforcement reponsibilities and investigating the feasibility of consolidating certain enforcement activities. Steps taken in response to the conclusions of this study are expected to enhance the probability of accomplishment of the objectives of the GCMP.

Comment: It is recommended that the Program address the relationship between Government of Guam authorities and policies and the counterpart Federal regulations and authorities in order to increase awareness of related, applicable Federal requirements and provide for closer coordination between Guam and the Federal agencies.

Response: The GCMP is believed to be consistent with all relevant federal regulations and authorities as required. Increased coordination and mutual awareness is expected through ongoing GCMP efforts and Federal participation in the federal consistency procedures. OCZM encourages Guam, as it has other States, to strive for consolidated permit procedures that include combined applications, joint notice and hearings, and other techniques that coordinate and simplify permit procedures. Section 307 of the CZMA clearly indicates that a major thrust of coastal management should be coordination and cooperation between Federal and state-level authorities in planning and regulation. We encourage the Corps of Engineers, in initiating its consistency procedures with GovGuam, to bring to attention of GCMP personnel specific areas that would benefit from the closer coordination called for in the Corps' comment.

U.S. Dept. of Commerce - National Marine Fisheries Service
(Gerald V. Howard, memo, 5/8/79)

Comment: We have reviewed the subject document and find it to be a great improvement over the related materials on coastal planning in Guam which we commented on March 29, 1978. The Executive Orders and implementing guidelines relating particularly to land use and wetlands policy are quite good. The rules and regulations presented as guidance for the Regulatory Commissions appear to provide the needed mechanisms for resource protection.

Response: Comment accepted.

Comment: The GCMP should include formal recognition that when environmental damages to wetlands result from permitted actions, even when in conformance with Commission guidelines, compensatory measures should be provided.

Response: Through permit and review procedures currently part of the GCMP, including those for wetlands, the Seashore Reserve and Land-Use Districts, a significant level of habitat protection is available. While the compensatory measures contained in the NMFS Southwest Regions Habitat Protection Policy are not mandatory under local permitting systems, the Territorial Planning Commission is empowered to require such combinations of habitat restoration, enhancement or off-site acquisition as it deems appropriate in reviewing development on a case-by-case basis. In addition, any development seriously endangering or threatening the existence of a particular living or marine resource could not be approved by the Territorial Seashore Protection Commission under terms of the Seashore Protection Act (see Vol. 2, pp. 1-38). The wetland APC regulations, furthermore, prohibit any development in or alteration of wetlands, unless no alternative site exists. Finally, while we believe that the GCMP provides significant new protection to resources of concern to the NMFS, we recognize that additional steps may be desirable to require the compensation measures suggested. We recommend that GCMP and NMFS staff consult closely on possible revisions to Wetland APC regulations and any regulations for marine resource APC's that may be designated in the future.

Comment: We are also pleased to see the interest shown in the management and development of Guam's fishery resources as evidenced by the February 1979 program document entitled "Marine Fisheries Development and Management on Guam: Its Current Status." The policy, additions and refinements recommended in that paper are quite thorough and certainly in line with the spirit of the Coastal Fisheries Assistance Program.

Response: Comment accepted. Recommendations outlined in the subject document were adopted through issuance of Executive Order 79-6 creating the Guam Marine Fisheries Advisory Council.

Department of Agriculture - SCS
(R.M. Davis, 5/1/79)

Comment: By limiting development under the Erosion and Siltation policy, in areas of 15 percent slope or greater, which constitute 43 percent of the island's land area, great development pressure is placed on more level, prime agricultural areas. Utilization of erosion-control measures and special construction techniques would permit steeper lands to be developed, freeing the prime agricultural land for that purpose.

Response: The GCMP, in limiting development in areas of 15 percent slope or greater, does not prohibit development on steeply sloped land. Designation of such areas as "Conservation" under the Territory's Land-Use Districting System removes them from jurisdiction of the traditional zoning mechanism and subjects them to rules and regulations promulgated by the Territorial Planning Commission for such Conservation Districts. These rules and regulations, while not intended to exclude all development from these areas, will require application of such construction or erosion control measures as necessary to prevent damaging erosion or siltation. Because Section VI (d) of the Land Use District Guidelines provide that any development for which a building or grading permit is required be approved by the Commission before issuance of such permits, such measures may be applied on a site-specific basis. Given variations in soil type and vegetative cover in such slopes, the Commission can decide to merely condition, rather than prohibit, development as waV3ajtg@f

The Urban Districts, as designated on the approved Land-Use Districting Map, outline sufficient area to accommodate projected urban-type development to the year 2000. Future urbans expansion will occur in the Rural Districts as appropriate infrastructure is provided. Through guiding development into these areas, pressure for development on the prime agricultural areas is relieved. The prime agricultural areas are designated as Agriculture Districts and zoned only for agricultural and related uses. Therefore, while tending to discourage extensive development on the more steeply-sloped lands, the districting system encourages utilization of more suitable level areas without jeopardizing the limited prime agricultural land.

Department of Agriculture - SCS (cont'd.)

Comment: The discussion of erosion and siltation should include the role of wildland fire on this process.

Response: The reference to field burning as one of those areas to be addressed by the GCMP, when approved, recognizes, and is intended to include, wildland fires within that term.

Comment: The discussion in Chapter III of air quality problems should mention smoke from wildland fires.

Response: While it may be true that wildland fires produce high particulate levels, their rather infrequent, short-lived nature poses threats not so much to the Territory's ambient air quality as they do to vegetative cover and soil, through increased erosion risk.

Comment: We suggest adding to the list, in Part Four of specific projected program activities, support to the Department of Agriculture for wildland fire protection, forest resources planning and initiation of an ongoing soil survey program.

Response: While not included in the subject exemplary list, the first two above-mentioned activities will be supported indirectly under the GCMP if approved as proposed.

Comment: Proposed legislation would place forestry and soil resource programs in the Department of Agriculture, therby improving resource management and protection for wildlands in Guam.

Response: The subject legislation has been reviewed by the GCMP. New initiatives in resource agency reorganization are being postponed pending issuance of recommendations by the recently formed Resources Management Task Force, chaired by the GCMP, regarding overall Government of Guam agency organization for resource management. The report is anticipated at approximately the same time as the issue date of this document.

Comment: Department of Agriculture review of Federal impact analysis and impact statements (Appendix 5) should be shown as a "major responsibility" rather than as "occassionally involved".

Response: While the DA actively involved in commenting on such documents, such duties are not one of the agency's major responsibilities as outlined in its enabling legislation. The Guam Environmental Protection Agency is responsible for coordinating Government of Guam comments on major projects requiring EIA's or EIS's under the locally established procedures.

Department of Housing and Urban Development
(Robert C. Embry, Jr., 4/30/79)

Comment: We have no serious concerns at this time and have no objections to approval by the Secretary of Commerce of the Guam Program.

Response: Comment accepted.

Comment: Presidential Executive Order 12127, March 31, 1979, established the Federal Emergency Management Agency, which includes the Federal Insurance Administration, previously of this Department. Their comments are not included and will be provided separately.

Response: Comment accepted.

Comment: It appears, under the Wetlands APC's rules and regulations, that are part of the GCMP, that an environmental review should be done whenever development is proposed within a wetland APC.

Response: The statement is correct.

Comment: It might be useful to mention the time frames established for review of the building permit requests under the flood hazard area management procedures.

Response: It is expected that the time required to review a proposal for siting in a flood hazard area will vary according to several factors. Among these factors would be the magnitude of the facility, its need for a floodplain location and availability fo alternative locations, economic and practical feasibility of protective design and construction measures, as well as the effect of the proposed use or structure on other floodplain values.

Dept. of Housing and Urban Development (cont'd.)

Comment: As indicated in the GCMP, Guam's land use element, developed as part of the CZM program, has been found to meet HUD's "701" requirements. The date of approval was May 30, 1978.

Response: Comment accepted.

Comment: Guam entered the emergency phase of the National Flood Insurance Program (NFIP) on January 19, 1977, and flood insurance has been available since that time.

Response: We understand that Guam is in the emergency phase of the NFIP, but entered that phase in January 1979.

Gov. Guam Department of Commerce
(Joseph D. McDonald, 4/17/79)

Comment: Since tourism is a major economic sector on Guam, zoning procedures should be patterned after resort communities. The major problem of the current system on Guam lies in the inadequate professional inpu on the architectural quality of the proposed projects. This inadequacy allows for approval of clearly second-rate development that adversely affects the tourism industry. I am proposing an architectural review board, composed of professional architects and engineers from the private sector, to supplement the existing mechanism and advise the Territorial Planning Commission. The initial area of jurisdiction would be Tumon Bay and the Seashore Reserve.

Response: Through the work of the Subdivision Review Committee and the Territorial Planning Commission, some review is done of architectural and landscape design features of project proposals, particularly of proposals for the resort-hotel zone. The capability of the TPC has probably been enhanced in this regard by the appointment, in recent months, of architects to the Commission. We believe that Gov. Guam, like most other State and Federal government entities is striving towards efficiency of operation, including accomplishing its objectives without the creation of new agencies or other bodies. We would suggest that the cited need and your proposal be brought to the TPC or discussed in detail with the appropriate Gov. Guam agencies to resolve the most effective way to meet the need.

Comment: All future regulatory changes should be evaluated in terms of costs imposed upon the community. The benefits of estimating costs of proposed regulations will be in elimination or revision of regulations where costs are too high relative to benefits and in requiring agencies to find the least-cost method of implementing regulations. I would like to see the Guam Coastal Management Program evaluated in these terms.

Response: This environmental impact statement does include a qualitative evaluation of the anticipated costs and benefits of the GCMP overall. Exact costs and benefits are difficult to compare. Costs involved in policy development as a basis for regulation are at least partially offset by savings to Gov. Guam and affected citizens by coordination among government agencies and use by all agencies of the single set of resource management objectives and policies as a context for permit decisions or government activities or funding. Time and money lost in conflict resolution and delay of decisions would be reduced. The benefits of the program, and of the laws and regulations on which it is founded, are often difficult to quantify. What is the dollar benefit of protecting access to Guam's coasts for its citizens against the cost of processing a permit for a prospective developer? What annual loss in revenues from tourism might be expected for each inappropriate use of coastal resources that damages the beauty of Guam's shoreline? These are examples of the kind of costs and benefits that must be balanced in enacting regulations such is those in the GCMP. We agree that these cost/benefit relationships warrant careful consideration. We also assume that the Legislature and Governor of Guam, as representatives of the people of the Territory, have concluded that the benefits to be derived from laws passed or regulatory authority granted to planning and resource management entities of Gov. Guam outweighs the costs that must be borne to attain those benefits.

Guam Environmental Protection Agency
(O.V. Natarajan, Ph.D, 5/11/79)

Comment: We finding that the GCMP and DEIS to be complete and comprehensive; support island-wide coastal zone designation and use of primarily existing authorities for implementation; environment impact assessment in thorough; the GCMP, Comprehensive Development Plan and Guam Water Quality Management Plan provide a framework for balancing development with environmental protection.

Response: Comment accepted.

Guam Surfing Association
(Nolan Hendricks, Robert Swigart - Public Hearing, 4/19/79)

Comment: (Hendricks) - Public access to reefs and beaches is of concern (e.g., Agana Boat Basin and Ricks Reef); wave and reef edges should be conserved and developed properly; desire to be made aware of changes, plans or modifications and development of any beach or reef.

Response: Development of surfing areas is subject to jurisdiction of the Territorial Seashore Protection Commission. Any development within the Seashore Reserve (10 meters inland and cut to 10 fathoms seward) must be reviewed by the Commission following public hearings and notice. The GCMP policy regarding public access is stated in Chapter III. Means of participating in the GCMP planning process are outlined in Chapter X.

Comment: (Swigart) - New surfing spots, created in conjunction with dredging or filling for the development of channels or marinas, would relieve current overcrowding, could attract additional tourists, and provide alternative to heroin addiction.

Response: GCMP acknowledges that provisions should be made for multiple use of coastal resources as long as the function of the principal use is not compromised, the safety of the various users is assured, and the environmental costs of such provisions do not outweigh the benefits of multiple use. OCZM recommends that the Surfing Association consult with the appropriate Territorial and Federal authorities when activities are proposed that could potentially be accomplished in such a way as to accommodate surfers' interests.

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