

The Environmental Council

THE 1998 ANNUAL REPORT OF THE ENVIRONMENTAL COUNCIL

STATE OF HAWAII

International Year of the Ocean

Environmental Report Card, 1998

An Assessment of Hawai'i's Environmental Health

- 28 indicators of environmental progress and quality in Hawai'i
- Recommendations to protect Hawai'i's ocean resources
- Agency progress report on meeting environmental goals

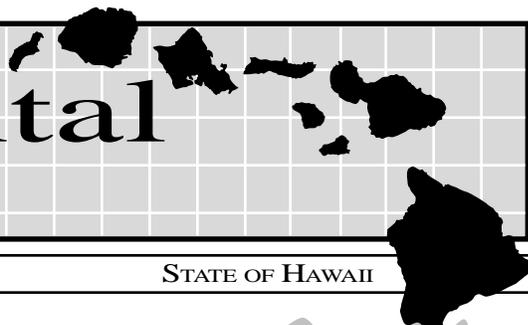
1998 Environmental Report Card Hawaii, State of	
Energy Use	C
Use & Recycling of Resources	B-
Biodiversity Maintenance	C
Air Quality	A+
Marine Pollution	A+
Terrestrial Quality	B+
Public Awareness & Concern	B-
OVERALL PROGRESS GRADE	B



The Environmental Council
and the
Office of Environmental Quality Control
State of Hawai'i

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The Environmental Council



THE 1998 ANNUAL REPORT OF THE ENVIRONMENTAL COUNCIL

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International Year of the Ocean

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ENVIRONMENTAL COUNCIL 1998

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The International Year of the Ocean:



Recommendations to the Governor

International Year of the Ocean:

What must be done to improve Hawai'i's ocean resources

We all expect the ocean to provide us food, fun and jobs. Public demand on its resources grows each year. Today, humans have begun to over tax the ocean's finite bounty.

*In recognition of the importance of our ocean resources and in conjunction with the **International Year of the Ocean**, the Environmental Council dedicates this annual report to ocean matters.*

After consulting with experts on Hawai'i's ocean resources, reviewing task force reports and conducting site visits, the Council compiled these recommendations. We urge the Governor and Legislature to implement the following actions to enhance our ocean environment.

1. Give DLNR the Authority and Funding to Save Our Beaches

The amount of beach loss in Hawai'i is alarming. In the past 70 years, almost one fourth of Oahu's natural sandy beaches have been lost or narrowed. Similar losses have been reported on Maui.

"Hardening" projects such as sea walls along our shoreline are the primary cause of beach loss. These walls have been universally applied to protect property from ocean forces. There is a better way. To deal with rising sea levels we should consider a range of options including: greater shoreline setbacks; purchase of undeveloped coastal lands; abandoning coastal developments; beach restoration; erosion control; and adaptation or hardening. We need to find ways to preserve our beaches and public access to the shoreline as well as protect property from flooding and wave damage.

The Department of Land and Natural Resources, Coastal Lands Program is addressing our shoreline erosion problem through the Coastal Erosion Management Plan (COEMAP). Affected state and county agencies should endorse the general concepts of COEMAP and implement its recommendations.

The Department of Land and Natural Resources, Coastal Lands Program should be designated as the lead state agency for coastal erosion management and beach restoration. The program must be empowered and funded to expand coastal erosion management options, collect data on erosion hazard areas, develop plans to improve degraded coastal beaches and identify sand sources for beach restoration.

2. Move Fisheries Statutes to Rules for Effective Management

Many of our bottom and reef fish stocks are depleted and overexploited. For example, bottomfish such as Ehu, Hapu'upu'u and Onaga in the main Hawaiian Islands are below sustainable levels. We must act quickly to protect and enhance our fishery resources.

Our fishing laws are outdated, complex and difficult to enforce. Today, changing controls on fishing nets or catch limits requires a cumbersome and time consuming legislative process. Our regulations must be based on the latest scientific information and management tools to protect and enhance our fishery resources.

For timely and effective management of fisheries resources, the Department of Land and Natural Resources, Division of Aquatic Resources needs greater administrative authority. Fisheries related statutes should be removed from our laws and converted into agency rules to allow more flexibility.

3. Stop the Invasion of Alien Aquatic Species

Many harmful alien organisms find their way to Hawaii by hitchhiking in the ballast water and on the hulls of ships. For example, the seaweed *Acanthophora* arrived in Hawaii on the hull of a barge from Guam in 1950 and spread rapidly to most of our islands in 10 years.

Existing laws are inadequate to deal with the problem of ballast water discharge and hull fouling agents. We must develop better mechanisms to prevent the introduction and dispersal of alien aquatic species through vessels.

The Department of Land and Natural Resources should be designated as the lead state agency and authorized to draft effective regulations to address issues concerning alien aquatic species. Also, the findings of the 1997 Alien Aquatic Organism Task Force should be implemented by affected government agencies and private groups.

Recommendations to the Governor

4. Minimize Polluted Runoff and Clean Our Coastal Water

If Hawai'i's coastal waters are polluted, the problem is usually caused by dirty water carrying sediments, motor oil and chemicals from the land. This polluted runoff can generate disease in humans, algae blooms and fish kills.

In 1996, the Hawai'i Coastal Zone Management Program and the Department of Health prepared a plan to control Hawaii's coastal polluted runoff. The Governor should direct all affected state agencies to implement the recommended actions and best management practices of Hawai'i's Coastal Nonpoint Pollution Control Program Management Plan.

These actions include requiring all state land leases to include "best management practices," facilitating community-based watershed management (like the Ala Wai watershed program), and taking immediate action to clean areas polluted by runoff such as Hilo Bay, Kane`ohe Bay and Ke`ehi Lagoon.

5. Improve Environmental Enforcement

Illegal seawalls are eroding our beaches, illegal fishing is ruining our fisheries and destroying our coral reefs and illegal grading has polluted our bays and coastal waters. Uneven enforcement of our laws has allowed these harmful practices to continue.

Inadequate enforcement is caused by lack of personnel, complex rules and ineffective criminal penalties. To correct these problems, we should hire more enforcement officers especially at the local level, simplify our regulations, educate users, and impose civil penalties which are easier to enforce.

6. Implement ORMP and other ocean related plans.

In 1991, the State completed the Hawai'i Ocean Resources Management Plan (ORMP). Recently, the Office of Planning and researchers from the University of Hawai'i reviewed the ORMP and highlighted 13 recommendations to address general issues and 29 sector-specific suggestions.

In addition to the ORMP, there are numerous other ocean related planning efforts. They are:

- * Bottomfish Management Plan
- * Coastal Erosion Management Plan
- * Kane`ohe Bay Master Plan
- * Nonpoint Pollution Management Plan
- * West Hawai'i Aquarium Fish Plan
- * Western Pacific Coral Reef Task Force
- * Gillnet Task Force

These planning efforts must be encouraged and supported. Any recommendations for improvement advocated by these plans should be implemented.

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Introduction

This Annual Report

In this report the Environmental Council expands and refines its comprehensive listing of Hawai`i Environmental Indicators. These data are presented in tables and graphs and track the environmental health of our islands on issues ranging from government funding to oil spilled into our waters. Students, policy makers and the public can use this document to gain an objective view of our state's progress in managing the natural and urban environment.

This report contains an updated Report Card. The Council, after considering the relevance of each indicator, grades our State's progress toward meeting its goals to protect the environment.

In recognition of 1998 as the Year of the Ocean, the Environmental Council has made ocean issues the focus of this report. The Council solicited issues and concerns from the public, surveyed experts and contacted government agencies to assemble this year's recommendations

The 1998 Annual Report also presents an overview of environmental action taken by government offices across the state. Agencies are asked each year to list their environmental goals and any progress toward meeting these goals. This review of environmental activity helps policy makers and the public keep tabs on government environmental initiatives.

The Environmental Council

The Environmental Council is a fifteen-member citizen board appointed by the Governor to advise the State on environmental concerns. The Council is responsible for making the rules that govern the Environmental Impact Statement (EIS) process for the State. The Council is also empowered to approve an agency's "exemption list" of minor activities that can be implemented without first preparing an Environmental Assessment (EA).

Created in 1970, the Council is empowered to monitor the progress of state, county, and federal agencies' environmental goals and policies. In a report each year, the Environmental Council must advise state policy makers on important issues affecting Hawai`i's environment.

The Office of Environmental Quality Control

The Office of Environmental Quality Control (OEQC) was established in 1970 to help stimulate, expand and coordinate efforts to maintain the optimum quality of the State's environment. OEQC implements the Environmental Impact Statement law, HRS Chapter 343. Office planners review and comment on hundreds of environmental disclosure documents each year. Twice a month the OEQC publishes *The Environmental Notice*. This bulletin informs the public of all the projects being proposed in the State that are subject to public review and comment. At the request of the Governor, the Director of the OEQC is empowered to coordinate and direct State agencies in matters concerning environmental quality. OEQC and the Council would like to thank our volunteer intern, Rosa Chen for her assistance in compiling the air quality data for this report.

Director's Report

After four years as OEQC's director, I will be moving on to new challenges. As I look back, I am grateful for the dedication and can-do spirit of our staff. Together we have dramatically improved the function and efficiency of the office. During my term as director, the "OEQC Bulletin" was transformed into The Environmental Notice, a much more comprehensive, informative and easy to use publication.

Our office also became an advocate for new policies. We guided both specific projects through the EIS system and promoted new standards for environmental reviews. We began environmental education projects, partnerships with community groups and created this Report Card including annual indicators and data.

In 1998 specifically, the Office of Environmental Quality Control accomplished the following:

Training Classes

Following the publication of our new Guidebook for the Hawai'i State Environmental Review System, we embarked on a state-wide training program for public and private planners and the public. We held a training class in each county and 8 sessions on Oahu. In all, nearly 400 people completed our training class and nearly all ranked the experience as being from "good" to "excellent."

An Even Better Notice

The Environmental Notice has expanded yet again to include two more topic areas of interest to the public. One new page has been dedicated to the Coastal Zone Management office and encourages the public to comment on matters under their review. Most recently we have included Department of Agriculture announcements of permit applications for the import of alien species to Hawai'i. These new pages will help our Notice achieve our goal of publishing a true "one stop shop" for environmental permit information in the state. Our web page has also improved in scope and accessibility.

Failed Merger

During the 1998 legislative session, a proposal to merge the Coastal Zone Management office into OEQC was before the legislature. The merger could have given the CZM program more autonomy, enhanced both programs and streamlined government. The legislature approved the merger in its budget but did not pass a necessary empowering measure. Without clear legal authority to lead the CZM function, OEQC returned the budget and positions to their original place and the status quo prevailed.

Environmental Reviews

OEQC played an important role in finalizing the "Alien Species Action Plan" for Kahului Airport. We helped to coordinate state and federal agencies to create a model quarantine program for the state and nation. Other high profile projects for the year include the proposed high-voltage powerlines on Wa'ahila Ridge, the planned "Eco-Camp" on the North Shore of Oahu and the Pacific Missile Range Facility on Kauai and Ni'ihau. A complete tally of documents processed by our office this year is presented on page 4.

This year, as in the past, OEQC has been blessed with volunteer interns. Rosa Chen has worked on air quality indicators, Stuart Ing on legal research and analysis and Janet Kennedy on our environmental flash card project.

As I say "aloha" to my friends at OEQC I am inspired by how far the office has come in such a short time and with so little money. I am confident that this office will claim many great accomplishments in the years ahead.

Imua!

Gary Gill
Director, Office of Environmental Quality Control

Chair's Report

The Environmental Council is pleased to transmit the 1998 Environmental Report Card to the Governor, the Legislature, and the public. Protecting Hawai'i's natural environment is a challenging task. We hope this report will promote discussion and provide data to encourage informed decisions.

The Council's **Annual Report Committee** continues under the very capable direction of Chair Bill Petti. With assistance of Dr. Stephen Dye and other committee members, this year's Environmental Indicators section has been improved and expanded.

The **Cultural Impacts Committee** continued under the leadership of chair Arnold Lum. This hard-working group completed the "Guidelines for Cultural Impacts" and compiled a list of Cultural Impacts Providers.

The **Exemption Lists Committee**, ably chaired by Mike Furukawa completed the exemption list survey and adopted the excellent report, "The EIS Exemption Screen" prepared by Dr. John Harrison, of the UH Environmental Center. Exemption lists were also received from the Division of Forestry and Wildlife, DLNR and the City Departments of Parks and Environmental Services.

The **Communication, Education and Legislation Committee** proposed five bills during the 1998 Legislative session. As the committee chair, I want to especially thank Ray Tabata for his many hours of work to complete the "How to Plant a Native Hawai'ian Garden" web page.

Steve Lim, chair of the **Rules Committee** is working to update the Council's procedural rules, HAR 11-201. Special thanks are due to our OEQC Director and staff for managing the affairs of the Environmental Council, updating the EIS Guidebook and leading statewide training classes on the environmental review system.

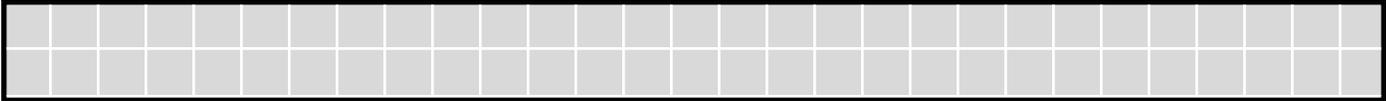
We reluctantly accepted the resignation of Muriel Seto and Roger Castro and welcome new Council members Purnima McCutcheon, Pauline Sato and Lance Gilliland. I want to especially thank Dr. Harlan H. Hashimoto for his leadership as our Council chair for the past two years.

Finally, mahalo to the many citizens who attended our meetings this past year. We are grateful for their energy, commitment and dedication to protecting Hawai'i's very special environment.

Barbara M. Robeson
Chair, Environmental Council

Environmental Documents Processed by OEQC in 1998

Type of Notice	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Draft EA	11	16	9	18	10	12	16	12	14	11	12	18	159
FONSI	11	7	11	10	9	19	14	12	17	9	7	18	144
EISPN	1	1	1	1	3	0	0	1	2	2	2	1	15
Draft EIS	0	0	1	2	1	2	2	2	0	1	0	3	14
Final EIS	0	1	0	0	1	1	2	1	2	1	0	1	10
EIS Acceptance	1	0	0	0	1	0	0	0	2	2	0	3	9
Withdrawals	2	0	0	0	2	0	0	0	0	0	1	2	7
NEPA Documents	4	1	6	1	5	2	2	4	8	2	1	5	41
Total	30	26	28	32	32	36	36	32	45	28	23	51	399



Section I

Environmental Indicators

Each year, the Environmental Council collects data on important indicators of the health of Hawai`i's environment. These data are presented in text, tables and graphs so that the public and policy makers can readily understand the status of Hawai`i's environment today. The indicators provide a comprehensive look -- from water quality to native species -- at the many faceted task of keeping Hawai`i clean and healthy.

The indicators presented in the Annual Report of the Environmental Council are organized this year in categories reflecting the principles of ecosystem sustainability. In order for an ecosystem to be sustainable, it must:

- 1) Use sunlight as the source of energy
- 2) Dispose of wastes and replenish nutrients by recycling all elements
- 3) Maintain biodiversity
- 4) Maintain the size of consumer populations so that "overgrazing" and overuse do not occur

It may be possible for an ecosystem to sustain itself for long periods without adhering strictly to these principles. However, sustainability in perpetuity can be achieved only if the above principles are met.

In this section the Environmental Council also grades the status of Hawai`i's environment. The Council hopes that this evaluation stimulates the public to learn about and take action to improve our environment.

Environmental Indicators

Energy Use

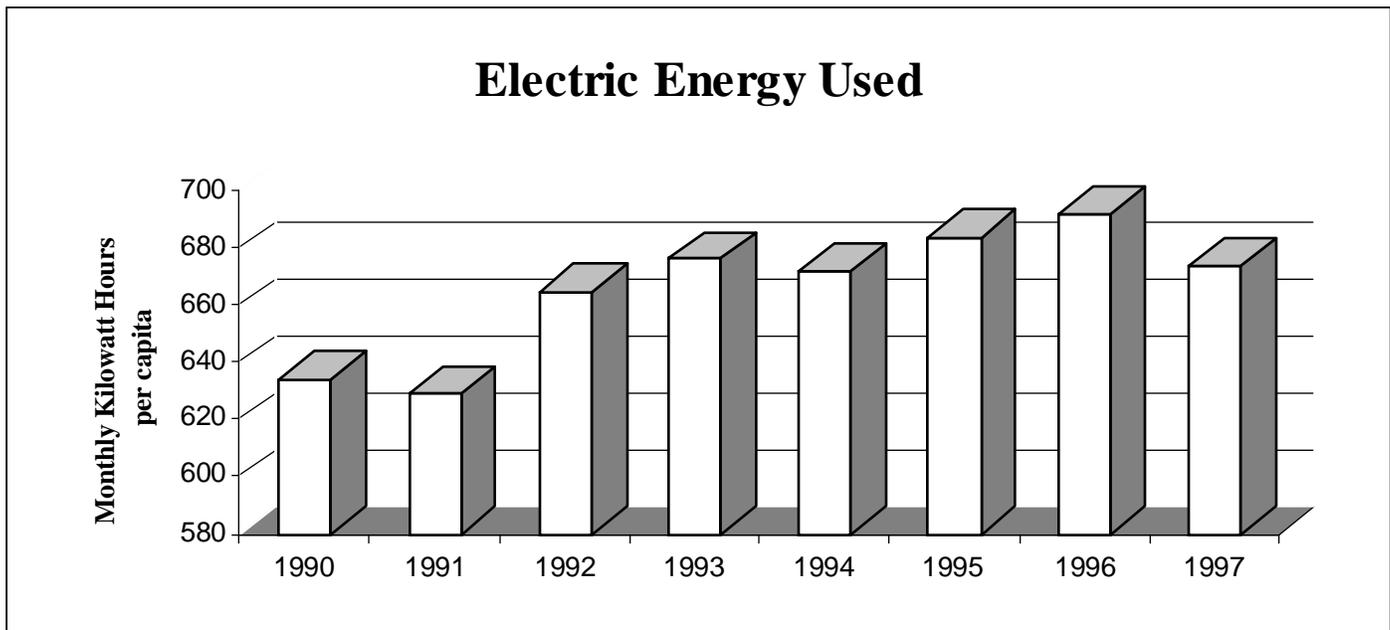
1. Total Electric Energy Used

Hawai'i depends on imported oil and coal for more than 90% of its energy. Energy production from fossil fuels is a major source of air pollutants. Additionally, petroleum shipping and handling pose risks to our fragile environment. Displacing petroleum fuels with alternate or renewable forms of energy and improving energy efficiency will improve our environmental quality. We can help reduce per capita energy use by conserving energy and improving energy efficiency. A solar water heater can reduce water heating costs by 90%. The table below shows the total electric energy used in Hawai'i.

Table 1: Total Electric Energy Used in Hawai'i, 1990-97.

Year	1990	1991	1992	1993	1994	1995	1996	1997
Total Electric Energy Used (Million KWH)	9,566	9,610	10,104	10,219	10,341	10,563	10,740	10,424
State de facto Population	1,256,746	1,272,459	1,265,834	1,260,036	1,281,602	1,287,322	1,292,866	1,288,745
Per capita Used per month (KWH)	634	629	665	676	672	684	692	674

Source: State DBEDT, Energy Division, Energy Data Services.



Environmental Indicators

2. Energy Produced in Hawai`i

One of Hawai`i's goals is to replace energy produced from fossil fuels with alternate and renewable sources such as solar power. The table below shows the amount of energy produced by source.

Table 2: Total Energy Produced in Hawai`i by Source, 1994 to 1997.

Resources	1994		1995		1996		1997	
	Trillion BTU	Percent						
Petroleum	285.5	87.2	274.0	87.0	277.1	87.7	278.3	88.0
Biomass	16.4	5.0	11.8	3.7	10.4	3.3	9.0	2.8
Solar hot water	2.3	0.7	2.8	0.9	3.1	1.0	3.1	1.0
Hydro-electric	1.5	0.5	1.1	0.3	1.1	0.3	1.0	0.3
Coal	13.6	4.2	16.5	5.2	16.9	5.3	16.8	5.3
Wind	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1
Geothermal	1.8	0.5	2.3	0.7	2.4	0.7	2.4	0.8
Solid Waste	6.2	1.9	6.4	2.0	4.7	1.5	5.3	1.7
Total	327.5	100.0	315.1	100.0	315.9	100.0	316.1	100.0

3. Fossil Fuel Imported to Hawai`i

Fossil fuels are coal, oil and natural gas which formed inside the earth from the remains of plants and animals that lived many years ago. These fuels are burned to provide energy for making electricity, powering vehicles and cooking.

The table below shows the amount of imported fossil fuel by type.

Table 3: Total Imported Fossil Fuel into Hawai`i by Type, 1994 to 1997.

Type of Imported Fuel	1994	1995	1996	1997
Crude Oil	323.9	298.2	301.9	296.4
Distillates	1.9	0	.6	0.4
Jet Fuel	6.1	4.6	20.3	30.9
Residual Fuel	2.6	5.7	6.7	-
Other	0	3.4	3.7	6.1
Coal	14.2	16.5	16.1	16.8
Total	348.7	328.4	349.3	350.6

Source: State DBEDT, Energy Division, Energy Data Services.

Note: Figures in trillion British thermal units (Tbtu).

Environmental Indicators

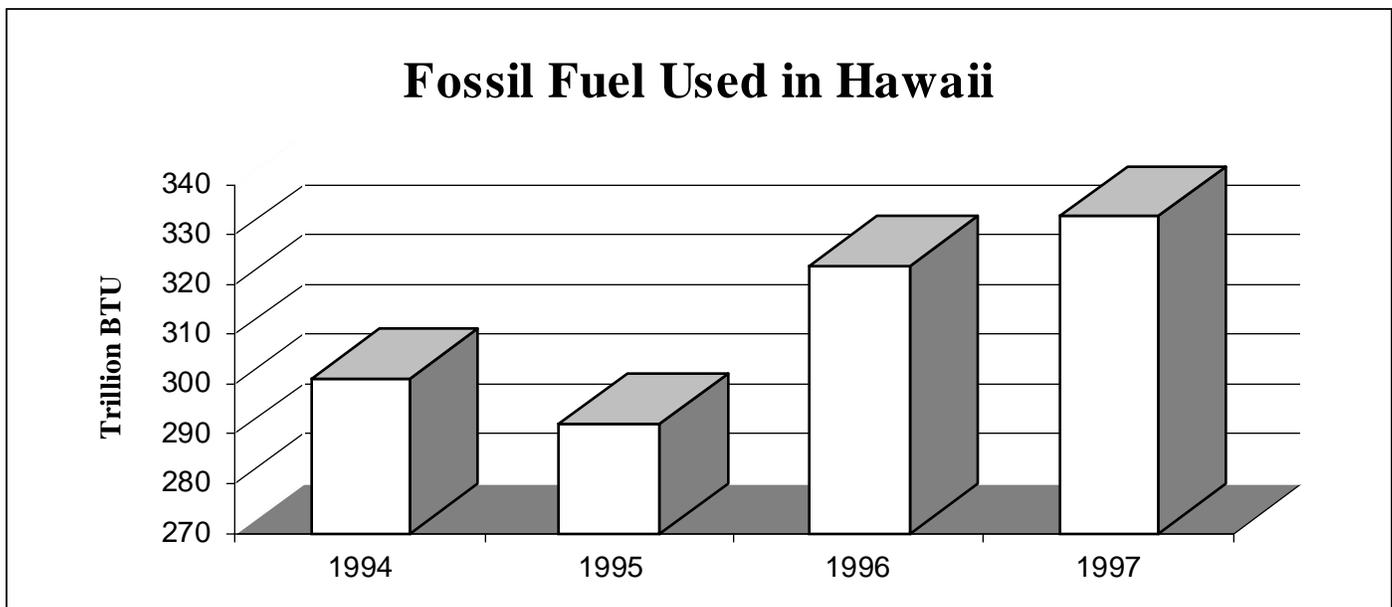
4. Fossil Fuel Used in Hawai'i

Hawai'i's over dependence upon imported oil is a major concern. In the event of a disruption in the world oil market, Hawai'i's economy and way of life would be adversely affected. Environmentally destructive oil spills are always a possibility during the transport of petroleum products. The table below shows the amount of fossil fuel used by category.

Table 4: Amount of Fossil Fuel Used in Hawai'i by Category, 1994 to 1997.

Sector	1994		1995		1996		1997	
	Trillion BTU	%						
Electricity Production	95.8	31.8%	95.1	32.6%	101.1	31.2%	100.0	30.0%
Transportation (Ground & Water)	81.5	27.0%	82.1	28.1%	75.9	23.4%	74.0	22.2%
Transportation (Air)	90.0	29.9%	96.5	31.6%	102.4	31.6%	102.7	30.8%
Other Sectors	17.7	5.9%	9.3	4.7%	15.1	4.7%	18.4	5.5%
Exports	16.4	5.4%	8.8	9.1%	29.4	9.1%	38.6	11.6%
Total	301.4	100.0%	291.7	100.0%	323.9	100.0%	333.7	100.0%

Source: DBEDT, Energy Division, Energy Data Services.



Environmental Indicators

Use and Recycling of Resources

5. Municipal Water Consumption

Good drinking water is one of Hawai'i's greatest natural assets. The combination of a growing population and limited potable water resources is reducing the availability and quality of our drinking water.

The table below shows water consumption through the respective municipal (county) water distribution systems and water consumption per capita. The Environmental Council's year 2002 goal for per capita water consumption is 150 gallons per day.

Table 5: Municipal Water Consumption by County, Fiscal Years 1992 to 1998.

County	FY 91-92	FY 92-93	FY 93-94	FY 94-95	FY 95-96	FY 96-97	FY 97-98
Honolulu (MG)	51,241	51,033	50,407	51,006	50,682	48,613	49,265
Kauai (MG)	4,453	4,056	4,149	4,114	4,206	3,945	4,165
Hawaii (MG)	8,024	7,937	7,999	8,378	8,363	7,804	8,158
Maui (MG)	10,399	10,312	11,177	11,494	11,477	11,438	11,729
Total (MG)	74,117	73,338	73,732	74,992	74,728	71,800	73,317
State de facto Population	1,272,459	1,265,834	1,260,036	1,281,602	1,287,322	1,292,866	1,288,745
Daily per capita Consumption (Gallons)	160	159	160	160	159	152	156

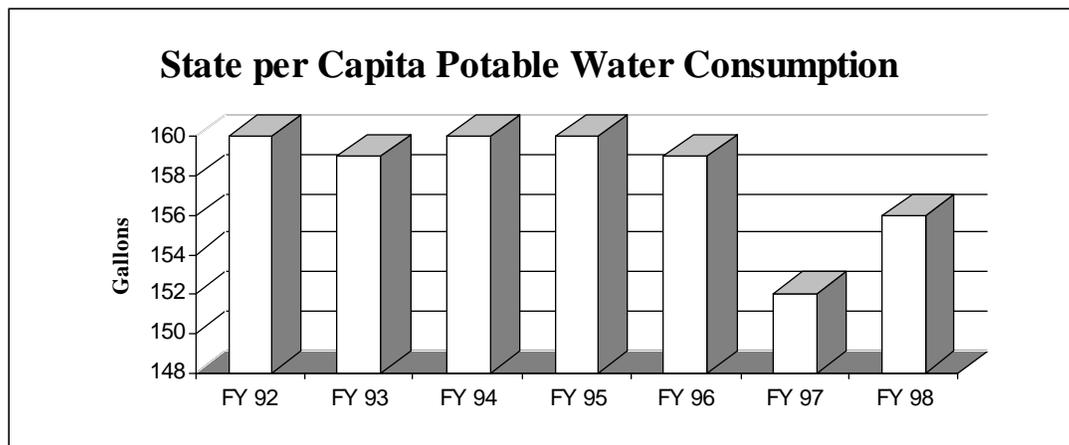
Source: The State of Hawai'i Data Book 1997 prepared by the Department of Business, Economic Development and Tourism; Honolulu Board of Water Supply; Hawai'i County Department of Water Supply; Kaua'i Department of Water; and Maui Department of Water Supply.

Note: i) These figures include only municipal water supply. Military, private and plantation water systems are not included.

ii) Within the municipal distribution system, water is used for residential, agricultural, government, industrial and commercial use.

iii) The percentage of municipal water used for agricultural purposes varies by county. The following is a breakdown of agricultural use for FY 1996: Honolulu - 3%, Hawai'i - 9%, Maui - 11%, Kaua'i - not available.

iv) MG = million gallons.



Environmental Indicators

6. Municipal Wastewater Treatment and Reuse

Promotion of wastewater management practices that protect, conserve and fully utilize water resources is vital for Hawai'i. One way to achieve this objective is to use water reclaimed from wastewater treatment plants for irrigation.

The table below shows how much wastewater was treated and reused at municipal (county) wastewater plants. The Council's year 2002 goal for the percentage of treated wastewater reused is 25%.

Table 6: Municipal Wastewater Treatment and Reuse by County, FY 1995 to 1998.

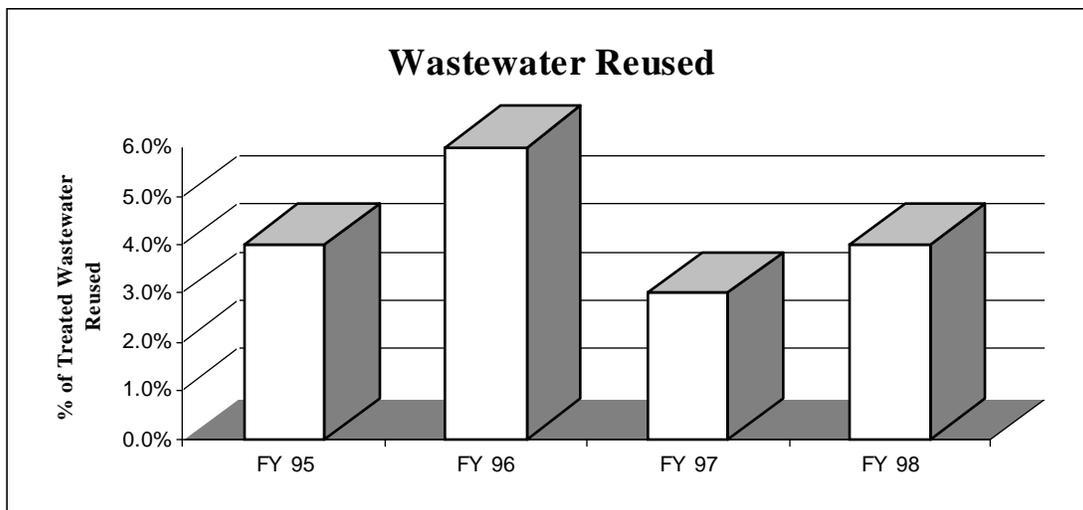
County	FY 1995		FY 1996		FY 1997		FY 1998	
	Treated (MG)	Reused (MG)						
Honolulu	43,174	732	41,403	1,570	43,511	63	41,289	144
Maui	5,351	638	5,307	725	5,133	909	5,354	1,157
Kauai	872	571	907	568	927	538	899	507
Hawaii	1,772	0	1,758	0	1,898	0	1,838	0
Total	51,169	1,941	49,375	2,863	51,469	1,510	49,380	1,808
Percent Reused	NA	4%	NA	6%	NA	3%	NA	4%

Source: Honolulu Department of Wastewater Management, Maui Wastewater Reclamation Division, Kaua'i Division of Wastewater Management, and Hawai'i County Department of Public Works.

Note: i) These data include only municipal wastewater treatment and reuse. Military and private treatment plants are not included.

ii) 100% (450 MG in FY 1997) of wastewater treated at the Lihue Wastewater Treatment Plant is sent to Kaua'i Lagoons for golf course irrigation. Kaua'i Lagoons then manages the effluent, some of which is disposed of by injection well during inclement weather. The county assumes that all of the treated water is reused.

iii) Honolulu reused 63 million gallons, which is less than the previous fiscal year due to limited incineration of biosolids. One other reason for the decline was the discontinued use of chlorination at the Honouliuli WWTP, which negated the reuse throughout the facility.



Environmental Indicators

7. Solid Waste Generation and Diversion

Wise management of solid waste through programs of waste prevention, energy resource recovery, and recycling reduces human impact on the environment. Waste minimization, recycling and composting also reduce the amount of solid waste that we send to our landfills. It is the goal of the state to reduce the solid waste stream prior to disposal by 50% by January 1, 2000.

The following table shows the total amount of municipal solid waste generated and the amount recycled and composted. The Environmental Council's year 2002 goal for municipal solid waste generated per capita is 4.3 pounds per day.

Table 7A: Solid Waste Generation by County, Fiscal Years 1994 to 1998.

County	FY 93-94	FY 94-95	FY 95-96	FY 96-97	FY 97-98
	Generation (in tons)				
Oahu	1,508,000	1,561,000	1,667,000	1,700,520	1,568,179
Maui	193,000	212,000	203,000	228,790	207,948
Kauai	92,000	90,000	81,000	76,599	65,422
Hawaii	159,000	160,000	181,000	146,567	151,832
Total	1,952,000	2,023,000	2,132,000	2,152,476	1,993,381
De facto Pop.	1,260,036	1,281,602	1,287,322	1,292,866	1,288,745
Daily per capita (in lbs)	8.5	8.6	9.1	9.1	8.5

Source: DOH, Office of Solid Waste Management

Table 7B: Solid Waste Diversion by County, Fiscal Years 1994 to 1998.

County	FY 93-94	FY 94-95	FY 95-96	FY 96-97 Preliminary Data	FY 97-98 Preliminary Data
Oahu	17.0%	21%	24%	28%	25%
Maui	24.0%	24%	25%	27%	30%
Kauai	15.0%	22%	15%	4%	5%
Hawaii	9.0%	7.0%	18%	6%	5%
Total	17.0%	20%	23%	25%	24%

Source: DOH, Office of Solid Waste Management

Environmental Indicators

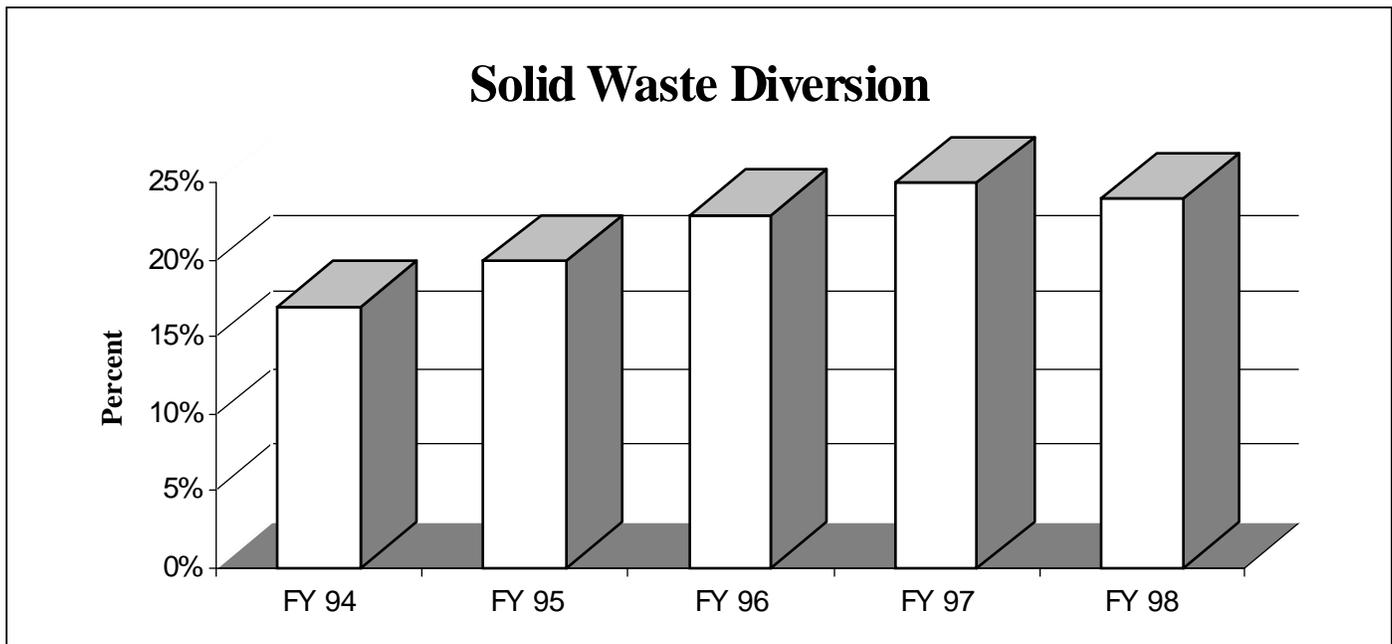
8. Municipal Solid Waste Landfill Capacity

The table below shows how much longer county landfills can accept waste at the current disposal rate. Solid waste minimization and diversion is critical in Hawai'i because at our present disposal rate, county landfills (except Hawai'i County) will reach capacity in 10 years or less.

Table 8: Solid Waste Landfill Life Remaining for Municipal Landfills in Hawai'i.

County	Location	Landfill Life Remaining
Oahu	Waimanalo Gulch, MSWLF	4 years
Maui	Central Maui, MSWLF all phases	4 years
Molokai	Naiwa, MSWLF	10 years
Lanai	Lanai, MSWLF	3-5 years
Kauai	Kekaha, MSWLF phase III	7 years
Hawai'i	Hilo MSWLF West Hawaii MSWLF	1 year 40 years

Source: DOH, Office of Solid Waste Management
 Note: MSWLF = Municipal Solid Waste Landfill



Environmental Indicators

9. Hazardous Waste Generated

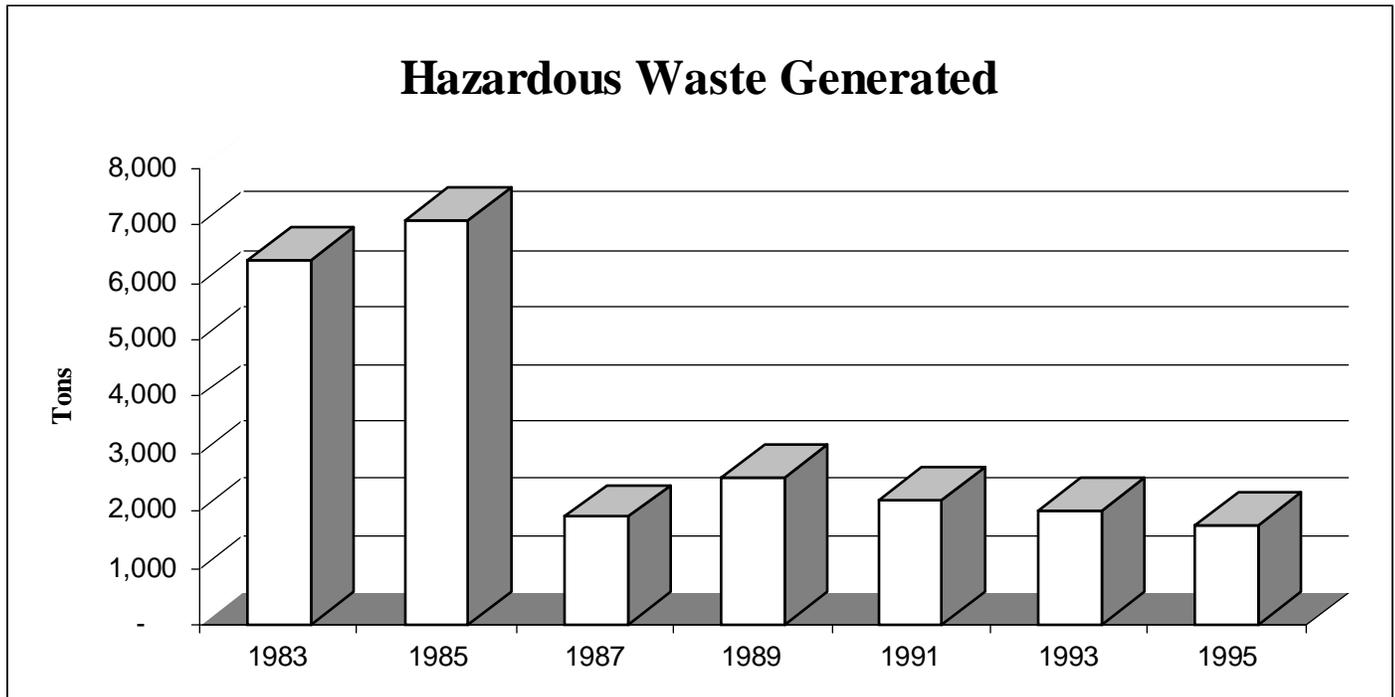
Hazardous wastes are classified as either ignitable, corrosive, reactive or toxic. These wastes have components that have been shown to be harmful to health and the environment. To protect worker safety, public health, and the environment, users of hazardous chemicals must minimize the amount of waste they generate.

State law requires large generators of hazardous waste to report biennially to the Director of Health the amount of hazardous waste generated. The following table shows the data. The Environmental Council's year 2002 goal for total hazardous waste generated is 900 tons.

Table 9: Total Hazardous Waste Generated in Hawai'i, 1983 to 1995.

Year	1983	1985	1987	1989	1991	1993	1995
Hazardous Waste Generated (in tons)	6,400	7,100	1,900	2,600	2,200	2,000	1,742

Source: Biennial Report System submittal from Hawai'i businesses to the Department of Health.



Environmental Indicators

Biodiversity Maintenance

10. Status of Plant Species

Hawai'i is the most isolated high land mass on Earth and most of our native plants are found nowhere else in the world. Species that reached the islands before the arrival of humans evolved with minimum competition. As a result, most native plants are easily damaged by feral animals and do not compete well with introduced, aggressive plants. Land use changes and exotic plants and animals cause major problems to our native species.

The table below shows the number of extinct, native and nonnative plant species in Hawai'i.

Table 10: Number of Plant Species in Hawai'i by Status, 1995 to 1998.

Year	Extinct	Number of Plant Species						
		Native (1,093)						Non-Native (Exotic)
		Rare				Total Rare	Abundant	
		Listed Endangered or Threatened	Proposed Endangered or Threatened	Candidate	Of Concern			
1995	103	198	85	13	308	604	489	> 9000
1996	103	280	0	10	317	607	486	> 9000
1997	103	284	11	41	250	586	507	> 9000
1998	95	272	21	45	262	600	493	> 9000

Source: Center for Plant Conservation - Hawai'i Office

Note: i) Native plant species are those that were established in Hawai'i before the arrival of humans.

ii) Extinct means that there are no known populations or individuals remaining in the wild or in cultivation, that the species has not been sighted in many years, and there is insufficient high quality habitat left to survey within its natural range. This designation is difficult to verify, and must be based on the projections, probabilities and estimates of our best botanical experts.

iii) Listed Endangered/Threatened status is conferred upon its final approval by the U.S. Fish and Wildlife Service (USFWS) Director, and its publication as a Final Rule in the Federal Register. A species is thus afforded special protection under the Endangered Species Act.

iv) Candidate status is authorized for a species by the Director of the USFWS after sufficient information has been gathered by botanical experts to demonstrate that a species is sufficiently rare and imperiled to qualify for federal listing. Official candidate status follows the Notice of Review, which is published in the Federal Register. The USFWS then has one year to propose an official candidate species for federal listing.

v) Proposed Endangered/Threatened status is conferred upon a species after approval by the USFWS Director and its publication in a Notice of Review in the Federal Register. The notice describes the status of a species and the nature and immediacy of the threats to its survival. The USFWS then has one year to advance the species through the final listing process, including a 30-day public comment period.

vi) Species of Concern is not an official USFWS category, but is used by professionals inside and outside of government to designate rare species that are potential candidates for listing.

vii) Rare means the species is uncommon in the natural environment. Usually, fewer than 5,000 individuals of a rare species exist although the number varies widely between species.

viii) Abundant means high numbers of individuals of the species are common in the natural environment.

ix) Nonnative or exotic means species that have been brought to the islands by humans.

Environmental Indicators

11. Status of Native Animal Species

The loss of native species in Hawai'i has been tremendous. Flora and fauna that evolved over millions of years have been devastated in less than 2,000 years. Twenty five percent of the U.S. endangered taxa occur in Hawai'i.

The table below shows the status of native animal species (except invertebrates) in Hawai'i.

Table 11: Status of Animal Species, 1997-98.

Number of Species	Mammals		Birds		Turtles		Fishes	
	1997	1998	1997	1998	1997	1998	1997	1998
Total Native Species	4	4	93	93	5	5	22	22
Extinct Species	0	0	26	26	0	0	0	0
Listed Endangered	4	4	30	30	2	2	0	0
Listed Threstened	0	0	1	1	3	3	0	0
Proposed for Listing	0	0	0	0	0	0	0	0
Candidate Species	0	0	2	2	0	0	0	0
Species of Concern	0	0	6	5	0	0	0	1

Source: U.S. Fish and Wildlife Service

Note: i) The status of Hawai'ian invertebrates is hard to assess due to lack of information on abundance and distribution for described (5,500+ species) and undescribed (3,000 - 5,000 species) taxa. ii) Four native mamals include the Monk Seal, Hoary Bat, Humpback Whale and Sperm Whale.

Environmental Indicators

12. Health of Hawai'i Fisheries

Ocean resources are an integral part of Hawai'i's heritage. Aquatic resources are extremely valuable for ecological, social and economic reasons. Sustaining and enhancing Hawai'i's living aquatic resources and their habitats make environmental and economic sense.

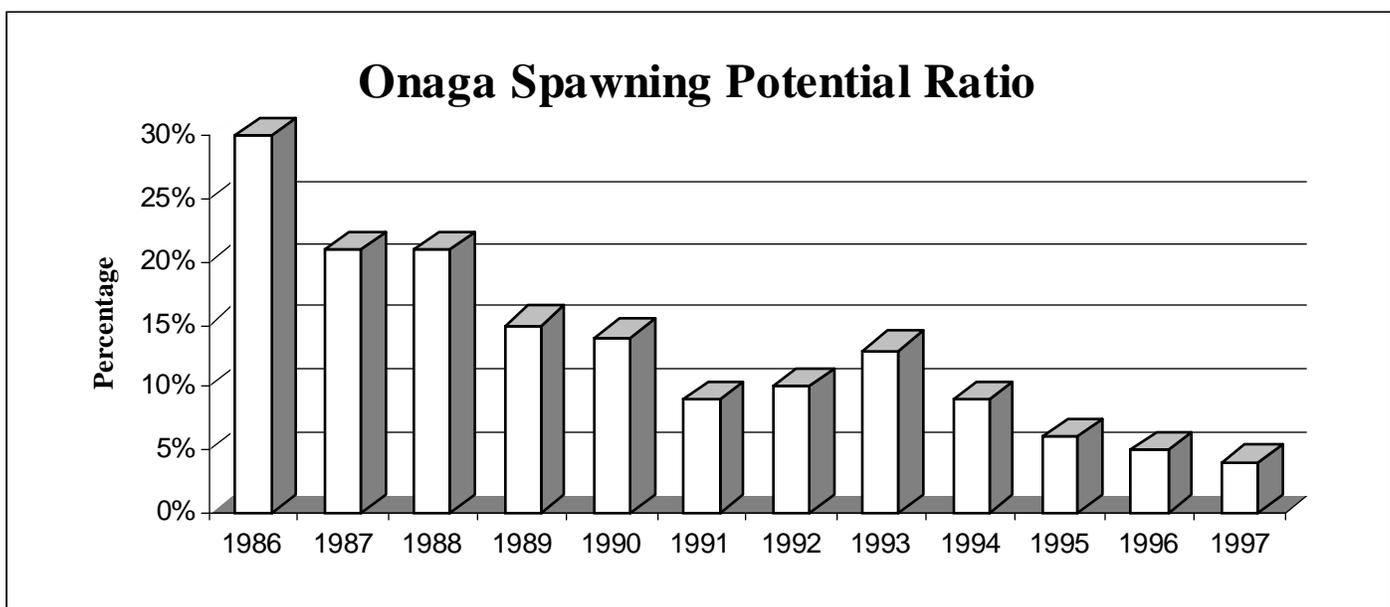
The table below shows the figures for the main Hawai'ian Island bottomfish *spawning potential ratio* compiled by the Honolulu Laboratory of the National Marine Fisheries Service. This ratio indicates when the population of a species of fish has declined to a level beyond its ability to sustain itself. Because the habitat of bottom fish is relatively isolated from sources of pollution, the decline in their population is a direct reflection of overfishing. Three of the five most important species listed below have now dropped below the 20% SPR level considered critical to species survival. The Environmental Council's year 2002 goal for the onaga SPR is 15%.

Table 12. Hawai'i Bottomfish Spawning Potential Ratio 1986 to 1997.

Bottomfish	Spawning Potential Ratio (in percent)											
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Ehu	9	13	9	17	12	7	4	5	6	7	8	7
Hapuupuu	42	37	52	58	37	34	37	26	33	21	21	19
Onaga	30	21	21	15	14	9	10	13	9	6	5	4
Opaka paka	33	31	37	58	42	39	44	32	37	35	28	27
Uku	49	21	64	55	30	26	28	46	37	40	45	31

Source: Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region: 1996 Annual Report of the Western Pacific Regional Fishery Management Council.

Note: SPR is calculated from catch size composition and commercial catch rate. SPR values of less than 20% are thought to be indicative of recruitment overfishing, the point at which there may be too few spawning fish remaining to maintain the population. Target SPR values for ehu and onaga recovery are 20%.



Environmental Indicators

Environmental Quality

13. Air Quality in Honolulu

Breathing polluted air can cause health problems ranging from difficulties in breathing to aggravation of asthma, to cancer and even death. Air pollution can also damage buildings and vegetation.

The table below shows air quality measurements compiled by the Environmental Protection Agency.

Table 13: Air Quality Measurements in Honolulu, 1988 to 1996.

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996
PM10 (ug/m3)	16	16	16	17	17	16	19	15	16
CO (ppm)	3.3	3.4	2.9	2.6	2.8	3.1	3.1	2.5	2.4
Ozone (ppm)	0.03	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.05
Lead (ug/m3)	0.01	0.03	0.01	0.01	0.01	0.01	0	0	0.01

Source: EPA, National Air Quality and Emissions Trends Report, 1996, Table A-15.

Note: PM10 - Weighted annual mean, ug = micrograms. State standard = 50 ug/m3.

CO - Second highest concentrations of carbon monoxide recorded during an 8-hour average. State standard = 4.4 ppm.

Ozone - Second highest daily maximum 1-hour. State standard = 0.05 ppm.

Lead - Maximum quarterly mean. State standard = 1.5 ug/m3.

14. Air Pollutant Emissions

The Environmental Protection Agency estimates the total amount of air pollutants emitted throughout the state. The estimates for Hawai'i include only on-road vehicle, point sources, residential wood combustion and wildfire emissions.

Table 14: Total Estimated Emissions of Air Pollutants Statewide, 1993 to 1996.

Year (thousand short tons)	1993	1994	1995	1996
CO	249	250	227	221
PM10	92	103	101	34
NO2	35	34	33	50
SO2	21	20	20	34
VOC	31	31	28	32

Source: EPA, National Air Pollutant Emissions Trends.

Environmental Indicators

15. Air Quality Comparison with Other Cities

All metropolitan areas in the United States with populations greater than 200,000 are required to report their air quality to the EPA. The table belows list the number of days the air quality at certian cities exceeded EPA standards.

Table 15: Number of Days Air Quality Declared Unhealthy by EPA Standards, 1987-1996.

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Honolulu	0	0	0	0	0	0	0	0	0	0
Las Vegas	7	31	46	22	12	5	8	12	7	3
Los Angeles	201	239	226	180	184	185	146	136	103	88
San Francisco	1	2	1	0	0	0	0	0	1	0

Source: EPA, National Air Quality and Emissions Trends Report, 1996, Table A-16.

16. Carbon Monoxide Emissions

Motor vehicles emit the largest amount of carbon monoxide. The following table is an estimation of total carbon monoxide emissions derived by multiplying the total vehicle miles statewide with a CO emission factor for vehicles. The emission factor is derived by using EPA's MOBILE5 model and Hawai'i's age distribution for vehicles.

Table 16: Estimated Carbon Monoxide Emissions from Motor Vehcles, 1986 - 1995.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
VMT (million miles)	6971	7217	7400	7748	8065	8142	8066	7945	7925	7944
CO Emission Factor (g/mile)	35	34	33	32	32	31	31	30	30	30
Total CO Emissions (million kilograms)	246	245	241	248	254	254	249	242	239	238

Sources: VMT - Hawai'i Databook, CO emission factor - supplied by Jim Morrow.

Environmental Indicators

17. Beaches Posted as Unsafe Due to Pollution

Residents and visitors use our public beaches and the ocean for recreation and fishing. Sewage, oil and chemical spills can restrict our enjoyment and use of the shoreline as well as poison aquatic life.

The following table shows the places and times beaches were posted with warning signs (unsafe due to water pollution) by the Department of Health. The Environmental Council's year 2002 goal for beach closure days is 5.

Table 17: Days Beaches Posted as Unsafe Due to Pollution by DOH, FY 1995 to FY 1998.

Location of Beach	Dates Beaches Posted as Unsafe	Number of Days
Kahala Beach, Oahu	July 6 - 12, 1994	FY 1995 = 15 days
Pohaku Park, Napili, Maui	November 19 - 23, 1994	
Lua landing, Laie, Oahu	March 20 - 25, 1995	
Kalapaki Bay, Kauai	July 26 - 29, 1995	FY 1996 = 24 days
Hanamaulu Beach Park, Kauai	July 29 - August 3, 1995	
Kihei, Maui	January 6 - 9, 1996	
Lahaina, Maui	June 8 - 21, 1996	
Kahului Harbor Beaches, Maui	September 3 - 6, 1996	FY 1997 = 27 days
Waianae, Oahu	November 17 - 22, 1996	
Waialua, Oahu	November 18 - 22, 1996	
Kahala Beach, Oahu	January 20 - 31, 1997	
Hanamaulu Beach, Kauai	April 12 - 16, 1997	
Kewalo Basin, Oahu	October 1, 1997	FY 1998 = 1 day

Source: Department of Health, Clean Water Branch

Note: i) There were additional postings of warning signs on streams, lakes, and harbors.

ii) Other agencies may also post warning signs on beaches. For example, the City and County of Honolulu also posts warning signs on beaches after opening stream mouths to drain water.

Environmental Indicators

18. Wastewater, Oil and Chemical Spills

Wastewater, oil and chemical spills pollute our ocean, streams, groundwater. In addition to the environmental and ecological damage, cleanup costs run into the millions of dollars. Even with the best response plan, it is impossible to restore the environment to its original condition. Spill prevention must be our primary strategy.

The following table shows the number of wastewater, oil and chemical spills in Hawai'i. The Environmental Council's year 2002 goal for the number wastewater of spills is 365.

Table 18: Wastewater, Oil and Chemical Spills in Hawai'i, 1995 to 1998.

Number of Spills	Oil		Other Chemicals		Wastewater		
	1995	1996	1995	1996	FY 95-96	FY 96-97	FY 97-98
Oahu	58	164	129	140	401	453	344
Maui	6	11	3	13	60	55	43
Hawaii	15	24	10	3	12	9	15
Kauai	3	9	9	3	12	12	17
Total	82	208	151	159	485	529	419

Source: Wastewater spills (fiscal year data) - Department of Health, Wastewater Branch. Oil and other chemical spills (calendar year data) - Department of Health, Hazard Evaluation and Emergency Response Office.

19. Oil Spilled in Hawai`ian Waters

Oil spills from vessels and pipelines pollute our shores and waters. This table quantifies oil spilled in Hawai`ian waters.

Table 19: Amount of Oil Spilled in Hawai`ian Waters in Gallons, 1993 to 1996.

Year	1993	1994	1995	1996
Oil Spilled (in gallons)	6,142	20,736	3,707	45,287

Source: Commanding Officer, United States Coast Guard, Marine Safety Office, Honolulu

Note: On May 14, 1996 approximately 39,000 gallons of fuel oil spilled into Pearl Harbor. The oil leaked from a corroded pipeline at Waiiau Power Plant.

Environmental Indicators

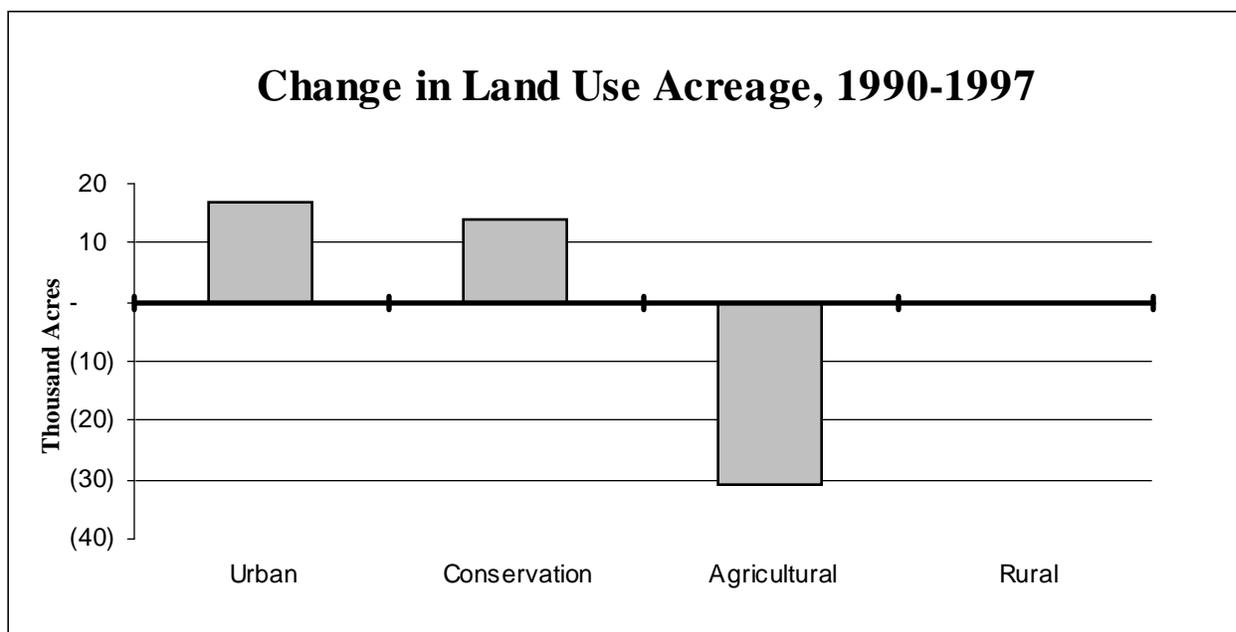
20. Statewide Land Use District Acreage

There are four land use districts in which all lands in the state are placed: urban, rural, agricultural, and conservation. With the decline of sugar cane and pineapple, there may be less productive agricultural land in Hawai'i. The following table shows that since 1990, about 30,000 acres of agricultural land have been converted to Urban and Conservation designation. The Council's year 2002 goal for conservation land area is 2,110,000 acres.

Table 20: State Land Use District Acreage 1990 to 1997.

Year	Land Area in Thousand Acres			
	Urban	Conservation	Agricultural	Rural
1990	175	1,961	1,966	10
1991	178	1,961	1,963	10
1992	181	1,960	1,961	10
1993	181	1,961	1,961	10
1994	188	1,959	1,956	10
1995	190	1,976	1,936	10
1996	191	1,975	1,936	10
1997	192	1,975	1,935	10

Source: State Land Use Commission, Department of Business, Economic Development and Tourism.



Environmental Indicators

21. State Land Use District Acreage by Island

Precious resources have a better chance of being protected if they are located in or classified as conservation lands. Protection of conservation lands is accomplished under regulations administered by the Department of Land and Natural Resources.

The following table shows how much land is designated under the four land use categories on each island.

Table 21: Statewide Land Use District Acreage by Island.

Island	Land Area in Thousand Acres				
	Urban	Conservation	Agricultural	Rural	Total
Hawaii	53	1306	1214	1	2,573
Maui	21	195	246	4	466
Kaho`olawe	-----	29	-----	-----	29
Lana`i	3	38	47	2	91
Moloka`i	3	50	112	2	166
O`ahu	98	157	131	-----	386
Kaua`i	14	199	140	1	354
Ni`ihau	-----	-----	46	-----	46
Kaula/Lehua	-----	0.4	-----	-----	0
Other (Northwest Hawaiian Islands)	-----	2	-----	-----	2
Statewide	192	1,975	1,935	10	4,112

Source: State Land Use Commission, Department of Business, Economic Development and Tourism.

Environmental Indicators

22. Drinking Wells Free of Chemicals

Fresh water is a precious resource. Pesticides, fertilizers, oils and chemicals that we apply to the ground eventually seep into our drinking water aquifers. We must protect our drinking water supplies from contamination, or spend millions of dollars for treatment. The next table shows the number of drinking wells free from chemical contamination.

Table 22: Number of Wells Free of Chemicals, 1996 to 1998.

County	As of October 1996			As of June 30, 1997			As of June 30, 1998		
	Number of Wells		% Free of Chem.	Number of Wells		% Free of Chem.	Number of Wells		% Free of Chem.
	Total	Free of Chem.		Total	Free of Chem.		Total	Free of Chem.	
Oahu	251	178	74%	286	213	74%	222	165	74%
Hawaii	76	49	64%	78	51	65%	94	73	78%
Maui	44	37	84%	44	37	84%	53	44	83%
Kauai	63	59	94%	63	59	94%	66	63	95%
Lanai	9	9	100%	9	9	100%	4	4	100%
Molokai	10	10	100%	10	10	100%	16	16	100%
Total	483	372	77%	490	379	77%	455	365	80%

Source: Department of Health Safe Drinking Water Branch

Notes: (i) Contaminants include pesticides, fuels and other man-made compounds. Nitrates are not included.

(ii) Figures include new wells and exclude non-drinking water wells.

(iii) The contamination levels usually detected are well below standards established to protect public health. If contamination approaches or exceeds standards, the well is closed or fitted with water treatment facilities to ensure safe drinking water for the public. Last year, one well on O'ahu was closed because contamination levels approached threshold levels.

Environmental Indicators

23. Public Water Systems Free of Microbiological Violations

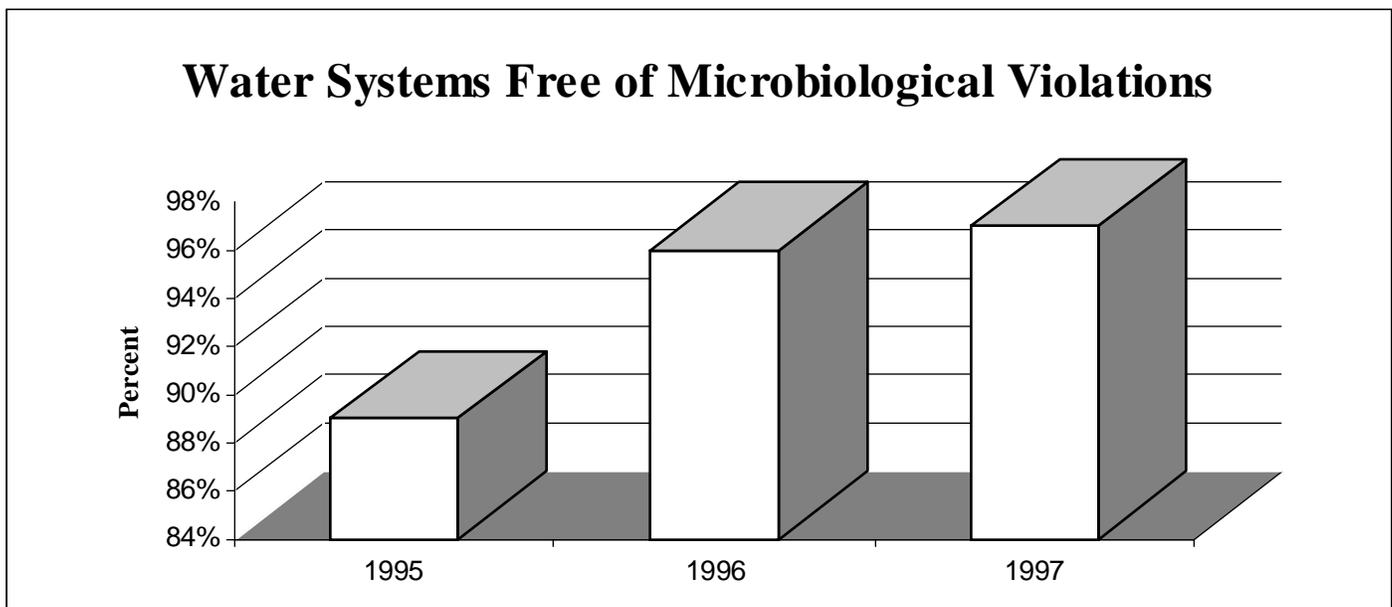
Public water systems provide piped water for human consumption such as drinking and washing. They include both municipal and private facilities for the collection, treatment, storage and distribution of water.

The following table shows the number of public water systems that are free of microbiological violations. The Council's year 2002 goal for the percentage of water systems free of violations is 97%.

Table 23: Number of Public Water Systems Free of Microbiological Violations, 1995 to 1997.

Year	1995	1996	1997
Number of Systems Free of Microbiological Violations	134	144	140
Total Number of Systems	150	150	144
Percentage Clean	89%	96%	97%

Source: Department of Health, Safe Drinking Water Branch.



Environmental Indicators

Public Awareness/Concern

24. State Environmental Expenditures

Environmental protection is one of the 11 primary objectives of the state government. Programs within the environmental protection structure include: Department of Health (Environmental Management, Environmental Health Administration, and Office of Environmental Quality Control); Department of Land and Natural Resources (Forestry & Wildlife, Commission on Water Resources Management, Conservation and Resources Enforcement, Natural Area Reserves, Aquatic Resources, Mineral Resources, and Conservation District); and Department of Agriculture (Pesticides).

More funding to promote the goals of Hawai'i's environmental programs will result in better overall state environmental quality. The portion of expenditures for environmental protection reflects the priority given towards environmental programs relative to other functions.

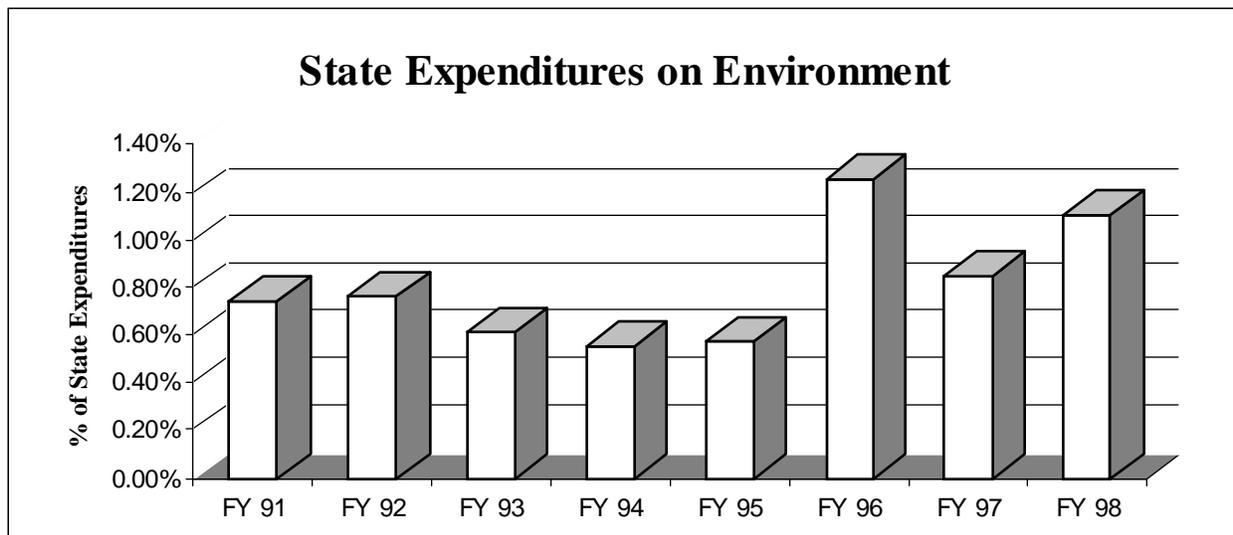
The table below shows the sum of money and the percentage of total state expenditures spent on environmental protection programs. The Environmental Council's year 2002 goal for the percentage of total state expenditures spent on environmental protection programs is 1.9%.

Table 24: State Expenditures on Environmental Protection Programs, FY 1991 to 1998.

Fiscal Year	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Environmental Expenditures in FY 1991 Dollars (in millions)	25.3	27.8	23.9	24.0	25.8	51.9	37.7	49.5
% of State Expenditures	0.74%	0.76%	0.61%	0.55%	0.57%	1.25%	0.85%	1.10%

Source: *The Variance Report, State of Hawai'i*, compiled by the Department of Budget and Finance. This report is prepared annually and submitted to the state Legislature.

Note: Beginning with fiscal year 1996, environmental spending figures include the Water Pollution Control Revolving Fund that was not shown in previous years. Revolving fund expenditures fluctuate greatly from year to year.



Environmental Indicators

25. Registered Motor Vehicles in Hawai'i

Exhaust from motor vehicles contains many air pollutants, including carbon monoxide, ozone and particulates. We breathe these toxic pollutants. Reducing the number of motor vehicles on our roads and improving emission control technology will improve air quality. We can help reduce air pollution by walking, biking or taking the bus instead of riding gas-powered cars.

The table below shows the total number of registered motor vehicles in Hawai'i. The Council's year 2002 goal for the number of motor vehicles per capita is 0.61.

Table 25: Number of Registered Motor Vehicles In Hawai'i, 1991 to 1997.

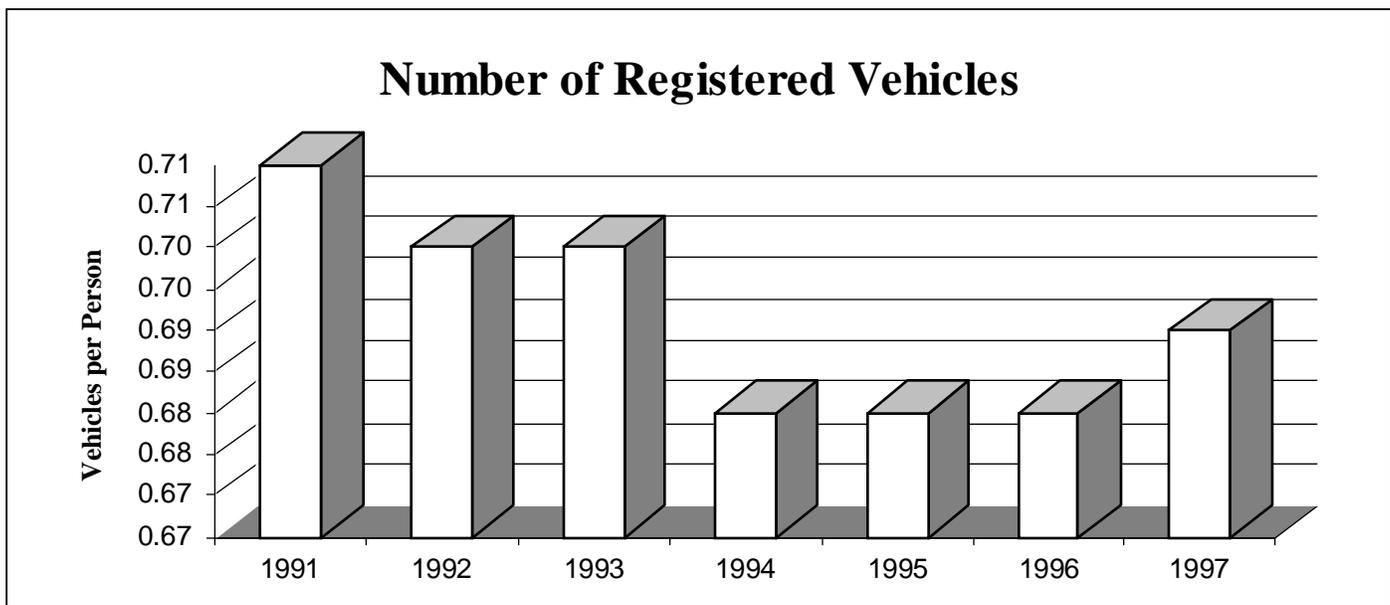
Year	1991	1992	1993	1994	1995	1996	1997
Number of Motor Vehicles	897,193	885,761	880,152	875,144	877,756	884,617	884,267
De facto Population	1,272,459	1,265,834	1,260,036	1,281,602	1,287,322	1,292,866	1,288,745
Vehicles per Person	0.71	0.70	0.70	0.68	0.68	0.68	0.69

Source: Statewide data provided by the City and County of Honolulu, Department of Finance, Motor Vehicles and Licensing Division.

Note: i) Carbon monoxide is a colorless, odorless and tasteless gas.

ii) Ozone is a poisonous form of pure oxygen. It is pungent smelling and faintly bluish.

iii) De facto population obtained from State Data Book.



Environmental Indicators

26. Noise Complaints Received by the Health Department

Loud noises can lead to health problems such as stress and hypertension. Noise also causes distress to wildlife and disrupts people's enjoyment of nature and wilderness. Usually, increase in urbanization results in more noise.

The following table shows the number of noise complaints (by category) received by the Department of Health. The Council's year 2002 goal for the number of noise complaints per hundred thousand people is 25.

Table 26: Number of Noise Complaints Received by the Department of Health, 1992 to 1997.

Type of Complaint	1992	1993	1994	1995	1996	1997
Agriculture	5	2	1	3	1	0
Aircraft	8	9	12	11	5	6
Commercial	0	0	21	6	3	13
Construction	166	164	157	142	140	112
Industrial	6	19	6	2	3	7
Miscellaneous	31	22	17	12	12	14
Refuse Collection	72	36	41	35	41	68
Stationary	100	85	93	112	109	104
Unreasonable: Animal	42	34	22	24	16	14
Hobby	11	3	8	9	9	12
Maintenance	38	37	29	37	27	21
People	21	23	16	12	13	13
Unknown	6	10	4	13	8	8
Sound Production	100	93	62	48	40	45
Vehicular	39	26	20	21	30	24
Total	645	563	509	487	457	461
State de facto Population	1,265,834	1,260,036	1,281,602	1,287,322	1,292,866	1,288,745
Noise Complaints per Hundred Thousand People	51	45	40	38	35	36

Source: Department of Health - Noise, Radiation and Indoor Air Quality Branch.

Environmental Indicators

27. Bikeway Miles

Alternate transportation programs such as bikeways and transit systems conserve energy, alleviate traffic congestion, reduce air pollution, support physical fitness and recreation, and provide green corridors. Overall, they improve environmental quality and the urban landscape.

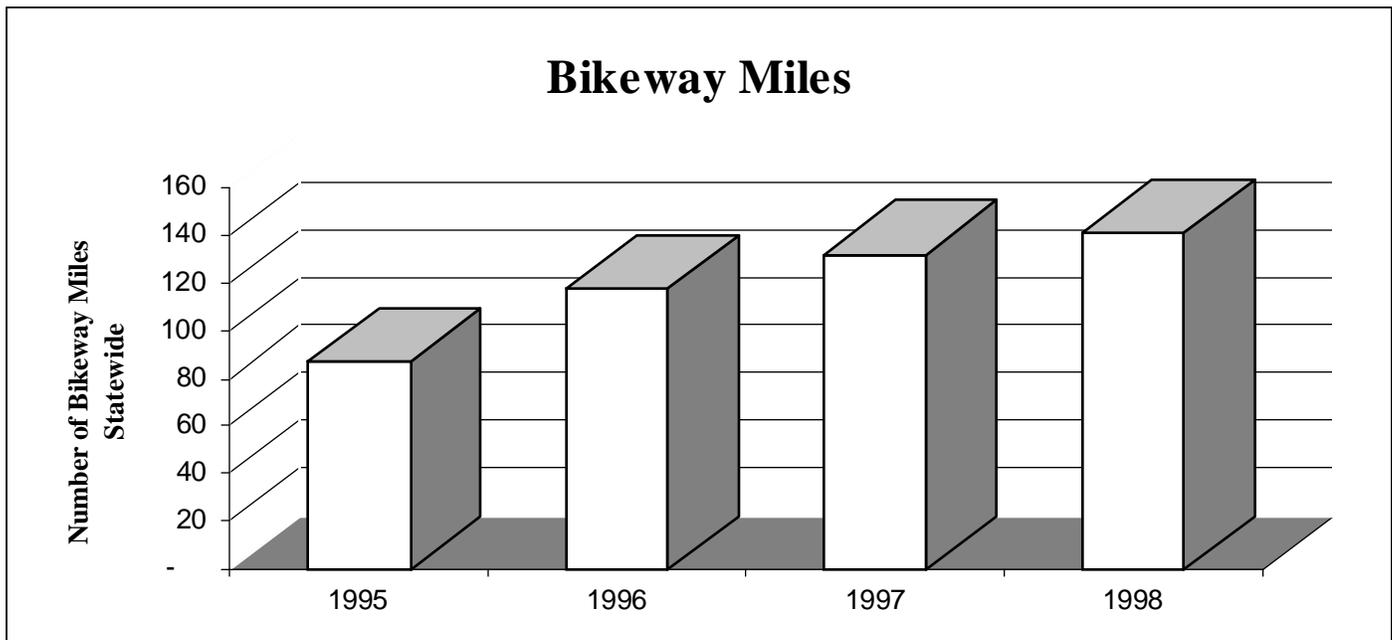
The next table shows the total miles of bikeways in Hawai'i by island. The Environmental Council's year 2002 goal for total miles of bikeways is 327.

Table 27: Miles of Bikeways in Hawai'i, 1995 to 1998.

Island	Bikeway Miles			
	1995	1996	1997	1998
Kauai	3.8	3.8	6.8	6.5
Oahu	55.4	66.1	56.6	60.3
Maui	19.6	40.0	40.8	43.3
Hawaii	8.2	8.2	27.8	30.8
Statewide	87.0	118.1	132.0	140.9

Source: State Department of Transportation, Highways Division

Note: i) Bikeway miles are provided only for bikeways that are designated as such through signing. The State and counties have installed many miles of improved paved shoulders, 4 feet or wider, on roadways which can accommodate bicycles but are not designated routes.



Environmental Indicators

28. Number of Bus Boardings on O`ahu

The data below are estimates of the number of boardings on O`ahu for TheBus. An effective mass transit system can reduce traffic congestion and improve the quality of life in a city. These estimates are calculated based on the amount of money in the fare box, number of monthly passes sold, and random samples. The Environmental Council's year 2002 goal for bus boardings on O`ahu is 89 million.

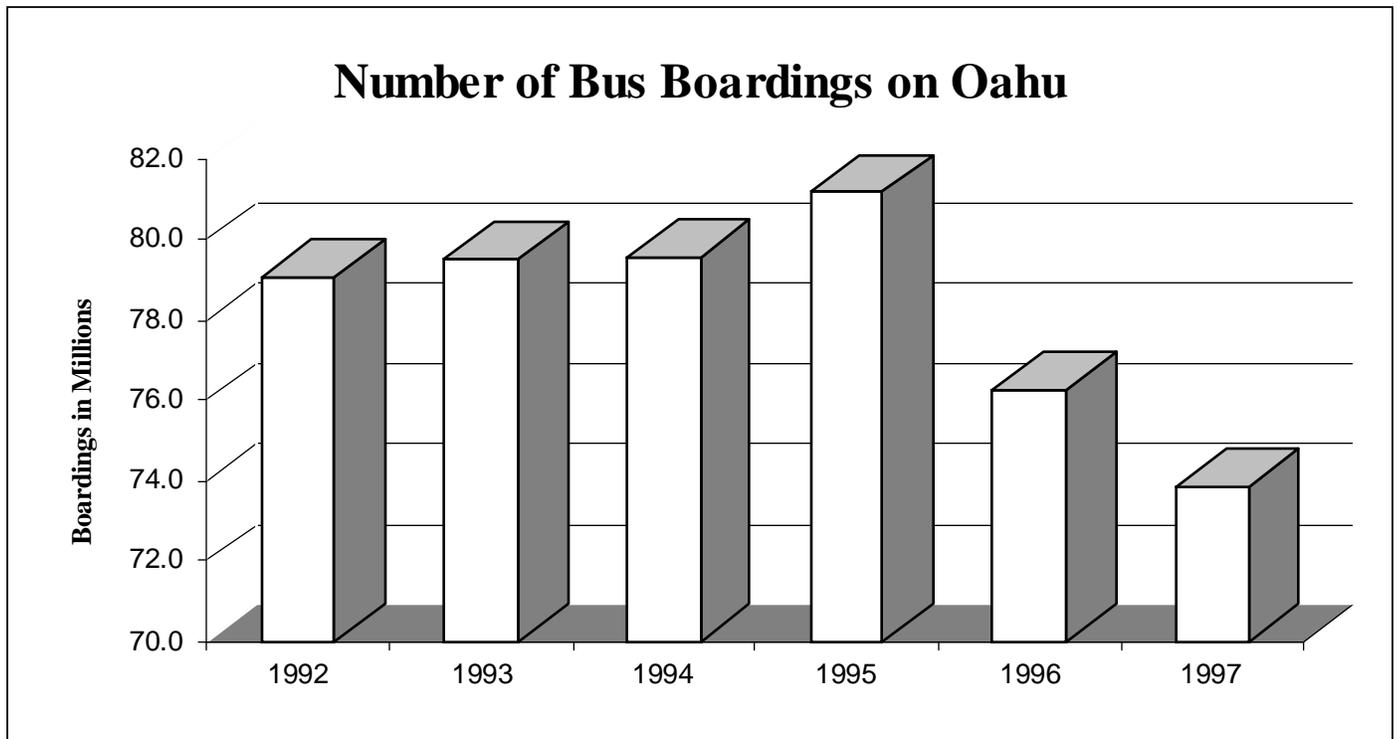
Table 28: Number of Bus Boardings on O`ahu, 1992 to 1997.

Year	1992	1993	1994	1995	1996	1997
Total Number of Bus Boardings (in millions)	79.1	79.5	79.6	81.2	76.3	73.9

Source: Public Transit Division of the Department of Transportation Services.

Note: i) Figures include residents and visitors.

ii) The figures are calendar year estimates of total passengers for TheBus calculated from reports to the American Public Transit Association.



Environmental Indicators

1998 Environmental Progress Report Card

In this section, the Environmental Council grades the status of Hawai'i's environment. This year the Council continues to measure progress towards annual goals. This report card provides citizens and policy makers with a quick assessment of how well we are caring for our environment. The Council hopes this evaluation stimulates the public to learn about and take action to improve our environment. Your thoughts and suggestions on the content and methodology of this report card are welcomed.

1998 Environmental Report Card Hawaii, State of	
Energy Use	C
Use & Recycling of Resources	B-
Biodiversity Maintenance	C
Air Quality	A+
Marine Pollution	A+
Terrestrial Quality	B+
Public Awareness & Concern	B-
OVERALL PROGRESS GRADE	B

Environmental Indicators

Method for Calculating Environmental Progress Grades:

Step 1.

Environmental Progress Scores and Grade

The method used to calculate the grades was selected to reward progress toward environmental indicator goals established for the year 2002. Progress is evaluated on a yearly basis and is measured relative to incremental progress toward the year 2002 goal. The grading system rewards Hawai'i's people for movement towards sustainability and reduction of pollution levels.

Establishing goals for each environmental indicator is a necessary starting point for the grading method. In some instances the agency responsible for monitoring the data has an established target for the indicator. The Council considered agency goals in establishing our year 2002 goals for the indicators used in this report card.

With the previous year's data and year 2002 goal available it is possible to determine annual increments approaching the goal. An exponential function, one which involves decreasing incremental change over time, is used to calculate annual increments. Indicator ratings are assessed relative to annual goals and an unacceptable condition.

Individual indicator scores are assigned as follows:

Present condition equal to or better than annual goal	= 100
Present condition equal to previous year's level	= 50
Present condition equal to unacceptable condition	= 0

A linear scale is employed to assign scores for conditions falling between the limits listed above. Letter grades corresponding to the assigned scores are given in the same manner as last year.

Environmental Sustainability Scores and Grades

The method used is based on the National Wildlife Federation's 1971 Environmental Quality Index (Kimball, 1972). Individual indicator scores are assigned as follows:

Present condition equal to or better than optimum condition	= 100
Present condition equal to unacceptable condition	= 0

A linear scale is employed to assign scores for conditions falling between the limits listed above. Letter grades corresponding to the assigned scores are given in the same manner as last year.

Step 2.

The environmental indicators are then organized into nine categories. The categories are: Energy Use, Use and Recycling of Resources, Biodiversity Maintenance, Air Quality, Marine Pollution, Terrestrial Quality, Public Awareness & Concern.

A weight is assigned to each of the indicators in a given category. This weight is used to obtain the score for each category. The weights are assigned to each indicator in relation to the empirical importance of the indicator itself as well as the reliability of its related data. For simplicity in interpreting the "0" to "100" scores, letter grades are used.

Step 3.

Finally, a weighted average of the nine components is used to obtain a progress index and grade for Hawai'i's environment.

Limitations:

The comprehensiveness and accuracy of the grades are limited by the following factors:

a) The assessment is based on a sample of 19 environmental indicators. This small sample is not a full representation of Hawai'i's environment.

b) The benchmarks for unacceptable and 2002 goals are based on assumptions and judgments made by the Council (see below). Others may have very different opinions about the figures.

c) The relative importance value to compute the weighted averages for the categories and total index is also subjective based on the Council's beliefs.

This is the third attempt to assess the status of Hawai'i's environment. The Council hopes to continually refine and improve this assessment process.

Environmental Indicators

Table A: Benchmarks, Environmental Progress Points and Sustainability Scores.

Indicator	Unacceptable Condition	Prev. Year Level	Latest Year Level	Latest Year Goal	Year 2002 Goal	Optimum Cond.	Progress		Sustainable	
							Pts.	Grade	Pts.	Grade
% of Energy from Renewable Sources	0.0	7.0	6.7	7.5	10.0	25.0	48	C	27	D
Daily per capita Water Consumption in Gallons	300	152	156	152	150	100	49	C	72	B
% of Treated Wastewater Reused	0	3	4	8.6	25	50	59	C+	8	F
Daily per capita Waste Generated in pounds	18	9.1	8.5	7.8	4.3	3.6	73	B	66	B
% of Waste Diverted	0	25	24	31	50	75	48	C	32	D
Hazardous Waste Generated in Tons	4,500	2,000	1,742	1,638	900	500	86	A	69	B
Number of Abundant Native Plant Species	0	507	493	569	757	1093	49	C	45	C
Onaga Spawning Potential Rate	0	5	4	7	15	50	40	C-	8	F
Number of Days Air Unhealthy	50	0	0	0	0	0	100	A+	100	A+
Carbon Monoxide Emissions in thousands short tons	500	227	221	223	200	100	100	A+	70	B
Days Beaches Posted Unsafe	100	27	1	19	5	1	100	A+	100	A+
Number of Wastewater Spills	1000	529	419	491	365	100	100	A+	65	B
Conservation Land Area in million acres	1.03	1.98	1.98	2.01	2.11	2.25	50	C	78	B+
% of Water Systems Clean	0	96	97	96	97	100	100	A+	97	A
% of State Funding for Environment	0	0.85	1.10	1.15	1.90	2.50	92	A	44	C-
Number of Motor Vehicles per capita	1	0.68	0.69	0.67	0.61	0.33	48	C	46	C
Noise Complaints per 100,000 People	100	35	36	33	25	10	49	C	71	B
Bikeway Miles	0	132	141	174	327	1309	61	B-	11	F
Annual TheBus Boardings in millions	0	76	74	78	89	124	49	C	60	B-

Environmental Indicators

Table B: Scores and Grades for Environmental Progress

Category	Indicator	Progress Points	Relative Weights	Category Scores	Category Grade	Category Weights	Total Score	Total Grade
Energy Use	% of Energy from Renewable Sources	48	100%	48	C	10%	72	B
Use & Recycling of Resources	Daily per capita Water Consumption in Gallons	49	20%	63	B-	20%		
	% of Treated Wastewater Reused	59	20%					
	Daily per capita Waste Generated in pounds	73	20%					
	% of Waste Diverted	48	20%					
	Hazardous Waste Generated in Tons	86	20%					
Biodiversity Maintenance	Number of Abundant Native Plant Species	49	50%	45	C	10%		
	Onaga Spawning Potential Rate	40	50%					
Air Quality	Number of Days Air Unhealthy	100	50%	100	A+	15%		
	Carbon Monoxide Emissions in thousands short tons	100	50%					
Marine Pollution	Days Beaches Posted Unsafe	100	50%	100	A+	15%		
	Number of Wastewater Spills	100	50%					
Terrestrial Quality	Conservation Land Area in million acres	50	50%	75	B+	15%		
	% of Water Systems Clean	100	50%					
Public Awareness & Concern	% of State Funding for Environment	92	20%	60	B-	15%		
	Number of Motor Vehicles per capita	48	20%					
	Noise Complaints per 100,000 People	49	20%					
	Bikeway Miles	61	20%					
	Annual TheBus Boardings in millions	49	20%					

Environmental Indicators

Assumptions:

The Environmental Council's assumptions for unacceptable conditions, year 2002 goals, and optimum levels for Hawai'i's environmental indicators are listed below.

a) Renewable Energy: The Department of Business, Economic Development and Tourism has proposed a year 2002 goal of 7% for the amount of energy from renewable sources. The Council prefers a more aggressive goal of 10% for the year 2002 and 25% for optimum conditions.

b) Water Consumption: The Honolulu and Maui Boards of Water Supply have set a goal of 150 gallons per capita each day for the year 2002. Twice the above amount is unacceptable. The optimum level is 100 gallons per capita each day.

c) Treated Wastewater Reused: The Department of Health has set a reuse target of 25% for the year 2002. The optimum level is 50%.

d) Waste Generated: According to Healthy Hawai'i 2000, the national objective is to reduce the average pounds of municipal solid waste produced per person each day to no more than 3.6 pounds. The optimum level is the same as the national objective. The year 2002 goal is the present national average of 4.3 pounds per person per day (EPA, 1997). It is unacceptable to produce 5 times the national objective.

e) Waste Diverted: Pursuant to section 342G-3, HRS, it is the goal of the state to reduce solid waste stream prior to disposal by 50% by the year 2000. The same goal is used for the year 2002. The optimum level is 75%.

f) Hazardous Waste: The Department of Health has set a target of 900 tons for the year 2002. Five times the target amount is unacceptable. The optimum target is 500 tons.

g) Native Plant Species: There are 1093 native plant species in Hawai'i. The year 2002 goal is to have all the "species of concern" listed in 1997 upgraded to "abundant." Optimally, all native species would be in abundance.

h) Onaga SPR: The National Marine Fisheries Service has set a target of 15% or better for the Onaga SPR for the year 2002. The optimum level is 50%.

i) Carbon Monoxide Emissions: The year 2002 goal is approximately 10% less than existing levels. The optimum conditions is emissions of less than 100 thousand short tons.

j) Beaches Posted Unsafe: The Department of Health has set a target of 5 beach closure days for the year 2002. A level of 100 beach closure days per year is unacceptable. Optimally, there would be one beach closure day or less.

k) Wastewater Spills: The year 2002 goal is to have less than 365 spills. An average of 10 spills per day is unacceptable. The optimum number is 100 or less.

l) Conservation Land: The 2002 goal coincides with the State Land Use District Boundary Review, 1992 recommendation that approximately 150,000 acres of Urban and Agricultural lands be converted to Conservation zoning. The report also identifies another 139,000 acres of non-Conservation land as "Areas of Critical Concern" that should be protected for its conservation resource value. Therefore, the optimum level is the conversion of 289,000 acres. Any less than one fourth of state lands in the Conservation district is unacceptable.

m) Water System Clean: The Department of Health has set a target of 97% of the water systems clean for the year 2002. Optimally, all water systems will be clean.

n) Environmental Spending: Based on information presented in World Resources Institute's 1992 Environmental Almanac the average state in the U.S. spends approximately 1.9% of its state budget on environmental protection. The year 2002 goal is the same as the average state. The optimum level is 2.5%.

o) Motor Vehicles: The year 2002 goal is to reduce the number of motor vehicles per capita by 10% from the 1995 level. One motor vehicle per person is unacceptable. The optimum level should be one motor vehicle for every three people (the average household size is three people).

p) Noise Complaints: The year 2002 goal is 25 complaints per hundred thousand people. An average of 100 noise complaints per hundred thousand people is unacceptable. The optimum number is 10 or less per hundred thousand people.

q) Bikeway Miles: According to Bike Plan Hawai'i a total of 1,309 miles of bikeways is proposed. The optimum condition is the construction of all the bikeways proposed. The year 2002 goal is to have 25% of the bikeways installed.

r) Bus Ridership: The present bus fleet is 525. The FEIS for the Honolulu Rapid Transit Program considered an expanded bus fleet of 997 buses for the Transportation System Management alternative. Based on Table 1.1 in the Comprehensive Bus Facility & Equipment Requirements Study, we estimate that the number of boardings for a fleet of 997 buses would be 124,000,000 per annum. The optimum level is 124,000,000 boardings. The year 2002 goal is to increase boarding by 10% from 1995 levels.

Environmental Indicators

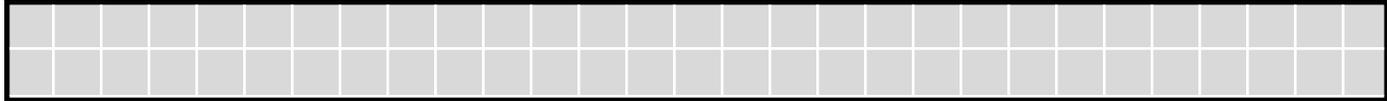
Letter Grades:

For the sake of simplicity in interpreting the “0” to “100” scores, letter grades are used. The scale that we used was obtained from A Rating Guide to Life in America’s Fifty States (Thomas, 1994).

100 = A+
85-99 = A
80-84 = A-
75-79 = B+
65-74 = B
60-64 = B-
55-59 = C+
45-54 = C
40-44 = C-
35-39 = D+
25-34 = D
20-24 = D-
0-19 = F

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Section II

Agency Goals

Summary of Agency Goals and Objectives

The Environmental Council monitors agency progress in achieving the state’s environmental goals and makes an annual report with recommendations to the Governor and Legislature. The Council asks each agency for its environmental goals and objectives for inclusion in its annual report. Each agency identifies its top three environmental goals for the past and current years and the results of its efforts to achieve these goals.

Public Agency Environmental Highlights

State Department of Agriculture issues almost 900 violation notices;
intercepts almost 400 alien insects; releases 4 biocontrol agents. Page 38

Coastal Zone Management Program coordinates State shoreline hardening policy..... Page 39

State Department of Land and Natural Resources adds staff to protect reefs and bottom fishery.. Page 42

DLNR works on coastal erosion and beach nourishment. Page 43

State Airports Division to implement new Alien Species Action Plan at Kahului Page 44

City to improve Wahiawa and Kailua wastewater treatment plants. Page 46

City Parks beautifies Waikiki. Page 47

All city buses have bike racks. Page 48

Hawai`i County installs energy saving fixtures. Page 50

Neighbor Island Counties updating land planning documents. Page 49-53

Agency Goals

State Department of Accounting and General Services

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Increase the recycle/reuse of office paper.

B. Goal/Objective #2: The Stadium Authority will continue to purchase and use several biodegradable products for cleaning the arena facilities and administrative offices.

C. Goal/Objective #3: Recognizing that lead is a significant threat to human health, the Public Works Division will develop a guidance for Lead Paint removal. The guidance will cover monitoring requirements and safety precautions during Public Works construction projects.

II. Results of Efforts FY 1998

A. Goal/Objective #1: The offices in this department reuse paper by printing on the reverse side for draft letters and reports. All of the paper is then recycled if possible. The Accounting Division reported that they recycled approximately 9000 lbs of white and computer paper.

B. Goal/Objective #2: The Stadium Authority is continuing to purchase and use biodegradable products for cleaning the arena facilities and administrative offices.

C. Goal/Objective #3: The Public Works Division is currently developing a Guide Specification concerning lead paint disturbance during electrical and telecommunications construction projects. The specification is approximately 99.9% complete and is expected to be finished by 11/30/98. The intent of the specification is to ensure that the projects are done in a safe manner in accordance with the applicable health and safety rules and regulations.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: The Archives Division will recycle obsolete records where practical. Where recycling is impractical, the documents will be sent to the Honolulu Resource Recovery Venture (H-Power Plant), rather than disposal at a landfill.

B. Goal/Objective #2: The Public Works Division will minimize the use of MC-30, a petroleum-based prime coat material used for asphalt concrete paving. Beside having an objectionable odor, wash-off of the material during rainy weather presents a pollution threat to streams, lakes and the ocean. In addition, minimizing its use will also avoid potential contamination of the soil. The Guide Specifications addressing this matter will also include requirements addressing the use of recycled glass for use in the base course material beneath the pavement.

C. Goal/Objective #3: The Public Works Division will reduce paper consumption by printing construction specifications on both sides of each sheet of paper. The Division will also continue to recycle paper.

State Department of Agriculture

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Prevent the introduction of harmful pests and diseases into the State.

B. Goal/Objective #2: Limit the plant pest populations which can cause significant economic damage to agriculture or constitute a serious threat to the environment.

C. Goal/Objective #3: To ensure the efficient, effective, and safe use of pesticides to minimize adverse effects on the environment, and enable the agricultural industry to continue the use of pesticides.

II. Results of Efforts FY 1998

A. Goal/Objective #1:

* Issued 895 violation notices resulting from surveillance of Hawai'i-bound air and sea baggage, cargo, mail and visitors.

* A total of 381 insect interceptions of species not known to occur in Hawai'i.

* Educated over 14,000 Hawai'i residents about the need to protect Hawai'i's environment by not importing alien species. Also, educated and trained over 700 Department of Transportation employees and military personnel to recognize and handle a Brown Tree Snake if encountered.

B. Goal/Objective #2:

* Eradicated Banana Bunchy Top Virus, a serious disease of bananas, from Kilauea, Kaua'i.

* Contained Banana Bunchy Top Virus to the Kona area of the Big Island where it was first found in October 1995.

* Released and established the Pakistan strain of a parasite (Lysiphlebus ambiguus) to control the yellow sugarcane aphid (Sipha flava) which attacks pasture grasses.

* Released and established the ivy gourd vine borer (Mellitia oedipus) on Oahu to control ivy gourd (Coccinia grandis), a serious lowland weedy vine in the islands.

* In cooperation with the University of Hawai'i, released and established a fungal pathogen (Septoria myricae) to control fire bush (Myrica faya) a noxious tree in our National Parks.

* Released and established a fungal pathogen (Colletotrichum gloeosporioides f. sp. miconiae) on the Big Island to control miconia (Miconia calvescens), one of the most serious weed pests to ever become established in Hawai'i.

C. Goal/Objective #3:

- * Funded pesticide user education activities, including certification classes and publication of "The Pesticides Label."
- * Conducted over 600 inspections of farms, pesticides dealers, and non-farm users for proper use and distribution.
- * Issued over 70 warning letters for improper use and collected \$20,820 in penalties for illegal use or sale of pesticides.

III. Goals/Objectives FY 1999

Same as for FY 1998.

State Department of Business, Economic Development & Tourism

Office of Planning, Coastal Zone Management

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Improve the efficiency and effectiveness of the Coastal Zone Management (CZM) Program as the State's central coordinating agency for developing and implementing land and water use policies that promote environmentally sustainable economic development in Hawai'i's coastal zone.

II. Results of Efforts FY 1998

A. Goal/Objective #1: The Office of Planning continued its research and analysis of coastal issues and implemented management projects that deal with current coastal issues such as beach erosion, polluted runoff, public access, coral reefs, storm and tsunami hazards, and ocean uses and conflicts. Intergovernmental coordination and public comment are key elements of these initiatives, as are administrative policies, legislative proposals, and collaborative management efforts including public education and outreach programs.

Some specific projects include:

- * Educating people about coastal hazards and risk reduction opportunities.
- * Developing and implementing coastal erosion projects.
- * Developing management tools for ocean and coastal resources, using the Ocean Resources Management Plan as a guide.
- * Developing and coordinating the State's coral reef initiative in conjunction with national and international efforts, working with volunteers, scientists, government agencies and the general public.
- * Developing and coordinating the State's coastal nonpoint pollution control program in conformance with Federal statutory requirements.

* Coordinating the development and implementation of the State's shoreline hardening policy.

* Monitoring activities to assure their compliance with the CZM law.

* Coordinating outreach and educational efforts, including the annual Get the Drift and Bag It cleanup, about marine debris and its impacts on our marine life and coastal areas.

State Department of Defense

Hawai'i Army National Guard

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Compliance. Meet EPA requirements for Underground Storage Tank upgrade/removal by 1998. Install oil/water separators and secondary containment.

B. Goal/Objective #2: Conservation. Implement the Endangered Species Program.

C. Goal/Objective #3: Land management. Create a Geographic Information System (GIS) mapping data base.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Compliance. Completed the removal of all regulated USTs to meet EPA requirements. Submitted the required closure documents to the DOH. Installation of oil/water separators statewide is 92% complete; permanent secondary containment is 40% complete. Thirty portable containment systems are available for use during field exercises and provides emergency containment to guard against minor leaks, drips, spills, and overfills.

B. Goal/Objective #2: Conservation. The U.S. Fish and Wildlife Services is 95% complete in its survey of endangered species on Hawai'i Army National Guard (HIARNG) training areas statewide. Published the Environmental Awareness Training and Operations Manual for the protection of rare and endangered species. This manual enables commanders and soldiers to avoid activities which may threaten species on HIARNG training areas and facilities. The integrated natural resources management plan is due for release in FY99. This plan will integrate endangered species requirements into training and tactical operations.

C. Goal/Objective #3: Land management. Acquisition of ARC/INFO and ArcView enhanced the capability of GIS mapping and provides a valuable tool for use in master planning and decision support. HIARNG has data layers of the location of endangered species for the State of Hawai'i and environmental baseline data for Barbers Point Naval Air Station. The systems manager is continuing efforts in coordinating with State, government, and key geo-processing agencies for additional mapping support services and data layers.

Agency Goals

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Conservation. Implement integrated natural and cultural resources management, alien species investigation, and continue the endangered species program.

B. Goal/Objective #2: Compliance. Implement solid waste management with an aggressive recycling program, and continue secondary containment projects.

C. Goal/Objective #3: Land management. Continue to develop a geographic information system (GIS) program to integrate environmental survey data into an automated mapping support system. Integrate GIS into a natural disaster protocol.

Hawai'i Air National Guard

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Compliance. Ensure continued compliance with Federal, State, and local regulations.

B. Goal/Objective #2: Environmental documentation. Continue to pursue assessment and consideration of environmental impacts for all proposed projects.

C. Goal/Objective #3: Pollution prevention. Identify and pursue projects which eliminate potential spills and undesirable discharges to the environment.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Compliance. Contract awarded for removal of a hydraulic vehicle lift at the 291 Combat Communications Squadron on Keaukaha Military Reservation. Geographically Separated Units (GSUs) evaluated by a private contractor under the Air Force's Environmental Compliance and Management Program, which identified potential compliance problems in-house.

B. Goal/Objective #2: Environmental documentation. Ensured completion of Air Force Form 813, which documents the Environmental Impact Analysis Process for all "significant Federal actions," including all real estate transactions. Completed an amendment to the Environmental Assessment for the addition to Building 3004, to include new requirements as a result of the designation of the 100-year flood plan on Hickam AFB.

C. Goal/Objective #3: Pollution prevention. Ordered a new hazardous material building and spill containment equipment for the 292 Combat Communications Squadron in Kahului for the storing and dispensing of hazardous materials. Purchased antifreeze recyclers for vehicle maintenance shops, and pneumatic grinders with vacuum attachments for dust-free paint removal.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Compliance. Ensure facilities and

operations continue in compliance with Federal, State, and local regulations.

B. Goal/Objective #2: Environmental documentation. Continue to pursue assessment and consideration of environmental impacts for all projects.

C. Goal/Objective #3: Pollution prevention. Pursue funding for projects which eliminate potential spills and undesirable discharges to the environment.

Civil Defense

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Training. Provide a statewide training and exercise program for emergency managers at state and county levels with funds provided by FEMA, DOT, EPA and DOE that emphasize potential environmental impacts of all phases of emergency management, e.g., Mitigation, Preparedness, Response and Recovery.

B. Goal/Objective #2: Ensure proper consideration of law, regulation and indirect impacts of emergency response and recovery operations by Federal, State and County governments. Monitor environmental impact statements and environmental assessments for proper evaluation of known natural hazards and availability of emergency warning systems.

C. Goal/Objective #3: Provide for full integration and access to existing data bases that detail environmental sensitive areas in the State of Hawai'i and the Pacific Insular States. Integrate information from official sources that are useful in reducing the impact of emergency management operations on the environment in the Pacific Disaster Center (PDC) and the Pacific Regional Emergency Management Information System (PREMIS). Provide assistance to county agencies in gaining access to Geographical Information Systems (GIS), supported by the PDC, to assist agencies in obtaining environmental information for decision making. The GIS is a computerized database system used for environmental planning, data analysis, and the creation of maps and reports.

II. Results of Efforts FY 1998

A. Goal/Objective #1: State Civil Defense's training program prepares Federal, State, County officials, the private sector, and the public to meet the responsibilities and challenges of emergencies through planning, mitigation, preparedness, response, and recovery. Emergency responders who converge on the scene of a major emergency are keenly aware of the tremendous responsibilities they are tasked with in saving lives and property, and protecting the environment. How successfully they perform depends not only on the skills and experience they possess, but on how well they have prepared, trained, and exercised for these events. Many of the courses presented by State Civil Defense enable participants to recognize the comprehensive all hazards approach to preparedness in dealing with a major disaster event. Training stresses the critical

role of teamwork in emergency preparedness and environmental protection and encourages participants to improve their own preparedness plans, operating procedures, and recovery steps in their organization and at home. This past year, State Civil Defense scheduled and conducted ten emergency management courses for 285 emergency managers statewide. Additionally, 30 hazardous materials response courses were conducted to over 750 responders statewide.

B. Goal/Objective #2: Monitored compliance with State and County environmental protection laws and ordinances including the Emergency Planning and Community Right-to-Know Act (EPCRA) and Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). Reviewed County hazardous materials response plans. Participated in the Hawai'i State Emergency Response Commission (HSERC) meetings and county Local Emergency Planning Committee (LEPC) meetings to discuss and to plan for and, if possible, prevent hazardous materials and environmental emergencies. It is a fundamental extension of the civic responsibility of state and local organizations to ensure the safety of responders and to protect the public and environment.

C. Goal/Objective #3: Data bases have been identified for incorporation into the PDC GIS program. Liaison to disseminate GIS information among all county civil defense emergency operation centers during ongoing emergency operations has been very successful. Efforts to collect, integrate and fuse these very large data bases into the PDC operations profile has expanded. Tailored enhanced support is being provided to county emergency management operations. State information agencies are extending connections to the statewide fiber optic network that when completed will give direct access to all State Departmental Civil Defense Point of Contact. Enhanced capability to monitor and record flood damage has been achieved.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Continue offering training courses that enable participants to meet the responsibilities and challenges of emergencies through planning, mitigation, preparedness, response, and recovery.

B. Goal/Objective #2: Continue to monitor closely the Environmental Impact Statements and Environmental Assessments for matters pertaining to our civil defense infrastructure and for mitigation activities and projects.

C. Goal/Objective #3: A comprehensive risk assessment by hazard is pending final installation of sophisticated modeling software for the State of Hawai'i. Anticipated damage to facilities, environment, flora and fauna, homes and other structures, public infrastructure, etc., will be modeled to produce detailed assessments. Continue to improve operations and capability for PREMIS which impacts all agencies, federal, state, county and private nonprofit, that are involved in all or some phases of emergency management within the State of Hawai'i and the Pacific Insular States.

Office of Veterans Services

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Training. This continues to be an important segment of the OVS/HSVC environmental protection program. Continual updating of training to emphasize water conservation (we have our own water system from our own non-potable well), recycling of organic green waste, recycling of paper and aluminum cans, and beginning the process of limiting the use of chemically treating HSVC grounds for weeds and pests.

B. Goal/Objective #2: Compliance. OVS/HSVC will continue to monitor and proactively develop protocols for meeting all applicable laws, rules, and regulations related to environmental protection or conservation.

C. Goal/Objective #3: Conservation. Faced with a severe lack of manpower to properly maintain the HSVC landscaping while still providing excellent counseling services, we will focus on our recycling program to reduce the amount of paper we use in our offices, the amount of water we use for irrigation, and the amount of chemicals we apply on our planted areas.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Training. On-the-job training continues to be an important part of the OVS/HSVC program, with emphasis on the correct use of fertilizers and herbicides. (Six employees completed training for HAZMAT handling; four were fit-tested for protective devices and clothing. Chemsearch provided classes on safe handling of chemicals and the proper dispensing of fertilizers, pesticides, and other chemicals and herbicides. Foster Garden staff provided instruction on the use of mulch and fertilizer to produce healthy tree growth).

B. Goal/Objective #2: Compliance. Continual monitoring of applicable laws and regulations related to environmental protection and conservation. Enforced rules and regulations regarding safety and health. Safety classes on lifting, using the buddy system, use of respirators. Pulmonary function testing for employees.

C. Goal/Objective #3: Conservation. Use of mulch obtained mainly from the Christmas tree recycling program has reduced the amount of water needed by the landscaped areas, and in small amount, the annual kwh required to pump irrigation water from the well to the holding tank. Automatic feature of irrigation system turned off, manual system used. Volunteers have hand-weeded selected portions of the cemetery grounds, eliminating the need for the broad application of agricultural chemicals.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Training. Continue on-the-job training as an integral part of the HSVC employee development program, especially in the areas of safe handling of fertilizers, herbicides, and pesticides. Continue HAZMAT training. Instruct employees to read all MSDS and sign roster. Train employees to

Agency Goals

recognize and locate water leaks so that the loss of water can be minimized. Become familiar with chemical use, to prevent runoff and contamination of ground water.

B. Goal/Objective #2: Compliance. Continue to monitor program for compliance to applicable laws and regulations related to environmental protection and conservation. Conduct safety classes. Conduct surveys of fire protection plans and devices. Ensure proper equipment is available. Counsel employees on safe practices of materials handling, including heavy grave markers and chemicals.

C. Goal/Objective #3: Conservation. Continue to evaluate low-impact turf management methods, use of mulch to conserve moisture in landscaped areas; monitor the irrigation system to eliminate irrigation when not required; office recycling of paper, printer cartridges, and newsprint; and closely monitor the use of electricity, water, and chemicals.

State Department of Education

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Provide staff development activities for teachers to share and learn effective instructional strategies in inquiry, critical thinking, and problem solving.

B. Goal/Objective #2: Develop standards-based, results-driven instructional units in studying the natural and built environments.

C. Goal/Objective #3: Continue to establish partnerships to enrich the instructional delivery of environmental education through contextual learning.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Environmental Education Program initiated the *Water Issues Teacher Training Project* to provide 18 days of workshops for sixty (60) teachers on O'ahu, Hawai'i, and Mau'i to strengthen their skills and knowledge in teaching critical thinking and inquiry. These workshops were scheduled throughout the school year to provide in-depth learning and sustained support. Funds for this project were provided from Environmental Protection Agency (Federal Grant) and Eisenhower Professional Development Program (Title II Grant).

B. Goal/Objective #2: Project teachers were introduced to Educational Standards and were required to develop standards-driven units that will be field tested in the classroom this fall. These units focus on infusing critical thinking and issue investigation into various subject areas. Revisions of the units will be completed by summer 1999.

C. Goal/Objective #3:

* Partnerships have been established with the Curriculum

and Research Group, University of Hawai'i (UH); Sea Grant College, UH; Waikiki Aquarium, UH; Department of Health, Clean Water Branch; Department of Land and Natural Resources; Board of Water Supply; City and County Waste Management Division and Public Works Division; and Hawai'i Water Environment Association to provide technical assistance at teacher workshops on environmental monitoring and GLOBE activities.

* Another established partnership is with the Moanalua Gardens Foundation to produce a 4th grade distance learning program, *Exploring the Islands*. The Polynesian Voyaging Society and other community groups and businesses have been working with the Department of Education to provide technical assistance in our voyaging project, Hoolokahi.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Align environmental curriculum with State and National Standards and develop assessment tools to measure student success in critical thinking and content performance.

B. Goal/Objective #2: Continue to provide staff development activities for teachers to learn effective instructional strategies in critical thinking and inquiry.

C. Goal/Objective #3: Strengthen established partnerships to enrich the instructional delivery of environmental education through contextual learning.

State Department of Land and Natural Resources

Division of Aquatic Resources

I. Goals/Objectives FY 1998

A. Objective #1: Upgrade staff and implement programs funded under the Governor's Ocean Initiative in the 1997 legislative session.

B. Objective #2: Rationalize fisheries management regulations.

C. Objective #3: Encourage cooperation between managers, scientists, resource users, volunteers and communities to sustain freshwater and marine biological resources.

II. Results of Efforts FY 1998

A. Objective #1: Added two biologists, one specializing in coral reefs and one specializing in reef fish, and two fisheries technicians to agency staff. Funded and organized an international workshop on coral reef monitoring. Initiated projects focused on nearshore fisheries enhancement, evaluation of the condition of

coral reefs, relationships between and integrated management of freshwater streams and the marine environment, and improvements in the commercial fisheries harvest database.

B. Objective #2: Implemented unique harvest regulations to restore depleted bottom fish populations. Initiated an extensive research program on the life history and ecological relationships of bottom fish to evaluate the effectiveness of the rules. Initiated review of all management rules for consistency with biological knowledge. Introduced legislation to transfer basic fisheries regulations such as size and bag limits from statute to administrative rule to expedite changes based on sound science. The amended Bill that passed worsened the situation and was vetoed.

C. Objective #3: Assumed leadership of hot spot teams for Kaneohe Bay, Hanauma Bay, and West Hawai`i to coordinate DLNR, community, and scientific activities to focus on restoring and sustaining these resources. Added a staff planner specializing in marine environmental issues and community involvement. Engaged volunteers in a variety of freshwater and marine management activities.

III. Goals/Objectives FY 1999

A. Objective #1: Continue advances made possible by the Governor's Ocean initiative with special emphasis on coral reef habitat protection and management.

B. Objective #2: Shift basic fisheries management regulation from the legislature to the administrative rule-making process, in accordance with the rest of the United States, to increase the probability of biologically sound rules.

C. Objective #3: Ensure that native Hawai`ian concerns are incorporated in fisheries management and habitat protection activities.

Land Division

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Adopt the Coastal Erosion Management Plan (COEMAP) and Coastal Lands Plan (CLP) as policies of the Department of Land and Natural Resources. Initiate work on a pilot beach nourishment project on Mau`i and continue to build institutional arrangements to promote beach management in the State.

B. Goal/Objective #2: To implement specific elements and action items, as identified in the "State Flood Hazard Mitigation Plan". Continue work with State, County and Federal agencies to reduce the loss of life and property due to flooding.

C. Goal/Objective #3: To conduct agency and public information meetings statewide to finalize the State Conservation District Management Plan. Upon Board of Land and Natural Resources approval, initiate specific plan recommendations and action items.

II. Results of Efforts FY 1998

A. Goal/Objective #1: The Board of Land and Natural Resources adopted the Coastal Erosion Management Plan (COEMAP). The State Coastal Zone Management Program Marine and Coastal Zone Management Advisory Group (MACZMAG) convened a Coastal Erosion Subcommittee. The Land Board approved a beach nourishment project on Kaua`i. Land Division staff presented issues on coastal erosion and beach loss at more than thirty community meetings. The Land Division secured funding for a Pilot Shoreline Hazard Mitigation Project to develop beach restoration and initiated a process to adopt a State Program General Permit (SPGP) for beach nourishment.

B. Goal/Objective #2: The State of Hawai`i Flood Hazard Mitigation Plan listed five categories of mitigation:

1. Storm Water Management and Flood Control Measures
2. Maintenance and Flood Control Facilities
3. Floodproofing/ Acquisition/ Relocation
4. Forecasting/ Warning/ Gaging
5. Public Awareness/ Education/ Information

Various items have been implemented relative to these categories. The Land Division obtained Federal Flood Management Assistance (FMA) funding for the Waimanalo Master Storm Water Drainage Plan. A consultant is to be selected. The Land Division requested the U.S. Corps of Engineers (COE) to conduct a flood study of the Paukaiula Stream (O`ahu) to determine the effects of the dredging of the stream mouth and a flood study is underway. The division is in the process of obtaining Hazard Mitigation Grant Program funds to install stream and rain gauges in and around Kawai Nui Marsh, O`ahu.

C. Goal/Objective #3: Agency and Public Information Meetings were conducted statewide in January and February, 1998 on the Discussion Draft Conservation District Management Plan. Several Land Board briefings were conducted to present information on various elements of the Draft Plan, with an opportunity for public input.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Revise the Coastal Erosion Management Plan and obtain the endorsement of the CZM MACZMAG. Further activities include proposing new beach restoration legislation with a funding mechanism, complete the Shoreline Hazard Mitigation Project and seek funding to implement a medium scale beach restoration project at a preferred site, and continue public education and outreach on shoreline issues.

B. Goal/Objective #2: Develop and implement Seismic Guidelines for existing dams in the State of Hawai`i.

C. Goal/Objective #3: Obtain Land Board approval of the final Conservation District Management Plan and begin to implement specific elements and action items as identified.

Agency Goals

Division of State Parks

I. Goals/Objectives FY 1998

A. Goal/Objective 1: Balance the public's recreational use of the natural and cultural resources in the state park system with the preservation and management of these resources through education and stewardship.

B. Goal/Objective 2: Promote community and park user participation in the sustainable management of the park resources.

II. Results of Efforts FY 1998

A. Goal/Objective 1: Installation of interpretive devices in the parks and the establishment of new interpretive positions both statewide and in selected parks. Major projects include construction of interpretive/education centers at Diamond Head State Monument, Lapakahi State Historical Park, and Kekaha Kai State Park which will be operated by interpretive program staff.

B. Goal/Objective 2: Continued development and expansion of volunteer and curatorship programs in the parks to assist with park improvements, visitor education, and resource management.

III. Goals/Objectives FY 1999

A. Goal/Objective 1: Continuation of goals and objectives from FY 1998 with an emphasis on parks with major natural resources, such as Kokee and Waimea Canyon State Parks.

Waimea-Kohala and a proposed noise monitoring network is being evaluated for Honolulu International Airport.

C. Objective #3: The Record of Decision (ROD) for EIS at Kahului Airport was executed in August 1998. All directives from the ROD, especially the Alien Species Action Plan, have been initiated.

III. Goals/Objectives FY 1999

A. Objective #1: Prepare and submit the annual report to renew the NPDES stormwater permits for Honolulu, Kahului, Lihue, Molokai and Dillingham Airports.

B. Objective #2: Initiate an Environmental Impact Statement for proposed improvements to Lihue Airport.

C. Objective #3: Prepare a preliminary engineering report which will focus on the treatment of process water from oil/water separators and to prepare the necessary documentation to establish a soil management facility for the remediation of petroleum contaminated soil at Kahului, Lihue, Kona and Hilo airports.

Harbors Division

I. Goals/Objectives for FY 1998

A. Goal/Objective #1: The Harbors Division perseveres to balance environmental and economic concerns in the improvement, allocation of harbor facilities.

B. Goal Objective #2: The Harbors Division encourages management practices which control and abate pollution.

C. Goal/Objective #3: To support Hawai'i's life-style, the Harbors Division develops transportation systems in compliance with environmental regulations.

II. Results of Efforts 1998

A. Goal/Objective #1:

* Engineering design and construction insure minimal environmental impacts of harbors projects.

* Harbors Division's engineering design and construction services always strive for project compatibility with the environment and natural surroundings.

* By consulting/coordinating with appropriate citizen groups and environmental organizations, the Division was able to address all environmental concerns/impacts to the satisfaction of the involved parties.

* Harbors projects continue to reflect an aesthetic harmony with the environment while striving to protect and preserve the environment.

* Harbors projects also minimize noise pollution and blasting

State Department of Transportation

Airports Division

I. Goals/Objectives FY 1998

A. Objective #1: Conduct an environmental compliance audit which will identify areas of environmental non-compliance and potential areas of contamination at 13 airports in Hawai'i.

B. Objective #2: Complete noise compatibility plans for Waimea-Kohala, Lanai and Hilo airports and installation/replacement of noise monitoring stations at Honolulu International Airport.

C. Objective #3: Complete the Environmental Impact Statement (EIS) for the runway extension at Kahului Airport.

II. Results of Efforts FY 1998

A. Objective #1: Environmental compliance audit has been completed on 12 airports. This effort was used to initiate electronic transfer, storage and analysis into the Statewide Airport Geographic Information System (SAGIS).

B. Objective #2: Aircraft noise contours were complete for

vibrations to satisfy public/community concerns.

B. Goal/Objective #2:

* The Harbors Division complies with all environmental requirements in the control and abatement of pollution. Coastal Zone Management approval of Harbors projects entail compliance with U.S. Army Corps of Engineers, State Department of Health (DOH) and U.S. Environmental Protection Agency pollution control requirements. Dredging, excavation and ocean dumping require the use of silt curtains, filtering pools, and water quality monitoring. Harbors projects also perform air monitoring whenever required by DOH programs.

* Asbestos, lead paint, contaminated soil, and other hazardous wastes generated by structural demolition are properly disposed or treated by the appropriate service.

* Administrative/professional offices practice paper and aluminum recycling.

* Harbors operations maintain pollution/litter control in and around the harbors and harbor facilities.

* Underground storage tanks are regularly monitored for leaks.

* Solvents, used oil, oil-based paints, lacquer, thinner, brake fluid, and other hazardous wastes are properly disposed.

* Nonhazardous substitutes (e.g., water-based solvents) are being considered to minimize hazardous waste generation.

* Tenants and lessees are advised of appropriate pollution control measures.

C. Goal/Objective #3:

* Hawai'i's history and tradition are linked to the sea. Our maritime culture began on the day the first Polynesian seafarers set foot on these islands. The harmonic embrace of the maritime culture, the life-style of the people and the environment of the State are being perpetuated through the development of additional/improved commercial harbor facilities and the use of more efficient vessels.

III. Goals/Objectives for FY 1999

Harbors Division will have the same goals and objectives as in FY 1997.

City and County of Honolulu Board of Water Supply

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Develop environmentally-appropriate

water system projects to ensure a safe and reliable supply for island residents.

B. Goal/Objective #2: Streamline the water use permit process by eliminating duplication of water use information, required at both the State and County levels.

C. Goal/Objective #3: Encourage the Commission on Water Resource Management (CWRM) to develop an implementation schedule to set permanent instream flow standards which would resolve the uncertainty regarding surface water resources.

II. Results of Efforts FY 1998

A. Goal/Objective #1: BWS projects are more environmentally appropriate.

B. Goal/Objective #2: CWRM and BWS staff have had discussions to streamline the water use permit process by information sharing.

C. Goal/Objective #3: The CWRM has not made any recent progress to develop permanent instream flow standards.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Continue to develop environmentally appropriate water system projects and increase public notification and information on these projects.

B. Goal/Objective #2: Continue discussions to streamline the water use permit process by utilizing the County's building permit review process to identify specific water uses.

C. Goal/Objective #3: Utilize the upcoming O'ahu integrated water resource planning process to identify the instream and noninstream uses to assist the CWRM in setting permanent instream flow standards. The uncertainty regarding surface water resources and their effect on groundwater availability need to be resolved.

City and County of Honolulu Department of Design and Construction

Due to the recent reorganization of the City, the response is first from that of the former City Building Department and its results in meeting its 1998 goals/objectives, and the second provides the 1999 goals/objectives City's new Department of Design and Construction.

Building Department

I. Results of Efforts FY 1998

A. Goal/Objective #1: During the past year, our planning and engineering efforts were involved in 8 projects for which environmental assessments were accomplished or are in progress.

B. Goal/Objective #2: The following programs have been addressed in our public buildings facility construction activities:

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Underground Storage Tank and associated soil remediation, National Pollutant Discharge Elimination System, Chlorofluorocarbon (refrigerant) Elimination, Polychlorinated Biphenyl (PCB) Containing Fixture Replacement, Lead Paint Asbestos Abatement/Removal, and Energy Conservation (e.g Green Lights).

The Building Department's Safety Division administers Ordinance No. 94-75 which provides for building energy efficiency standards in new buildings and new construction in existing buildings.

C. Goal/Objective #3: Activities in this area include the proper storage and handling of hazardous materials which includes compliance with Material Safety Data Sheets program and disposal of such materials as paints, chemicals, fluorescent lamps and ballasts. This also includes our activities in the collection of paper waste in public facility offices for recycling purposes.

Department of Design and Construction

I. Goals/Objectives for FY 1999

A. Goal/Objective #1: Specify/incorporate non-potable water distribution systems for irrigation purposes in the planning and design of new City facilities.

B. Goal/Objective #2: Specify the use of equipment and/or construction products which incorporate recycled materials, provided they meet minimum performance levels.

C. Goal/Objective #3: Specify and promote the procurement of energy efficient equipment to reduce our demand for emissions producing fuels.

City and County of Honolulu Department of Environmental Services

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Reuse 2 million gallons per day of reclaimed effluent by June 30, 1998.

B. Goal/Objective #2: Prepare preliminary engineering report for a long-term solution to improve treatment at the Sand Island Wastewater Treatment Plant.

C. Goal/Objective #3: Develop and implement a plan to stop discharging nutrient-rich effluent into Lake Wilson, an enclosed freshwater body, and to reuse the effluent.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Accomplished.

B. Goal/Objective #2: A preliminary engineering report is

roughly 30 percent complete and will address treatment requirements specified in the recently issued Sand Island 301(h) waiver permit.

C. Goal/Objective #3: The plan, consistent with the Wahiawa Consent Decree, is to upgrade the treatment capability (Phase I) at Wahiawa Wastewater Treatment Plant to produce reclaimed water sufficient for irrigation and to provide a deeper outfall (Phase II). Both phases are expected to be completed by March in the year 2001.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Reuse 5 million gallons per day of reclaimed effluent by July 1, 1999.

B. Goal/Objective #2: Complete sewage sludge composting pilot project.

C. Goal/Objective #3: Reduce odor and noise at the Kailua Regional Wastewater Treatment Plant.

City and County of Honolulu Department of Facility Maintenance

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Promote sound environmental measures for the operation and maintenance of public facilities.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Compliance with environmental regulations by obtaining proper permits to perform our operations and maintenance of public facilities.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Promote sound environmental measures for the operation and maintenance of public facilities.

City and County of Honolulu Department of Parks and Recreation

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Preserve the Ka Iwi coast of O`ahu through acquisition or land use zoning.

B. Goal/Objective #2: Continue beautification efforts including landscaping, stream and beach cleaning projects and other conservation efforts.

C. Goal/Objective #3: Develop an island-wide Park Master Plan, a comprehensive long-range plan for open space, parks and recreation, utilizing an overall systems approach to planning.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Over \$10 million dollars was appropriated (FY 1998) for land acquisition, and an additional \$14 million dollars has been appropriated for planning, design and construction this fiscal year. The city is continuing to pursue actions in concert with state and federal agencies to acquire Queens Beach, incorporating related parcels into the city's park system, and managing the Ka Iwi area as a recreational and natural resource of national significance.

B. Goal/Objective #2: The department participated in the "Ala Wai Beautification" program which involved major landscaping, bike paths and period lighting along the Ala Wai Canal; major renovation of the Waikiki area including more public, landscaped open space and urban design to create a pedestrian-friendly, walking environment; supported as well as coordinated community cleanups and graffiti paint-outs; supported the international "Get the Drift and Bag It" program involving hundreds of volunteers and thousands of pounds of beach debris; and worked with the U.S. Coast Guard and various community groups on the Honolulu Oil Spill area committee and the Derelict Fishing Net program.

C. Goal/Objective #3: Development of an island-wide Park Master Plan is still ongoing. Recent restructuring of city agencies has shifted the planning, design and construction functions for parks to other agencies. The department is continuing to work with respective agencies in developing an island-wide park master plan.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Preserve the Ka Iwi coast of O`ahu.

B. Goal/Objective #2: Continue beautification efforts including landscaping, stream and beach cleaning projects, and other island-wide conservation efforts.

C. Goal/Objective #3: Recycle and use recycled materials.

City and County of Honolulu Department of Planning and Permitting

I. Goals/Objectives FY 1998

A. Goal/Objective #1: The careful and sensible implementation of existing rules and regulations that incorporate numerous environmental goals and objectives.

B. Goal/Objective #2: Prevention of unnecessary soil erosion and off-site construction pollution control.

C. Goal/Objective #3: Improve effective land use and development controls.

II. Results of Efforts FY 1998

The adoption of Land Use Ordinance (LUO) amendments by the City Council that:

A. Goal/Objective #1: Increased buffer zone and restrictions on composting facilities.

B. Goal/Objective #2: Placed prohibitions and restrictions on explosive and toxic chemical manufacturing, storage and distribution facilities as well as petroleum processing facilities.

C. Goal/Objective #3: Increased buffer zone and restrictions on the location of waste disposal and processing facilities.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Continue efforts for better coordinated and cooperative beach and shoreline protection programs with the State Department of Land and Natural Resources, as well as with the Federal agencies.

B. Goal/Objective #2: Increase compliance with existing rules and regulations which protect the environment. Greater emphasis on proper and appropriate mitigation and monitoring of development and construction.

These continue to be our long-term efforts toward the achievement of our environmental projection goals.

City and County of Honolulu Department of Transportation Services

I. Goals/Objectives FY 1998

A. Goal/Objective #1: To promote programs to reduce dependence on the use of automobiles.

B. Goal/Objective #2: To evaluate the social, economic, and environmental impact of additions to the transportation system prior to construction.

C. Goal/Objective #3: To support environmental friendliness through waste minimization, materials recycling, and the undertaking of proactive measures to ensure that City transportation facilities comply with all environmental rules.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Awarded the design and construction contracts for the Kaelepulu Stream Bikeway Bridge. Worked to maintain and improve the City's existing bikeways. Preliminary

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engineering work was done for new bikepath projects for Diamond Head Road and Waialua Beach Road. Continued implementation of the Bikes-on-Buses program in coordination with O`ahu Transit Services, Inc.; entire fleet of transit buses has been equipped with front-mounted bike racks. Purchased 40 bicycle parking racks for installation in municipal parking lots, sidewalks and other areas; 30 of the racks installed in Downtown Honolulu and Waikiki. Promoted the "Mayor's Sunday on Wheels" events, mass bicycle rides with Mayor Harris. Helped organize and promote the "RideShare Rallies" at various locations in cooperation with the State Department of Transportation. Wheelchair-accessible service now provided with 360 buses. As part of the City's "First Night" celebration, TheBus provided free rides from noon on 12/31/97 until 8:00 a.m. on 1/1/98. Provided special TheBus services for the Mayor's Memorial Day Service, Easter Sunrise Service, Great Aloha Run, Aloha Stadium Football Express for all UH home games, Aloha and Pro Bowls, and Hawai`ian Open golf tournament. Paratransit fleet increased from 88 to 100 vehicles. Commenced a \$2 million bus stop improvement program.

B. Goal/Objective #2: Reviewed, coordinated and processed approximately 50 environmental impact and assessment documents. Managed the consultant contracts to conduct the environmental assessments for the Pearl City Bus Facility and the Ala Wai Canal Dredging. Continued project management for the North-South Road project in Ewa. Continued work on the O`ahu Short-Range Transportation Plan and Program, Intelligent Transportation System (ITS) Early Deployment Study and the Honolulu Bikeway System Master Plan.

C. Goal/Objective #3: Managed the consultant contract to conduct the environmental assessment for the Pearl City Bus Facility.

III. Goals/Objectives FY 1999

In accordance with the Revised Charter of the City and County of Honolulu which states, in part, that the Director of Transportation Services shall "plan, design, operate and maintain transportation, including transit, systems to meet public transportation needs, in accordance with the general plan and development plans," the following top three environmental goals/objectives are identified:

A. Goal/Objective #1: To promote programs to reduce dependence on the use of automobiles.

B. Goal/Objective #2: To evaluate the social, economic, and environmental impact of additions to the transportation system prior to construction.

C. Goal/Objective #3: To improve the safe and efficient operation of City transportation and other facilities under the jurisdiction of the department.

City and County of Honolulu Fire Department

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Expand the recycling program from one battalion to five battalions (department-wide program).

B. Goal/Objective #2: Department to install partitions in dormitories. This will reduce usage of overhead light fixtures and promote usage of low wattage desk lamps for each cubicle.

C. Goal/Objective #3: Completion of wash rack at the new facility. City trucks in the Waipahu area will be permitted to use the wash rack which will meet NPDES requirements.

II. Results of Efforts FY 1998

A. Goal/Objective #1: The recycling project has expanded to two battalions to date. The goal is to incorporate the recycling project with the three remaining battalions during FY1999.

B. Goal/Objective #2: Partitions were installed in seven stations and the program was placed at a temporary halt because of funding. The department will evaluate the electricity usage at these stations and compare with those stations not having partitions.

C. Goal/Objective #3: Work began on the construction of the wash rack at the HFD Maintenance Facility, however, it has been halted due to funding constraints.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Department is in the process of removing underground fuel tanks where applicable and remediating the soil. Aboveground fuel tanks will be installed in stations having the space to do so.

B. Goal/Objective #2: Department of Design and Construction and the Honolulu Fire Department are evaluating the effectiveness of heat pumps presently in stations. The plan is to replace heat pumps with solar panels in those stations now using heat pumps.

C. Goal/Objective #3: Continue working with the DDC to complete projects established in FY1998.

City and County of Honolulu O`ahu Civil Defense Agency

I. Goals/Objectives FY 1998

A. Goal/Objective #1: None

B. Goal/Objective #2: None

C. Goal/Objective #3: None

II. Results of Efforts FY 1998

A. Goal/Objective #1: All employees of the agency have been made familiar with the provision of Chapter 344, HRS.

B. Goal/Objective #2: Approximately 30 percent of civil defense volunteers have been made familiar with the provisions of Chapter 344, HRS. We will continue to provide training in this subject matter.

C. Goal/Objective #3: This agency does not expect to develop new goals at this time, but will remain cognizant of environmental concerns and add new goals as appropriate.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Civil Defense volunteers will be able to describe, in general terms, the State Environmental Policy presented in Chapter 344, HRS.

City and County of Honolulu Planning Department

I. Goals/Objectives FY 1998

A. Goal/Objective #1: To analyze proposed projects that may have potential impacts on the environment, and to provide objective information to decision makers.

B. Goal/Objective #2: To incorporate principles of sustainability in regional planning efforts.

C. Goal/Objective #3: To establish environmental policies, principles and guidelines; and a new environmental review process triggered by Zone Change applications in the remaining seven Development Plan Areas.

II. Results of Efforts FY 1998

A. Goal/Objective #1: The Planning Department reviewed and accepted 2 Final Environmental Impact Statements. The Planning Department also reviewed and commented on 5 Pre-Draft Environmental Assessments, 41 Draft Environmental Assessments, 7 Environmental Impact Statement Preparation Notices and 5 Draft Environmental Impact Statements.

B. Goal/Objective #2: This goal/objective is ongoing as the Planning Department continues to update the Development Plans.

C. Goal/Objective #3: This goal/objective is ongoing as the Planning Department continues to update the Development Plans.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: To analyze proposed projects that may

have potential impacts on the environment, and to provide objective information to decision makers.

B. Goal/Objective #2: To establish environmental policies, principles and guidelines; and a new environmental review process triggered by Zone Change applications in the remaining seven Development Plan Areas.

County of Hawai'i Department of Parks and Recreation

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Wastewater System Improvements
B. Goal/Objective #2: Tree Planting Program

II. Results of Efforts FY 1998

A. Goal/Objective #1: Converted cesspool system to septic system at Waipio Valley Lookout, Hamakua and Waikoloa Park, South Kohala.

B. Goal/Objective #2: Tree planting project completed at Kamakana Playground, North Kona.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Wastewater System Improvements (Paauilo, Haina, Milolii, Higashihara)

B. Goal/Objective #2: Tree Planting Program (Kamehameha Ave, West Hawai'i Veterans Cemetery, Hilo Municipal Golf Course)

County of Hawai'i Department of Public Works

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Protect our land and water resources by the construction of a material recovery facility and initiate planning for the closure of the Hilo Landfill.

B. Goal/Objective #2: Protect our coastal water resources by the development and implementation of an effluent reuse program for Kealakehe Wastewater Treatment Plant.

C. Goal/Objective #3: Reduce our dependency on fossil fuels and delay expansion of power plants by retrofitting all County facilities with energy efficient equipment.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Project is in planning phase.

Agency Goals

B. Goal/Objective #2: Developed Master Plan for Kealakehe Effluent Reuse.

C. Goal/Objective #3: Retrofitted Hawai'i County Building with energy efficient light fixtures.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Protect our land and water resources through sound solid waste management practices and increased recycling by updating the Integrated Solid Waste Management Plan.

B. Goal/Objective #2: Protect coastal waters by expanding municipal wastewater systems and implementation of Phase I of the Kealakehe Effluent Reuse Program.

County of Hawai'i Department of Water Supply

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Continue to replace transite pipes with ductile iron pipe throughout the island.

B. Goal/Objective #2: Refurbish and paint water tanks to improve aesthetics.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Replaced transite pipes containing asbestos with ductile iron pipes throughout the island.

B. Goal/Objective #2: Plans to refurbish and paint water tanks were changed to remove Olaa Tank No. 3 and to remove and replace Kawaiiani Tank. Other tanks to be refurbished and painted will be done in fiscal year 1998.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Continue to replace transite pipes with ductile iron pipe throughout the island.

B. Goal/Objective #2: Refurbish and paint water tanks to improve aesthetics. Also, target to replace all lead-based primer-coated steel tanks with concrete tanks.

County of Hawai'i Fire Department

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Update pre-plans for hazardous material.

B. Goal/Objective #2: Purchase Hazmat vehicle for West Hawai'i.

C. Goal/Objective #3: Continue wildland fire/urban interface pre-fire plans.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Received Cameo, Aloha, and Marplot programs to assist with pre-planning and updating of pre-planning for hazardous materials.

B. Goal/Objective #2: Working on funding for purchase of Hazmat vehicle for West Hawai'i.

C. Goal/Objective #3: West Hawai'i fire personnel have received wildland fire pre-planning training. Wildland Fire Urban Interface Defensible Space public education program has been initiated.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Maintain Hazmat equipment inventory and increase training for Hazmat personnel.

B. Goal/Objective #2: Work on Cameo and pre-plans for Tier II businesses.

C. Goal/Objective #3: Continue training of fire personnel in wildland fire pre-planning. Continue public education program on Wildland Fire Urban Interface Defensible Space.

County of Hawai'i Office of Housing and Community Development (OHCD)

I. Goals/Objectives FY 1998

A. Goal/Objective #1: The OHCD will continue to seek training to keep staff abreast of NEPA's rule changes.

B. Goal/Objective #2: The OHCD will continue to seek ways to educate and coordinate with its environmental consultants to streamline the Environmental Assessment (EA) process, with Federal and State agencies.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Staff attended two workshops to discuss ways of streamlining the EA process. Staff also attended a workshop on the State's Volunteer Response Program.

B. Goal/Objective #2: Kept consultants abreast of new requirements set forth by the U.S. Department of Housing and Urban Development (HUD) and NEPA. Continued working with consultants to develop a more efficient way to address EA requirements.

III. Goals/Objectives for FY 1999

A. Goal/Objective #1: The OHCD will continue to seek training to keep staff abreast of the State's, NEPA's and HUD's rule changes regarding EA requirements.

B. Goal/Objective #2: The OHCD will continue to work with the State and Federal governments and the respective County agencies to draft an acceptable Memorandum of Understanding (MOU) regarding projects that will be exempt from the Historical Preservation requirements.

C. Goal/Objective #3: The OHCD will continue to work with its environmental consultants to further refine an EA format that will adequately comply with both State and Federal environmental requirements.

County of Hawai'i Planning Department

I. Goals/Objectives FY 1998

A. Goal/Objective #1: To continue to seek a proper balance between protection of our environmental resources and the encouragement of economic development for the well-being of our island residents.

B. Goal/Objective #2: To establish better coordination of our review and permitting procedures with various Federal, State and County agencies.

C. Goal/Objective #3: Commence with the Comprehensive Review of the Hawai'i County General Plan. This will provide the opportunity to reevaluate and reassess the County's environmental goals for the first decade of the New Century within the context of the environmental elements of the General Plan. These elements consist of Environmental Quality, Flood Control & Drainage, Historic Sites, Natural Beauty and Natural Resources and Shoreline.

II. Results of Efforts FY 1998

A. Goal/Objective #1: In mid-1998, a Geographical Information System (GIS) was established within the Planning Department to aid land use analysis. Currently working with various governmental agencies and private organizations to obtain GIS data layers. Once fully implemented, the GIS will provide this office with an enhanced ability to analyze data essential to proper land use planning.

B. Goal/Objective #2: Meetings held with various Federal, State and County agencies regarding the Comprehensive Review of the Hawai'i County General Plan have had a positive effect on the relationships we share with these agencies as well as the sharing of information. We will continue to foster the growth of these relationships to provide for better coordination and cooperation with permit and project reviews.

C. Goal/Objective #3: Comprehensive Review of the Hawai'i County General Plan commenced in January 1998 with a series of public informational workshops held throughout the island and with various governmental agencies, major landowners, community organizations and special interest groups. A draft of the Revised Hawai'i County General Plan is expected to be released for public review and comment around March 1999.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: To continue to seek a proper balance between protection of our environmental resources and the encouragement of economic development for the well-being of our island residents. Continue with the implementation of a GIS and incorporate its abilities within our planning processes and programs.

B. Goal/Objective #2: To continue to work for better coordination of our review and permitting procedures with various Federal, State and County agencies. Maintain relationships established through the General Plan Comprehensive Review program.

C. Goal/Objective #3: Completion of Comprehensive Review program and the adoption of the revised Hawai'i County General Plan.

County of Kaua'i Department of Public Works/Solid Waste

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Continue Public Education Program to promote environmental awareness.

II. Results of Efforts FY 1998

A. Goal/Objective #1: a) Continued contract for Glass recycling on Kaua'i, includes component to provide public education on recycling of glass.

b) Continued public advertisements for the Kaua'i Recycles Residential Recycling Program.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Continue programs to promote environmental awareness.

County of Kaua'i Department of Water

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Ensure that DOW projects are environmentally sound.

Agency Goals

II. Results of Efforts FY 1998

A. Goal/Objective #1: All construction projects are evaluated through the OEQC environmental review procedures prior to contracting. All required permits are obtained prior to construction, and all work is conducted in accordance with environmental regulations and permit requirements.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Continued operation of all our water systems in full compliance with all applicable Safe Drinking Water Act requirements.

B. Goal/Objective #2: Continued operation of all department business in accordance with all applicable environmental and safety regulations, and implementation of best management practices within all of our operations.

C. Goal/Objective #3: Timely completion of the environmental review process for all new projects.

County of Kaua`i Housing Agency

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Effectively assume responsibility for environmental review, decision making and action that would otherwise apply to HUD under the National Environment Policy Act, 24 CFR Part 58.

B. Goal/Objective #2: Afford private citizens and governmental entities an opportunity to provide comment on federally funded activities affecting human, physical and social environments.

C. Goal/Objective #3: Effectively monitor activities subject to Part 58, including Community Development Block Grant, HOME Investment Partnerships Program, Emergency Shelter Grant Program, and Special Purpose Grants.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Assessed environmental review for Eleele I`Luna and Plantation Traditional Living housing projects. Assessed environmental review for Waimea-Kekaha water development project.

B. Goal/Objective #2: Issued public legal notices and considered public comments in conducting EAs.

C. Goal/Objective #3: Maintained environmental review record for each program activity/project assessed during the reporting period.

III. Goals/objectives FY 1999

Same as those identified for fiscal year 1998.

County of Kaua`i Planning Department

I. Goals/Objectives FY 1998

A. Goal/Objective #1: To ensure that land use and development projects are assessed for conformity to the goals and policies of the Kaua`i County General Plan and supporting zoning ordinances with respect to maintaining Kaua`i as the "Garden Island" by sustaining the unique landscape, natural ecology and environmental character of the island.

B. Goal/Objective #2: To facilitate the implementation of the County's Shoreline Setback and Special Management Area Rules and Regulations.

C. Goal/Objective #3: To provide objective reviews and information regarding projects that may have potential impacts to the environment.

II. Results of Efforts FY 1998

A. Goal/Objective #1: Discretionary permits and applications are referred to various governmental agencies for comments (and HRS 343 process when applicable) and adjoining property notification and public hearings are held to further identify and address impacts. The County is also in the process of updating the General Plan.

B. Goal/Objective #2: Departmental efforts to monitor development activities which may impact the Special Management Area are ongoing.

C. Goal/Objective #3: Departmental comments are offered through the environmental assessment process, conservation district use permit reviews and when requested by other agency or applicant actions. As funding allows, staff attends workshops and conferences to enhance in-house expertise.

III. Goals/Objectives FY 1999

The current environmental goals/objectives apply to FY 1999.

County of Maui Department of Planning

I. Goals/Objectives FY 1998

A. Goal/Objective #1: To provide the expertise and staff to enforce the County's Special Management Area and Shoreline Area Regulations as revised.

B. Goal/Objective #2: To continue to review projects for conformity with the County's current environmental policies in the General Plan, the specific community plans, zoning codes, and coastal zone management guidelines.

C. Goal/Objective #3: To continue to support the adoption of all pending community plans by providing timely updated information on revised proposals necessary of the County Council's review. These plans contain environmental goals, objectives and policies, and implementing actions as they relate to the specific community plan region.

II. Results of Efforts FY 1998

A. Goal/Objective #1: In fiscal year (FY) 1998, the Department reviewed 166 applications for Special Management Area Permits. Of these, 135 were minor permits which are reviewed administratively. The other 31 were publicly reviewed before the Maui Planning Commission.

B. Goal/Objective #2: In FY 98, the Department reviewed 118 discretionary permits for conformance with the County's environmental policies as expressed in the Maui General Plan and the appropriate community plan. These applications include:

- 12 District Boundary Amendments
- 23 State Special Use Permit
- 24 Changes in Zoning
- 4 Project District Reviews
- 5 Community Plan Amendments
- 11 Conditional Use Permits
- 9 County Special Use Permits
- 15 Shoreline Setback Approvals
- 2 Shoreline Setback Variances
- 12 Environmental Assessments
- 1 Environmental Impact Statement

C. Goal/Objective #3: In FY 98, the Department supported the ongoing review and adoption of the Kihei-Makena Community Plan. The Department is currently assisting in the review and adoption of the Lanai and Wailuku-Kahului Community Plans.

III. Goals/Objectives FY 1999

The Department's goals and objectives are unlikely to change in FY 1999. The first two goals are ongoing activities by the Department. The third will require at least one more year to adopt the Molokai Community Plan.

County of Maui Department of Public Works and Waste Management

I. Goals/Objectives FY 1998

A. Goal/Objective #1: Adopt the revised Soil Erosion and Sedimentation Control Ordinance and implement its provisions and training program.

B. Goal/Objective #2: Develop and implement a pretreatment program which will effectively manage and track commercial

discharges into the County's wastewater collection system. Additionally, this program will have the enforcement authority to issue fines for properties that are in violation of the new pretreatment program.

C. Goal/Objective #3: Continue to expand the wastewater reuse program by actively speaking with prospective reuse users both in the private and public sectors.

II. Results of Efforts FY 1998

A. Goal/Objective #1: The ordinance was adopted the first quarter of FY 1999. Workshops and public education seminars are underway.

B. Goal/Objective #2: The enabling ordinance has been adopted. A work group has been formed to guide recommendations to Council for adoption of specific rules in FY 1999.

C. Goal/Objective #3: The agreement was signed and is being implemented.

III. Goals/Objectives FY 1999

A. Goal/Objective #1: Finalize an agreement with the union to plan for transition to automated refuse collection, green waste, and recycling collection.

B. Goal/Objective #2: Adopt the wastewater pretreatment civil procedure, rules, and ordinances to effectuate this program.

C. Goal/Objective #3: Fully implement the grant with the Department of Health by selecting and contracting the work provided in the agreement for protecting near shore water quality.

