HISTORY OF COASTAL ZONE USE

Prepared by: Bureau of Planning 1975

COASTAL ZONE HANAGEMENT GRANT APPLICATION GUAN, U.S.A. BURTALL OF PLANNING GLVCC MALE F GUAM F.G. EDX 25E F GUAM AGAINA, GUAM 96910 PREPARED FOR OFFICE OF COASTAL ENVIRONMENT NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
ROCKVILLE, MARYLAND PREPARED BY BUREAU OF PLANNING PAUL B. SOUDER, DIRECTOR CLARK E. JEWELL, ACTING DEPUTY DIRECTOR SUPPORT STAFF ARMAND SPEIDEL JUANIT SIONGCO CLAUDIA H. KATNIK VANGIE BLAS PETER LEON GUERRERO MAGGIE LEON GUERRERO

/m 1.	1999
Joes this assistance request require State, local,	Name of Governing Body
regional, or other priority rating? Yes X No	Priority Rating
Item 2. Does this assistance request require State, or local advisory, educational or health clearances?	Name of Agency or Board
Yes X No	(Attach Documentation)
Item 3. Does this assistance request require clearinghouse . seview in occordance with OMB Circular A-95?	(Attach Comments)
Item 4. Does this assistance request require State, local, regional or other planning approval? Yes X No	Name of Approving Agency
Item 5. Is the proposed project covered by an approved comprehensive plan? X YesNo	Check one: State
Item 6. Will the assistance requested serve a Federal installation? Yes X No	Name of Federal Installation
Item 7. Will the assistance requested be an Federal land or installation? Yes X No	Name of Federal Installation ' Location of Federal Land Percent of Project
Item 8. Will the assistance requested have an impact or effect on the environment? ———————————————————————————————————	See instructions for additional information to be provided.
Nill the assistance requested cause the displacement of individuals, families, businesses, or farms?	Number of: Individuals Families Businesses Farms
2 32 2	See instructions for additional information to be provided.

FORM CD-292 (12-72)

SECTION A - BUDGET SUMMARY

Grant Program, Function	Federal	Federal Estimated Unabligated Funds N		New or Revised	Budget	
Activity (a)	Cetalog No.	Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (D	Total (g)
I. CZM		\$	\$	\$ 143,000	\$ 71,500'	\$ 214,500
2.						
3.		in .				
4.						
5. TOTALS		2	2	5	s	5

SECTION B - BUDGET CATEGORIES

6. Object Class Categories		- Grant	Program, Function or Activi	ly	Tatel
	(I) CZM	(2)	(3)	(4)	(5)
a. Personnel	\$ 118,144	\$	\$ ·	s	s
b. Fringe Benefits	12,406				
c. Travel Local & Off-islar	d 7,800				
d. Equipment	23,286				•
e. Supplies	2,864				
f. Contractual	50,000				
g. Construction					
h. Other					
I. Total Direct Charges	214.500				
j. Indirect Charges					
k. TOTALS	\$ 214,500	\$	\$	5.	\$
7. Program Income	\$	5	2	s	5

SECTION B - BUDGET CATAGORIES Further Itemization

Personnel	<u>Yearly</u> \$118,144	Monthly \$9845.33
Fringe Benefits	12,406	1033.83
Travel	7,800	650.00
Equipment		
car	3,000	250.00
office rent	12,096	1008.00
telex and telephone	475	39.58
xerox machine rental	900	75.00
mag card machine rental	3,500	291.66
printing	900	75.00
advertising	275	22.92
conference room rental	500	41.67
Supplies	2,864	238.67
Contractual		
aerial mapping*	50,000	4166.67
Coastal Zone Management Information Dissemination	1,640	136.67
TOTAL	\$214,500	\$17,875.00

^{*}Aerial Mapping: These funds are to be designated as the Bureau of Plannings share in a combined effort to aerial map the island. They will be contracted to Department of Public Works, who will in turn contract a private agency to perform the mapping. A copy of the contract will be sent to the Coastal Zone Management Office for approval before the contract is awarded and any monies obligated.

PERSONNEL

In Nouse Personnel

	Salary	•	Benefits	Total
Planner II	\$1,500		\$158	\$1,658
	3,000		315	3,315
Planner III	7,000		735	7,735
Director	1,968		207	2,175
Admin. Ass't	1,641		172	1,813
Acting Dep. Dir.	4,400		462	4,862
Chief Planner	8,955		940	9,895
TOTAL	\$28,464		\$2,989	\$31,453

Hired Personnel

	Salary	Benefits	Total
Planner IV Planner II Planner III Planner I (2) General Helper (1)	15,000 12,000 14,000 20,000 4,680	\$1,575 1,260 1,470 2,100 492	\$16,575 13,260 15,470 22,100 5,172
Secretary TOTAL	8,000 \$73,680	840 \$7,737	\$81,417

In Kind Through Other Agency Support

	Salary	Benefits	Total
Land Management Bureau of Budget	\$9,000	\$945	\$9,945
and Management	7,000	_735	7,735
TOTAL	\$16,000	\$1,680	\$17,680

BUDGET INFORMATION

In Kind Contribution

Office Rental	\$12,096
Local Travel	3,300
Telephone and Telex	475
Xerox Machine Rental	900
Mag Card Machine Rental	3,500
Advertising	275
Salaries: Director, Acting Dep. Dir. Chief Planner, Planners IV, III, and II, Admin. Ass't	31,453
Salaries: Land Management and Bureau of Budget Management	17,680
Printing Costs	900
Supplies and Materials	921
TOTAL	\$71,500

BUDGET INFORMATION

Overhead

Secretary	\$8,840
Car	3,000*
Office Rental	12,096
Local Travel	3,300
Supplies	2,864
Off-Island Travel	4,500
Telex and Telephone	475
Xerox Machine Rental	900
Mag Card Machine Rental	3,500
Printing	900
Advertising	275
Acting Deputy Director	4,862
Director	2,175
Administrative Assistant	1,813
TOTAL	\$49,500

^{*} The price quoted by the Department of Public Works for a 4x2, 5 passenger sedan is \$3450. Any amount over the \$3000 specified will be absorbed by the Bureau of Budget. After approval of this grant and procurement of the vehicle, identifying requirements as specified by the A-102 will be supplied.

SECTION C - NON-FEDERAL RESOURCES

(s) Grant Pragram	(b) APPLICANT	(c) STATE	(d) OTHER SOURCES	(+) TOTALS
s. Coastal Zone Management	\$ 71,500	5	\$	5 71.500
9.				
10.				
11.				
12. TOTALS	3	s	\$	3

SECTION D - FORECASTED CASH NEEDS ..

	Total for lat Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 143,000	\$ 76.250	\$ 23.250	\$ 23.250	\$ 20, 250
4. Non-Federal	71.500	17.875	17 875	17 875	17.875
15. TOTAL	\$ 214,500	\$ 94.125	\$ 41,125	\$ 41.125	3 38,125

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(e) Grent Program		FUTURE FUNDING PERIODS (YEARS)			
(8) Olahi Fragram	(b) FIRST	(c) SECOND	(d) THIRD	(a) FOURTH	
16.Coastal Zone Management	\$ 143,000	\$ 164,667	\$ 86,666	\$	
17.					
18,			•		
19.					
20. TOTALS .	5	5	\$	\$	

SECTION F - OTHER BUDGET INFORMATION

(Attach additional Sheets If Necessary)

21. Direct Charges: Fringe benefit rates were computed by multiplying the amount of salary allocated (indicative of time spent on the project) per person times 10.5%. This figure was derived by checking the rates used to calculate the Government of Guam civil service fringe benefits 22. for the last 4 years. Since the rates were rising, the last and therefore highest rate was chosen.

23. Remorkst

÷ 1.

ASSURANCES

The Applicant hereby assures and certifies that he will comply with the regulations, policies, guidelines, and requirements including OMB Circulars Nos. A-87, A-95, and A-102, as they relate to the application, acceptance and use of Federal funds for this Federally assisted project. Also the Applicant assures and certifies with respect to the grant that:

- 1. It possesses legal authority to apply for the grant; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body, authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.
- 2. It will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and in accordance with Title VI of that Act, no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the applicant receives Federal financial essistance and will immediately take any measures necessary to effectuate this agreement.
- 3. It will comply with Title VI of the Civil Rights Act of 1964 (42 USC 2000d) prohibiting employment discrimination where (1) the primary purpose of a grant is to provide employment or (2) discriminatory employment practices will result in unequal treatment of parsons who are or should be benefiting from the grant-aided activity.

- 4. It will comply with requirements of the provisions of the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (P.L. 91-646) which provides for fair and equitable treatment of persons displaced as a result of Federal and federally assisted programs.
- 6. It will comply with the provisions of the Hatch Act which limit the political activity of employees.
- It will comply with the minimum wage and maximum hours provisions of the Federal Fair Labor Standards Act, as they apply to hospital and educational institution employees of State and local governments.
- 7. It will establish safeguards to prohibit employees from using their positions for a purpose that is or gives the appearance of being motivated by a desire for private gain for themselves or others, particularly those with whom they have family, business, or other ties.
- 8. It will give the grantor agency or the Comptroller General through any authorized representative the access to and the right to examine all records, books, papers, or documents related to the grant.
- 9. It will comply with all requirements imposed by the Federal grantor agency concerning special requirements of law, program requirements, and other administrative requirements approved in accordance with Office of Management and Budget Circular No. A-102.

420.45 CHECK LIST

- a. See enclosed letter and past correspondence with Mr. Paul Pritchard.
- b. Pages 3 5
- c. Pages 5 6
- d. Overall work program design Pages 8 & 9

1.	920.12 920.13 920.14 920.15 920.16 920.17	B.1, 4 and B.1 B.1 B.1 B.3 B.1	5		ř		page page page page page	14 15 16 17
2.	920.12	B.4					page	11
3.	920.15 920.17	B.1 B.1					page page	
4.	920.14 920.15 920.17	B.3 B.1 B.1		ŧ		in the second	page page page	16
5.	920.16	B.3					page	17
6.	920.11	B.1					page	10

- e. 1. Synopsis of first year production plans page 21.
 - Complete description of tasks to be completed (see pages 10-19, Section B).

Specific Data:

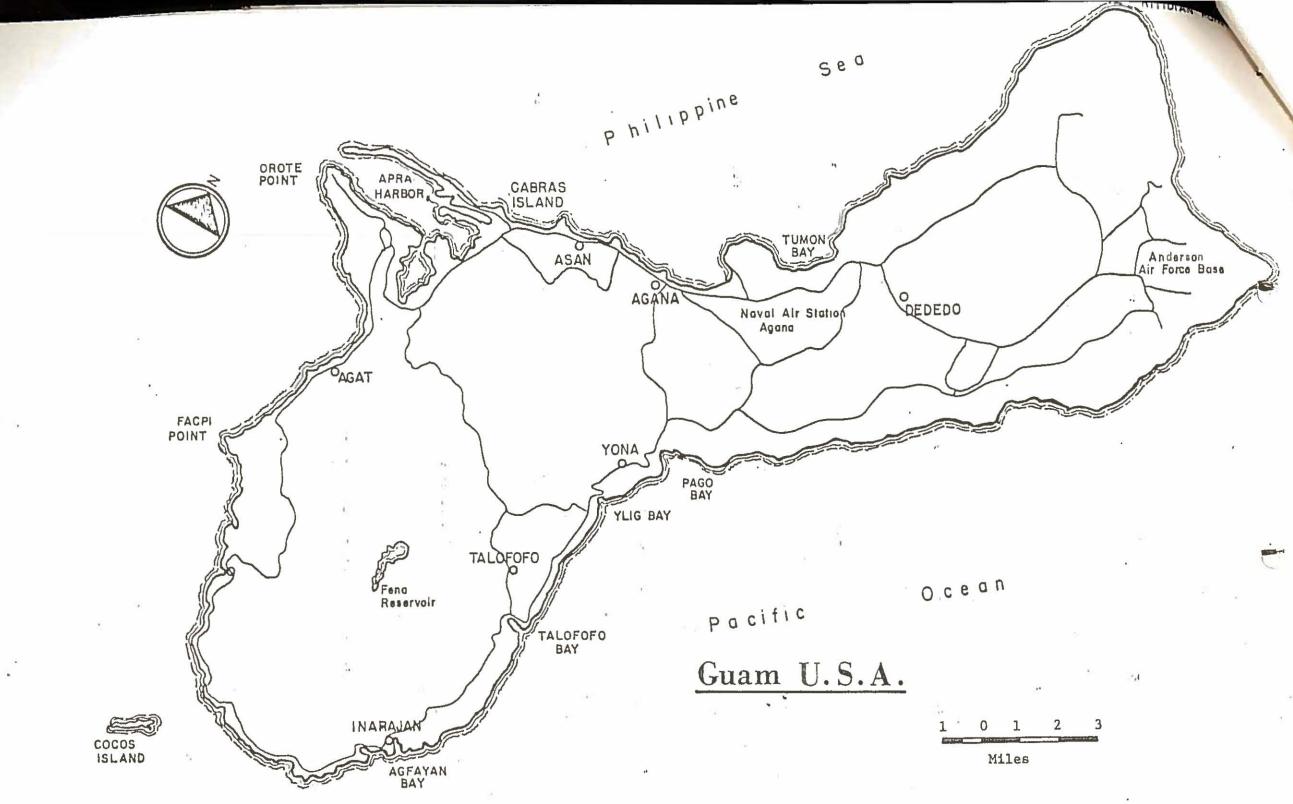
- iii) Manpower requirements: page e.
- iv) Time schedule of 3 year program: pages 8 and 9, and 21, 22, and 23.
- vi) Source of funds: page 4, In-kind contribution itemization page f.
- f. Pages 24 through 28

PART IV

PROGRAM NARRATIVE

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Guam, a picturesque island, located in the Western Pacific as a gateway and crossroads to the Far East and Micronesia, is the largest and most populated island between Hawaii and the Philippines. It is approximately thirty miles long, ranging from four to eight and one half miles in width with an area of about 209 square miles.

Once a sleepy island, it has evolved into a commercial, financial and strategic military base in the Western Pacific. In addition, Guam has come to be regarded as a tourist mecca, particularly among Japanese honeymooners. It now enjoys a thriving business in tourism, construction, and other auxiliary activities. As a U.S. territory, it is now one of the most rapidly developing economies in the world today.

HISTORY

The original inhabitants of Guam were Chamorros. Guam was first discovered by the West in 1521 and subsequently claimed by Spain in 1565. Following the Spanish-American War in 1898, the island became a U.S. possession and came under the administration of the U.S. Navy until the enactment-of Organic Act of 1950 which placed the island under a civilian administration with a governor appointed by the President with the consent of the Senate. With the first election held in November 1970 for Governor and Lt. Governor, Guam now enjoys its own elected executive and legislative branches of government with full responsibility and autonomy for the improvement of welfare in the island.

GOVERNMENT

In January of 1971, the Honorable Carlos G. Camacho was inaugurated as Guam's first elected Governor. He was made responsible for the execution of the laws of Guam and those of the United States which are applicable in Guam. The unicameral Legislature consists of 21 Senators, each elected at large for a two-year term. It is responsible for the laws of Guam which pertain to the welfare of the Island, subject only to the Organic Act of 1950 and the Court of Guam, the Chief Justice Supreme Court of which is appointed by the Governor with the advice and consent of the Legislature for a term of five years.

PEOPLE

Once an isolated island, Guam now bears the features which characterize major cosmopolitian centers, largely due to its booming tourism. Yet the heritage of Guam has been preserved — the widely spoken Chamorro language, closely knit family ties, active religious devotion, and frequent family and village participation in fiestas, weddings, and wakes all play a major part in the lives of the Guamanian people. The Island of Guam, indeed is a blending of many cultures, along with Western material well-being and traditional mores. This is what makes the island unique.

POPULATION

The 1970 census places Guam's population at 84,966. It has been anticipated to reach 100,000 by this year. Because of a high rate of in-and out-migration in the island, it is difficult to gauge accurately the population of today, but is generally believed to have already reached the projected number of 100,000 for 1975.

HISTORY OF COASTAL ZONE USE

Umatac was the first port used on the island. Ferdinand Magellan, a Portuguese explorer and navigator in the service of king Charles I of Spain landed in Umatac Bay while continuing the search Columbus had begun 30 years earlier for a sea route to the Orient. Subsequently, that port became the regular port of call for English and Dutch freebooters as well as Spanish galleons.

Prior to the Spanish occupation, the native islanders were dependent primarily on fish and sea life as the main portion of their diet supplemented by a variety of tropical vegetation. Most of the island's villages were situated near the coastlines in order to sustain their everyday activities; fishing, boatmaking, crafting of fishing equipment and making many other cooking and farming utensils. The Spanish occupation period followed by the transition into American influence reflected a cultural change in the ways of the Chamorro lifestyle. The introduction of livestock and poultry by the Spaniards suppressed most fishing activities but chores of washing and food preparation necessitated a water source and consequently, residing within the vicinity of the coastlines was still prevalent.

The reconstruction period after World War II, resulted in a major relocation of numerous villages, most of which were destroyed by the war. The relocation and reconstruction provided for, along with roads and electricity, the necessary commodity of water through a public utility system from wells and reservoirs. The amount of fishing activity was probably similar to the prewar period but water needs from streams, rivers, springs and the coast to provide for everyday living actually ceased.

The reconstruction period also initiated the development of harbor facilities in Apra Harbor and was at that time under sole control of the U. S. Navy. Building of commercial docking and storage facilities, which were confined to a narrow portion of Cabras Island was begun in 1966, with construction being completed in 1969. The Commercial Port, as it is now called, is presently joint facility shared by the U. S. Navy and Government of Guam.

There is a proposed Master Plan currently being studied for the Commercial Port of Guam. It embodies estimates of harbor needs and loading facilities projected through the year 1990 and intends to propose a phased development program. A sharp turning point in the development of the Island occurred in November 1962, the year Typhoon Karen destroyed a major portion of the Island. As a result, the Rehabilitation Act (P.L. 88-170) was passed by the U.S. Congress, authorizing 45 million dollars for the laying out of Guam's "infrastructure". This developed a plan for an Integrated Wastewater System. Since then, numerous sewer outfalls have been constructed and are presently in operation.

Since then, numerous sewer outfalls have been constructed and are presently in operation. The ocean waters also have been utilized by three power plants as a means of providing a source of cooling waters for their generators.

Our coastal waters have been more popular at providing both residents and tourists with a variety of outdoor recreational uses: fishing of various types, water skiing, shelling, scuba diving, swimming or picnicking.

In light of this, the government has become involved in recreation planning along the coastal zone. This Master Plan was designed to take advantage of Guam's natural assets - use them to enhance the life of the community, preserve them for the future generations and make them an important factor in the economic growth of the island.

ISSUES AND PROBLEM AREAS

1. Public Health Hazards

Unsanitary conditions presently exist due to inadequate sewer treatment facilities. The presence of untreated raw discharges in water ways, drainage and coastal areas poses a significant threat in terms of epidemic diseases.

2. Erosion and Siltation Control

Erosion of topsoil and subsequent siltation of lowland water areas have recently become major problems. Within the past five years, there has been a rapid increase in island construction. The increased erosion and siltation that this construction adds to the natural erosion and siltation caused by fires, agricultural activities, heavy rainfall, etc., aggrivates the initial problem. The island of Guam is almost completely surrounded by a reef which acts as a barrier to prevent the dispersion of storm water, sewage from shoreline cesspools, and siltation by the ocean currents. This problem creates a build up of pollution and stagnation of the water between the shoreline and the reef.

3. Oil Pollution as a Potential Threat

Oil spills are not presently a problem of great magnitude, but are having an impact on several estuarine areas. The U. S. Coast Guard is efficient in cleaning spills and policing polluters. However, there are existing proposals for super tankers on Guam. The increased traffic which these facilities would bring to Guam's coastal waters would undoubtedly increase the frequency of probable oil spills. The Coast Guard's ability and willingness to continue and expand their cleanup and policing efforts are not known.

4. Sandmining

The increase in construction activity has intensified the need for sand which has resulted in the removal of sand for this purpose. Ocean dredging causes submerged pits and the lessening of sand on adjacent beaches due to current flow. The deminishing amount of sand on Guam's beaches has caused the deterioration of the aesthetic quality of those beaches. The crushing of coral to manufacture sand, undertaken to minimize the problem of sandmining, only leads to increased siltation.

5. Zoning

The zoning of land on Guam at the present time does not protect the quality of coastal waters. There is no presently adopted land-use policy which reflects the combined management of terrestrial and submerged lands.

6. Maintenance of Prime Agricultural Lands

Many areas of land along Guam's coast are very fertile. The prime agricultural lands are a natural, and presently endangered, resource of the island. Development of fertile areas into other than agricultural uses reduces the future possibilities of Guam's agricultural self sufficiency.

7. Flood Plains

If flood-prone lands are left open, practically no flood losses occur. However, the development of flood prone lands, without taking proper precautionary measures toward the channeling of flood waters, threatens the individual's health, safety and/or economic well being. Part of the problem is also that with construction, the value of the land as scenic and open space areas is diminished.

PRELIMINARY MULTI-YEAR WORK PROGRAMS

CHANGING TIMES

On November 11, 1962, Typhoon Karen destroyed 90% of the island's structures, utilities, and most of the vegetation. Since that time Guam and her people have embarked on a new era. Many of the wooden and tin structures are gone - replaced by sturdy concrete typhoon-proof homes. Several villages have undergone urban renewal, in the process uprooting families who had lived on the land for decades.

This reorganization has brought a new concept of land ownership to Guam. A new awakening as to property rights has evolved. Land was heretofore taken for granted as something to be handed down from generation to generation.

a result some segments of the population are being denied use of scenic, recreation and/or economically desirable land and water areas.

Water definitely belongs in the category of a common resource to be enjoyed and used by all. With the present land ownership system, it remains to be seen whether or not land will ever be classified in the same category.

It is for the orderly development of this ecologically fragile common resource that Guam desires to develop a coastal zone management program. There is a need to protect and manage the coastal zone so as to maintain as well as preserve its value. In accomplishing this, the coastal zone may be used to maximize its present and future potential.

GUAN'S COASTAL ZONE MANAGEMENT GOALS

In maximizing the potential of the coastal zone for present and future use, through the coastal zone management program the people of Guam desire to:

- 1. Improve the quality of life by improving the quality of the coastal and marine environment.
- 2. Promote the orderly growth of commercial and industrial facilities as well as residential, recreation and scenic areas in the coastal zone such that it is compatible with the above goal.
- 3. Promote the orderly and responsible development of coastal zone resources to fully maximize benefits accrued from these resources and thereby creating employment opportunities and increasing local revenues.
- 4. Encourage the use of the coastal waters to promote scientific knowledge.
- 5. Provide a mechanism to coordinate various governmental agencies' interests in and programs concerning the coastal zone.
- 6. Provide a mechanism to coordinate and control land use adjacent to the coastal waters, and thereby guarding the fragile relationship that exists between the two.

PROGRAM DESIGN AND WORK PROGRAM

This program has been designed according to the specifications outlined in the Federal Register volume 38, number 229, section 920.45, "Application for the Initial Grant". The Hawaii Coastal Zone Management application was used as a guide and at times has been "borrowed" from due to the analogous substance of the information.

The following is a three year work program in brief summary, followed by an expansion of each program element. Next is a three year cost analysis according to tasks, followed by yearly breakdowns according to tasks for the designated year and the costs associated with those tasks.

gram Element	Sun	mnary of Work Program Components	Primary Participants	Phasing
0.11 undaries of he coastal zone.	Α.	Analysis of inland boundary alternatives and a determination of the extent of the territorial	Applicable government agencies and general public.	lst. year
·		sea.		
į.	В.	Recommendation for Boundary delineation.		lst. year
÷ =	C.	Final boundary determination and implementation.		lst. year
920.12 Permissible land and water uses which have a directand significant impact on coastal	A.	Identify and analyze local and Federal laws and ordinances which pertain to coastal zone land and water use. Make recommendations as to the deletion	Expansion of personnel under direction of Bureau of Planning	1st. year and on-going
waters.		of unnecessary laws and as to the addition of needed laws.		
este a a tertina - en	В.	Describe and analyze uses permitt by local and Federal laws and ordinances.	ed	lst. year and on-going
	c.	Inventory, mapping, and cata- gorization of land and water use and data pertaining to their use.	Applicable government agencies.	1st. year and second
	D.	Research, develop, and apply criteria and measures to be used in assessing impacts caused by use and use changes within the coastal zone.	University of Guam, Bureau of Planning, University of Guam Marine Laboratory, and Guam Environmental Protecti Agency.	
920.13 Geographic areas of particular concern.		Monitor Coastal Zone in terms of criteria and standards proposed by 920.12 - D.	University of Guam Marine Laboratory, Guam Environmental Protection Agency.	2nd.year and on-going
÷	В.	Identify and inventory those areas whose indicies exceed those proposed by 920.12 - D.	Guam Environmental Protection Agency and Bureau of Planning.	2nd. year and on-going
	c.	Designate areas of particular concern.	Guam Environmental Protection Agency and Bureau of Planning.	3rd. year
`	D.	Identify, inventory, acquire and/or manage estuarine areas.		lst. year and on-going
920.14 Means of exerting Governmental control over land and water use.	Α.	Legal analysis of alternative land and water use control mechanisms.	Expansion of personnel under the direction of Bureau of Planning.	lst. year
	в.	Recommendations as to optimum control mechanism(s).		2nd. year

Element	Car	cary of Work Program Components	Primary Participants	Phasing
20.14 (cont.)	С.	Implementation of changes in existing laws, policies, and practices necessary to exercise control mechanisms.	8 ×	3rd. year
20.15 csignation of riority uses ithin specific eographical areas broughout the castal zone.	Α.	Determination of local and islandwide goals, objectives, problems and issues, and the priorities among these in terms of land and water resource utilization throughout specific areas within the coastal zone.	Bureau of Planning and other governmental agencies.	1st. and on-going
br.	В.	Integration of said priorities within the planning and decision making processes specified in section 920.12 - D.		3rd. and on-going
20.16 tional Interest iting of acilities.	Α.	Determine national interest in the siting of facilities on Guam necessary to meet requirements which are other than local in nature.	Bureau of Planning	2nd. year and on-going
	В.	Recommendations for assigning various coastal resource utilizations meeting national as well as islandwide needs.		3rd. year and on-going
Po.17 Tganization Tructure to Thement the Thagement program.		Management and institutional analysis of Coastal Zone Management organizational options (administrative and regulative). Methods of public participation and methods of Coastal Zone Management adoption.	Bureau of Planning, University of Guam graduate student special project, Bureau of Budget.	1st. year + 2nd. year
	В.	Implementation of recommended changes.		3rd. and on-going

Phasing Key

* First Year

- Second Year

+ Third Year

BUREAU OF PLANNING GOVERNMENT OF GUAM P.O. BOX 2950 AGANA, GUAM 96918 Work Program Component: Boundaries of the Coastal Zone.

A. Purpose:

The purpose of this element is to identify the boundaries of Guam's coastal zone subject to the management program.

B. Description of Tasks:

(Phasing)
* 1. Analyze island wide benefits accrued through alternatives designating the coastal zone boundary at various locations. Factors which affect the alternatives are:

- a. Biophysical factors.
- b. Shoreline impacts.
- c. Institutional, developmental, and cultural factors.

C. Participants:

B.1. Applicable government agencies such as Bureau of Planning , Department of Land Management, Guam Environmental Protection Agency, University of Guam, Public Utilities Agency of Guam, Department of Public Works and the general public.

D. Products:

(tangible)

(intangible)

- One summary report and appropriate technical support.
- Public awareness and input.
- The official designation of a physical point at which the coastal zone management program can focus its efforts.

E. General Statement:

The completion of this element will provide for the establishment of a definite geographical parameter upon which planning for and management of the island's shoreline resources may be based.

F. Costs:

(B.1.) \$3,798

Work Program Component: Permissible Land and Water Uses.

A. Purpose:

The purpose of this element is to collect and organize environmental, physical, and socio-economic data pertaining to the coastal zone in a meaningful manner and provide for an updating process such that the information bank can continually be maintained. Develop standards by which the impact of any use change within a coastal zone can be measured and thereby provide a basis of determining permissible use within a coastal zone.

B. Description of Tasks:

(Phasing)

- * 1. Research to identify local and Federal laws, statutes, ordinances, mandates and any other rulings which place regulations upon the coastal lands and waters.
- * 2. Make recommendations to delete any incongruous, overlapping, outdated, or undesirable laws, ordinances, etc., and suggestions as to laws which would encompass important areas not covered by previously ratified laws.
- * 3. Catagorize and analyze the uses permitted by the regulating documents specified in B.1.
- * 4. Inventory, mapping and catagorization of land and water use and data pertaining to their use including:
 - a. Inventory land use in terms of lot number, area, value, infrastructure upon lot, infrastructure area, infrastructure value, primary and accessory use, zone, and owner. Provide for continual updating of this information.
 - Identify water uses in terms of purpose of use, frequency of use, and impact of use, and provide for on-going updating system.
 - c. Identify land and water resources in terms of aesthetic, historic, conservation, physical, ecological, as well as economic value.
 - d. Develop maps designating land and water use.
 - e. Identify, synthesize, and evaluate as for utility and availability, studies and plans prepared by other private and public agencies or any other informed parties whose information pertains to the coastal zone and/or the management thereof.
 - f. Identify unmet data needs and proceed in collecting necessary absent data.
- + 5. Research, develop, and apply criteria and measures to be used in assessing impacts caused by use and use changes within the coastal zone.
 - a. Identify environmental, physical, and socio-economic coastal zone related indicies of change.
 - b. Incorporate these indicies sited in 5a into the Federal and local decision making process.

c. Problem identification, simulation techniques to determine extent of impact, evaluation of environmental tollerance of impact, statement of standard to control extent of impact at or above environmental assimilative capacity.

C. Participants:

- B.1. Expansion of personnel under direction of Bureau of Planning.
- B.2. Expansion of personnel under direction of Bureau of Planning.
- B.3. Expansion of personnel under direction of Bureau of Planning.

B.4.

- Bureau of Planning, Department of Land Management, and Department of Revenue and Taxation.
- Guam Environmental Protection Agency and Public Utilities Agency of Guam.
- c. Bureau of Planning.
- d. Bureau of Planning, Guam Environmental Protection Agency and Department of Land Management.
- e. Bureau of Planning.
- f. Bureau of Planning.

B.5.

- a. University of Guam.
- b. Bureau of Planning
- University of Guam Marine Laboratory and Guam Environmental Protection Agency.

D. Products: (tangible)

(intangible)

water use.

- A list of meaningful laws which pertain to coastal zone management and/or coastal zone use accompanied by recommendations for deletion of unnecessary laws, and addition of those which cover unmet present or future needs.
- 2. List of uses permitted by existing laws.
- Comprehensive data bank pertaining to land and water use.
- Maps designating land and water use.
- Problem identification, materials balance studies, trade-off analysis, carrying capacity profiles, and other appropriate technical reports.
- Statement of criteria and standards pertaining to coastal zone land and water use and quality.

1. A concept of existing policy pertaining to

.. coastal zone land and

E. General Statement:

The completion of this element shall provide an analysis of land and water resources and the use thereof, and methods of evaluating the impact of specific uses upon coastal lands and waters. This element is critical in that it provides the basis for use regulation.

F. Costs:

Work Program Component: Geographic Areas of Particular concern.

A. Purpose:

The coastal zone will be monitored and evaluated in terms of standards set in 920.12 - 5. Areas which exceed the prescribed criterias and \leftarrow standards shall be identified and designated as areas of particular concern.

B. Description of Tasks:

(Phasing)

- + 1. Gathering, examining, and evaluating of marine and terrestrial data in terms of the criteria and standards specified.
- + 2. Identify areas which exceed criteria and standards and develop a monitoring system by which continual measurement will occur.
- + 3. Propose the methods of designation and designation of areas of particular concern.
- * + 4. Identify, inventory, acquire and/or manage estuarine areas.

 Determine if the areas should be designated as sanctuaries by surveying and analyzing the benefits of the existing biota.

 Propose legislation to control use within estuarine areas.

C. Participants:

- B.1. Marine Laboratory, University of Guam and Guam Environmental Protection Agency.
- B.2. Guam Environmental Protection Agency and Bureau of Planning.
- B.3. Guam Environmental Protection Agency and Bureau of Planning.
- B.4. Guam Environmental Protection Agency and Bureau of Planning.
- D. Products: (tangible)

(intangible)

- A system by which specific criteria and standards are used to control and therefore plan and direct coastal zone use.
- Constant awareness of the quality of the measured environment.
- Report on the areas which exceed the criteria and standards and recommendations as to these areas being of particular concern.

E. General Statement:

By inventorying and designating areas of particular concern within the coastal zone the Government of Guam has expressed some measure of islandwide concern about these areas and included them within the preview of the management program.

F. Costs:

(B.1.) \$25,000

(B.3.) \$5,000

(B.2.) \$30,000

(B.4.) \$6,613

Work Program Component: Means of exerting Governmental Control over land and water use.

A. Purpose:

The purpose of this element is to identify and establish the means by which the Government of Guam may exert control over land and water use within its coastal zone.

B. Description of Tasks: (Phasing)

- * 1. Review and inventory of pertinent Federal and local legal policies statutoria, case law, and other precidents relating to ongoing and proposed coastal zone management activities.
- Legal analysis of alternative land and water use control mechanisms to include an assessment of current legal constraints and preparation of executive or legislative initiatives.
- + 3. Recommendations to the Governor and Legislature as to the implementation of changes in existing laws, policies, and practices to comply with the implementary provisions of the National Coastal Zone Management Act and in support of related Coastal Zone Management work components.

C. Participants:

- B.1. Expansion of Personnel under the direction of Bureau of Planning.
- B.2. Expansion of Personnel under the direction of Bureau of Planning.
- B.3. Expansion of Personnel under the direction of Bureau of Planning.

D. Products: (tangible)

(intangible)

- A series of preliminary reports analyzing Guam's legal structure and regulatory systems.
- A clear concept of the organizational structure necessary for the management of the coastal zone.
- A final report to the Governor and the Legislature on recommended control mechanisms as a basis for complying with the implementary requirements of Section 306 (d) and (e) of the National Coastal Zone Management Act.

E. General Statement:

The completion of this element is crucial to the success of the program since any policy or program is only as good as its powers to enforce itself.

F. Costs:

(B.1.) \$16,542 (B.2.) \$30,000 (B.3.) \$5,000

Work Program Component: Designation of priority uses within specific geographical areas throughout the coastal zone.

A. Purpose:

The purpose of this element is to provide a framework for regulating land and water uses such that the governmental agencies and the citizens are provided a common reference point for resolving conflicts and to articulate public and private interests in the preservation, conservation, and orderly development of specific areas within Guam's coastal zone.

B. Description of Tasks: (Phasing)

- * + 1. Determine local and islandwide goals, objectives, problems and issues pertaining to land and water use and the priorities among them through:
 - a. Close coordination with the goals committee created within P. L. 12-200, consultation with technical departments of government as well as private agencies which have interests in or control over parts of the coastal zone, and other public participatory measures listed within 920.17, B.1., b.
 - b. Identification of planning and management problems and use conflicts and the formation of appropriate priorities for land and water use.
 - + 2. Recommendations as to the integration of the subsequent priorities within the planning and decision making process throughout all Government of Guam agencies and throughout the related Coastal Zone Management program components.

C. Participants:

- B.1. Bureau of Planning and other governmental agencies.
- B.2. Bureau of Planning.

D. Products: (tangible)

- A series of documents delineating hierarchy and extent of coastal zone management goals, objectives, problems, and issues.
- A summary report analyzing the various special interest reports submitted (1), accompanied by recommendations for updating implementation or integration with other work components as appropriate.

(intangible)

- Citizen and media awareness and participation.
- Development of policy pertaining to land and water use within the coastal zone.

E. General Statement:

The completion of this program element shall show evidence that the Government of Guam has developed and is prepared to apply broad policies or guidelines relating to the relative priorities Guam will give in the implementation of the management program to the land and water uses permissible in specific coastal areas.

F. Costs:

- (B.1.) \$13,620
- (B.2.) \$25,000

Work Program Component: National interest in the siting of Facilities.

A. Purpose:

The purpose of this work element is to provide for adequate consideration of the national interest involved in the siting of facilities necessary to meet requirements which are other than local in nature.

B. Description of Tasks:

(Phasing)

- * 1. Prepare a complete inventory of all coastal resources in the coastal zone. (See 920.12 B4 c.)
- + 2. Analyse the capability and suitability of each resource for supporting each facility in question. (See 920.12 - B5.)
- + 3. Identification of the perception of cognizant Federal agencies of how the resources of the island's coastal zone ought properly to be utilized in the siting of facilities in question, and otherwise, to include:
 - a. The plans pertaining to the use of Federal lands within the coastal zone such that the use of adjacent lands can be planned for accordingly.
 - + 4. Synthesis of information and recommendation of alternatives of how the Government of Guam would assign the various coastal resource utilizations meeting island and national needs.

C. Participants:

B.1. See 920.12 - B.4.

B.3. Bureau of Planning.

B.2. See 920.10 - B.5.

B.4. Bureau of Planning.

D. Products: (tangible)

- (intangible)
- Reports from various federal agencies pertaining to national interest in coastal zone utilization.
- Citizen and Governmental awareness of national needs and interests.
- A report analyzing island and national 2. needs and interests with recommendations as to the available alternatives in site location.
- Integration of otherwise disassociated units such that planning can occur within a continuous process rather than a piece by piece approach.

E. General Statement:

The completion of this element shall show evidence that the Government of Guam has given adequate consideration to the national interest involved in the siting of facilities that meet needs that are other than local in nature.

F. Costs:

(B.1.) See 920.12 - B.4.

(B.3.) \$10,000

(B.2.) \$20,000

(B.4.) \$10,000

Work Program Component: Organizational structure to implement the management program.

A. Purpose:

The purpose of this element is to show evidence that the Government of Guam is organized to implement the management program. This is to state that the Government of Guam has authority for the management of the coastal zone, and such authority shall include the power to administer land and water use regulations, control development in order to insure compliance with the management program, and to resolve conflicts among competing uses.

B. Description of Tasks:

(Phasing)

- * 1. Management and institutional analysis to include:
 - a. An organizational analysis of institutional options and regulatory mechanisms to carry out the management program ranging from the consolidation of existing functions to the establishment of a seperate governmental agency.
 - Mechanisms for public awareness, participation in, access to, and review of all coastal zone management information, research, and materials generated during the planning process through;
 - i monthly newsletter to the members of each municipality's advisory council and commissioners*and any other parties who request it concerning progress and content of each program element.
 - ii brief panel discussions on local television (within Guam U.S.A.) which discuss points of information, interest, conflict, etc..
 - iii the appointment of an advisory committee of key decisionmakers appointed by the Governor whose purpose is to advise the public of the progress of the program and the impact it is expected to have.
 - iv annual public meetings which will contain a summary of the previous years activities, and a designation of goals and tasks for the succeeding year.
 - ν public hearings on each element at the time of completion.
 - c. Methods of coastal zone management adoption.
 - Recommendations as to the implementations of the above.

C. Participants:

- B.1. Bureau of Planning, University of Guam graduate student special project, Bureau of Budget and Management, Advisory Committee, Commissioners, general public.
- B.2. Bureau of Planning, University of Guam graduate student special project, Bureau of Budget and Management.

D. Products: (tangible)

(intangible)

 A series of reports and recommendations outlining the alternatives available in obtaining an affective organizational structure. Improved methods of communication between governmental agencies and the general public. A series of reports outlining the appointment and role of Citizen and Policy Advisory Committees, public hearing and coastal zone management adoption procedures, and the establishment of an appropriate coastal zone management clearinghouse and information center.

E. General Statement:

The completion of this element shall show evidence that the Government of Guam has the authority to organize, implement and regulate the coastal zone management program. This element shall also provide various methods of public participation within the planning process.

F. Costs:

- (B.1.) \$15,470
- (B.2.) \$5,000

COST SUMMARY OF 3-YEAR WORK PROGRAM

P	ROGRAM ELEMENT		WORK PROGRAM	COST
	920.11 Boundary	B.1.	Analyze alternatives for coastal zone boundary.	3,798
	920.12 Land and water uses	B.1. B.2.	regulate coastal land and water use.) Make recommendations as to the deletion) of unnecessary laws and as to the addi- ; tion of needed laws.	16,575
		B.3. B.4.	Inventory, mapping, and categorization of land and water resources and use.	112,742
			impacts.	30,000
	920.13 Geographic	B.1.	terrestrial data in terms of criteria and	25,000
	Areas	B.2. B.3.		25,000 30,000
		B.4.	designation of areas of particular concern. Identify, inventory, acquire and/	5,000
		6	or manage estuarine areas.	16,613
š	920.14	B.1.	Review all Federal and local legal policies concerning management of the coastal zone.	16 542
	•	B.2. B.3.		16,542
			Recommendations as to means of effect- ing change.	30,000 5,000
	920.15 Priority Uses	B.1. B.2.	problems, and issues pertaining to the coastal zone. Recommendations for integration of above	48,260
			priorities into the planning and decision making process.	25,000
,	920.16 Federal	B.1. B.2.	Inventory of coastal zone resources. Analyze the capability of resource	See 920.12-B4
	Interests	for support of each facility. B.3. Identify how the Federal agencies feel the coastal zone should be used in		20,000
		B.4.	the siting of facilities. Synthesis of information and recommend-	10,000
			ations as to siting of facilities using this information.	10,000
	920.17 Organization and	B.1. B.2.		45,470 5,000
	Implementation		These Vers Tatel	AFF 000
1			Three Year Total	455,000
			Administrative overhead (30%)	+ 136,500*
			W	591,500
. ,		19	Minus Government of Guam (1/3)	<u> 197,167</u>
	4.		TOTAL COASTAL ZONE MANAGEMENT GRANT	\$394,333

^{*} Includes acquisition of additional in-house personnel to administer program as well as appropriate supplies and equipment.
Also includes local and off-island travel expenses.

COST SUMMARY OF FIRST YEAR PROGRAM (75-76)

•**			
PROGRAM ELEMENT		WORK PROGRAM	COST
920.11 Boundaries	B.1.	Analyze alternatives for coastal zone boundary	3,798
920.12 Land and water uses	B.1. B.2.	Research of laws, ordinances, etc. which) regulate coastal land and water use. Make recommendations as to the deletion) - of unnecessary laws and as to the addi- tion of needed laws.	16,575
	B.3. B.4.	그 맛을 하는데 그 그는 그는 그는 그를 가장하면 그는 그는 그는 그들은 그를 다 그는 그를 다 하는데 그를 다 했다.	92,742
920.13 Geographic Areas	B.4.	Identify, inventory, and develop a manage- ment program for estuarine areas.	6,613
920.14 Control Means	в.1.	Review all Federal and local legal policies concerning management of the coastal zone.	16,542
920.15 Priority Uses	B.1.	Determine islandwide goals, objectives, problems, and issues pertaining to the coastal zone.	13,260
920.17 Organization and Implementation		Management and institutional analysis.	15,470
		FIRST YEAR TOTAL COST	\$165,000
		Administrative overhead (30%)	+ 49,500
			214,500
e ob a		Minus Government of Guam (1/3)	- 71,500
		TOTAL FIRST YEAR COASTAL ZONE MANAGEMENT GRANT	\$143,000

COST SUMMARY FOR SECOND YEAR PROGRAM (76-77)

PROGRAM ELEMENT			WORK PROGRAM				
	920.12 Land and water uses	B.4.	Inventory, mapping, and categorization of land and water resources and use.	20,000			
	Marel ases	8.5.	Research, develop, and apply criteria and measures to be used in assessing impacts.	20,000			
	920.13 Geographic Areas	B.1.	Gather, examine, and evaluate marine and terrestrial data in terms of criteria and standards.	20,000			
		B.2.	Identify areas which exceed standards.	20,000			
		B.4.	Identify, inventory, acquire and/or manage estuarine areas.	5,000			
**	920.14 Control Means	B.2.	Legal analysis of alternative control mechanisms.	30,000			
87	920.15 Priority Uses	B.1.	Determine islandwide goals, objectives, problems, and issues pertaining to the coastal zone.	25,000			
	920.16 Federal	B.2.	Analyze the capability of resource for support of each facility.	15,000			
•	Interests	B.3.	Identify how the Federal agencies feel the coastal zone should be used in the siting of facilities.				
	Organization		Management and institutional analysis.	30,000			
	and Implementation	on	•				
			SECOND YEAR TOTAL COST	\$190,000			
			Administrative Overhead (30%)	+ 57,000			
				247,000			
			Minus Government of Guam (1/3)	- 82,333			
		2	TOTAL SECOND YEAR COASTAL ZONE MANAGEMENT GRANT	\$164,667			

COST SUMMARY FOR THIRD YEAR PROGRAM (77-78)

PROGRAM ELEMENT			WORK PROGRAM	COST
	920.12 Land and Water Uses	B.5.	Research, develop, and apply criteria and measures to be used in assessing impacts.	10,000
	920.13 Geographic Areas	B.1.	Gather, examine, and evaluate marine and terrestrial data in terms of criteria and standards.	5,000
		B.2.	Identify areas which exceed standards.	10,000
		B.3.	Propose the designation and methods of designation of areas of particular concern.	5,000
		B.4.	Identify, inventory, acquire and/ or manage estuarine areas.	5,000
¥	920.14 Control Means	в.3.	Recommendations as to means of effecting change.	5,000
	920.15 Priority Uses	B.1.	Determine islandwide goals, objectives, problems, and issues pertaining to the coastal zone.	10,000
		B.2.	Recommendations for integration of above priorities into the planning and decision making process.	25,000
•	920.16 Federal Interests	B.2.	Analyze the capability of resource for support of each facility.	5,000
		B.3.	Identify how the Federal agenies feel the coastal zone should be used in the siting of facilities.	5,000
	15 45 av	B.4.	Synthesis of information and recommendations as to siting of facilities using this information.	10,000
	920.17 Organization and		Recommendations as to implement the management program.	5,000
	Implementati	on	· ·	
			THIRD YEAR TOTAL COST	\$100,000
		8-	Administrative Overhead (30%)	+ 30,000
		141	-	130,000
			Minus Government of Guam (1/3)	- 43,334
		*	TOTAL THIRD YEAR COASTAL ZONE MANAGEMENT GRANT	\$ 86,666

IN GUAM'S COASTAL ZONE

FEDERAL AGENCIES

ACTIVITIES

- 1. Department of Commerce
 - National Oceanic and Atmospheric Administration
 - Weather Service Meteorological Observatory
- *Monitors and gathers data relative to weather and atmospheric conditions; maintains all data collection and provides weather information to local and global weather forecast services.

- 2. Department of Interior
 - Geological Survey
 - i. Water Resource Division
- *Monitors and records water resource rélated areas such as stream flow measurement, rainfall guaging. Presently conducting Water Resource Data Management system and Ground Water Program.
 - B. Coast and Geodetic Survey
 - i. Magnetic and Seismological Observatory
- *Records and analyze magnitude and director of seimic action and gathers earth gravity data.
- Department of Housing and Urban Development
- *Provides financing assistance for single family housing; the main office is based in Honolulu, Hawaii which administers and provides planning assistance grants.

a Historia Contra

- 4. Department of Defense
 - 'A. Army Corps of Engineers
- *Although main office is based in Hawaii, they are responsible for reviewing all construction projects on Guam's coastal waters relative to environmental impact; presently undertaking the construction of Namo River Flood Control Program in Guam.

B. Military Services

*Uses approximately 20% of Guam's shoreline for bases and base recreational facilities.

- National Aeronautics and Space Administration
 - A. Guam Tracking Station
- *Monitors and records data on wind velocity and direction; has capacity of furnishing weather photography through satellite relay.
- **Effort is being made by the Bureau of Planning in coordination with Guam's A-95 representative to maintain awareness of other Federal and local programs and plans that impact upon this proposed Coastal Zone Program. All necessary precautions will be taken such that all programs enhance and complement one another rather than obstruct the achievement of the overall goal.

4. Department of Transportation

- A. Federal Highway Administration
- * Administers federal aid program in cooperation with the local Department of Public Norks towards major highway programs; also provides technical assistances on highway planning design and construction.

B. Coast Guard

* Provides for coastal waters and port areas: safety and security of navigation and passage; search and rescue; technical assistance to recreation boats; and law enforcement of territorial waters.

7. Department of Agriculture

- A. Federal Plant and Animal Quarantine
- * Morks in cooperation with various divisions of the local Department of Agriculture to promulgate quarantine regulations to protect the agricultural interests in Guam from new plant pests and diseases; provides technical assistance in investigating and monitoring agricultural and forestry programs.

GOVERNMENT OF GUAM AGENCIES

ACTIVITIES

1. Department of Agriculture

- *Administers and conducts Fish and Wildlife research development, and management activities.
- *Administers and conducts research and development projects of the Federal Aid to Commercial Fisheries Research and Development Program.
- *Controls and regulates fish and game in and about Guam.
- *Manages and enforces wildlife conservation areas.
- *Conducts monitoring and research of plant parasites.
- *Manages and administers forest restoration program.
- *Administers and manages activities on submerged lands.
- *Administers and controls all public land.
- *Administers and manages agricultural lease of public land.
- *Administers and enforces zoning and subdivision ordinances.
- *Administers program on outdoor recreation plan.
- *Administers nine member Planning Commission which serves as a review board for all zone change, zone variance and conditional use applications.
- *Presides on Subdivision and Development Review Committee which consist of principal government agencies and is responsible for review of all subdivision and development projects prior to review by Territorial Planning Commission.
- *Administers and conducts studies relative to Housing and Urban Renewal Programs.
- *Conducts land-use inventory and updating programs.
- *Directs the Island's comprehensive planning process and conducts studies in preparing the Island's master plan revision.
- *Conducts staff review and recommendation to Subdivision and Development Review Committee and Territorial Planning Commission.

2. Department of Land Management

- 3. Guam Housing and Urban Renewal Authority
- 4. Bureau of Planning

SEVERIMENT OF SAM AGENCIES

5. Public Utility Agency of Guam

Guam Power Authority

Department of Public Works

ACTIVITIES

- *Provides sewer and water services to civilian populace.
- *Administers water resource planning programs.
- *Coordinates construction of sewer treatment plant facilities and sewer outfalls.
- *Administers Water System Improvement Program.
- *Conducts staff review and recommendation to Subdivision and Development Review Committee and Territorial Planning Commission.
- *Provides islandwide electrical power service.
- *Conducts studies relative to electrical power needs and energy conservation efforts.
- *Coordinates construction of power plants.
- *Administers solid waste management and sanitary landfill programs.
- *Administers Drainage and Flood Control Programs.
- *Formulates and enforces grading ordinance standards.
- *Reviews and processes building permit applications; conducts inspection of civil and government construction projects.
- *Administers comprehensive highway planning program.
- *Conducts studies relative to feasability of Urban Mass Transportation Systems.
- *Administers the Island's capital improvement programs.

- 8. Department of Commerce
 - A. Parks and Grounds Division
- *Administers and maintains local.parks and parks facilities.
- *Administers and manages program for historic site preservation and restoration.
- *Conducts and reviews studies for marina development.
- *Conducts staff review and recommendation to Subdivision Development Review Committee and Territorial Planning Commission.

GOVERNMENT OF GUAM AGENCIES

- 9. Commercial Port
- Guam Environmental Protection Agency

11. University of Guam

- A. Sea Grant Program
- B. Marine Laboratory

- 12. Attorney General's Office
- 13. Guam Energy Office

ACTIVITIES

- *Administers and manages commercial harbor and harbor facilities.
- *Administers water pollution control programs including:
 - a. Reviews and makes recommendations for sewer and wastewater disposal design in processing of building permit applications.
 - Conducts the Island's water quality monitoring program.
 - c. Reviews environmental design criteria for sewage treatment plant facilities and sewer outfalls and assists in coordination of sewer treatment plant and sewer outfall construction.
 - d. Conducts water resource and water quality management studies.
 - Conducts staff review and recommendation to Subdivision and Review Committee and Territorial Planning Commission.
- *Conducts research related to the development of marine resources, with emphasis on practices, techniques and design of equipment applicable to development of marine resources.
- *Conducts research in the biological sciences including ecology, physiology and behavior of marine plants and animals, pollution studies, and basic research into the interrelationship of marine organisms and their environment. Major areas of research recently completed includes:
 - Talofofo Bay Coastal Survey

 Technical report
 - Coastal Survey of Guam a. Technical report
- *Provides legal opinion on matters regarding intent of land use ordinance and applicability of the various provisions.
- *Administers and enforces Federal Energy Guidelines.
- *Conducts studies on natural energy resources; current studies include research on solar and wind energy.