

Chapter Three

Environment and Resource Management

3.1 Focus and Purpose of this Chapter

This chapter focuses upon the policies and strategies the American Samoa Government can implement with best practices between 2002 and 2005 to protect and preserve the environment and the Territory's natural resources.

The policies and strategies, which appear in section 3.4 of this chapter, address the most acute environmental and resource management issues identified during the scoping and panel investigation process to formulate this plan.

The issues primarily focus upon concerns about the terrestrial and coastal environment and the Territory's natural resources. The maintenance of water quality and the preservation of marine life are predominate themes in this chapter. Moreover, the primary issues converge on land use and development practices and exploitation of the Territory's resources. Air quality, a common problem for the continental United States and developed countries, is not a principal concern for American Samoa at this time.

After a summary of the principal policies in section 3.2, and a brief discussion of the principal issues in section 3.3 of this chapter, the policies and strategies follow and are presented on the basis of the organization and mandates of the agencies of the American Samoa Government.

The policies and strategies in this chapter aspire to achieve the following aims or goals:

- development of cooperation and coordination among American Samoa Government agencies and departments to create the capacity to effectively manage the Territory's natural resources;
- the ability to integrate long-term planning and the development of policies among agencies

to better protect and preserve the Territory's environment and natural resources;

- the integration and co-sponsorship of programs to limit redundancy of efforts and to achieve maximum utilization of human and financial resources to enforce laws and regulations to protect the environment;
- a well-informed public with the knowledge and awareness of the resource management, protection and preservation practices required to sustain the Territory's environment and natural resources in a healthy state;
- individuals and communities committed to eliminating activities and causal factors that contribute to degradation of the environment and depletion of resources; and
- a balanced approach to development which assures economic and social development without degradation of the Territory's terrestrial environment or depletion of its natural and marine resources or wildlife.

3.1 Summary of Principal Policies

3.1.1 Overall Policy for the Environment and Resource Management Component of the Territorial General Plan

Focus upon creating the capacity within the American Samoa Government to effectively manage the terrestrial, coastal and natural resources of American Samoa's islands and to protect and preserve the environment for the future sustainable development of the Territory

This mission is supported by policies and strategies in section 3.4 of this chapter. They are briefly outlined on the following two pages to

provide a quick overview of this chapter's content and strategic direction.

3.2.2 Principal Policies for the Environment and Resource Management

- **Promoting Long-Range Environmental Planning**.....support the implementation of long-range planning for the economic, environmental and cultural and social sustainability of the Territory
- **Promoting Public Awareness for Environmental Protection**.....promote a sense of responsibility at the community and individual level to improve the environment of the Territory
- **Complying with Environmental Laws**..... create a strong commitment to compliance with environmental laws and regulations through public education programs
- **Preserving Groundwater Quality**implement habitat restoration and protective measures in order to end pollution of the Territory's groundwater resources and drinking water
- **Disposing of Solid Wastes Properly**develop an effective program to manage the disposal of wastes and to regulate and protect the community from the impacts of hazardous materials
- **Observing the Proper Use of Pesticides and Chemicals**.....ensure that only legal pesticides and chemicals are used and usage is within the recommendations of the manufacturer
- **Dealing with Piggeries Pollution**.....focus upon piggery waste management principals to reduce piggery pollution as a major source of non-point pollution
- **Preserving the Forests**.....promote the retention of forests throughout the islands, discourage the clearing of forests and encourage best practices to preserve the well-being of the forests
- **Eradicating Invasive Species**.....eradicate invasive species through intensive assessment and monitoring, legislation enabling their eradication, and strict quarantine procedures
- **Supporting Traditional Knowledge**.....support traditional knowledge and agricultural practices that are environmentally friendly and transmit valuable knowledge
- **Preserving Unique Areas of Environmental Significance**.... promote conservation of aquifer recharge areas, special habitat sites, watersheds and coastal areas of environmental importance
- **Preserving the Wetlands**.....establish programs to promote the retention, restoration and preservation of wetlands and programs to reduce degradation and depletion of wetlands
- **Promoting the Preservation of Coral Reefs**.....include science instruction in the education system and implement public awareness programs to address the threats to coral reef systems
- **Stopping Over-Harvesting of Marine Life**.....reduce the over-harvesting of marine life and reef fish and maintain sustainability of their stocks with education and restrictive legislation
- **Protecting the Oceans' Resources**.....develop policies and planning to manage and protect the ocean environment and advocate the modification of laws and regulations to protect the ocean
- **Assessing the Pelagic Fish Stock**..... evaluate pelagic fish stocks for sustainability under continuous fishing pressures and establish policies and guidelines for the harvesting of pelagic fish

- **Protecting Native Birds and Mammals**monitor, manage and control the impact of human activities upon wildlife to sustain native fauna species and to remove the threats to them
 - **Managing Cumulative and Secondary Impacts**.....implement long-range, integrated planning to reduce, mitigate or eliminates negative impacts caused by inappropriate development
 - **Controlling Coastal Hazards**.....strengthen the ability to protect coastal resources through education and public awareness programs and better enforcement of resource regulations
 - **Halting Unsound Development Practices**.....curtail unsound development practices by creating appropriate legislation and restrictions that can be effectively administered by the PNRS
 - **Studying Population Growth and Immigration**.....study migration and movement within the Territory to adapt the Territory's planning programs to the changing characteristics of the population
 - **Promoting Community Inspired Policies and Development**..... in consort with the social, commercial and environmental aspirations of the community compatible with comprehensive plans
 - **Adopting Land Use Management**.....formally adopt the Tualauta County Land Use Plan and implement the land use management policies and actions for the rational and best use of the land
 - **Applying Resource Management Planning in Tafuna**.....implement the development assessment studies, resource management planning, and the utilities and infrastructure plans recommended in the Tualauta County Land Use Plan to foster appropriate human settlement and development
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- **Promoting Land Conservancy Planning**.....designate new land areas for recreation and conservation and develop land use policies that allow for the use of communal open space
 - **Revitalizing the Pago Pago Area**..... promote the urban renewal and revitalization of the Pago Pago Bay area through community development initiatives and urban renewal programs

3.3 Brief Review of Environmental Issues

There are three prevalent issues that appear throughout this environment chapter and are common issues for the resource management agencies. They contribute significantly to the state-of-the-Territory's environment. They are:

- the environment of the Territory is degraded and its natural resources are being depleted;
 - the public, communities and individuals do not possess adequate knowledge of their actions which damage the environment, or they do not possess positive attitudes toward protecting the environment; and
 - the laws and regulations governing the conservation, protection and preservation of the environment are inadequately enforced by enforcement agencies or individuals with the responsibility for enforcement.
- Most areas of the environment have been diminished, degraded or depleted to various degrees. Some types of damage from natural causes can be eventually overcome by natural, ecological renewal processes, while in other cases, there will be no opportunities for renewal from human development activities.
- The coral reefs on Tutuila sustained noticeable damage from the hurricanes in the

early 1990s, an invasion of 'crown of thorns' starfish in the late 1970s, and from bleaching and die-off caused by El Niño low-tide events in 1994 and 1998. The coral reefs are slowly recovering from those natural events, but they are being impacted by human settlement along the shoreline and siltation caused by improper construction and development practices upstream of the coastal shores. In addition, they are constantly being degraded by the dumping of solid wastes and by the disposal and/or misuse of chemical agents, like soaps and detergents.

Marine resources, which have traditionally been a staple of the Samoan diet, including fish and a range of reef marine life, are presently under stress from overfishing in some reef areas. The rapid growth of the human population and the demand for fish have raised the concern that the fish stock could be depleted without proper controls and management. These are noteworthy concerns, as a rapid escalation of bottomfishing in the 1980s quickly led to a lessening of the stock. And most recently, the U.S. National Marine Fisheries Service placed limits on the number of large boats that could fish in American Samoa's offshore waters for commercial pelagic fish, due to the concern for the sustainability of the fish stock.

American Samoa's wetlands are under siege from human settlement. It has been estimated that as much as seventy percent of the island's wetlands have been lost to development since 1900. Of the wetlands remaining, most are seriously threatened by human activities that would degrade the health of the ecosystems, as repositories of wastes, or from cutting of mangrove trees, an important ecological habitat for the renewal of marine life.

Improper land use and development activities and improper human settlement threaten to impact the Territory's terrestrial environment, wildlife and water resources. The lack of comprehensive land use policies and planning regulations are at the root of the problem, as well as the lack of effective enforcement of resource management laws and regulations that would protect the environment.

There is paramount concern that the future unregulated residential and commercial

development of the watershed and recharge areas of the Tafuna Plain and Malaeimi Valley, the Territory's primary source of drinking water, will degrade and contaminate the fresh water aquifer that lies beneath these areas. There is also concern that improper agricultural activities, the improper use of herbicides and pesticides, the dumping of chemicals, poorly controlled piggery wastes, and the lack of proper management over septic systems will also contribute to groundwater contamination and serious health problems that the Territory has not yet experienced.

The disposal of solid wastes has been a serious problem for many years. Waste collection and waste management has improved markedly in the last several years, but trash and rubbish can still be seen along the sides of the road and in the streams. Not only has the mishandling of wastes resulted in health problems, but it has degraded the aesthetic beauty of the islands and discouraged the development of a tourism trade. Secondly, wastes management is becoming a greater problem due to the importation of non-biodegradable and non-recyclable products.

Many of American Samoa's environmental concerns can be attributed to public awareness and the enforcement of laws that would mitigate the issues, but the Territory also needs to strengthen its environmental and land use planning efforts with laws and regulations to account for 21st Century development issues.

As of 2002, there are still no formal land use and zoning regulations that apply to the Territory. The Territory's planning statutes and regulations are out of date and cannot contribute to the control of future development as they stand. Controlling growth is a serious problem of the Territory, and unfortunately improper development practices are widespread.

The Territory's rapid population growth could lead to extensive clearing of land on Tutuila's steep slopes for new housing as lowland settlements fill. Deforestation is already an acute issue that leads to cumulative impacts upon the groundwater resources, the floodplains, and eventually siltation of the coastal reefs. The consequences of deforestation are invariably soil

erosion and hazardous landslides during periods of heavy rainfall. Deforestation for agriculture and human settlement also results in the removal of wildlife habitat.

At present the impacts upon the wildlife, i.e., birds and mammals, from human settlement and deforestation are not well known, nor are the effects of invasive species of wildlife upon native species. However, there is the potential for invasive species of plant life to overtake the native forest and destroy the habitat and resources upon which the wildlife rely.

3.4 Policies and Strategies

3.4.1 American Samoa Environmental Protection Agency

3.4.1.1 Territorial Environment

Overall Issue

Although the Samoan culture creates a strong sense of community among the people, the practice of shared responsibility is not applied to pollution control or other environmental problems. The result is that the population recognizes many of the consequences of increased pollution, but concerted efforts at mitigation are negligible. At the individual level, Samoans often have expectations as to what actions their government should take to manage the mounting crisis of pollution on their islands. The government, in turn, often considers these same actions the responsibility of the community and individual. Because there is a modest tax-base, and no property taxes levied in American Samoa, government services are understandably limited to essential services. Pollution prevention and control is largely, and appropriately, the responsibility of communities and their individual members. Changing people's and communities' behavior may be a much more cost effective means to make long-lasting improvements to environmental health, than are government regulatory actions. However, public awareness about environmental protection at this time is inadequate to affect a change.

If public awareness of pertinent environmental issues remains inadequate, public behavior and attitudes toward the environment will not improve until quality of life is significantly affected, but by then, it may be too late to remedy the situation. If public awareness does not improve, popular support for enforcement of environmental laws will also remain low.

**ASEPA
Strategic
Policy**

Promote public awareness for environmental protection and preservation; and promote a sense of responsibility at the community and individual level to create a vision of improved long-term environmental health for the Territory

Strategies

integrate the concepts of watershed protection and management into all applicable program activities and focus on watersheds because water is the primary means of transporting pollutants and disease

aggressively promote that the onus of responsibility for resource management and environmental protection is on the individual and community

focus on public education and outreach, and focus staff training efforts on basic fundamentals and scientific principals to increase ASEPA staff capabilities

carry out a consistent and focused public education program that emphasizes private sector responsibility for environmental health and community well-being

Responsibility
ASEPA

Participants
ASPA
DOC
DOH
DLG
DOE
DOA
Business
DMWR

Reference
TGP ASEPA
Issues 2001

3 . 4 . 1 . 2

Groundwater and Potable Water

Issue

The American Samoa Environmental Protection Agency is concerned about the contamination of groundwater resources that provide the Territory's drinking water. Improper land development due to poor enforcement of development regulations, insufficient maintenance of septic systems, piggeries and poor waste management practices are potential sources of groundwater contamination. Lack of knowledge about the impacts upon human health, insufficient public awareness, and a lack of enforcement of violations contribute to the risk of contamination. Developers and road builders use unregulated construction methods, farmers use pesticides and chemicals improperly, piggery owners do not contain hog urine and fecal wastes, and homeowners do not dispose of liquid and solid wastes properly. These development problems might be limited or mitigated if there was dedicated enforcement and adequate legal staff to stop the contamination. Unfortunately, there is a lack of enforcement and punitive damages are not strong enough to have effective results.

If measures are not taken to control the sources of contamination, groundwater quality will progressively decline to the point where more costly water treatment will be necessary. These costs will be passed on to the customer, and the probability of serious health problems, such as gastroenteritis will increase. If groundwater quality is protected, treatment of water will remain relatively simple and affordable and the incidence of water-borne diseases may decrease.

**Groundwater
Quality
Policy**

Focus on community participation to develop a growing cycle of environmental awareness among the public; and implement habitat restoration and protective measures in order to end wide-spread pollution of the Territory's groundwater resources and properly protect the Territory's drinking water

Responsibility

ASEPA

Participants

ASPA

DLA

DOC

DPD

DOH

DPW

DLG

DOE

Fono

Reference

TGP Agency Issues 2001

ASEPA

3.4.1.3 Nearshore Water Quality

Issue

Improper development and waste management results in significant degradation of coastal water quality. Although public information programs have been used in the past to alert people to the dangers of poor waste disposal practices, there still remains a lack of knowledge of the links between actions on land and water quality. There is still insufficient public awareness

among the public about the impacts of their actions.

Strategies

monitor and regulate the quality of the public water supply

implement groundwater education and conservation measures

continue the watershed education and riparian habitat restoration program

implement the American Samoa Watershed Protection Plan, and the American Samoa Wetland and Stream Restoration and Enhancement Plan

promote the use of stormwater controls and support legislation to limit poor development practices, and monitor developments to mitigate and implement strategies that reduce water quality impacts

eliminate illegal cesspools and promote proper septic tanks and connections to the sewer system; and establish proper protection for well-heads in or near watersheds to reduce the risk of contamination

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coordinatio
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controls
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to provide
accurate
informatio
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pollution at
sea.
Informatio
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control
over

sources of pollution at sea is also a problem. Monitoring of pollution and coastal resources requires the assistance of fishermen, business and industry, the Department of Port Administration, the Department of Marine and Wildlife Resources and the U.S. Coast Guard. are issues to be remedied.

If coastlines and beaches will become more polluted there will be a significant negative impact upon the marine environment and availability of marine life for food resources. Severe effluent discharges will pose health risks to beach-goers and fishermen. Polluted coastal and nearshore waters will discourage tourism development.

Coastal and Nearshore water Quality Policy

Create a strong commitment to compliance with environmental laws and regulations through public education and develop programs, policies, laws and regulations to provide better enforcement of the Territory's Environmental Quality Act

Strategies

assess over time the success of Non-Point Source management measures in reducing pollution loads and improving water quality

continue to pursue amendments to the Territory's Environmental Quality Act to improve compliance with environmental laws and regulations

establish a public information program to encourage compliance with environmental laws through voluntary, cooperative methods

establish an appropriate and credible enforcement component to the agency to provide more consistent and rigorous enforcement of environmental laws

establish a public education campaign to provide an orientation to ASEPA's enforcement program and work with other enforcement agencies to orient their staff to the needs of enforcement environmental laws

Responsibility
 ASEPA

Participants
 ASCMP
 DPA
 DLA
 DLG
 DOH
 DPA
 DPS
 DOE
 KVZK

Reference
 TGP Agency
 Issues 2001
 ASEPA

3.4.1.4 Solid Wastes

Issue

Illegal dumping and the accumulation of solid waste presents a health and environmental problem. There is a lack of knowledge of the impacts of solid waste upon the environment. The lack of awareness of environmental issues is common among school children, Pulenu'u and the community at large. Littering and dumping violations are commonplace. Enforcement of existing regulations is difficult, because of ineffective enforcement and lack of political and public to improve solid waste disposal.

If measures are not taken to reduce illegal solid and hazardous waste disposal, the effects of these pollutants on the environment and quality of life will increase. Visual pollution will adversely affect the local tourist industry. Most importantly, accumulation of solid wastes poses a serious health hazard as these sites provide breeding grounds for rodents and mosquitoes which spread diseases to people. Indiscriminate dumping of solid waste includes glass and scrap metals that can cause injury. In an attempt to reduce trash piles by burning, toxic fumes from plastics, rubber, and metals, such as lead, are released. These fumes are a serious threat to human health.

Solid Waste Disposal Policy

Develop an effective Territory-wide program to proactively reduce the creation of solid waste and manage the segregation, disposal and recycling of wastes

Strategies

continue the public awareness programs to alert people to the dangers of improper solid waste disposal and focus on education in the schools and outreach programs to reduce littering and the mis use of chemicals/pesticides

enhance ASEPA's ability to maintain control over and restrict hazardous materials use, including providing better enforcement and strict inspections of vessels to eliminate illegal chemicals from entering the Territory

identify and require closure of contaminated sites and follow with cleanups

support recycling and develop incentives and programs to recycle wastes

develop incentives to restrict importation of non-recyclable materials and short-lived materials and equipment that will be costly to either store or remove

improve the monitoring program of chemical use and develop a better prepared response to emergency situations and the release of hazardous materials

develop a plan for the disposal of heavy equipment, vehicles and non-

Responsibility
ASEPA

Participants
ASP
ASMCA
ASTCA
DOE
DOH
DPS
DLA
DPA
TEMCO
DPW
KVZK

Reference
TGP Agency
Issues 2001
ASEPA

3.4.1.5 Piggery Waste

Issue

Piggeries waste has become a serious problem as the urine and fecal matter from the concentration of pigs is contaminating the groundwater supply and affecting ecosystems. Inadequate waste management practices at piggeries are a source of the contamination. Pig owners and farmers do not adequately understand the impacts of poor animal husbandry practices and they lack knowledge of proper management techniques. There is also insufficient awareness among village leaders of where piggeries should and should not be sited.

The problem is controllable and treatable but the problem has been created from; a lack of awareness about the impact of piggery fecal wastes upon the environment; a lack of enforcement of existing public health laws that pertain to control of piggeries and animal wastes; a lack of economic incentives for good animal husbandry towards controlling the situation; a lack of knowledge of diseases associated with piggeries, and a lack of planning and zoning for agriculture and animal husbandry that would isolate piggeries and guard the groundwater supply. Furthermore, the control agencies, i.e., ASCMP and ASEPA, have been limited by the number of staff capable to dealing with the problem. ASPA has been attempting to provide incentives, e.g., composters and sewage hook-ups, but all agencies are limited in their resources to mitigate the issues.

In 2000 the the Interagency Piggery Management Council was created to deal with piggery wastes and management. The Council consists of ASEPA, the Community and Natural Resources Division and the,Extension and Forestry Divisions of ASCC, the USDA-Natural Resource Conservation Service, the Soil and Water Conservation Board and the Resource Conservation and Development Council. During FY2001 the Interagency Piggery Management Council sponsored workshops for the general public that promoted environmentally friendly piggery designs and basic animal husbandry skills. The Council also conducted workshops for village mayors and religious leaders to explain the necessity of the piggery program. Since the program is new, the long-term effects of its activities are not known.

If the number of piggeries and pigs increase, the effects of animal waste pollution will increase the contamination of surface water, ground water and coastal waters. This will threaten public health by increased bacteriological contamination of ground water and surface waters that are still used by some people for drinking and bathing. From the perspective on non-human impacts, the effects of animal wastes being directly discharged into the environment increases nitrogen and phosphorous loads that adversely affect watersheds, streams, and the coastal environment by decreasing oxygen supply due to rapid algae growth.

**Piggery Waste
Management
Policy**

Focus upon piggery waste management principles to reduce piggery pollution as a major source of non-point pollution in American Samoa; support the development of controls over piggery waste for the preservation of a healthy environment through the activities of the Interagency Piggery Management Council and promote the education of village leaders, piggery owners and the public about piggery waste issues

Strategies (Piggeries)

develop support within the American Samoa Government for continuing the Interagency Piggery Management Council's program and continue the activities established in 2001 to enhance public awareness of the dangers brought about by piggery contamination

identify appropriate methods for the best disposal methods of piggery wastes

increase the number of sanitation inspectors and provide education regarding piggery control requirements and diseases related to piggery functions

identify incentives to bring piggeries into compliance with waste management schemes

cooperate and coordinate with the Department of Agriculture to educate and to provide technical assistance for the public and farmers to understand best management practices for piggeries

work with the Office of Samoa Affairs to strengthen the public awareness of the problems of piggeries and the need to control their wastes among the village mayors, in order to gain their cooperation in lessening the impact of piggeries upon the environment

work with the media to develop public education programs about the impact of pollution and piggeries upon the environment

cooperate in the development of land use plans and zoning regulations for the siting of piggeries in appropriate areas

Responsibility
ASEPA

Participants

ASCC-CNR
ASPA
DOC-ASCMP
DLA
DLG
DOA
DOC
DOH
KVZK
Fono
National Park
NRCS

Reference

TGP Agency
Issues 2001
ASEPA

TGP Issues
Statement
2001
ASCC-CNR

3.4.2 American Samoa Coastal Management Program

The American Samoa Coastal Management Program (ASCMP) was established by executive order in May of 1980 with a broad mandate to coordinate government processes relative to village development, to review development activities, and to manage and protect the Territory's natural resources. In 1988, the responsibilities of ASCMP were expanded by executive order to include administration of the Project Notification and Review System (PNRS), which issues land use permits.

The ASCMP enabling legislation was again superseded by the Coastal Management Act of 1990 (P.L. 21-35) which provided 'that the general purpose of ASCMP is to provide effective resource management by protecting, maintaining, restoring, and enhancing the resources of the coastal zone.' ASCMP would do this by:

- protecting unique areas and resources, including wetlands, mangrove swamps, aquifer recharge areas, critical habitat areas, streams, coral reefs, watersheds, nearshore waters, and designated or potential historic, cultural or archeological sites from destruction or inappropriate development;
- developing strategies for coping with sea level rise, other coastal hazards, and cumulative impacts;
- promoting the public health and safety and economic welfare in the conservation of wildlife, marine, and other resources;
- coordinating planning, monitoring, and enforcement activities for all ASG agencies whose activities affect the coastal zone; and
- improving and expanding recreational activities.

Thus, ASCMP is empowered with a mandate over a broad range of matters that involve the natural Territory's resources but also the economy, the society and development.

3.4.2.1 ASCMP Enforcement Authority

Issue

The Section 312 *Evaluation Findings for the American Samoa Coastal Management Program from March 1997 through July 2000*, which resulted from a required assessment of the program's effectiveness by NOAA's Office of Ocean and Coastal Resource Management (OCRM), identified several major issues and made recommendations for their correction.

ASCMP's primary issues that need to be addressed in regard to the Project Notification and Review System during this plan period relates to: the enforcement and monitoring of development activities; interagency responsibilities in the process; community acceptance of land use controls; and balancing the costs of development controls against the weight of unattended impacts.

Because these concerns cut across agency authority, the response in this plan is to handle them at a higher level. Thus section 1.3 of Chapter One addresses how ASCMP and the resource management agencies intend to treat the issue of enforcement and monitoring of development.

3.4.2.2 National Flood Insurance Program

Issue

The Section 312 evaluation also identified concerns other than enforcement relative to protection of the Territory's resources and recommended measures as future activities and programs to be undertaken by the ASCMP.

The Territory will face the dilemma of how to deal with entry into the National Flood Insurance Program. The issue is multi-faceted. It requires that property be insurable, that the flood insurance maps (upon which construction decisions are made) are up-to-date, that policies and procedures for the new requirements of the Flood Insurance Program are put-in-place, and that cooperation among government agencies is needed. Since there are many changes expected to take place in order to implement the Flood Insurance Program, it is not expected to be a simple task to achieve immediately.

Flood Insurance Program Policy

The American Samoa Coastal Management Program and affected government agencies should work to develop a coordinated approach to implementing the National Flood Insurance Program and observe the requirements of the program in order to protect the Territory's structures from the dangers of flooding

Strategies

identify the needs and requirements of the new National Flood Insurance Program and inform the Governor's Office of the importance of following through with participation in the program and communicate the need for American Samoa's participation in the National Flood Insurance Program to other government agencies and organizations responsible for implementation

establish an Inter-Agency NFIP Implementation committee to oversee the work prior to participation in the program

work closely with the Federal Emergency Management Agency to identify and secure sources of technical and financial assistance to prepare for participation

update the Flood Insurance Maps to correspond to new measurement and floodplain level categories and predicted sea level rise

develop a Flood Insurance Implementation plan under the supervision of the Inter-Agency Implementation Committee

Responsibility
ASCMP
GOV

Participants
DOC Planning
TEMCO
DPW
DLA

Reference
Section 312
Evaluation
2000

3.4.2.3 Protecting Unique Areas and Resources

Issue

The Territory's availability of pristine areas is diminishing quickly. Wetlands are being degraded and depleted while forests are being removed for development. The encroachment upon the Territory's natural, renewable resources, i.e., land and water, is increasing rapidly with the increase of population and the pressures for finding new areas for human settlement. ASCMP has put an extensive effort into stemming the tide of irresponsible development, but has not had the financial and human resources to fulfill its goals relative to protecting and preserving the environments and ecosystems that are or may be under threat. This includes establishing Special Management Areas, preserving habitat areas for wildlife, and securing the financial resources to purchase reserves as was the intent to save the rainforest of Tafuna.

Unique Areas and Resources Protection Policy

Preserve unique areas of environmental significance and promote the conservation of aquifer recharge areas, special habitat sites, watersheds and coastal areas of historic, cultural and environmental importance

Strategies

- establish the Malaeimi Valley as a Special Management Area to protect the Territory's primary aquifer and source of drinking water
- establish the Malaelola watershed as a Special Management Area to protect the aquifer as a source of drinking water for Tutuila
- support the monitoring and protection of the flora and fauna of Rose Atoll from possible encroachment from poachers
- work with the Federal agencies to identify the resources to secure lands and resources in need of protection and to find alternative options for protecting and preserving important environmental areas

Responsibility

ASCMP

Participants

DMWR
DLA
ASCC-CNR
ASEPA
ASP
ASHPO
National Park
US F&WS

Reference

ASCMP

3.4.2.4 Cumulative and Secondary Impacts from Development

Issue

The *Section 309 Assessment and Strategy for the American Samoa Coastal Management*

Program (which was undertaken by the Pacific Basic Development Council as a Federal requirement to evaluate the past performance of the ASCMP) identified three priority environmental areas of concern that need to be addressed in coming years to mitigate and reduce development issues. They are, in priority order, concern for the environmental areas of: cumulative and secondary impacts, wetlands, and ocean resources. The assessment also recognizes coastal hazards, marine debris and the need to register sensitive environmental areas as Special Management Areas as important issues to handle.

High population growth rates and the impacts of development are the primary reason for ranking cumulative and secondary impacts as the number one priority. In the words of the Section 309 assessors, "There is a growing concern that the recent rate of development in American Samoa is having an overall negative impact upon the quality of life of its residents. The deterioration is far-reaching and it negatively affects such diverse assets as natural resources as well as traditional decision-making systems, including a breakdown of traditional village planning and resource management. Especially prominent are potential threats to drinking water, wetlands, and near shore fisheries caused by physical development, pollution, and increased sedimentation. However, these are the by-products of seemingly uncontrolled and unplanned growth."

"Residential development has had cumulative impacts on environmentally sensitive areas

and historic properties. The cumulative effects of unplanned residential growth are causing adverse impacts on the visual setting and character of historic buildings and landscapes, especially in the Tafuna Plains region. Encroachment on environmentally sensitive areas such as wetlands either through physical development or non-point source pollution and increased run-off, has become and especially important problem."

Rapid development in some areas of the Territory, and specifically on the Tafuna Plain, is overtaking the ability of the government and village authorities to effectively deal with the cumulative and secondary impacts of development. From an overall perspective, there is no long-range planning to account for the integration of economic, social and cultural changes that are transforming the face of the Territory. There is inadequate attention given to analyzing trends, to analyzing programs and projects for cumulative economic, social and environmental impacts, and inadequate local, regional and facility planning to accommodate future population growth and the development of commerce and communities.

The ASCMP lacks adequate tools and staff to effectively study and come to grips with cumulative and secondary environmental impacts of throughout the Territory. Foremost among the needs is the ability to map the Territory and analyze critical areas of development.

Cumulative and Secondary Impacts Policy

Support the implementation of long-range planning that accounts for the economic, social and cultural sustainability of the Territory; that stresses a balanced approach to development; and that reduces, mitigates or eliminates negative cumulative and secondary environmental impacts

Strategies

support actions to revitalize the Territorial Planning Commission

support a public education program aimed at building support for policies and strategies of the Territorial General Plan

develop an information system to track growth and development and to provide information for land use management and resource management decisions

develop of an agency geographical information system (GIS) to map and analyze the Territory's land use, natural and water resources and support a agency-wide effort to develop a central or cooperative government GIS program

implement organizational changes to more effectively integrate land use management and zoning systems into laws, regulations and planning

implement measures to strengthen the preemptive oversight capacity, decisions and enforcement of the Project Notification and Review System

implement the recommendations of the Population Task Force to account for and manage population growth and immigration

develop a public education plan and program for the Territory that addresses

Responsibility
ASCMP

Participants
PNRS
Agencies

Reference
ASCMP
309
Assessment
and
Strategy
2001

3.4.2.5 Wetlands

Issue

“The primary problem facing American Samoa’s wetlands is development. Wetlands are cleared and filled for housing, commercial development, and agriculture.” Wetlands are also degraded by dumping of trash, discharging of liquid wastes, upstream pollution from piggeries and disposal of wastes in streams, the cutting of mangroves for firewood, and siltation from upstream erosion caused by improper development activities.

Between 1900 and 1961 estimates of wetlands loss range from twenty-five to forty percent of all wetlands in the Territory were lost due to development. Between 1961 and 1991, a third of the remaining wetlands were estimated to be lost. In 1961 there were 600 acres of wetlands in the Territory, today there are less than 450 acres. This represents an average annual loss of nearly five acres per year. While there has been heightened public education and awareness of the issue, the largest mangrove swamps and wetlands on Tutuila continue to be depleted.

Pollution continues to degrade the wetlands and their habitat. A major problem is still chemical pollution. Pesticides, household chemicals, detergents, run-off from piggeries and other forms of non-point pollution pose serious threats to the sustainability of the wetlands.

Wetlands Preservation Policy

Establish programs to promote the retention, restoration and preservation of wetlands; and support programs to reduce activities which would degrade and deplete wetlands

Strategies

- continue the development of village ordinances based on the delineation and mapping activities of the Community Based Wetlands Management Program
- develop research activities in cooperation with ASEPA to determine how and why wetlands are being impacted
- develop a program to facilitate sustainable, economically viable, community-based development of wetlands that would support activities like ecotourism
- strengthen public outreach and education efforts focusing principally on community leaders
- continue wetland restoration efforts, build up inter-agency coordination for better enforcement efforts
- develop volunteer monitoring capability with the cooperation of schools
- research and support appropriate technologies for living near wetlands

Responsibility

ASCMP

Participants

ASEPA
DLG
DMWR

Reference

ASCMP
309
Assessment
and
Strategy
2001

3.4.2.6 Ocean Resources

Issue

The Section 309 Assessment and Advisory Council meetings determined that nearshore resources should be a third priority of the ASCMP. The 309 Assessment reports that there is a “growing concern that existing ocean management regimes are not adequate to prevent the depletion and degradation of ocean resources in American Samoa” waters. There had been no further developments in ocean management since 1990, when the Exclusive Economic Zone legislation was introduced, until recently, when in August 2001, the U.S. National Marine Fisheries Agency closed fishing within a fifty mile limit to foreign vessels to preserve ocean fish stock and limit the take to American Samoa.

Ocean resources are influenced by what happens on land and in the nearshore.
Activities

detrimental to ocean resources, for which the ASCMP can influence or control, contributed to the Advisory Council’s opinion to raise the level of concern for ocean resources. The problems are: over-fishing, generally caused by population growth and the introduction of new fishing technologies to meet the increased demand for seafood; ocean dumping of chemicals, oil spills, bilge clearing; pollution caused by disposal of solid and liquid wastes in streams; and the depletion of mangroves which are the breeding grounds and source of marine life and valuable ecosystems.

Ocean Resources Management Policy

Lead the development of policies and planning to protect American Samoa’s ocean environment and advocate the modification of laws and regulations to account for diminish the threats to the ocean environment

Strategies

develop and Ocean Resource Management Plan at the Territorial level involving a broad-based participatory planning process

conduct a public awareness and education campaign aimed at building support for the Ocean Resource Management Plan

establish a task force devoted to making changes in existing laws and regulations to bring them into consistency with the Ocean Resource Management Plan

build support among the public and the Territory’s legislature to adopt the plan by statute, and make changes to statutes

Responsibility

ASCMP
GOV
DLA

Participants

DMWR
DOA

Reference

ASCMP
309
Assessment
and
Strategy
2001

3.4.2.7 Coastal Hazards

Issue

Human settlement in American Samoa has traditionally been along the coast and on the narrow coastal shelves of its islands. Because of the physical arrangement of these small, narrow coastal shelves, which are bounded by the sea and steep mountain slopes, human settlement has always been faced with the risk of hazards. The hazards most likely associated with economic loss are storm surge and high winds that result in erosion of the shoreline. Serious threat to life is a consequence of landslides, falling rocks activated by heavy rains or earthquakes, hurricanes and tsunamis. Hurricanes and tsunamis randomly strike the islands of American Samoa. They have caused loss of life and millions of dollars in damage throughout the Twentieth Century and, therefore, pose the greatest danger.

Population growth and development on the island of Tutuila are putting more people and property at risk, as natural threats are exacerbated by human activity, which often includes the unwise and unsound practices of sand mining of the shoreline, dredging, construction on filled land near shallow inlets, and new construction on coastal shelves that are not well protected from natural hazards.

The new threat of climate change, global warming and sea level rise, add another dimension to the existence of human settlements along the coastal shelves of the islands. While the hazards mentioned above are episodic and random, a marked sea level rise will mean permanent removal of human settlement along the coastal shoreline.

Coastal Hazards Policy

Strengthen the ability of the American Samoa Coastal Management Program to protect the coastal resources of the Territory through public education and awareness programs and better enforcement of resource regulations

Strategies

continue the public awareness and education activities, but focus upon getting the message to village leaders and through village councils

continue to strengthen the leverage of the Project Notification and Review System to implement compliance with respect to building restrictions

utilize the village ordinances and agreements developed by the Coastal Hazard Assessment and Mitigation Project (CHAMP) to address the outstanding problems of coastal resource protection

develop a coastal protection awareness agenda for human settlement in consort with a flood mitigation plan for coastal areas and cooperate with the Territorial Emergency Management and Coordinating Office to develop emergency programs consistent with development standards and a comprehensive planning effort

Responsibility

ASCMP
 DPD

Participants

PNRS
 DLG
 DOE
 DPS
 DOH
 DLA
 DPW
 TEMCO

Reference

ASCMP 309
 Assessment and
 Strategy 2001

3.4.3 Coral Reefs and Marine Protected Areas

3.4.3.1 Fagatele Bay National Marine Sanctuary

The Fagatele Bay National Marine Sanctuary focuses on protecting the resources, both natural and cultural, of Fagatele Bay. The Sanctuary extends its realm of interest to include the reefs of American Samoa, in general, and includes them in the Sanctuary's planning. The Sanctuary is managed by a variety of tools that include education, science investigation and monitoring, and enforcement of Sanctuary regulations.

The Sanctuary's primary focus since the mid-1980s has been upon education. The Sanctuary's annual programs utilize the Department of Education, the media and publications to propagate public awareness among school children and the public in general.

**Marine Sanctuary
 Public Awareness
 Policy**

Promote the conservation, preservation and protection of the Fagatele Bay National Marine Sanctuary through public awareness, formal education, community involvement and media information; and conduct studies to assess the state

**of the
 Sanctuary
 and its
 marine life**

Strategies

teach people at a young age in the schools to value the environment:

- Reef Week ...introduces 4th grade students to the importance of reefs;
- Enviro Discoveries Camp (Camp Tififiti)...a summer camp that involves 8 to 12 year old children in an environment and reef oriented curriculum;
- Save-a-Beach...a program aimed at the 'adoption' of a beach by a school class, which is responsible for the care and cleanliness of the beach

involve people in community programs to highlight the care of ocean resources

- Coastweeks...a program spearheaded by ASCMP at which time FBNMS offers
- Whale Watch boat tours and sponsors Art and Tide Calendar competition
- School visits and field trips... to orient students to the Marine Sanctuary
- Le Tausagi village outreach program

advertise the Marine Sanctuary through media events and promote its theme

conduct resource surveys, mapping and monitoring of the state of the Marine Sanctuary and reefs.

- Triennial Survey...conducted by marine and ocean biologists to assess reef resources, primarily coral and fish (conducted every six years for invertebrates)
- map the Marine Sanctuary and participate with the Department of Commerce and an inter-agency geographical systems (GIS) consortium
- Reef and Sanctuary Monitoring...to detect traces of organic chemicals such as pesticides and herbicides in the Sanctuary's waters.

contract to the Department of Marine and Wildlife Resources to provide patrols

Responsibility
 FBNMS

Participants
 ASCMP
 ASEPA
 DMWR
 DOE
 KVZK
 DLG

Reference
 FBNMS

3.4.3.2 American Samoa Coral Reef Initiative

The Governor's Coral Reef Advisory Group (CRAG) coordinates the government's coral reef activities. CRAG is a new program established in 1999 and comprises both Territorial and Federal agencies. CRAG is comprised of the American Samoa Coastal Management Program, the Fagatele Bay National Marine Sanctuary, the Department of Marine and Wildlife Resources, the American Samoa Environmental Protection Agency, the American Samoa Community College and the National Park of American Samoa. These agencies cooperate to plan and implement coral reef actions and management of the Territory's estimated 114 square miles of coral reefs.

CRAG is in the process of updating its five-year Coral Reef Initiative Plan, 2000 - 2004, to reflect new priorities which fit the goals of the National Action Plan categories. The primary focus will be upon education and outreach, the development of Marine Protected Areas, and monitoring and assessment of the coral reefs. The purpose of the education and outreach is two-fold; to inform communities of CRAG's marine science activities, of the effects human activities upon reefs, of proposed legislation, and its coral reef management program; and to spur an interest in American Samoans toward pursuing a career in marine science, resulting in an increased base of local expertise. It is hoped that the monitoring and assessment studies, together with the Marine Protected Areas program, will be of great value towards CRAG's goal of creating twenty percent 'no-take coral reserves.'

The Coral Reef Initiative Plan relies upon the interwoven projects of the associated agencies. In the forthcoming years, the Coral Reef Initiative agencies will focus on the areas shown below.

Area of Concern and Program Description	Monitoring & Assessment	Education & Outreach	Marine Protected Areas
Creel Survey to assess inshore fishing pressures, assessment of harvest trend and resources	DMWR		
Workshops and plans to identify areas that are critical habitats and propose timetables and procedures to designate Marine Protected Areas			CRAG & all Agencies
Develop Territorial network of Marine Protected Areas over 20% of Territorial reefs			CRAG/DOC FBNMS
Develop Territorial Monitoring Plan for reefs	CRAG		
Develop GIS mapping system for analysis	DOC/FBNMS		
Assess regulatory enforcement functions and strengthen enforcement capacity of PNRS	DOC		
Map all coastal areas for Coastal Development Study and coastal analysis	DOC ASEPA		

Establish a Territorial Marine Laboratory for coral reef science, research and monitoring	CRAG	GRAG	
Strengthen resource management capacity	DMWR/DO C		
Area of Concern and Program Description	Monitoring & Assessment	Education & Outreach	Marine Protected Areas
Undertake a Coral Health/Stress Study	DMWR		
Complete a Watershed Protection Plan	ASEPADO C		
Develop stake-holder consultation process and participation program		DMWR	
Le Vai Moana Marine Center...support ASCC educational activities for school children		FBNMS ASCC	
Marine Science Literature Enhancement to build up marine resources literature at the Feleti Barstow Public Library		FBNMS	
Marine Science Website Design and Implementation	DOC FBMNS		
Coral Reef Information Materials...replenish and republish literary materials about traditional fishing methods			
Teacher Challenge Awards...to teachers most effective in promoting marine science	FBNMS		

3.4.3.2.1 Development Practices and Enforcement

Issue

Coral reefs are being threatened, degraded and damaged by development practices that have gone on relatively unchecked and unregulated since the Territory saws its first human settlers. The most destructive practices are those that contaminate and pollute the coastal waters. They are; development activities that yield erosion and siltation and sedimentation of wetland and reefs; road construction and the development of homes and facilities in the vicinity of the coast that ultimately and permanently destroy the reefs; and contamination and pollution of coastal waters from point and non-point sources that damage habitats and ecosystems. These include the entry or introduction of heavy metals and organic substances, such as pesticides and herbicides into streams and coastal waters, and urine wastes from piggeries.

The reasons for this situation are clear. There is a lack of public awareness of degradation to food-chains and ecosystems, a lack of understanding of the critical nature of the problem, a lack of education on the part of the perpetrators of the problem, and, perhaps, a lack of interest in abiding by rational development and use principals. Secondly, there is a lack of

regulations and restrictions governing the practices, and consequently a lack of enforcement policies and enforcement management to force a curtailment of the activities. These are issues that are spread throughout the government enforcement agencies and have their roots in village and traditional enforcement regimes. Yet, these are problems that have not had a high priority and garnered overwhelming interest in their solutions by those that may contribute to the problem.

If this situation continues unabated and uncontrolled, we should expect to see the acceleration of soil loss and damage to wetlands and habitat on land and a decrease in water quality and clarity, and sedimentation leading to consequent destruction of reef habitat and ecosystems. Coral reefs cannot be mitigated. Coral reefs require centuries to regenerate.

Development and Enforcement Policy

Curtail unsound development practices by creating appropriate legislation and restrictions that can be effectively administered with suitable enforcement tools and via the Project Notification and Review System; and create public awareness and implement education programs to retard and

stop unsound practices

Strategies

dedicate funding toward the preparation of public awareness programs to address the issue of proper land use and unsound development practices that contribute to flooding, erosion, siltation and possible groundwater contamination

assess the PNRS review system for improvements in the ability: to scrutinize projects with attention to erosion control; deny projects that threaten coral reefs; and oversee projects with special conditions

increase public awareness of both agricultural and development practices that lead to erosion through extension and it awareness programs

provide orientation and instruction to the Civil Highways Division about best practices for road construction that retain soil and retard erosion; and monitor road construction and facilities development projects

intensify the orientation and instruction program about best development practices for contractors

provide orientation and instruction through the Department of Local Government to education village leaders and village mayors about unsound development

provide orientation and instruction to enforcement agencies, e.g. Department of Public Safety, on the necessity to protect the Territory's reefs

increase the monitoring and enforcement capacity of enforcement agencies by providing training with regard to laws and regulations

support the implementation of the Population Task Force Report to reduce the

Responsibility
 ASCMP
 ASEPA

Participants
 ASHPO
 DPW
 DPS
 DPR
 PNRS

Reference
 CRI
 ASCMP
 DMWR
 FBNMS

3.4.3.2.2 Public Awareness

Issue

The reefs and ecosystems would not be threatened, endangered, degraded or depleted if the public had better knowledge of the importance of reef ecosystems and the impact of their actions upon reef habitat. In essence, it would seem that the reef ecosystems are not fully appreciated. One of the reasons may be that traditional knowledge and practices have been lost. Today's educators, i.e., instructors in the school system, may lack the knowledge and be unaware of the significance of reef ecosystems. Less than one percent of the working population actually make a living from harvesting fish or marine life. Thus, most educators would not possess the knowledge to pass along to students. Secondly, many of the artisan fishermen and fishermen that receive pay for their fishing efforts are immigrant workers. They have often been defined as being disenfranchised, both politically and from American Samoa's cultural past. This disenfranchisement may result in a lack of commitment to care for the marine ecosystems properly. If the public continues to be unaware of the threats they pose to the reef ecosystems, they will continue the practices that endanger reef ecosystems.

**Coral Reef
Public Awareness
Policy**

Promote the preservation of coral reefs through marine science instruction at all levels in the education system; and design and implement public awareness programs to address the threats to coral reef systems

Strategies	Responsibility
<p>plan for and develop public awareness programs to be implemented as an inter-agency offensive to educate the public to the importance of reef habitat and ecosystem conservation and preservation</p>	<p>ASCMP FBNMS DMWR</p>
<p>assist the Department of Education with the development of a marine science curriculum by funding instruction or instructors</p>	<p>Participants ASHPO DOE DLG DOC</p>
<p>integrate a coral reef awareness and marine science education program into the Department of Education curriculum</p>	
<p>work with the Department of Local Government to implement coral reef awareness at the community level</p>	<p>Reference ASCMP FBNMS DMWR</p>
<p>foster coral reef and ecosystem preservation as a means to develop ecotourism at the community level, and work with the Economic Planning Division of DOC to encourage ecotourism as a means to preserve coral reefs and ecosystems</p>	
<p>identify social and economic incentives to the community that will enhance the prospects for environmental care and conservation</p>	
<p>cooperate and coordinate initiatives with the Territory's cultural and historical agencies to foster coral reef preservation</p>	

3.4.3.2.3 Over-harvesting

Issue

The coral reefs are overfished in some areas and American Samoa's increasing human population threatens to put greater pressure on reef resources as a source of food. As the population increases fishing is likely to increase in coastal waters, nearshore and inshore waters (if no limitations are put on fishing). As American Samoa does not have expansive coral reefs, the increased pressure may result in depletion of marine resources, particularly in Tutuila's waters.

'No take areas' and marine protected areas are two solutions to overfishing. It may even be possible to prevent the depletion of marine resources outside of marine protected areas. However, the ability to eliminate the process of overfishing requires a number of actions to be effective and successful. Presently, there appears to be inadequate knowledge of the importance of maintaining the carrying capacity of the fish stock and a lack of awareness and insufficient education programs to promote conservation of the fish stock. Secondly, there is inadequate enforcement of restrictions on fishing where restrictions are in place. Third, there appears to be insufficient support among the fishermen and village leaders to reduce the level of fishing. Therefore, more education, in general and for all parties, is needed, in addition to more stringent enforcement of fishing restrictions and regulations (including Marine Protected Areas). Without a defined level of acceptable fishing to maintain the carrying capacity of the stock, a limit or quota on the amount of marine resource stock taken, adequate knowledge of the impacts of overfishing by the population at large and a commitment to enforcement of fishing restrictions, the reefs may

very well be depleted of food resources. This, of course, would have a devastating impact upon the entire reef food-chain, as overfishing could shut down the reef ecosystem.

**Reef
 Over-harvesting
 Policy**

Reduce the over-harvesting of marine life and fish on the reefs of American Samoa by educating the public about the need to sustain fish and marine life stocks; and develop and implement restrictive legislation to restrain people from over-harvesting the reefs

Strategies

apply the resources of the Coral Reef Initiative to supplement funding the DMWR Five Year Plan to plan for and add more 'no take ' protected reef areas

support the ASCMP and FBNMS public awareness programs to educate the public, artisan fishermen, and commercial fishermen to the effects of overfishing

support the DMWR Fisheries Division's plans for development of fisheries management plans for the Territory and villages

undertake fish stock assessments of the coral reefs and develop scenarios of the rate of depletion to create restrictive reef fishing regulations in 'no take areas'

Responsibility

CRAG

Participants

GOV

DLA

DLG

ASCC

DOE

Reference

ASCMP

DMWR

FBNMS

3.4.4 Department of Marine and Wildlife Resources

3.4.4.1 Coastal and Inshore Marine Resources

Issue

American Samoa's coastal reefs have been damaged and degraded from natural disasters, human settlement and improper development practices. Development, resulting from increased population and human settlement in coastal areas, has contributed significantly to the siltation of the reefs from improper development practices upstream. These improper practices have degraded or destroyed marine habitats over time to the degree that there is depletion of the reefs' marine resources of Tutuila and possibly of the Manu'a Islands. Overfishing has also contributed to the depletion of reef resources. The increased population has brought a great market demand for fish and marine life. The full picture of the scale of depletion is not known because of a lack of data, but there is a pressing need to educate the public about the significance of responsible fishing.

Inadequate enforcement of Department of Marine and Wildlife Resources regulations are a principal cause of the problems relating to overfishing and destruction of habitat (by other means than siltation from improper development). There is a lack of training and pay for personnel, a lack of funding and limited professional oversight of enforcement program, a lack of

public support , a lack of sense of ownership of regulations, a feeling that enforcement is solely the responsibility of the government, a fear of offending family and friends by informing on violators.

Promote the conservation, preservation and protection of the marine environment through public education and outreach and develop the capacity to evaluate the state of the marine environment and manage coastal and inshore marine resources

Responsibility

DMWR

Participants

US NMFS
DOC/ASCMP
DOE
ASCC
DLG

References

Five Year Plan for Marine Resources Research and Management
2001

**Coastal and Inshore
Marine Resources
Policy**

Marine Education and Outreach 1997

3.4.4.2 Offshore Fisheries

Issue

Strategies

expand the community-based management of fish resources through the addition of Marine Conservation Enforcement Officers to: interdict the taking, sale or importation of illegal items , the enforcement of all DMWR fishing regulations, the enforcement of US Federal fishing regulations by assisting the US NMFS agent in FBNMS patrols, and inspections of foreign fishing vessels

conduct the monitoring and assessment of coral reefs and reef resources in conjunction with the Coral Reef Initiative program that includes field and laboratory studies of the relative abundance and population dynamics, biology and ecology of key reef-associated species

conduct a long-term bottomfish stock assessment - multi-species assessment in collaboration with the National Marine Fisheries Service Honolulu laboratory

develop a long-term, public education and outreach campaign to increase understanding, encourage appreciation and to promote conservation and preservation of the fisheries resources and marine environment

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ies, primarily albacore tuna, was a relatively small business activity until the late 1990's. Towards the end of the decade, larger 'alia' of the forty to fifty foot class were introduced and the a rapid increase in the number of alias fishing in the Samoa archipelago ensued. In addition, commercial fishing in American Samoa waters included more larger, locally owned, single-hulled boats in the fifty to ninety foot class, and greater, that supplied the canneries. A Western Pacific Regional Fisheries Management Council report in 2000 noted that the five larger vessels of fifty plus feet had the capacity to set more hooks alone than the whole forty foot class of small alia fleet set could set in one year. Of further interest is that the number of hooks set (estimated between 1.2 and 1.6 million) in the year 2000 was the highest since the fisheries began.

By 2001, the rapid increase and the numbers of albacore caught had caused the Department of Marine and Wildlife Resources and local fishermen to request a moratorium on the introduction of more large fishing vessels into American Samoa's Exclusive Economic Zone for fear of depletion of the tuna stock. As of October 25, 2001, fishing was restricted to the U.S. long-line vessels holding a permit and with a documented catch prior to that date. As of this plan publication date, little empirical data has been obtained on by-catch, the size and weight frequency distributions, the spatial and temporal distribution of albacore and their foraging habits. Thus, the information about the albacore stock is insufficient to determine a fishing threshold, but it has been observed that catch rates have been declining in recent years.

Offshore Marine Resources Management Policy

Develop the capacity to evaluate the nature of the pelagic fish stock in relation to the sustainability of the stock as a result of continuous fishing pressures and establish policies and guidelines for the harvesting of pelagic marine resources to maintain sustained populations

Strategies

utilize additional Marine Conservation Enforcement Officers to work along side the U.S. National Marine Fisheries staff as observes of fishery vessel operations and establish a Scientific Observer Program for staff to accompany alias

enlist the assistance of the U.S. Coast Guard to more effectively patrol the Territory's Exclusive Economic Zone for poachers and for illegal fishing and put more Marine Conservation Enforcement Officers on board surveillance ships

establish collaboration between the Independent State of Samoa and the American Samoa Government to undertake joint research on convergent fisheries management problems

establish a Research Program for Oceanic Fisheries with an initial emphasis study on the spatial and temporal dynamics of the albacore and secondly a

Responsibility
DMWR

Participants
US NMFS
WPRFMC

Reference
Marine Resources Research and Management Plan Update 2001

3.4.4.3 Wildlife Resources

Issue

The vertebrate population (fauna) ,i.e.,birds and mammals, of American Samoa is limited in diversity, and most of the species are shared with other Polynesian islands. Most of the native species of fauna appear to sustain breeding populations. Most of the wildlife populations can and do generally recover from the devastating effects of hurricanes. The greatest concern now to the Department of Marine and Wildlife Resources are human activities, and especially those of hunting and the destruction of natural forest and wetlands habitat. These are not cyclical events after which wildlife may eventually recover. Hunting and destruction of habitat are sustained activities that could intensify as the human population increases, if there are no management processes in place to curtail them .

The high frequency of disturbance from hurricanes and the increasing stress put upon wildlife from indiscriminate habitat destruction necessitates long-term monitoring of wildlife. There is a need: to develop and maintain a situation-sensitive management program to continuously monitor wildlife populations; to obtain accurate data on spatial and temporal variations in populations of wildlife and their resources for existence; to study the impact and threat of invasive plant species upon wildlife populations; and a need to learn more about the prevalence of diseases and parasites in wildlife.

Wildlife Management Policy

Develop the capacity to monitor, manage and control the impact of human activities upon American Samoa’s wildlife in order to sustain native fauna species, and to remove the threats to native species from invasive flora and fauna

Strategies

- develop a public awareness program to halt the destruction of forest and wetlands wildlife habitat
- develop a situation-sensitive monitoring and management program for island populations of fruit bats and endangered species of fauna to form the basis of management actions
- develop a program to identify critical habitat for possible protection and establish guidelines to maximize species recovery and minimize disruption by humans
- assess the potential impacts of the identified stresses on the evolutionary and ecological performance of fauna species and develop management and conservation action programs that can mitigate the effects of the stresses
- collect information on food resources, roosting habits and condtions, and social and behavioral traits of the bat population to describe their natural history and for determining management programs for the protection of their essential habitat

Responsibility
 DMWR

Participants
 DOC
 DPW
 Customs
 DLG
 Churches

Reference
 Five Year Plan- Wildlife Projects for American Samoa 2001-2005

3.4.5 American Samoa Community College, Community and Natural Resources Division

The Division of Agriculture, Community and Natural Resources of the American Samoa Community College, formerly called the Land Grant Program, encompasses the Cooperative Research and Extension Services, the Forestry Division and the Instructional Division. It represents a three-pronged approach common to every Land Grant College and university in the country. Its work is stake-holder driven and involves broad programming areas, e.g., nutrition, agriculture, natural resource management and entrepreneurship. CNR is also involved in pesticide awareness and water quality programs.

3.4.5. 1 Forestry Clearing

Issue

Humid tropical forests and other native vegetation cover a significant portion, or over two-thirds, of Tutuila and the Manu'a Islands. Maintaining the forests presents a very difficult task, as the Territory's increased population seeks space to develop homesteads and commerce. Population growth has seen the Tafuna Plain lose virtually all of its native rainforest due to developmental pressures. Other areas will follow if controls are not placed on the clearing of land. The primary threat to the forest is human activity, particularly clearing of land for development purposes and conversion for agricultural uses. The shifting agriculture or agroforestry traditionally practiced by Samoans may have enhanced overall forest diversity and forest habitat in the past, but the traditional practices of shifting agriculture may no longer be appropriate in this day and age. Continuing the same practices has led to a decline in forest quality, diversity and overall biodiversity, as clearing of forests exceeds the forests' regenerative capacity with respect to the rate at which the human population is increasing.

Forestry Management

Promote the retention of forests throughout American Samoa, develop incentives to limit or discourage the clearing of forests, and identify and encourage best management practices to preserve ecosystem function and structure and biodiversity in general

Strategies

- submit a needs assessment in order to receive the Forest Legacy Program
- document and monitor the extent of forest cover with the use of GIS systems and satellite imagery to gauge ongoing habitat loss and climate change effects
- identify methods to restrict destructive land clearing on slopes of mature forests, on cutting of selected species and to preserve low-land forests
- work with the Department of Commerce to apply restrictions to development on forested land identified for special management practices
- vigorously support the replanting of cleared land with native forest species
- actively support the protection of watersheds and wetlands, coastal stabilization practices, buffering of streams, and erosion suppression

Responsibility
 ASCC-CNR

Participants
 DLG
 DOC
 DPW
 ASPA
 DMWR
 USDA-NRCS
 National Park

Reference
 TGP Issues
 Statement
 2001
 ASCC-CNR

3.4.5.2 Invasive Species

Issue

Introduced species, whether they arrived in American Samoa intentionally or by accident, are difficult to control, once present. These non-native species may be beneficial, benign, or harmful to native species. Those that spread rapidly and prove damaging are often called invasive species. Many invasive species are very good at competing with native species and can eliminate native's altogether. It is very difficult to identify all the impacts any given invasive specie may cause. A single introduced specie can deleteriously affect an entire ecosystem, as is very apparent in Hawaii and Tahiti. Specialized species can indirectly affect many other species, as seen when the taro blight arrived. It had important indirect effects on other plants and animals and significantly affected the agro-economy of American Samoa.

There are no easy solutions to the problem of eradicating invasive species. One of the major stumbling blocks to eradicating invasive plant species is the lack of authority to enter upon private land. Another problem is the lack of sufficient resources to combat the problem. Although there are on-going efforts by the U.S. Forestry Service, ASEPA, the Department of Agriculture, the American Samoa National Park, and CNR, the problem is bigger than their collective capacity. American Samoa has had a long history of introductions of non-native species to, as there are now more than two hundred introduced plant species. The Customs Office needs to strengthen its capacity to quarantine suspicious or listed plants arriving in American Samoa. However, Customs has inadequate staffing and functional protocols to handle quarantine requirements properly. There also needs to be more effort towards educating the public to deal with the problem of blocking, investigating, restriction and suppression, eradication and prevention of listed imported and exported species. The recently formed American Samoan Selected Invasive Species Task Force (ASSIST) is currently addressing all of these issues.

Invasive Species Management

Develop the capacity to deal with introduced and invasive species through more intensive assessment and monitoring, legislation enabling their eradication, cooperation and

coordination among government agencies, strict quarantine procedures, and intensive eradication programs

Strategies

set up an Invasive Species Task Force to assess eradication and planning needs

schedule ASCC-CNR and DMWR to work with the Department of Legal Affairs to draft legislation on invasive species and request legislation authorization

increase the number of Customs officers and improve orientation and education of Customs quarantine officers about the impacts of invasive species, and provide training and equipment to restrict introduction of species without lengthy quarantine and exhaustive study

provide more funding to educate the public about the impacts of invasive species, to locate and eradicate invasive species and to provide native species

work with the Department of Local Government and local village mayors to

Responsibility
ASCC-CNR
DOA
DMWR
GOV
DLA
National Park

Participants

DLG
ASEPA
DPPB
USDA-NRCS

Reference

TGP Issues
Statement

3.4.5.3 Pesticides and Chemicals Contamination

Issue

The level of pesticide and chemicals contamination, that generally result from agricultural and household usage is not well known. The impacts upon Tutuila's environment and the health of American Samoa's residents from pesticide use has not been quantified. Restrictions are in place on the importation of illegal pesticides and chemicals that arrive in American Samoa via a business. However, it is uncertain that illegal chemicals are being restricted from entering the Territory from the Independent State of Samoa. As Customs and ASEPA are not staffed sufficiently to quarantine items, it is possible that pesticides and chemicals are making their way here.

Pesticides and Chemicals Management

The use of pesticides in the wrong hands, without proper instruction and without adequate personal protection during its use, is of particular concern. Literacy and the ability to understand written instructions is a must when handling these chemicals. CNR provides written literature in both English and Samoa to explain to farmers and the public how to properly handle the materials. Nevertheless, there is great concern for safety and for what misused pesticides and chemicals could do to the environment and the Territory's water resources.

Ensure that only legal pesticides and chemicals used for agricultural, household and commercial purposes enter the Territory, that applicators are certified, and that usage of pesticides is within the recommendations of the manufacturer by providing the orientation and training necessary to police the use of pesticides and chemicals

Responsibility

CNR
ASEPA
ASPA
DOA

Participants

DOC
National Park

Reference

TGP Issues
Statement
2001
ASCC-CNR

Strategies

support a research project to study the environmental impact of pesticides upon the Territory's groundwater supply

work with ASPA and ASEPA to identify areas within watersheds that should be off-limits to the use of pesticides and chemicals used for agriculture

continue to work in cooperation with ASEPA to conduct Pesticide Applicator Training sessions that permit participants receive EPA licensing

continue the Agriculture Extension Division's workshops that promote pesticide safety, as well as alternative pest control methods

strengthen the pesticides orientation program for Department of Agriculture staff and provide update orientation about new chemical products on the market and

work with the Department of Agriculture to strengthen its ability to promote EPA-registered pesticides use by farmers

work with the Department of Agriculture to strengthen its ability to restrict the importation of illegal or not-recommended products from entering the Territory

extend pesticide safety training to include commercial application operators, importers of pesticides, exterminators, and to all others know to use pesticides

**3.4.5.4
Traditional
Knowledge
and Practices**

Issue

The use of traditional knowledge and agricultural practices is a double-edged sword.

Some traditional agricultural practices promote preservation of soil quality and natural resources, while

others can degrade or deplete natural resources, e.g., forest clearing. The Agriculture and Forestry Extension Divisions promote traditional agricultural practices that are sustainable. The topography of most of American Samoa is very steep. There are very few areas that are flat and thus, conducive to large scale agricultural practices. This creates two problems 1) heavy pressure on slopes causing erosion and related problems, and 2) degradation of lowland ecosystems that were already fragile and not very extensive prior to development/land conversion. This is an area of concern that is difficult to quantify and identify responsible parties due to cultural reasons. As part of the mission of ASCC, the Agriculture and Forestry Extension Divisions utilizes the Samoa and Pacific Studies Department (SANDPAC) as a resource in order to effectively work with traditional leaders and encourage them to utilize more sustainable practices.

Continue to support traditional knowledge and practices that are environmentally friendly and provide educational training and orientation for farmers that want to continue to utilize traditional Samoan agricultural practices

Traditional Knowledge Training

Responsibility

ASCC-CNR

Participants

National Park

DOC
ASEPA
DMWR
DOA

Strategies

Continue environmental education efforts at all levels. Work with schools, groups, churches and organizations so the importance of this message is clearly understood.

Provide technical support for farmers and developers. Support could be in the form of alternative vegetative species, engineering alternatives, incentives for sustainable practices, etc.

pool resources the resources of resource management agencies to reduce mixed messages and strengthen the overall capacity for development of effective programs

Promote the use of native species of plants and trees

Reference
TGP Issues Statement 2001
ASCC-CNR

3.4.6 Department of Commerce, Planning and Research

3.4.6.1 Research and Analysis

Issue

The Department of Commerce requires a strong research and analysis capability to provide the kind of background information and analysis necessary to make well-informed decisions and to develop policies, strategies and plans for the Territory. The Research and Statistics Division has been short of staff and funding to undertake many necessary research studies for the last decade. The Planning Division has also been short of professional personnel for the last decade. Therefore, both Divisions have been limited in their capability to perform up to the expectations of a common government planning and statistics organization.

Although the Department of Commerce has a Research and Statistics Division to collect data and information, the functions and presence of a government statistics office do not supplant the need for a planning research and analysis function. The Planning Division's demands for research and analysis focus upon project and program specific information which require qualified planners to apply planning assessment and modeling techniques uncommon to the functions of a statistics office.

The Planning Division needs to develop its economic research capability in light of the long-standing absence of a macro-economic planning program within the government. This means that the division is presently not capable of providing 'on-call' analysis, or short- or long-term economic monitoring of the economy. It is not capable of economic feasibility analysis because it is not capable of collecting information pertinent to micro-economic and business development.

Research and Analysis Planning Policy

Upgrade the research and analysis capability within the Department of Commerce and undertake socio-economic surveys, assessments, studies and analysis to augment planning programs and projects and provide decision-makers with reliable information upon which to make judgements

Strategies

identify the objectives of a Research and Analysis Section within the Planning Division; formulate a proposed program with a budget and resource needs; and lobby for its implementation as a necessity to achieve the goals of the Economic Development Commission and to provide professional planning analysis

augment the Research and Statistics Division by recruitment of qualified personnel for social and economic surveys, data collection and analysis

expand the breadth of the Research and Statistics Division's annual surveys

correlate the data collection with the department's geographical information system and maintain annual socio-economic data down to the village level

Responsibility
 DOC
 GOV

Participants
 DPPB

Reference
 DOC

3.4.6.2 Population and Immigration Studies

Issue

American Samoa's population grew at an annual rate of two percent from 1990 to 2000, from a population of 46,773 to 57,291 people in April 2000. This rate of growth was observed to be lower than the previous ten-year rate of growth. Nevertheless population growth between 1980 and 1990 set the stage for future development demands that the Territorial government would be hard pressed to meet and for which planning was only beginning to account for. High fertility rates and increased migration to the Territory were observed to be the primary factors for an increase in population in both ten-year Census cycles. Immigration to the Territory had increased for a number of reasons, but immigration was also offset by young adults leaving the Territory for education and jobs elsewhere.

The exact nature of the in- and out-migration is not known. The Census 2000 data may not be available until 2003 for discrete analysis. The Department of Commerce must get a handle on the characteristics of movement in and out of the Territory, as well as within the Territory. This information is needed for statistical reporting purposes, but also for planning of services and infrastructure. To date, little planning has been done on the basis of population change within the Territory. Summary data is available, and summary data points to a situation of slow population growth on the eastern and western fringes of Tutuila Island with rapid growth in the Tafuna area. In contrast to rapid growth in the Tafuna area, the Manu'a Islands have been losing population over the last several decades. This shifting population base must be accounted for in future planning. Therefore, planners need to take hard look at the latest characteristics of the Territory's population.

**Immigration and
Population Analysis
Planning Policy**

Dedicate resources toward the development of systems to adequately study migration and movement within the Territory in order to adapt the Territory's planning programs to the changing characteristics and needs of the population

Responsibility

DOC

Participants

ASPA
DOE
DHHS
DLG
DOH
CRAG
DWY
Population
Implementation
Committee

Reference

DOC

3.3.4.5 Community Planning

Issue

Community development planning in American Samoa was delegated to the Economic Development and Planning Office (now the Department of Commerce) in the legislative authorization for the Territorial Planning Commission. There have been other agencies that have contributed to community development over the last two decades through the construction of facilities, but the work has not been steadily done by the agencies under a planned program and there has essentially been little cooperation between agencies.

In essence there has been little planning done toward the development of a comprehensive vision for American Samoa communities. There are no established Territory-

Strategies

work with the geographic information system program of the Department of Commerce to apply the Census 2000 enumeration block and village data to the ArcView GIS for processing and use a statistical package to analyze the Census 2000 data for migration and population change throughout Territory

conduct stratified surveys to further define migration factors

produce a definitive report on the population and migration characteristics of the Territory for DOC's departmental planning and for public distribution

evaluate the findings of the studies to determine how migration can positively affect economic development and how economic development can reduce the 'brain drain' from the Territory

wide policies for community development, no established comprehensive schemes for community or regional development, and no established land use policies for the Territory, although zoning regulations do exist. Virtually all community development projects have

had their foundation in Federal funding opportunities that are restricted to the mandates of the

donor. There has been very little integrated planning of the Territory's economic and social development infrastructure within the Capital Improvements Program planning that is supported by Department of the Interior awards.

Community Development Planning Policy

Promote the achievement of community inspired policies and development that is planned in combination with the commercial, environmental and social aspirations of the community and linked to the comprehensive planning of infrastructure and community service facilities

Strategies

- develop a community based public information and planning process to get villages and communities involved in making planning decisions for themselves
- develop community inspired policies and standards of development for community projects and community improvements
- identify and plan for community service programs with facility requirements and link them to funding sources from Federal grantors that provide capital improvements funding for community and economic development purposes
- integrate community planning with economic development planning initiatives and proposed facilities funded by Federal programs
- integrate community planning with agency and government enterprise authority planning and prepare a five-year integrated, Territory-wide community services and facility plan

Responsibility

- TPC
- TPC Councils
- DOC

Participants

- ASHPO
- ASPA
- ASTCA
- ASMCA
- DPW
- DPS
- DOE
- DOH
- DPR
- DLG
- DHHS
- DYWA
- TAOA
- ASCC

3.4.6.3 Land Use Planning

Issue

The adverse and cumulative impacts of the Territory's population increase, development and residential growth are readily noticeable on the Tafuna Plain. The Tafuna Plain has been the fastest growing area of the Territory. Residential development has resulted from the availability of individually-owned land and the opportunity for immigrants and American Samoans to live in non-traditional village settings. Because land in the Tafuna area can be purchased and leased, there has been and still is strong competition for the available land to be used for commercial, industrial and recreational purposes, in addition to residential use. However, there has been no comprehensive development plan or land use plan in effect for the Tafuna area that could have been used as a guide and to maximize the use of land.

The lack of planning has resulted in haphazard and random development with overcrowding. It has meant that basic infrastructure needs, e.g. water lines, sewers and roads, have not been installed in preparation for human settlement. Rather, they have been installed as a

reaction to development. Consequently, the Tafuna area has an amplification of the negative impacts from traffic congestion, noise, nuisances and unsightly and unaesthetic neighborhoods.

Rapid human settlement has occurred where growth has not been adequately enforced or controlled by regulations, as land use designations or zoning. The lack of appropriate zoning codes to control and filter development has resulted in the use of outdated legislation as an ineffective means to curb random and improper use of the land and contain commerce, industry and residential expansion. There is also resistance from competing forces, e.g., cultural traditions of matai control of land, against the practice of land use and resource management to enable sustainable development.

Land Use Planning and Management Policy

Formally adopt the Tafuna Land Use Plan and implement the land use management policy and actions which provide for the rational and best use of the lands in Tualauta County; and revise the land use management process and permit system to provide overall protection of the Territory's land

Responsibility

DOC

Participants

GOV

Fono

DLA

DLG

Reference

Tualauta County

Land Use Plan

2001

DOC

Land Use Management Strategies

implement section 6.6 and 6.7 of Chapter Six of the Tualauta Land Use Plan which deals with the creation and centralization of the Territorial land use function and revise the ASAC Code to make the Territorial Planning Commission the single overall development and land use governing board

revise and adopt a new administrative code for the functions of the Territorial Planning Commission and administration of land use management under the Project Notification and Review System

identify an appropriate role for the American Samoa Zoning Board in the structure of the land use management system

revise land use and zone classifications and submit to the Legislature for adoption as stated in section 6.5.1 of the Tualauta Land Use Plan

3.4.6.4 Tualauta County Development

Issue

While American Samoa is far from being over-

populated, in comparison to islands like

Oahu, Hawaii, the island of Tutuila has pockets of overcrowding. The overcrowding is reminiscent of third world squatter settlements because of the nature of the structures and their congestion. There aren't many of these areas. They should not have been permitted to be built and should not be permitted to expand. If the overcrowding continues, there may be unwanted social and environmental problems.

American Samoa has no community development plans that identify suitable housing, or ideal community characteristics for a local community. Furthermore, there have been no studies to determine the limits for desirable development. Although ASPA estimates Tutuila's daily maximum population limit of 115,000 people, with regard to the carrying capacity of the water supply, there have been no desirable limits set on the carrying capacity of residential areas. Thus, a complete assessment of community values is necessary when undertaking planning.

**Tafuna
 Development
 Policy**

Implement the resource management, development assessment studies and the utilities and infrastructure plans as defined in Chapter Six of the Tualauta Land Use Plan to account for the development of human settlements and the carrying capacity of the land and natural environment

Responsibility
 DOC

a) Community Development

Strategies

undertake research and opinion research to identify the carrying capacity of natural ecosystems and human settlement in the Tafuna area and develop appropriate development standards for the Territory and Tualauta County

establish Planned Unit Development (PUD) building regulations in conjunction with zoning specifications for Tualauta County and for the Territory

establish public participation and a validation process for land use planning as defined in Chapter Six, section 6.6.1 of the Tualauta Land Use Plan

b) Resource Management

Strategies
 investigate the opinions of Tualauata County residents, identify community desires, and produce a booklet of standards for development under ideal conditions for Tualauta County
 assist ASCMP with the completion of a Floodplain Management Plan to restrain development in areas where flooding will negatively affect the natural environment and endanger structures
 formulate a Residential and Multi-Family Housing Plan for Tualauta County that will restrain the development of squatter settlements and contribute to the creation of desirable communities
 develop standards to protect the groundwater and aquifer from development externalities and contamination
 coordinate the formulation of the Tafuna Sports Complex Plan with the Department of Parks and Recreation
 contribute to the formulation of development standards for the Malaeimi Valley Special Management Area

Participants

DLA
 DLG
 ASPA
 DPW

Reference

Tualauta
 County
 Land Use Plan
 2001
 DOC

Responsibility

DOC/PLAN
 ASCMP

Participants

ASPA
ASEPA
DPW

Reference

ASCMP

c) Development Assessments and Infrastructure Plans

Strategies

complete a comprehensive Commercial and Retail Center study as recommended by Chapter Six, section 6.3.2, to focus commercial development and reduce urban sprawl

commission an assessment for the siting of public facilities and the development of a Regional Government Center , including an evaluation of best use of government residential land, in Tafuna as recommended in Chapter Six, section 6.3.5 and 6.4.3

assess how land use policies and zoning can contribute to the maintaining commercial and subsistence agricultural activities on the Tafuna Plain as recommended by Chapter Six, section 6.3.9

intiate the planning of a Tufana to Pava'ia'i by-pass road and develop a Cooridor Plan for the commercial and residential development of the immediate areas surround the road as recommended by Chapter Six, section 6.4.2

incorporate the CIP funding criteria into the land use development plans and utility and infrastructure plans for Tualauta County as recommended in

Responsibility

DOC/PLAN

Participants

DPW
ASPA
ASTCA
DOA
DLA

Reference

Tualauta
County
Land Use Plan
2001

3.4.6.5 Conservation of Land

Issue

The lack of land use policies and planning regulations makes conservation and preservation of areas in need of protection unduly arduous. Without the authority to place specific lands under protection, i.e., authorized plans, conservation of specific areas is difficult to execute. Much lands that could have been used for recreation, open space or drinking water aquifer recharge, for example, have already been permanently removed by development. Conservation of land and the designation of reserves is made more difficult because of a general interest in maintaining unalienable communal lands. Where open space for recreational tracks would normally be available to recreation hikers, these areas are generally off-limits to the public because they are communal and privately owned lands, which are unalienable.

Land and Conservancy Planning Policy

Initiate land use policies that allow development and use of open space and communal lands for the general public while maintaining the right of communal leadership to control access; and designate new areas for recreation and conservation

Strategies

participate with the American Samoa Historic Preservation Office to review and map historic properties as recommended by Chapter Six, section 6.2.5

commission a study to validate where development may and should not occur in steep slope areas as recommended by Chapter Six, section 6.2.7

demarcate, zone and establish a 1000' extension to the airport safety clear zone at the western end of the Pago Pago International Airport runway as required by the Federal Aviation Administration

plan and acquire easements, as part of a traffic circulation plan, for the establishment of pedestrian walkways and bicycle paths in the Tafuna area

Responsibility
DOC
ASHPO

Participants
DPW
DPR
ASCC-DAHNR

Reference
Tualauta
County
Land Use Plan
2001
DOC

3.4.6.6 Pago Pago Bay Area

Issue

The communities along the shoreline of Pago Pago Bay were the first to shoulder western type development. In a general sense, they are becoming blighted and in need of revitalization and renewal. There are exceptions, as new residences are sprouting up, but on the whole, quite a few businesses and homes are delapidated and in disrepair. Some of the structures should be demolished. This view of the bay area is in stark contrast to the spectacular mountain and forest scenes that surround the man-made development along the shoreline of the bay.

There have been efforts recently to improve government land within the central business district of Fagatogo village, but these efforts pale with respect to the total redevelopment and revitalization needs of most communities in the bay area. One of the main stumbling blocks to the Territory's tourism development has been the gradual deterioration of the villages and the negative impression it imposes upon visitors to Tutuila. Secondly, the state-of-deterioration of the Rainmaker Hotel is now known throughout the Pacific and it is a major deterrent to tourism development.

**Pago Pago Bay
 Urban Revitalization
 Planning Policy**

Promote the urban renewal and revitalization of the Pago Pago Bay area through community development initiatives and urban renewal funding to remove blighted buildings, repair roads, revitalize local parks and construct public and recreational facilities within the Pago Pago Bay area

Strategies

complete the planning of government land for the shoreline of Pago Pago harbor and the West Harbor Shoreside Development Plan

utilize Community Development Block Grant funding as support for urban renewal project in the Fagatogo central business district

revitalize the whole of Pago Pago Park with Community Development Block Grant funds

remove blighted buildings in the Fagatogo and Pago Pago village areas with Community Development Block Grant funds

utilize Community Development Block Grant funds to plan the revitalization of the lower harbor and Pago Pago village

redevelop the Malaloa Shoreline Park in cooperation with the Department of Parks and recreation as a recreational site and small boat harbor

revitalize Utulei Beach Park with new park and recreational facilities, a public swimming pool and pavilion with Community Development Block Grant funds

undertake a planning effort to re-conceptualize the Rainmaker Hotel as a public recreational center and convention center for the Territory's residents and for tourism development

Responsibility
 DOC/PLAN

Participants
 ASCMP
 DPR
 DPW
 ASTCA
 DPA
 ASPA
 DLA
 DLG
 DOA
 DMWR
 GOV

Reference
 DOC/PLAN

3.4.6.7 Traffic Circulation and Congestion

Issue

The ever-increasing number of vehicles on the roads in American Samoa is causing 'traffic jams' or bumper-to-bumper traffic during the early morning and late afternoon hours. Poorly maintained roads that were not designed to carry heavy traffic loads contribute to the problem. The traffic congestion can stretch from the American Samoa Community College to the canneries on the eastern shore of Pago Pago Bay during these hours.

There have been no plans to cope with the traffic congestion, although a most recent Six-Year Federal Highway Plan is about to expire and requires renewal. These plans address the need for Federal highway construction and improvements, but do not stress the reduction of traffic nor alternatives to vehicular traffic. Thus, there are no alternative plans for bus transit systems, car pooling, staggering traffic patterns or an inexpensive means of mass transit.

It is not inconceivable that the main highway between Pago Pago Bay and the Tafuna Plain will be at grid-lock in the not too distant future. Unless there are alternative methods to move people about the island, Tutuila residents should expect to spend more and more time behind the wheel of their vehicles.

Traffic Circulation and Options Policy

Develop alternative solutions to the problem of traffic congestion along Highway One; and develop a traffic circulation plan for the Tafuna area in conjunction with comprehensive development of the areas infrastructure and utilities systems

Strategies

identify funding resources to acquire a planning consultant to conduct a study of traffic congestion along Highway One and to recommend options for reducing the congestion

identify planning and development standards for maintaining a steady flow of traffic along Highway One in conjunction with the consultant's report

formulate a development and traffic corridor plan prior to the planning and improvement of the southern coast and Nu'u'uli road corridor with Federal Highway Administration funding

include the design of a traffic circulation plan in the formulation of a Master Plan for Infrastructure and Utilities Development in the Tafuna area

Responsibility

DOC
 DPW-CHD

Participants

ASTCA
 ASPA
 ASCC
 DPA
 DPR
 DOA
 DOE

Reference

DOC/PLAN

Chapter Three: Environment and Resource Management

3.1 Focus and Purpose of this Chapter	II - 3 - 2
3.2 Summary of Principal Policies	II - 3 - 2
3.2.1 Overall Policy for the Environment and Resource Management Component of the Territorial General Plan	II - 3 - 2
3.2.2 Principal Policies for the Environment and Resource Management	II - 3 - 3
3.3 Brief Review of Environmental Issues	II - 3 - 4
3.4 Policies and Strategies	II - 3 - 6
3.4.1 American Samoa Environmental Protection Agency	II - 3 - 6
3.4.1.1 Territorial Environment	II - 3 - 6
3.4.1.2 Groundwater and Potable Water	II - 3 - 7
3.4.1.3 Nearsore Water Quality	II - 3 - 8
3.4.1.4 Solid Wastes	II - 3 - 9
3.4.1.5 Piggery Management	II - 3 - 10
3.4.2 American Samoa Coastal Management Program	II - 3 - 11
3.4.2.1 Cumulative and Secondary Impacts	II - 3 - 12
3.4.2.2 Wetlands	II - 3 - 13
3.4.2.3 Ocean Resources	II - 3 - 14
3.4.2.4 Coastal Hazards	II - 3 - 15
3.4.3 Coral Reefs and Marine Protected Areas	II - 3 - 16
3.4.3.1 Fagatele Bay National Marine Sanctuary	II - 3 - 16
3.4.3.2 American Samoa Coral Reef Initiative	II - 3 - 17
3.4.3.2.1 Development Practices and Enforcement	II - 3 - 18
3.4.3.2.2 Public Awareness	II - 3 - 20
3.4.3.2.3 Over-harvesting	II - 3 - 21
3.4.4 Department of Marine and Wildlife Resources	II - 3 - 22
3.4.4.1 Coastal and Inshore Marine Resources	II - 3 - 22
3.4.4.2 Offshore Fisheries	II - 3 - 24
3.4.4.3 Wildlife Resources	II - 3 - 26
3.4.5 American Samoa Community College, Community and Natural Resources Division	II - 3 - 27
3.4.5.1 Forestry Clearing	II - 3 - 27
3.4.5.2 Invasive Species	II - 3 - 28

3.4.5.4 Pesticides and Chemicals Contamination	II - 3 - 30
3.4.5.5 Traditional Knowledge and Practices	II - 3 - 31
3.4.6 Department of Commerce, Planning and Research	II - 3 - 33
3.4.6.1 Research and Analysis	II - 3 - 33
3.4.6.2 Population and Immigration Studies	II - 3 - 34
3.4.6.3 Land Use Planning	II - 3 - 35
3.4.6.4 Tufuna Development	II - 3 - 36
3.4.6.5 Conservation of Land	II - 3 - 38
3.4.6.6 Pago Pago Bay Area	II - 3 - 39
3.4.6.7 Traffic Circulation and Congestion	II - 3 - 40