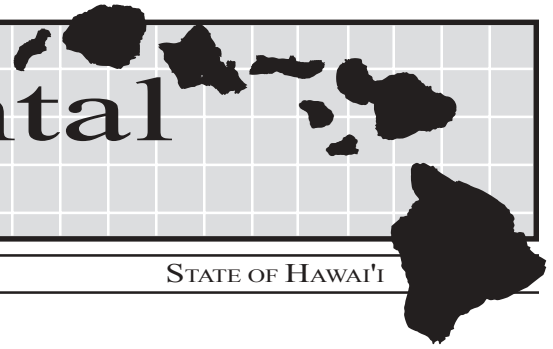


Hawai'i Environmental Report Card 2002

Environmental Council



The Environmental Council



THE 2002 ANNUAL REPORT OF THE ENVIRONMENTAL COUNCIL

STATE OF HAWAII

Environmental Report Card, 2002

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Table of Contents

ENVIRONMENTAL REPORT CARD, 2002

ENVIRONMENTAL COUNCIL, STATE OF HAWAII

Introduction

| | |
|--------------------------------------|----|
| Recommendation to the Governor | 7 |
| OEQC's Report | 10 |
| Council's Report | 11 |

Environmental Indicators

Population & Economy

| | |
|---------------------------|----|
| State Population | 14 |
| Gross State Product | 15 |

Forest and Natural Areas

| | |
|--|----|
| Managed Forest Areas | 16 |
| Watershed Partnerships | 17 |
| Hawai'i Endangered Bird Conservation Program | 18 |

Energy Use

| | |
|--|----|
| Electric Utility Sales | 19 |
| Energy Used in Hawai'i | 20 |
| Estimated Greenhouse Gas Emissions | 21 |
| Fossil Fuel Imported into Hawai'i | 22 |
| Fossil Fuel Use in Hawai'i | 23 |

Use and Recycling of Resources

| | |
|--|----|
| Municipal Water Consumption | 24 |
| Wastewater Treatment and Reuse | 25 |
| Solid Waste Generation and Diversion | 26 |
| Hazardous Waste Generated | 27 |

Biodiversity Maintenance

| | |
|---------------------------------------|----|
| Status of Plant Species | 28 |
| Status of Native Animal Species | 29 |
| Health of Hawai'i Fisheries | 30 |

Environmental Quality

| | |
|---|----|
| Air Quality Comparison with Other Cities | 31 |
| Air Quality Measurements in Honolulu | 31 |
| Ambient Levels of Carbon Monoxide | 32 |
| Ambient Levels of Sulfur Dioxide | 32 |
| Ambient Levels of Particulates | 33 |
| Beaches Posted as Unsafe Due to Pollution | 34 |
| Oil and Chemical Spills | 35 |
| Safe Drinking Water | 36 |
| Statewide Land Use District Acreage | 37 |

Public Awareness/Concern

| | |
|--|----|
| Noise Complaints Received by the Health Department | 40 |
| Bikeway Miles | 41 |
| Number of Bus Boardings on O'ahu | 42 |

Environmental Report Card

| | |
|--------------------------------------|----|
| 2002 Environmental Report Card | 43 |
|--------------------------------------|----|

Agency Goals

| | |
|--|----|
| Department of Accounting and General Services | 50 |
| Department of the Attorney General | 50 |
| Department of Defense (DOD) | 50 |
| Department of Education | 53 |
| Department of Hawaiian Home Lands | 54 |
| Department of Health | 54 |
| Department of Land and Natural Resources (DLNR) | 54 |
| Department of Transportation (DOT) | 57 |
| City and County of Honolulu, Department of Parks and Recreation .. | 58 |
| City and County of Honolulu, Department of Transportation Services | 59 |
| City and County of Honolulu, Fire Department | 59 |
| City and County of Honolulu, O'ahu Civil Defense Agency | 60 |
| County of Hawai'i, Department of Parks and Recreation | 60 |
| County of Hawai'i, Department of Water Supply | 61 |
| County of Hawai'i, Office of Housing and Community Development .. | 61 |
| County of Kaua'i, Department of Water | 62 |
| County of Kaua'i, Offices of Community Assistance | 62 |
| County of Maui, Department of Fire Control | 63 |
| County of Maui, Department of Housing and Human Concerns | 63 |
| County of Maui, Department of Parks and Recreation | 64 |
| County of Maui, Dept. of Public Works and Waste Management | 64 |

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.

The 2002 Annual Report 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 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.

Acknowledgements

The Environmental Council would like to thank the following individuals for their assistance in compiling this report.

Steven Alber
Nancy Heinrich
Kay Kaminaka
Douglas Oshiro
Maile Sakamoto
Leslie Segundo
Jeyan Thirugnanam

Recommendation to the Governor

May the Earth continue to live
May the heavens above continue to live
May the rains continue to dampen the land
May the wet forests continue to grow
Then the forests shall bloom
And we people shall live again

*E ho'omau ke ola o ka honua
E ho'omau ke ola o na lani
E ho'oma'u mau ka 'aina i ka ua
E ho'oulu mau na ulu la'au
Alaila, mohala na ulu la'au
A, e ola hou makou*

Traditional

'Olelo Hawai'i translation from Frances Hali'a Frazier



Photo by Peter Kaomea

Our Hawaiian Forests

Settled in the middle of the vast Pacific Ocean, on land more remote from continental masses than any other land in the world, our Hawaiian archipelago evolved over millennia untouched by beast or human. Native Hawaiians believe the islands were formed by Wakea, Sky Father, and, Papa, Earth Mother, who gave birth to these islands. Today the islands range geographically from the Northwest Hawaiian Island shoals to Mauna Loa, known to be the largest land mass on Earth, rising 13,679 feet above the sea, and to Lo'ihi, growing slowly from the seafloor to form a new island in perhaps another 200,000 years. The entire procession, measured in geological time is recent and short, however, as these islands evolved, so did some of the most unique, fragile and rich forests on earth.

The richness of the forest is due to Hawai'i's celebrated and unique biota. The mystery remains about how the life forms ever got to our shores, but once established, they adapted themselves to highly specific conditions, locations, and interdependencies, evolving into the multiplicity of species of plants and animals that are found here alone.

Hawaiian Forests are the home to the greatest proportion of endemic species in any forest anywhere on the earth.

It is this facet of the Hawaiian Forest – its uniqueness — that most concerns the Environmental Council and which is the focus of our 2002 Annual Report. As the state celebrates in 2003 the Year of the Hawaiian Forest, we recognize the cultural and utilitarian qualities of the forests in their watershed value, gathering, timber, hunting and recreational opportunities. We have attempted to measure some of these resources in the indicators section of our Annual Report, and have listed some recommendations on policies and actions that we believe will better protect, preserve, and enhance the 'Hawaiian-ness' of our forests.

Recommendation to the Governor

History tells us that our forests have been under siege since the earliest natives first landed on these shores. When Captain Cook arrived, he noted that forests began at middle elevations, the lower areas having already been deforested in slash-and-burn agriculture. Harvesting of sandalwood in the early 1800s, was probably the first major incursion by humans into the upper-elevation forests. Great areas of forest were left devastated and open for more destruction by the goats and cattle introduced in 1793. Within a mere 50 years, it became apparent to many that the forests' destruction was affecting climate, rainfall, and flows of mountain streams.

Demand for water, necessary for the growing sugar industry and expanding city of Honolulu, led to the earliest efforts to protect forests as watersheds. In one of the earliest recorded instances of watershed protection, in 1874, King Kalakaua led a group to the headwaters of Nuuanu Stream to plant trees. These early efforts gained momentum and culminated in the establishment of the first forest reserves in 1903. In 1906 the first forest management agreement to protect privately owned forests was established on Maui, between the Territory and Alexander and Baldwin.

While these efforts spared the forests from further, and perhaps permanent destruction, they were not rooted in the preservation of our unique biota. Introduction of alien plants, insects and animals for 'better' capture water, timber, erosion control hunting and ornamentation was the accepted practice, and continues today, despite our increasing awareness to protect, preserve and restore our Hawaiian Forests. Today, programs and organizations such as Watershed Partnerships, Natural Area Reserves Systems, Forest Stewardship programs, Natural Area Partnership Programs, and Island Invasive Alien Species Committees, as well as many grassroots organizations have been established throughout the islands, all working towards a new and better future for the Hawaiian Forest.

The production of water continues to be a primary purpose of the forests. But our economy today depends on another industry – tourism – that needs the scenic beauty, endemic plants, and the culture surrounding Hawai'i's bio-diverse landscape. Thus, we argue that the protection, preservation and enhancement of the biodiversity of Hawaiian forests is no less important today as water alone was in its time to the thirsty sugar fields. The merits of protecting it for such intangible values as biodiversity, beauty, cultural significance, and ecotourism potential are paramount to Hawai'i's competitive edge.

A healthy Hawaiian forest makes good economic sense.

Therefore, we are pleased to submit to you our recommendations for actions that will go far in protecting what remains of our Hawaiian forest heritage:

1. Governor and Legislative Support and Participation in the Year of the Forest. Like King Kalakaua did 128 years ago, your high profile involvement can only help stimulate greater interest and commitment, during this centennial recognition of the establishment of the first Hawaiian Forest Reserves.
2. Support Establishment of Critical Habitats on each Island as required by the federal Endangered Species Act. We recognize that this is controversial to some, but additional focus, habitat identification and pro-active protection is necessary for many of Hawaii's endemic species to survive.
3. Annual List of Forest Hot Spots. Direct the state forester to annually canvas his own agency, as well as other interested government agencies, conservation groups, and individuals, to identify 10 areas, or issues, that are of current and urgent concern. These would be published in the Environmental Council's annual report. Attention and resources could then be focused where needed the most.
4. Stable and Increased Funding for Forest Programs. We know this is a perennial request, but in recent years, funds have been cut from programs affecting forest health. However it is critical that funding go towards invasive species prevention and control, protective fencing, watershed partnerships, and grants to community volunteer groups. Public-private Watershed Partnerships, and Island Invasive Species Committees require dedicated funds to ensure forest protection. In addition to General Funds, sustainable funding could come from County water supply boards, development impact fees, and State water users.

Recommendation to the Governor

5. Establish a Lease/Incentive Program to farm forest products. The intent of this recommendation is to alleviate over gathering of forest resources and inadvertent introduction and spread of invasive alien plants, insects and animals. Maile, mokihana, ferns, 'pepeiao', awa, and other medicinal plants may be profitably farmed.
6. Encourage the establishment of Native Tree Farms on former sugar lands and non-native forested areas. Many of these lands were once covered in native lowland forests, containing such valuable, and ever scarce koa, 'ohi'a, kauila, and sandalwood. Non-native species planted for timber generations ago might be harvested and used to fund the reforestation with native species.
7. Greater Accountability. As was done in the past, DLNR should report, at least annually, the monitoring of forest areas by island, broken down by meaningful categories of ownership, management and control, as well as conditions of the forests relating to feral animal removal, species and number of trees and shrubs protectively fenced or replanted within these areas, timber taken, and areas fenced. If you can't measure it you can't manage it
8. Require EA/EIS (no exemption) for new leases of lands exceeding 25 acres. This to include water licenses, farm and ranch lands. Amend the State Environmental Review process to specifically address impacts critical to watershed and forest areas. Large, often old leases, should not automatically be rolled over into new leases, even if the use is similar, without environmental review. This may be the only opportunity to correct past flaws in environmental protection.
9. Require riparian buffers and Best Management Practices as conditions to State land leases, permits, and approvals. Lease forms should be reviewed and revised to clearly explicate these practices and support compliance. Bonding performance should be considered.
10. Fencing. Native ecosystems often recover rapidly with the simple removal of non-native animals, and often separates survival from extinction. Best Management Practices should include fencing of sensitive native forests from feral animals. Fence lines become the boundary. Habitat areas of critically endangered species are being fenced, but not fast enough. Hunting is encouraged as a co-operative method of removal of feral animals within protected areas, followed by monitoring and management. Surveillance and maintenance of fence lines between pastures and forests should be increased. Other areas, such as selected valleys, ravines, pali, and forest remnants could be fenced to re-establish forest growth down mountain-sides to link with other fragmented forests and eco-systems.
11. Better Coordinate efforts and resources.
 - a. Coordinate hunters and conservationists, to better manage the animal threats to the forests. Animals need to be removed from actively managed forests. Communication, coordination, and mutual understanding and respect, between groups competing for forest control, can be a useful management tool.
 - b. Separate Game Management from DOFAW. Protecting the forests, and promoting the welfare and increase of game animals, is a conflicting mandate. Game management is probably better under State Parks where it would be included with other recreational activities.
 - c. State Parks should develop a responsible forest recreation plan, that reflects carrying capacity, facilities development and maintenance. Appropriate areas of the forests should be places people can get into and enjoy.
12. Support public education and outreach programs. The forests, their watersheds, their culture, their diverse, unique and fragile biota, their connection to the reefs and shores of these islands, are often overlooked in this place known for sea, sun, and sand. With more knowledge will come more appreciation, and more protection. Make it a goal that all our children learn the values of our forests. Much of this can be done without additional spending, but by simply directing attention, and parts of existing curriculum in this direction.

OEQC's Report

Director's Report

In 2002, we celebrated the Year of the Horse, and like galloping horses, OEQC quickly moved forward. I would like to thank my dedicated staff, Jeyan Thirugnanam, Les Segundo, Nancy Heinrich and Kay Kaminaka, for their hard work. Also, I wish to thank all of you who have helped OEQC achieve our accomplishments this past year.

- The Beverage Container Bill (Act 176) was passed.
- Educational flash cards on invasive species were completed and distributed to the schools.
- Our website has been expanded to better access *The Environmental Notice*, Environmental Council and self-help to Chapter 343.
- Several workshops for advance planners from all sectors were conducted.

- We have the 25 sample Environmental Impact Statements and Assessments available on CD-ROM and our website.
- The task force report to the Legislature, on endangered species, has been completed.

We will continue to get involved in workshops and pre-consultations with county, state, federal agencies, and just as important, the private sector. Our next educational flash card project will be on cultural practices.

The Year of the Ram brings artistic talents, and we'll spend much of the year pursuing creative endeavors to help find a fair balance between economic progress and protection of the environment.

Genevieve Salmonson
Director

Environmental Impact Assessments Submitted to OEQC

| Type of Notice | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|----------------|------------|------------|------------|------------|------------|------------|------------|
| Draft EA | 164 | 142 | 159 | 137 | 132 | 129 | 123 |
| FONSI | 142 | 142 | 144 | 133 | 124 | 130 | 100 |
| EISPN | 9 | 12 | 15 | 11 | 6 | 15 | 10 |
| Draft EIS | 13 | 7 | 14 | 11 | 12 | 9 | 7 |
| Final EIS | 12 | 13 | 10 | 11 | 9 | 4 | 14 |
| Total | 340 | 316 | 342 | 303 | 283 | 287 | 254 |

A Message from the Chair

Last year our report focused on Hawai'i's biodiversity. This year the Status Grade for Biodiversity Maintenance slipped from D to D-. I hope this raises real concern. The grade is especially disappointing because there are so many policies and laws, and individuals, agencies and organizations that are trying hard to protect Hawai'i's fragile native species.

Surely something is not working.

The Environmental Council looks forward to working with the new administration, the legislature, and the many individuals, agencies, and organizations, in finding viable and realistic solutions to improve Hawai'i's environmental health.

Michael A. Faye
December 2002



Section I

Environmental Indicators

Environmental indicators are measurements that track environmental conditions over time. 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 or other renewable alternatives such as wind as the source of energy
- 2) Dispose of wastes and replenish nutrients by recycling all elements
- 3) Maintain biodiversity
- 4) Maintain the size of human or animal 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

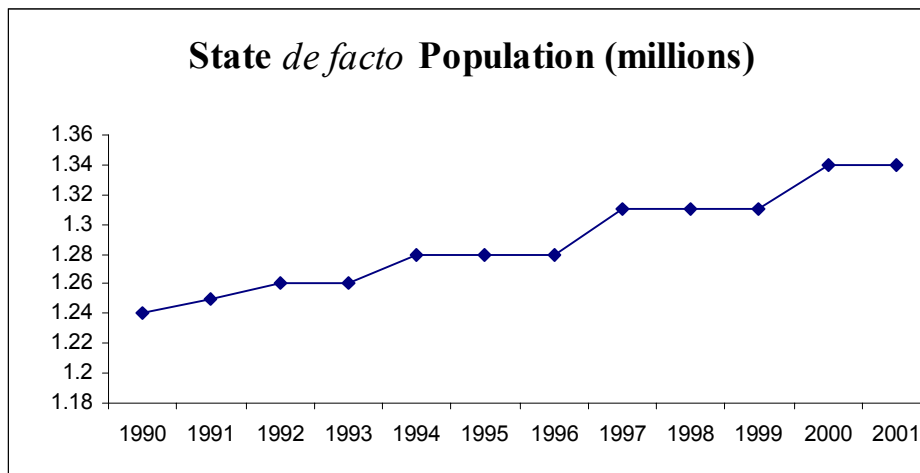
Population

State Population

The stress of population growth adds pressure on our ecosystem. More people means more wastes, more housing areas, more cars. Hawai'i's *de facto* population (which include visitors present but excludes residents temporarily absent) keeps growing from year to year. DBEDT estimates that by year 2020 our de facto population will reach 1.72 million--a 30% increase. This population increase creates many challenges as we try to balance the needs of our people and the health of our ecosystem. According to the Commission for Environmental Cooperation (2001), an average person in the U.S. consumes four times as many resources as the average person in the world. Reducing our consumption is one way to minimize our impact on our ecosystem.

Hawai'i *de facto* population

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| State <i>de facto</i> Population (million) | 1.24 | 1.25 | 1.26 | 1.26 | 1.28 | 1.28 | 1.28 | 1.31 | 1.31 | 1.31 | 1.34 | 1.34 |



Source: State of Hawai'i Data Book 2002.

Note: The vertical axis does not begin with zero.

Environmental Indicators

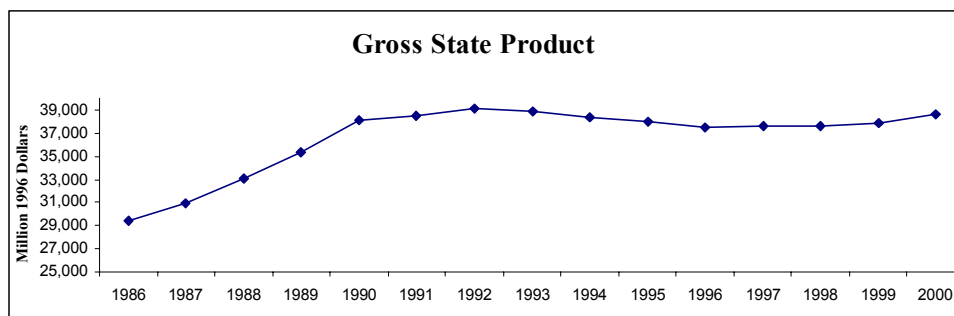
Economy

Gross State Product

The stress of economic expansion presents challenges to the environment. More economic activity means more imported oil, more wastes, more energy use, more traffic. After rising steeply between 1986 and 1990, Hawai'i's economy, as measured by Gross State Product, has remained steady. The GSP is the market value of the goods and services produced by a state and is the state counterpart of the nation's gross domestic product.

Gross State Product

| Year | GSP in millions of 1996 dollars |
|------|---------------------------------|
| 1986 | 29,464 |
| 1987 | 30,913 |
| 1988 | 33,028 |
| 1989 | 35,309 |
| 1990 | 38,134 |
| 1991 | 38,516 |
| 1992 | 39,120 |
| 1993 | 38,809 |
| 1994 | 38,332 |
| 1995 | 37,948 |
| 1996 | 37,490 |
| 1997 | 37,668 |
| 1998 | 37,622 |
| 1999 | 37,863 |
| 2000 | 38,582 |



Source: State of Hawai'i Data Book 2002.

Note: The vertical axis does not begin with zero.

Environmental Indicators

Forest and Natural Areas

Managed Forest Areas

Hawaiian native forests have evolved over millions of years. Invasive species that choke out native plants, and feral animals that cause erosion on the fragile forest floor can cause serious damage to the native forest. Keeping out invasive species and feral animals and planting more native plants promotes healthy forests.

Acres of Forest and Natural Areas

| Year | Forest Reserve Land | Private Forest Land | Natural Areas |
|------|---------------------|---------------------|---------------|
| 1995 | 622,339 | 328,742 | 122,703 |
| 1996 | 622,339 | 328,742 | 122,703 |
| 1997 | 643,134 | 328,742 | 109,164 |
| 1998 | 643,134 | 328,742 | 109,164 |
| 1999 | 643,134 | 328,742 | 109,164 |
| 2000 | 643,134 | 328,742 | 109,164 |
| 2001 | 643,134 | 328,742 | 109,164 |

Source: State of Hawai'i Data Book 2002.

Note: Forest Reserve Land = State-owned and privately-owned lands under surrender agreement in forest reserve system.

Private Forest Land = Private forest land within conservation district. The majority of these lands were previously in the forest reserve system.

Natural Areas = The State of Hawai'i created the Natural Area Reserves System, or NARS, to preserve and protect representative samples of the Hawaiian biological ecosystems and geological formations.

In 1937, 1,027,299 acres were in forest reserves.

Environmental Indicators

Watershed Partnerships

Forested watersheds provide us with nearly all of our state's fresh water. Watershed Partnerships are voluntary alliances of public and private landowners committed to the common value of protecting large areas of forested watersheds for water recharge and other values. More than 200,000 acres of important watershed areas in Hawai'i have been placed within these unique public-private partnerships

West Maui Watershed Partnership (50,000 acres)

The Maui County Board of Water Supply
Kamehameha Schools
C. Brewer and Company Limited
Amfac/JMB Hawai'i, L.L.C.
The Nature Conservancy of Hawai'i
Maui Land & Pineapple Co., Inc.
State Department of Land and Natural Resources
The County of Maui

East Maui Watershed Partnership (100,000+ acres)

State Department of Land and Natural Resources
The Nature Conservancy of Hawai'i
The Maui County Board of Water Supply
Haleakala Ranch Co.
East Maui Irrigation Co., Ltd.
Haleakala National Park
Hana Ranch
The County of Maui

Ko'olau Watershed Partnership (50,000+ acres)

Kamehameha Schools
State Department of Land and Natural Resources
State Department of Hawaiian Home Lands
Agribusiness Development Corporation
U.S. Army
Honolulu Board of Water Supply
Queen Emma Foundation
Bishop Museum
Manana Valley Farm LLC
Tiana Partners
Dole Food Co., Inc.
The Nature Conservancy of Hawai'i

East Moloka'i Watershed Partnership (5,000 acres)

Kamehameha Schools
Kapualei Ranch
Ke Aupuni Lokahi Enterprise Community
Governance Board
EPA
Hawai'i Department of Health
State Division of Forestry and Wildlife
Kalaupapa National Historical Park
Maui County
Maui Board of Water Supply
Moloka'i-Lana'i Soil and Water Conservation District
USDA Natural Resource Conservation Services
US Fish & Wildlife Service
US Geological Services
The Nature Conservancy of Hawai'i

Lanai Watershed Partnership (3,580 acres)

Castle & Cooke
Maui County Board of Water Supply
Hui Malama Pono O Lana'i
State Department of Land and Natural Resources
US Fish & Wildlife Service
USDA Natural Resources Conservation Service
Molokai-Lanai Soil and Water Conservation District
The Nature Conservancy of Hawai'i

Ola'a-Kilauea Watershed Partnership (420,000 acres)

Kulani Correctional Facility - State, Public Safety
Puu Maka'ala NAR - State, DLNR DOFAW
Kamehameha Schools
USDI - Hawaii Volcanoes National Park Service
USDA - Forest Service
USGS - Biological Resources Division

Environmental Indicators

Hawai'i Endangered Bird Conservation Program

The Hawaiian Islands are home to species of birds that are found nowhere else on the planet, exhibiting a staggering array of adaptations to life in their unique habitats. Prior to human disturbance, Hawaiian birdlife was abundant from the montane cloud forests to the dry forests by the sea in what are thought to have been the highest densities of any birds on earth. Of the more than 140 native breeding species and subspecies present prior to the colonization of the islands by humans, more than half have been lost to extinction. The DOFAW collaborates broadly with government and private researchers, managers, and landowners to implement programs designed to protect and recover Hawai'i's unique forest bird species and their habitats. Unfortunately, some birds that are released do not survive in the wild.

Endangered Bird Releases

| Year | Species | Site | Number Released |
|------|----------|---|-----------------|
| 1993 | 'Alala | South Kona | 5 |
| 1994 | 'Alala | South Kona | 7 |
| 1995 | 'Amakihi | Keauhou Ranch | 16 |
| 1995 | 'Oma'o | Puu Wa'awa'a | 2 |
| 1996 | 'I'iwi | Puu Wa'awa'a | 2 |
| 1996 | 'Alala | South Kona | 4 |
| 1996 | Nene | Kaua'i; W. Maui; Hakalau | 49 |
| 1997 | 'Oma'o | Puu Wa'awa'a | 23 |
| 1997 | 'Alala | South Kona | 8 |
| 1997 | Nene | W. Maui | 14 |
| 1998 | 'Alala | South Kona | 3 |
| 1998 | Nene | Hana 'Ula; Haleakala | 17 |
| 1999 | Puaiohi | Kawaikoi, Alaka'i | 14 |
| 1999 | Nene | Haleakala; Hana Ula | 14 |
| 2000 | Puaiohi | Kawaikoi, Alaka'i | 5 |
| 2000 | Nene | W. Maui, Kaua'i, | 34 |
| 2001 | Puaiohi | Kawaikoi, Alaka'i | 15 |
| 2001 | Nene | HAVO; Hakalau; Moloka'i; W. Maui | 68 |
| 2002 | Puaiohi | Halepa'akai, Alaka'i | 8 |
| 2002 | Nene | HAVO; Hana 'Ula, Moloka'i; Haleakala | 34 |

Environmental Indicators

Energy Use

Electric Utility Sales

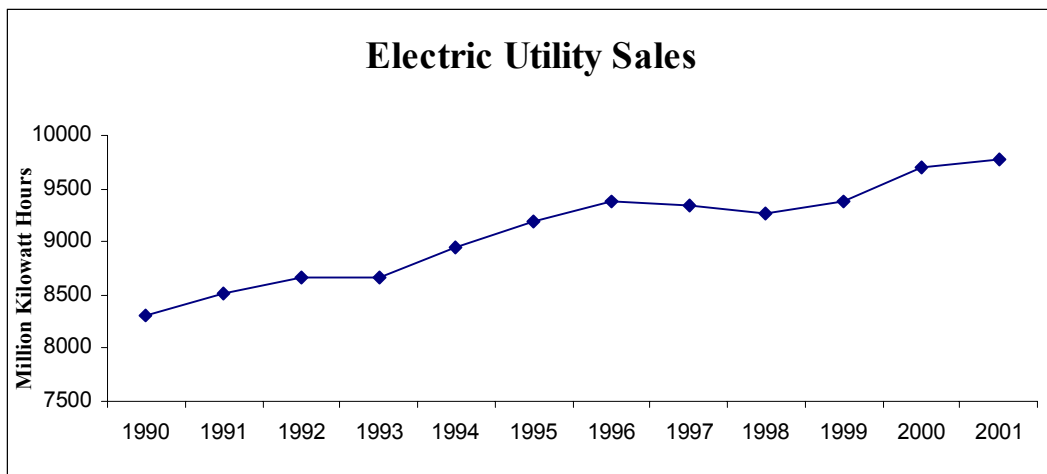
The table below depicts the growth in electricity sales in Hawai'i. It should be noted that, in 2000, electric utility sales accounted for 88.1% of all electricity generation in Hawai'i. Hawai'i's electric utility sales generated 60.4% of total electricity generation, while independent power producers (IPP) and the sugar industry produced the remaining 39.6%. The IPPs and sugar mills sold 84% of their generation to the utilities (33.1% of total generation), and used 16% in their own operations (6.5% of total generation). Transmission losses accounted for the remaining 5.4% of total generation.

Hawai'i Electric Utility Sales

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| State Utility Sales (Million kWh) | 8,524 | 8,667 | 8,658 | 8,948 | 9,187 | 9,378 | 9,346 | 9,261 | 9,380 | 9,690 | 9,777 |

Sources: State DBEDT, Energy, Resources, and Technology Division, Energy Data Services; State of Hawai'i Data Book 2000; Utility FERC-1 and Annual Reports to the Public Utilities Commission.

Note: The vertical axis does not begin with zero.



Environmental Indicators

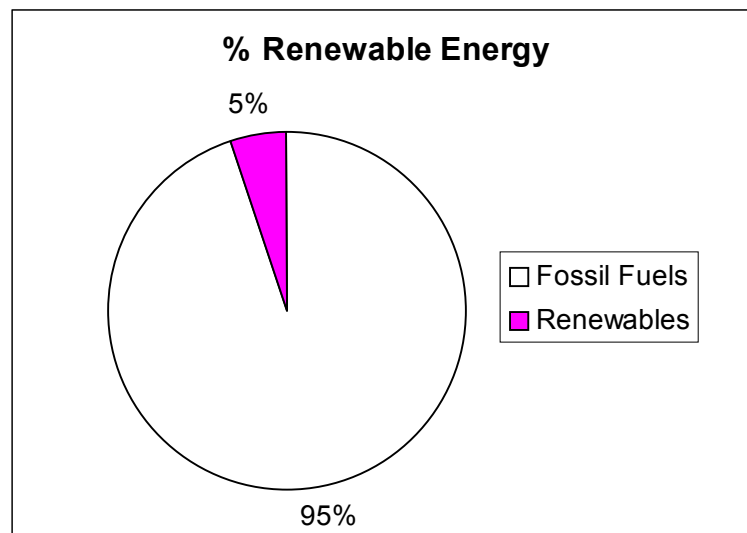
Energy Used in Hawai'i

One of Hawai'i's goals is to replace energy produced from fossil fuels with alternate and renewable sources such as solar power, biomass, hydro-electric, wind, geothermal and solid waste. The table below shows the amount of energy used in Hawai'i in trillion British thermal units (BtU) used.

Total Energy Used in Hawai'i in Trillion BtU

| Source | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Petroleum | 285.5 | 274.0 | 277.1 | 278.3 | 269.1 | 272.5 | 290.2 | 273.8 |
| Coal | 13.6 | 16.5 | 16.9 | 16.8 | 14.8 | 14.5 | 15.5 | 15.8 |
| Biomass | 16.4 | 11.8 | 10.4 | 9.0 | 7.5 | 9.2 | 7.1 | 3.4 |
| Solar Hot Water | 2.3 | 2.8 | 3.1 | 3.1 | 3.1 | 3.5 | 3.6 | 3.7 |
| Hydroelectric | 1.5 | 1.1 | 1.1 | 1.0 | 0.8 | 1.2 | 1.0 | 1.0 |
| Wind | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 |
| Geothermal | 1.8 | 2.3 | 2.4 | 2.4 | 2.3 | 2.0 | 2.6 | 2.1 |
| Solid Waste | 6.2 | 6.4 | 4.7 | 5.3 | 5.1 | 5.1 | 5.1 | 4.5 |
| Photovoltaic | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0020 | 0.0027 | 0.0043 | 0.01 |
| Total | 327.5 | 315.1 | 315.9 | 316.1 | 302.9 | 308.0 | 325.2 | 304.4 |

Source: State DBEDT, Energy, Resources, and Technology Division, Energy Data Services.



Environmental Indicators

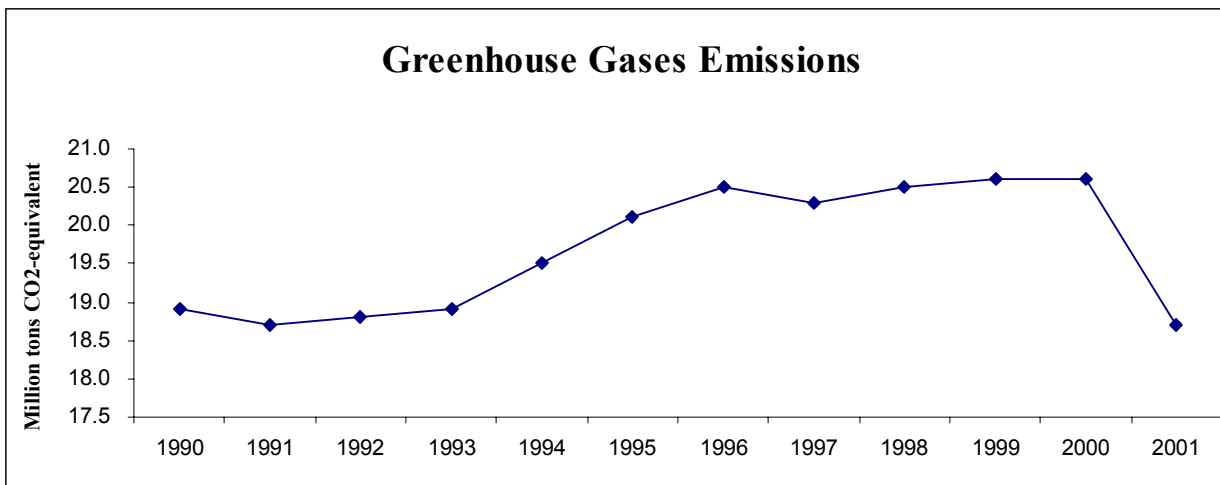
Estimated Greenhouse Gas Emissions

The earth's climate is changing because human activities are altering the composition of the atmosphere through the buildup of greenhouse gases, primarily carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons. The energy sector produces 90 percent of the greenhouse gases. The table below shows the estimated greenhouse gas emissions in Hawai'i.

Estimated Greenhouse Gas Emissions in Millions of Tons Carbon Dioxide Equivalent

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Greenhouse Gasses (Millions of Tons Carbon Dioxide Equivalent) | 18.7 | 18.8 | 19.5 | 20.1 | 20.5 | 20.3 | 20.5 | 20.6 | 20.6 | 20.7 | 18.7 |

Source: State DBEDT, Energy, Resources, and Technology Division, Energy Data Services.



2000 recommendations to the Governor on “Global Warming: No More Business as Usual”

The Environmental Council recommends that the Governor and Legislature support the Kyoto Protocol to the United Nations Framework Convention on Climate Change, signed by the United States in November 1998, and accordingly, commit to reduce Hawai'i's greenhouse gas emissions by 7% less than 1990 emissions by 2008–2010. The *Hawai'i Climate Change Action Plan* (DBEDT, 1998) offers many strategies for reducing greenhouse gas emissions.

Environmental Indicators

Fossil Fuel Imported into 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. The table below shows the amount of imported fossil fuel imported into Hawai'i by type.

Total Imported Fossil Fuel into Hawai'i in Trillion BtU

| Type of Imported Fuel | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Crude Oil | 323.9 | 298.2 | 301.9 | 296.4 | 299.6 | 272.5 | 289.4 | 300.8 |
| Refined Oil Products | 10.6 | 13.7 | 31.3 | 37.3 | 39.3 | 49.6 | 58.7 | 25.5 |
| Coal | 14.2 | 16.5 | 16.1 | 16.8 | 14.8 | 14.5 | 15.7 | 15.8 |
| Total | 348.7 | 328.4 | 349.3 | 350.5 | 353.7 | 336.6 | 363.8 | 342.1 |

Source: State DBEDT, Energy, Resources, and Technology Division, Energy Data Services.

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

Environmental Indicators

Fossil Fuel Use 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.

Amount of Fossil Fuel Used in Hawai'i by Category in Trillion BtU

| Sector | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Electricity Production (Oil) | 82.2 | 78.6 | 84.2 | 83.2 | 85.6 | 87.2 | 91.8 | 87.2 |
| Electricity Production (Coal) | 13.6 | 16.5 | 16.9 | 16.8 | 14.8 | 14.5 | 15.5 | 15.8 |
| Transportation - Ground & Water (Oil) | 81.5 | 82.1 | 75.9 | 74.0 | 78.8 | 75.9 | 76.6 | 73.1 |
| Transportation - Air (Oil) | 90.0 | 96.5 | 102.4 | 102.7 | 93.3 | 92.3 | 102.7 | 92.8 |
| Other Sectors (Oil) | 17.7 | 9.3 | 15.1 | 18.4 | 11.5 | 17.1 | 19.1 | 20.7 |
| Total | 285.0 | 283.0 | 294.5 | 295.1 | 284.0 | 287.0 | 305.7 | 289.6 |

Source: DBEDT, Energy Division, Energy Data Services.

Environmental Indicators

Use and Recycling of Resources

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.

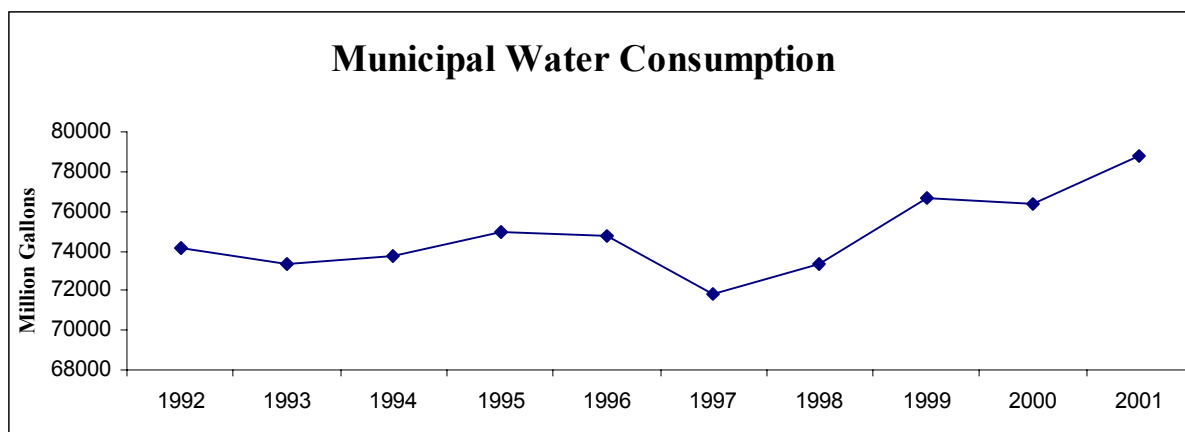
Municipal Water Consumption by County (in millions of gallons)

| Fiscal Year | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Honolulu | 51,241 | 51,033 | 50,407 | 51,006 | 50,682 | 48,624 | 49,265 | 51,614 | 51,020 | 52,608 |
| Kauai | 4,453 | 4,056 | 4,149 | 4,114 | 4,206 | 3,944 | 4,148 | 4,373 | 4,309 | 4,631 |
| Hawaii | 8,024 | 7,937 | 7,999 | 8,378 | 8,363 | 7,804 | 8,159 | 8,097 | 8,353 | 8,676 |
| Maui | 10,399 | 10,312 | 11,177 | 11,494 | 11,477 | 11,438 | 11,729 | 12,547 | 12,719 | 12,833 |
| Total (MG) | 74,117 | 73,338 | 73,732 | 74,992 | 74,728 | 71,810 | 73,301 | 76,631 | 76,401 | 78,748 |

Source: The State of Hawai'i Data Book 2002 prepared by the Department of Business, Economic Development and Tourism; Honolulu Board of Water Supply; Hawai'i County Department of Water Supply; Kauai 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.

Note: The vertical axis does not begin with zero.



Environmental Indicators

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.

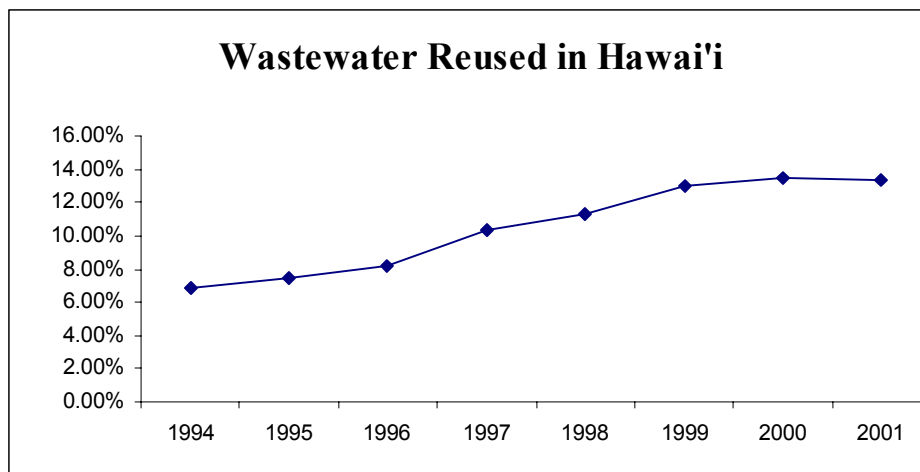
The table below shows the rate wastewater was treated and reused in millions of gallons per day (MGD).

Total Statewide Wastewater Treatment and Reuse

| Federal Fiscal Year | Total Waste water Treated (MGD) | Wastewater Reused (MGD) | Percentage Reused |
|---------------------|---------------------------------|-------------------------|-------------------|
| 1994 | 151.6 | 10.5 | 6.9% |
| 1995 | 150.1 | 11.1 | 7.4% |
| 1996 | 150.1 | 12.3 | 8.2% |
| 1997 | 150.0 | 15.6 | 10.4% |
| 1998 | 150.0 | 17.0 | 11.3% |
| 1999 | 150.0 | 19.5 | 13.0% |
| 2000 | 150.0 | 20.2 | 13.5% |
| 2001 | 150.0 | 19.9 | 13.3% |

Source: Hawai'i Department of Health.

Note: Previous annual reports show lower treatment and reuse figures because only municipal wastewater treatment systems were included.



Environmental Indicators

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 was the goal of the state to reduce the solid waste stream prior to disposal by 50% by January 1, 2000. Recent data show that we have only met half our goal.

The following table shows the total amount of municipal solid waste generated and the amount recycled and composted. The amounts diverted do not include waste sent to H-Power for incineration and power generation.

Solid Waste Generation and Diversion in Hawai‘i

| Federal Fiscal Year | Produced Statewide (1,000 tons) | De facto Population (million) | Daily per Capita (lbs) | Disposed Statewide (1,000 tons) | Diverted Statewide (1,000 tons) | Percentage Diverted |
|---------------------|---------------------------------|-------------------------------|------------------------|---------------------------------|---------------------------------|---------------------|
| 1994 | 1,953 | 1.28 | 8.4 | 1,616 | 337 | 17% |
| 1995 | 2,023 | 1.28 | 8.7 | 1,620 | 403 | 20% |
| 1996 | 2,122 | 1.28 | 9.1 | 1,619 | 503 | 24% |
| 1997 | 2,132 | 1.31 | 8.9 | 1,599 | 533 | 25% |
| 1998 | 2,004 | 1.31 | 8.4 | 1,524 | 481 | 24% |
| 1999 | 1,884 | 1.31 | 7.9 | 1,424 | 460 | 24% |
| 2000 | 1,794 | 1.34 | 7.3 | 1,441 | 353 | 20% |
| 2001 | 1,971 | 1.34 | 8.1 | 1,479 | 493 | 25% |

Source: Hawai‘i Department of Health and Department of Business, Economic Development and Tourism, Data Book 2000 (De facto Population).
 Note: The 2000 numbers are partial as not all facilities have reported to DOH.

1999 recommendations to the Governor on “Improving Hawai‘i’s Solid Waste Recycling Rate”

- Support local recycling enterprises
- Establish recycling demonstration projects
- Implement a comprehensive recycling program
- Invest in infrastructure to recycle
- Provide more funding to the Department of Health
- Support the development of a market for recycling products
- Use glassphalt for paving roadways
- Create preference for non-polluting recycling activities
- Amend definition of maritime business to include recycling
- Provide funds for market development research
- Enforce current recycling laws
- Expand the “advance disposal fee” program

Environmental Indicators

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.

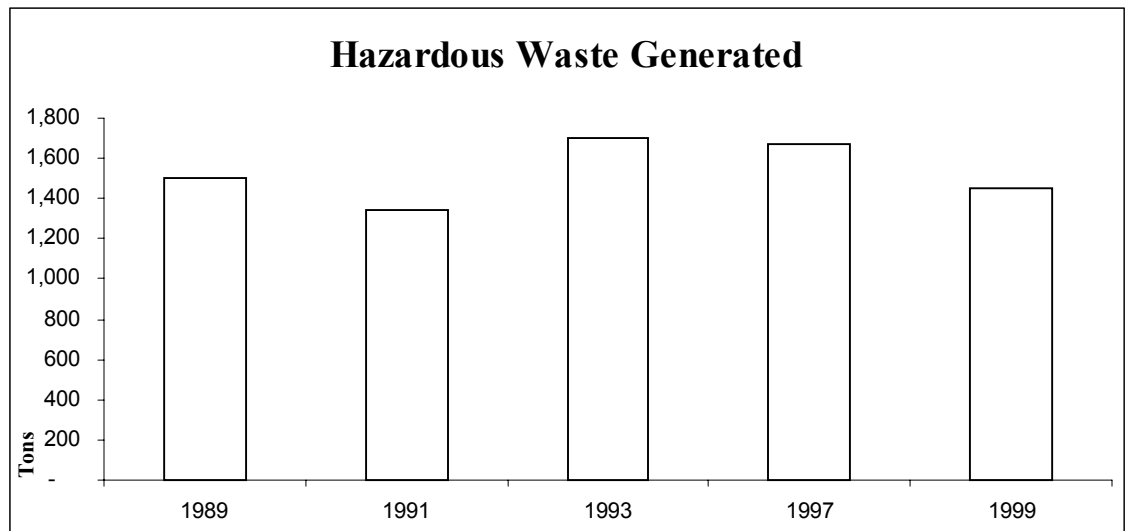
Total Hazardous Waste Generated by Large Quantity Generators in Hawai'i

| Federal Fiscal Year | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 |
|-------------------------------------|-------|-------|-------|------|-------|-------|
| Hazardous Waste Generated (in tons) | 1,499 | 1,343 | 1,702 | NA | 1,669 | 1,456 |

Source: Hawai'i Department of Health.

Note: i) Figures do not match previous years' annual report data as the numbers have been adjusted by the DOH.

ii) Data for 1995 are not included because the data collected by the Department of Health includes both **large and small** quantity generators.



Environmental Indicators

Biodiversity Maintenance

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 rare native plant species in Hawai'i.

Number of Plant Species in Hawai'i by Status

| Year | Listed Endangered or Threatened | Proposed Endangered or Threatened | Candidate for Endangered or Threatened Listing | Species of Concern | Total Rare Plant Species |
|------|---------------------------------|-----------------------------------|--|--------------------|--------------------------|
| 1999 | 292 | 0 | 92 | 204 | 588 |
| 2000 | 292 | 0 | 92 | 204 | 588 |
| 2001 | 292 | 0 | 92 | 204 | 588 |

Source: U.S. Fish and Wildlife Service.

Environmental Indicators

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.

Status of Animal Species

| Number of Species | Mammals | | | Birds | | | Turtles | | | Fishes | | |
|-----------------------------|---------|------|------|-------|------|------|---------|------|------|--------|------|------|
| | 1999 | 2000 | 2001 | 1999 | 2000 | 2001 | 1999 | 2000 | 2001 | 1999 | 2000 | 2001 |
| Total Native Species | 4 | 4 | 4 | 93 | 93 | 93 | 5 | 5 | 5 | 22 | 22 | 22 |
| Extinct Species | 0 | 0 | 0 | 26 | 26 | 26 | 0 | 0 | 0 | 0 | 0 | 0 |
| Listed Endangered | 4 | 4 | 4 | 31 | 33 | 33 | 2 | 2 | 2 | 0 | 0 | 0 |
| Listed Threatened | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 3 | 3 | 0 | 0 | 0 |
| Proposed for Listing | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Candidate Species | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Species of Concern | 0 | 0 | 0 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 1 |

Source: U.S. Fish and Wildlife Service

Note: i) The status of Hawaiian 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 mammals include the Monk Seal, Hoary Bat, Humpback Whale and Sperm Whale.

Environmental Indicators

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 tables below shows the figures for the bottomfish *spawning potential ratio (SPR)* compiled by the Honolulu Laboratory of the National Marine Fisheries Service. Archipelagic values of less than 20% indicate recruitment overfishing for the stock. Similar values for more localized areas, such as the Main Hawaiian Islands, indicate locally depleted resources. Localized depletion is still a serious problem, but not as serious as overfished stocks.

Main Hawaiian Islands Bottomfish Spawning Potential Ratio

| Bottomfish | Spawning Potential Ratio (in percent) | | | | | | | | | | | | | |
|------------|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| Ehu | 9 | 17 | 12 | 7 | 4 | 5 | 6 | 7 | 3 | 8 | 4 | 7 | 4 | 11 |
| Hapu'upu'u | 52 | 58 | 37 | 34 | 37 | 26 | 33 | 21 | 15 | 23 | 16 | 27 | 24 | 28 |
| Onaga | 21 | 15 | 14 | 9 | 10 | 13 | 9 | 6 | 4 | 5 | 5 | 6 | 6 | 3 |
| Opakapaka | 37 | 58 | 42 | 39 | 44 | 32 | 37 | 35 | 25 | 32 | 24 | 28 | 33 | 30 |
| Uku | 64 | 55 | 30 | 26 | 28 | 46 | 37 | 40 | 35 | 29 | 29 | 47 | 33 | 27 |

Source: National Marine Fisheries Service.

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%.

Archipelago-Wide Bottomfish Spawning Potential Ratio

| Bottomfish | Spawning Potential Ratio (in percent) | | | | | | | | | | | | | |
|------------|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| Ehu | 37 | 51 | 44 | 44 | 51 | 54 | 38 | 41 | 43 | 42 | 38 | 37 | 39 | 39 |
| Hapu'upu'u | 56 | 70 | 57 | 58 | 67 | 65 | 51 | 48 | 49 | 49 | 44 | 47 | 49 | 48 |
| Onaga | 42 | 38 | 36 | 42 | 41 | 53 | 39 | 33 | 39 | 25 | 22 | 34 | 27 | 25 |
| Opakapaka | 49 | 69 | 57 | 57 | 68 | 67 | 53 | 54 | 52 | 52 | 47 | 46 | 52 | 48 |
| Uku | 62 | 68 | 52 | 53 | 61 | 73 | 52 | 56 | 57 | 51 | 50 | 55 | 52 | 49 |

Source: National Marine Fisheries Service.

Environmental Indicators

Environmental Quality

Air Quality Comparison with Other Cities

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.

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 below lists the number of days the air quality at certain cities exceeded EPA standards.

Number of Days Air Quality Declared Unhealthy by EPA Standards

| | # of Monitoring Sites | 1982 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-----------------|-----------------------|------|------|------|------|------|------|------|------|------|------|
| Honolulu | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: Hawai'i Department of Health.

Air Quality Measurements in Honolulu

Hawai'i's annual average concentrations of sulfur dioxide are so low that they do not pose a health concern. The following are annual average concentrations of sulfur dioxide from the Kapolei air monitoring station.

Air Quality Measurements in Honolulu

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | Federal Standard |
|---|------|------|------|------|------|------|------------------|
| PM₁₀ (ug/m³) | 14 | 8 | 9 | 14 | 14 | 16 | 50 |
| CO (ug/m³) | 2127 | 4133 | 6726 | 4788 | 3990 | 5244 | 40,000 |
| SO₂ (ug/m³) | 3 | 2 | 2 | 2 | 1 | 2 | 80 |

Source: Hawai'i Department of Health.

Notes: PM₁₀, SO₂ are annual means; CO is the maximum 1-hour value recorded in the year.

Environmental Indicators

Ambient Levels of Carbon Monoxide

Annual Average of Daily Maximum 1-Hour Carbon Monoxide (in ug/m³), 1995-2000.

| | Honolulu | Waikiki | West Beach | Kapolei | Federal Standard |
|------|----------|---------|------------|---------|------------------|
| 1996 | 2,127 | 2,159 | 594 | 477 | 40,000 |
| 1997 | 4,133 | 1,939 | 598 | 541 | 40,000 |
| 1998 | 6,726 | 1,672 | 470 | 419 | 40,000 |
| 1999 | 4,788 | 1,634 | 299 | 387 | 40,000 |
| 2000 | 3,990 | 4,332 | 1,596 | 2,508 | 40,000 |

Source: Hawai'i Department of Health.

Ambient Levels of Sulfur Dioxide

Annual Average Sulfur Dioxide (in ug/m³)

| | Honolulu | West Beach | Kapolei | Makaiwa | Federal Standard |
|------|----------|------------|---------|---------|------------------|
| 1995 | 3 | 1 | 2 | 2.5 | 80 |
| 1996 | 3 | 3 | 2 | 1 | 80 |
| 1997 | 2 | 6 | 2 | 1 | 80 |
| 1998 | 2 | 4 | 2 | 3 | 80 |
| 1999 | 2 | 1 | 2 | 2 | 80 |
| 2000 | 1 | 3 | 1 | 1 | 80 |

Source: Hawai'i Department of Health.

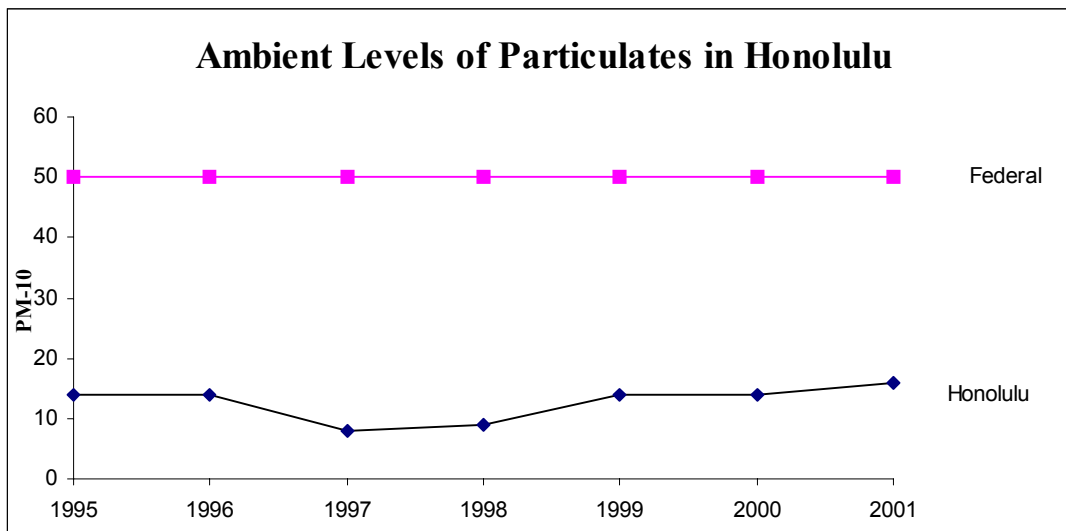
Environmental Indicators

Ambient Levels of Particulates

Annual Average 24-Hour Sampling of PM-10 on Oahu (in ug/m³)

| | Honolulu | Liliha | Pearl City | Waimanalo | West Beach | Kapolei | Federal Standard |
|------|----------|--------|------------|-----------|------------|---------|------------------|
| 1995 | 14 | 15 | 17 | 16 | 16 | 24 | 50 |
| 1996 | 14 | 16 | 14 | 16 | 18 | 19 | 50 |
| 1997 | 8 | 15 | 14 | 18 | 17 | 13 | 50 |
| 1998 | 9 | 15 | 16 | 20 | 16 | 15 | 50 |
| 1999 | 14 | 15 | 14 | 18 | 13 | 15 | 50 |
| 2000 | 14 | 15 | 16 | 17 | 14 | 17 | 50 |

Source: Hawai'i Department of Health.



Environmental Indicators

Beaches Posted as Unsafe Due to Pollution

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

The following table shows the number of times beaches were posted with warning or closure signs (unsafe due to water pollution) by the Department of Health. Beach closures increased 50% in 1999 largely due to the DOH requiring more precautionary closures.

Days Beaches Posted as Unsafe Due to Pollution by DOH

| Year | Days beaches closed |
|-------------|----------------------------|
| 1994 | 20 |
| 1995 | 16 |
| 1996 | 45 |
| 1997 | 28 |
| 1998 | 13 |
| 1999 | 26 |
| 2000 | 16 |
| 2001 | 20 |
| 2002 | 36 |

Source: Hawaii Department of Health.

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

Oil and Chemical Spills

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 oil and chemical spills in Hawai'i.

Oil and Chemical Spills in Hawai'i

| Federal Fiscal Year | Oil Releases | Chemical Releases | Total Spills |
|---------------------|--------------|-------------------|--------------|
| 1995 | 126 | 222 | 348 |
| 1996 | 237 | 230 | 467 |
| 1997 | 295 | 205 | 500 |
| 1998 | 225 | 305 | 530 |
| 1999 | 240 | 286 | 526 |
| 2000 | 163 | 303 | 466 |
| 2001 | 171 | 271 | 442 |

Source: Hawai'i Department of Health.

Environmental Indicators

Safe Drinking Water

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.

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 next table shows the percentage of Hawai'i's population served drinking water in compliance with 1994 maximum microbiological and chemical contaminant levels. Water which exceeds maximum contaminant levels (MCLs) is believed to be harmful to human health.

Population Served Safe Drinking Water

| Federal Fiscal Year | Percentage Population Served Water Below MCLs |
|----------------------------|--|
| 1994 | 95.0% |
| 1995 | 98.0% |
| 1996 | 99.5% |
| 1997 | 98.2% |
| 1998 | 99.8% |
| 1999 | 99.7% |
| 2000 | 98.8% |
| 2001 | 100.0% |

Source: Hawai'i Department of Health.

Environmental Indicators

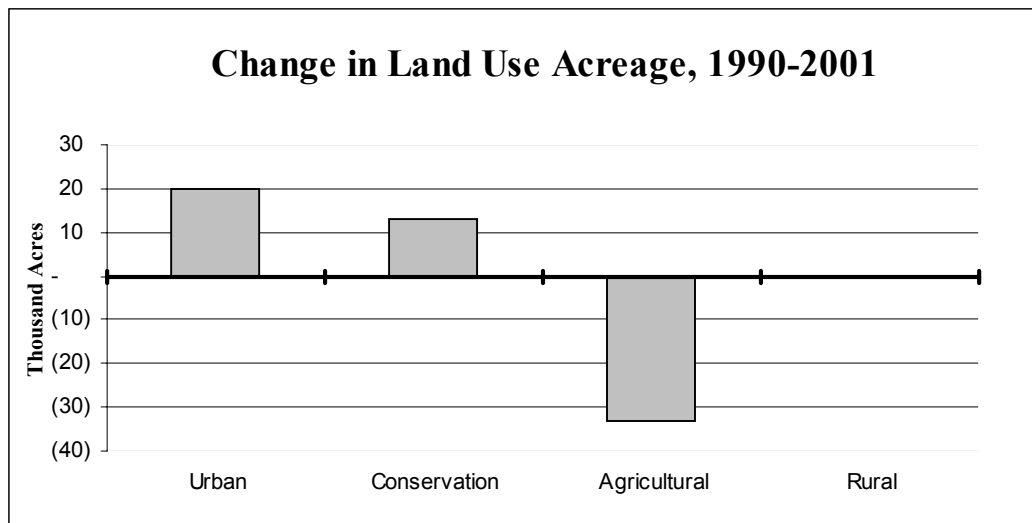
Statewide Land Use District Acreage

There are four land use districts designations for all lands in the state: urban, rural, agricultural, and conservation. With the decline of sugar cane and pineapple, there may be less productive agricultural land in Hawai'i than previously. The following table shows that since 1990, more than 30,000 acres of agricultural land have been converted to Urban and Conservation designations.

State Land Use District Acreage

| 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 |
| 1998 | 193 | 1,975 | 1,934 | 10 |
| 1999 | 195 | 1,975 | 1,933 | 10 |
| 2000 | 193 | 1,976 | 1,933 | 10 |
| 2001 | 195 | 1,974 | 1,933 | 10 |

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



Environmental Indicators

Public Awareness/Concern

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).

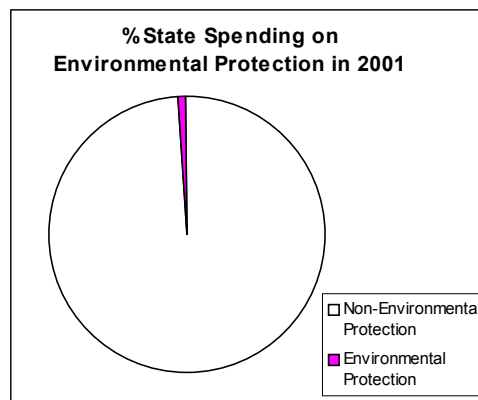
More funding to promote the goals of Hawai'i's environmental programs will result in better overall state environmental quality. The portion of expenditures for environmental protection reflects the priority given to environmental programs relative to other functions.

The table below shows the sum of money and the percentage of total state expenditures spent on environmental protection programs.

State Expenditures on Environmental Protection Programs

| Fiscal Year | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| State Expenditures (million \$) | 3,907 | 4,320 | 4,953 | 5,092 | 4,906 | 5,338 | 5,393 | 5,315 | 5,538 | 6,175 |
| Environmental Expenditures (millions \$) | 30 | 26 | 27 | 30 | 61 | 45 | 60 | 69 | 69 | 51 |
| Environmental Spending as % of State Expenditures | 0.76% | 0.61% | 0.55% | 0.59% | 1.25% | 0.85% | 1.10% | 1.30% | 1.24% | 0.83% |

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.



Environmental Indicators

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.

Number of Registered Motor Vehicles In Hawai'i

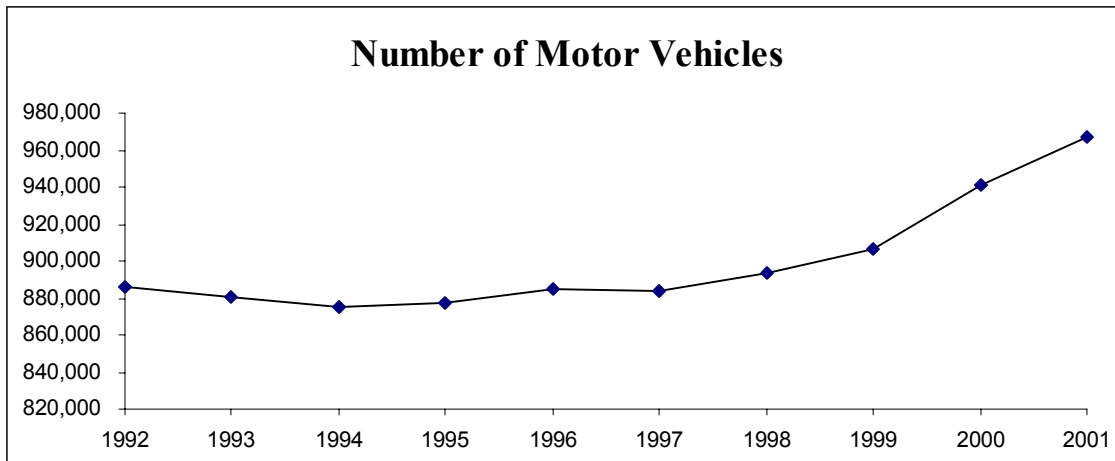
| Year | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Number of Motor Vehicles (in thousands) | 886 | 880 | 875 | 878 | 885 | 884 | 893 | 907 | 941 | 967 |
| State de facto Pop. (million) | 1.25 | 1.26 | 1.26 | 1.28 | 1.28 | 1.28 | 1.31 | 1.31 | 1.34 | 1.34 |
| Vehicles per Person | 0.71 | 0.70 | 0.69 | 0.69 | 0.69 | 0.69 | 0.68 | 0.69 | 0.70 | 0.72 |

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.



Note: The vertical axis does not begin with zero.

Environmental Indicators

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.

Number of Noise Complaints Received by the Department of Health

| Type of Complaint | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Agricultural | 5 | 2 | 1 | 3 | 1 | 0 | 0 | 0 | 6 | 8 |
| Aircraft | 8 | 9 | 12 | 11 | 5 | 6 | 0 | 1 | 3 | 1 |
| Commercial | 0 | 0 | 21 | 6 | 3 | 13 | 4 | 13 | 8 | 11 |
| Construction | 166 | 164 | 157 | 142 | 140 | 112 | 146 | 106 | 250 | 231 |
| Industrial | 6 | 19 | 6 | 2 | 3 | 7 | 9 | 2 | 9 | 14 |
| Miscellaneous | 31 | 22 | 17 | 12 | 12 | 14 | 18 | 12 | 14 | 10 |
| Refuse Collection | 72 | 36 | 41 | 35 | 41 | 68 | 43 | 33 | 30 | 35 |
| Stationary | 100 | 85 | 93 | 112 | 109 | 104 | 75 | 93 | 97 | 96 |
| Unknown | 6 | 10 | 4 | 13 | 8 | 8 | 13 | 11 | 8 | 7 |
| Animal | 42 | 34 | 22 | 24 | 16 | 14 | 12 | 8 | 14 | 14 |
| Hobby | 11 | 3 | 8 | 9 | 9 | 12 | 4 | 6 | 10 | 9 |
| Maintenance | 38 | 37 | 29 | 37 | 27 | 21 | 25 | 20 | 17 | 19 |
| People | 21 | 23 | 16 | 12 | 13 | 13 | 5 | 8 | 2 | 7 |
| Sound Production | 100 | 93 | 62 | 48 | 40 | 45 | 51 | 47 | 42 | 44 |
| Vehicular | 39 | 26 | 20 | 21 | 30 | 24 | 22 | 12 | 26 | 17 |
| Total | 645 | 563 | 509 | 487 | 457 | 461 | 427 | 372 | 536 | 523 |
| State <i>de facto</i> Population (Million) | 1.26 | 1.26 | 1.28 | 1.28 | 1.28 | 1.31 | 1.31 | 1.31 | 1.34 | 1.34 |
| Noise Complaints per Hundred Thousand People | 51 | 45 | 40 | 38 | 36 | 35 | 33 | 28 | 40 | 39 |

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

Environmental Indicators

Bikeway Miles

Alternate transportation modes such as bicycling and mass transit systems conserve energy, alleviate traffic congestion, reduce air pollution, and support physical fitness and recreation. Overall, they improve environmental quality and the urban landscape.

The next table shows the total miles of bikeways in Hawai'i by island.

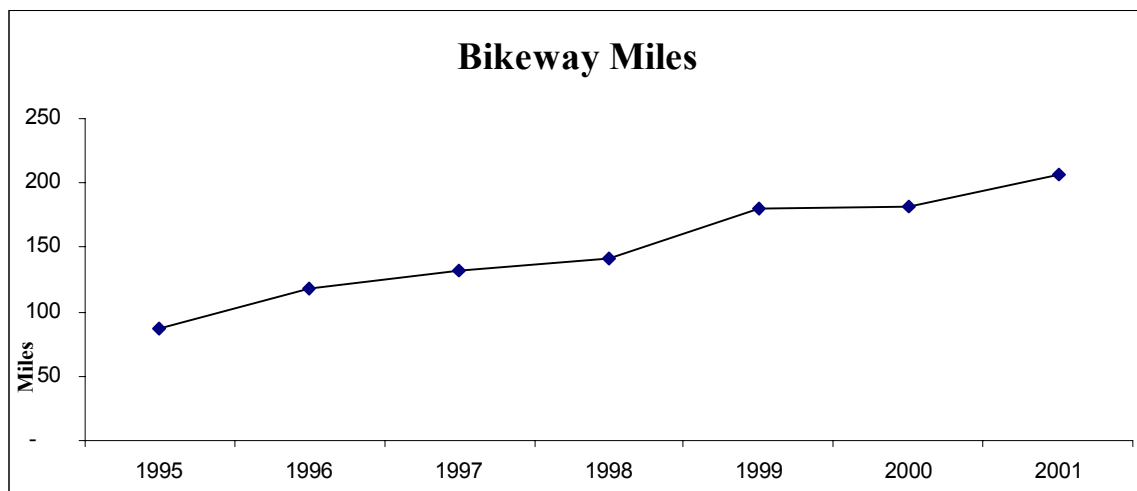
Miles of Bikeways in Hawai'i

| Island | Bikeway Miles | | | | | | |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001* |
| Kaua'i | 3.8 | 3.8 | 6.8 | 6.5 | 6.2 | 6.2 | 21.0 |
| O'ahu | 55.4 | 66.1 | 56.6 | 60.3 | 73.7 | 75.1 | 94.2 |
| Maui | 19.6 | 40.0 | 40.8 | 43.3 | 67.1 | 67.1 | 60.3 |
| Hawai'i | 8.2 | 8.2 | 27.8 | 30.8 | 32.7 | 32.7 | 31.3 |
| Statewide | 87.0 | 118.1 | 132.0 | 140.9 | 179.7 | 181.1 | 206.8 |

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.

* As of 11/7/02



Environmental Indicators

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.

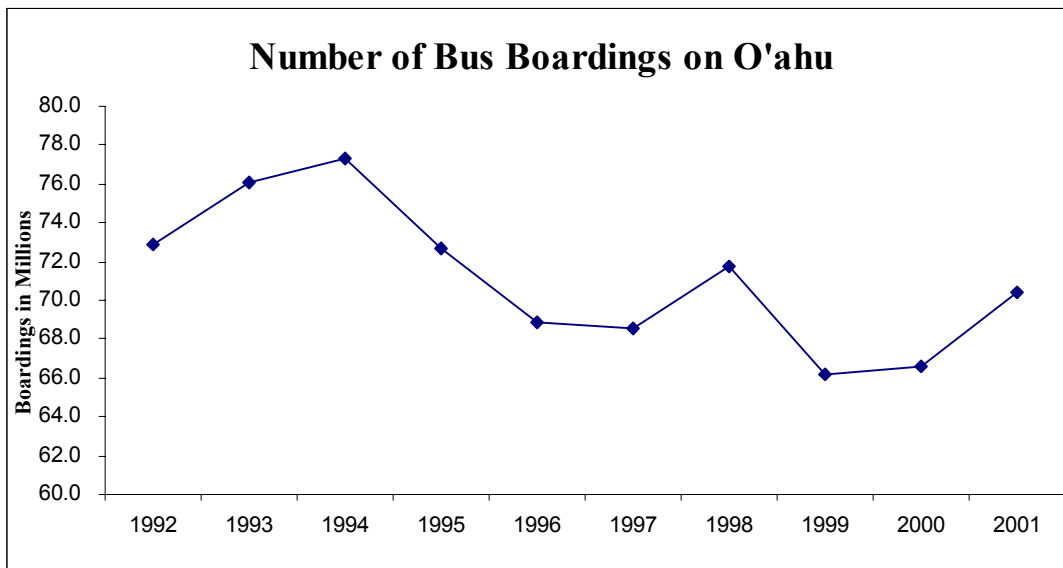
Number of Bus Boardings on O'ahu

| Year | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|------|------|------|------|------|------|------|------|------|------|
| Total Number of Bus Boardings (in millions) | 72.9 | 76.1 | 77.3 | 72.7 | 68.9 | 68.6 | 71.8 | 66.2 | 66.6 | 70.4 |

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.



Note: The vertical axis does not begin with zero.

Environmental Indicators

2002 Environmental Report Card

In this section, the Environmental Council grades the status of Hawai'i's environment. 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.

| Environmental Report Card | 2001 | 2002 |
|----------------------------------|-------------|-------------|
| Energy Use | D | C- |
| Use & Recycling of Resources | C | C |
| Biodiversity Maintenance | D | D- |
| Air Quality | A+ | A+ |
| Water Quality | A- | A- |
| Terrestrial Quality | B | B |
| Public Awareness & Concern | C | C- |
| Overall Grade | C+ | C+ |

Environmental Indicators

Method for Calculating Environmental Status Grades:

Step 1.

Environmental Status 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 seven categories. The categories are: Energy Use, Use and Recycling of Resources, Biodiversity Maintenance, Air Quality, Water Quality, 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 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 20 environmental indicators. This small sample is not a full representation of Hawai'i's environment.

b) The benchmarks for unacceptable and optimum conditions 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 fifth attempt to assess the status of Hawai'i's environment. The Council hopes to continually refine and improve this assessment process.

Environmental Indicators

Benchmarks, Trends and Status Scores

| Indicator | Unacceptable Condition | Latest Year Condition | Optimum Condition | Status | |
|--|------------------------|-----------------------|-------------------|--------|-------|
| | | | | Points | Grade |
| % of Energy from Renewable Sources | 0.0 | 4.9 | 25.0 | 20 | D- |
| Greenhouse gas emissions in million tons | 23.0 | 18.7 | 15.7 | 59 | C+ |
| Water Consumption in Million Gallons | 100,000 | 78,748 | 50,000 | 43 | C- |
| % of Treated Wastewater Reused | 0 | 13.3 | 25 | 53 | C |
| Daily per capita Waste Generated in pounds | 10.8 | 8.1 | 3.6 | 38 | D+ |
| % of Waste Diverted | 0 | 25 | 75 | 33 | D |
| Hazardous Waste Generated in Tons | 3,000 | 1,456 | 500 | 62 | B- |
| Number of Rare Native Plant Species | 1000 | 588 | 0 | 41 | C- |
| Main HI Islands Onaga Spawning Potential Rate | 0 | 3 | 50 | 6 | F |
| Particulate Levels as a % of Federal standards | 100 | 32 | 75 | 100 | A+ |
| Number of Unhealthy Air Days | 1 | 0 | 0 | 100 | A+ |
| Days Beaches Posted Unsafe | 100 | 36 | 0 | 64 | B- |
| % of Population Served Water Below MCLs | 90 | 100 | 100 | 100 | A+ |
| Conservation Land Area in million acres | 1.03 | 1.97 | 2.25 | 77 | B+ |
| Number of Oil and Chemical Spills | 1000 | 442 | 100 | 62 | B- |
| % of State Funding for Environment | 0 | 0.83 | 2.50 | 33 | D |
| Number of Motor Vehicles per capita | 1 | 0.72 | 0.33 | 42 | C- |
| Noise Complaints per 100,000 People | 100 | 39 | 10 | 68 | B |
| Bikeway Miles | 0 | 207 | 1309 | 16 | F |
| Annual TheBus Boardings in millions | 0 | 70 | 124 | 56 | C+ |

Environmental Indicators

Scores and Grades for Environmental Status

| Category | Indicator | Status Points | Indicator Weights | Category Scores | Category Grade | Category Weights | Total Score | Total Grade |
|------------------------------|--|---------------|-------------------|-----------------|----------------|------------------|-------------|-------------|
| Energy Use | % of Energy from Renewable Sources | 20 | 50% | 40 | C- | 15% | 59 | C+ |
| | Greenhouse Gas Emissions | 59 | 50% | | | | | |
| Use & Recycling of Resources | Water Consumption in Million Gallons | 43 | 20% | 46 | C | 15% | | |
| | % of Treated Wastewater Reused | 53 | 20% | | | | | |
| | Daily per capita Waste Generated in pounds | 38 | 20% | | | | | |
| | % of Waste Diverted | 33 | 20% | | | | | |
| | Hazardous Waste Generated in Tons | 62 | 20% | | | | | |
| Biodiversity Maintenance | Number of Abundant Native Plant Species | 41 | 50% | 24 | D- | 10% | | |
| | Onaga Spawning Potential Rate | 6 | 50% | | | | | |
| Air Quality | Particulate Levels as % of National Standard | 100 | 50% | 100 | A+ | 15% | | |
| | Number of Unhealthy Air days | 100 | 50% | | | | | |
| Water Quality | Days Beaches Posted Unsafe | 64 | 50% | 82 | A- | 15% | | |
| | % of Pop. Served Water Below MCLs | 100 | 50% | | | | | |
| Terrestrial Quality | Conservation Land Area in million acres | 77 | 50% | 70 | B | 15% | | |
| | Number of Oil & Chemical Spills | 62 | 50% | | | | | |
| Public Awareness & Concern | % of State Funding for Environment | 33 | 20% | 43 | C- | 15% | | |
| | Number of Motor Vehicles per capita | 42 | 20% | | | | | |
| | Noise Complaints per 100,000 People | 68 | 20% | | | | | |
| | Bikeway Miles | 16 | 20% | | | | | |
| | Annual TheBus Boardings in millions | 56 | 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 Council prefers a goal of 25% for the amount of energy from renewable sources.
- b) Greenhouse Gasses: The Council supports the Kyoto Protocol which calls for emissions of 7% below 1990 levels by 2010. This works out to 5.7 million tons by 2010 for optimum. The unacceptable level is 23 million tons.
- c) Water Consumption: The Council has set 50,000 million gallons per year as the optimum level. 100,000 is unacceptable.
- d) Treated Wastewater Reused: The reuse target is 25%.
- e) 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. It is unacceptable to produce 3 times the national objective.
- f) Waste Diverted: Pursuant to section 342G-3, HRS, it was the goal of the state to reduce the solid waste stream prior to disposal by 50% by the year 2000. The Council sets 75 as an optimum level.
- g) Hazardous Waste: The optimum target is 500 tons. 3,000 tons is unacceptable.
- h) Native Plant Species: Optimally, all native species should be in abundance. 1,000 species listed as rare would be unacceptable.
 - i) Onaga SPR: The optimum level is 50%.
 - j) Particulate Levels: The optimum level is 75% of the federal standard.
 - k) Unhealthy Air Days: Not a single day should be declared unhealthy in Hawai'i.
 - l) Beaches Posted Unsafe: A level of 100 beach closure days per year is unacceptable.
 - m) Oil and Chemical Spills: The optimum number is 100 spills or less.
 - n) Conservation Land: The State Land Use District Boundary Review, 1992, recommended 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 amount than one fourth of state lands in the Conservation district is unacceptable.
 - o) Drinking Water: The optimum level to have 100% of the population drinking clean water.
 - p) 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 optimum level is 2.5%.
 - q) Motor Vehicles: 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).
 - r) Noise Complaints: An average of 100 noise complaints per hundred thousand people is unacceptable. The optimum number is 10 or less per hundred thousand people.
 - s) 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.
 - t) 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.

Environmental Indicators

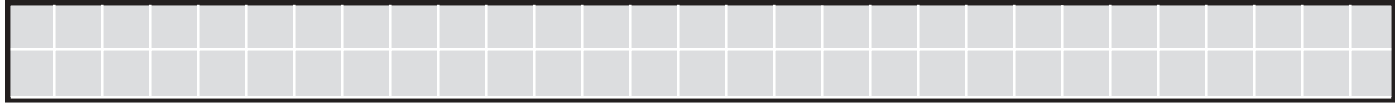
Letter Grades:

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 |

References:

- City and County of Honolulu, Department of Transportation Services. Final Environmental Impact Statement for the Honolulu Rapid Transit Program. Honolulu, 1992.
- Hawai‘i Department of Business, Economic Development and Tourism. State Energy Resources Coordinator’s Annual Report. Honolulu, 1994.
- Hawai‘i Department of Business, Economic Development and Tourism. The State of Hawai‘i Data Book, 2002. Honolulu, 2001.
- Hawai‘i Department of Health. Healthy Hawai‘i 2000: Preliminary Objectives and Health Status Indicators for the State of Hawai‘i. Honolulu, 1995.
- Hawai‘i Department of Health. The State of Environmental Protection In Hawai‘i. Honolulu, 1997.
- Hawai‘i Department of Health. Indicators of Environmental Quality, September 1999.
- Hawai‘i Department of Transportation. Bike Plan Hawai‘i. Honolulu, 1994.
- Honolulu Public Transit Authority. Comprehensive Bus Facility & Equipment Requirements Study. Honolulu, 1994.
- Kimball, Thomas L. Why Environmental Quality Indices? In The Quality of Life Concept by the Environmental Protection Agency. Warrenton, Virginia, 1972.
- Office of State Planning. State Land Use District Boundary Review. Honolulu, 1992.
- Thomas, G. Scott. A Rating Guide to Life in America’s Fifty States. New York: Prometheus Books, 1994.
- United States Environmental Protection Agency. Characterization of Municipal Solid Waste in the United States: 1996 Update. EPA530-R-97-015. Washington, DC.
- World Resources Institute. Environmental Almanac. Boston: Houghton Mifflin Company, 1992.



Section II

Agency Goals

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.

Outstanding Environmental Agencies for 2002

- Hawai‘i Department of Education
- Hawai‘i Department of Defense, Army National Guard
- County of Maui Department of Public Works and Waste Management
- City and County of Honolulu Department of Transportation Services

Agency Goals

Department of Accounting and General Services

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: The Public Works Division will begin to phase out the use of arsenic containing termite treated lumber. Copper azole, Type A and Inorganic Boron will be used in lieu of Chromated Copper Arsenate (CCA) and Ammoniacal Copper Zinc Arsenate (ACZA).

B. Goal/Objective #2: The Maui District will spend about \$325,000 to retrofit or replace light fixtures at Maui District schools. The new fixtures will use energy efficient lamps and ballasts. A study estimates that a 34 percent reduction in lighting energy costs can be achieved by retrofitting or replacing existing fluorescent light fixtures with more efficient lamps and electronic ballasts.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: The Public Works Division has eliminated the use of CCA and ACZA preservative treated lumber by removing these from the Public Works Guide Specifications. Only Copper azole Type A and Inorganic Boron are allowed now.

B. Goal/Objective #2: A project to retrofit and replace fluorescent light fixtures at Baldwin and Maui High Schools is currently in progress and nearing completion. A project to replace fluorescent light fixtures at the Wailuku State Office Building is currently in progress. Existing fluorescent light fixtures were replaced with energy efficient units as part of School Renovation and Repaint projects at Ha'iku, Kilohana, Lahainaluna, Makawao, Maunaloa, and Wailuku schools. All new buildings currently under construction are being fitted with energy efficient fluorescent lamps and ballasts.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: The Stadium Authority will implement a program to encourage the recycling of materials discarded during and/or after stadium events, including aluminum cans, cardboard boxes, etc.

B. Goal/Objective #2: Comply with the Governor's Administrative Directive No. 98-03 regarding the use of Solar Water Heating Systems for State Facilities. The directive requires that a comparative analysis be done to determine the cost-benefit of using conventional versus solar water heating systems for all new or renovated facilities using state funds or located on state land and incorporate the use of hot water.

Department of the Attorney General

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Provide effective and timely legal counsel and training for our clients.

B. Goal/Objective #2: Improve the quality of and expedite environmental enforcement actions.

C. Goal/Objective #3: Improve coordination of enforcement actions among the air, water, solid and hazardous waste, and hazard evaluation and emergency response programs, as well as among other state and federal civil and criminal agencies.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Our department helped with the drafting of the bottle bill and with various rules for the Department of Health.

B. Goal/Objective #2: Our department helped the Department of Health collect about \$1,026,000 worth of penalties and settlement amounts in environmental enforcement actions, compared to less than \$250,000 the prior year. The latest year's collection amount is probably unusual and due partly to a few large recoveries and partly to reducing some backlogs.

C. Goal/Objective #3: Our department helped with intrastate and intergovernmental coordination on specific enforcement cases. For example, one administrative enforcement case involved many Department of Health branches and another civil enforcement case is a joint state-federal effort.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Provide effective and timely legal counsel and training for our clients.

B. Goal/Objective #2: Improve the quality of and expedite environmental enforcement actions.

C. Goal/Objective #3: Improve coordination of enforcement actions among the air, water, solid and hazardous waste, and hazard evaluation and emergency response programs, as well as among other state and federal civil and criminal agencies.

Department of Defense (DOD)

Hawai'i Army National Guard (HIARNG)

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Conservation. Continue natural/cultural resource management, eradicate alien

Agency Goals

species, protect endangered species, and educate the public.

B. Goal/Objective #2: Compliance. Continue to monitor for regulatory compliance and implement pollution prevention initiatives.

C. Goal/Objective #3: Land Management. Continue to implement integrated training area management to protect/enhance the natural resources of ARNG training lands.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Conservation. Completed a six-year Natural Resource Status Report analyzing field data, resource trends and compiling program accomplishments. Partnered with over 20 private, non-profit, state and federal agencies to implement 25 field projects. Established an entirely self-sufficient, in-house field crew and four island base yards housing equipment, supplies, herbicides and tools. Successfully prevented the extinction of the endangered Maui 'ohai tree through the establishment of three additional, irrigated populations. Surveyed and treated fountain grass and miconia on four installations. Signed three Memorandums of Understanding with the Department of Land and Natural Resources, Hawai'i Community College and Punahou School for student and volunteer plant propagation and out-planting programs on HIARNG lands. Installed interpretive signs at Diamond Head (O'ahu) and Kekaha (west Kaua'i) for native plant species identification and appreciation.

B. Goal/Objective #2: Compliance. Enhanced the qualified recycling program by recycling 160,680 pounds of paper, metal and cardboard. Implemented new inspection checklist procedures/documentation to ensure compliance and to serve as a training tool for commanders and soldiers. Fielded parts-washer and weapon cleaning systems to reduce the time it takes to clean a weapon. Updated management plans (hazardous material and waste, spill prevention control and countermeasure, installation and unit field spill plan).

C. Goal/Objective #3: Land Management. Installed 10 tons of erosion-control mats (geotextiles) to prevent wind and rain erosion of firing berms at Ukumehame Firing Range (Maui). Completed a fencing project at Keaukaha Military Reservation (Hilo) to protect 108 acres of coastal old-growth rain forest from feral pigs. Produced laminated identification species cards highlighting rare and endangered birds, plants and mammals for soldiers to use in the field.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Conservation. Continue endangered species recovery, noxious weed eradication, and awareness training and education of Hawai'i's youth, Guard members, and the public.

B. Goal/Objective #2: Compliance. Continue to monitor for regulatory compliance and implement pollution prevention initiatives.

C. Goal/Objective #3: Land Management. Continue to implement integrated training area management to protect and enhance the natural resources of ARNG training lands.

DOD, Hawai'i Air National Guard

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Compliance. Ensure that the facilities and operations continue to comply with Federal, State and military base regulations.

B. Goal/Objective #2: Pollution Prevention. Implement pollution prevention initiatives whenever possible to ensure efficient use of limited funding.

C. Goal/Objective #3: Environmental Documentation. Ensure all projects and real estate actions are properly assessed and evaluated for their environmental impacts.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Compliance. Hickam Air Force Base (AFB) units evaluated under the U.S. Air Force's Environmental, Safety, and Occupational Health Compliance and Management Program (ESOH CAMP) assessment guidelines by an internal Hickam AFB team. An internal Air National Guard Environmental/Safety Team evaluated the Geographically Separated Units under the ESOH CAMP assessment guidelines. All discrepancies identified have been corrected.

B. Goal/Objective #2: Pollution Prevention. The 15ABW Environmental Pollution Prevention section has implemented many measures applicable to the Hawai'i ANG. These measures include a recycling program, the implementation of an authorized use list, regulating the issue of Hazardous Material to both base and tenant (HIANG) units, and applying the "first in first used" rule to ensure the reduction of hazardous waste or unusable products.

C. Goal/Objective #3: Environmental Documentation. Submitted Air Force Form 813, Environmental Baseline Surveys, and Environmental Assessments, as required, for all real estate and construction projects including the property acquisition of Headquarters, Hawai'i Air National Guard at Fort Ruger, various demolition projects at Hickam AFB and General Lyman Field, Hilo.

Agency Goals

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Compliance. Implement a quarterly or bi-annual inspection program to ensure HIANG units are in compliance with Federal, State and local regulations. This inspection program will serve two purposes: 1) ensure HIANG wide compliance and 2) aid in identifying outstanding compliance of environmental regulations throughout the HIANG.

B. Goal/Objective #2: Pollution Prevention. Implement an expanded HIANG wide recycling program and to stress the use of environmentally friendly products and services.

C. Goal/Objective #3: Environmental Documentation. Ensure all projects and real estate actions are properly assessed and evaluated for their environmental impacts.

DOD, State Civil Defense (SCD)

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Continue to participate in Hawai'i State Emergency Response Commission (HSERC) meetings and Local Emergency Planning Committee (LEPC) meetings to provide input on the development of State contingency plans related to hazardous materials and to support hazardous materials training and exercises for first responders statewide.

B. Goal/Objective #2: Plant trees and other foliage in the surrounding areas of Birkhimer Emergency Operating Center. The added irrigation system will help sustain plant life and reduce the potential for dry brush fires. Continue our efforts of recycling used paper products (and aluminum cans) and continue to reduce the amount of paper we use in our offices. Ensure all SCD personnel receive annual hazard communication (HAZCOM) training on responsibilities for hazardous material handling and know how to properly dispose of hazardous waste.

C. Goal/Objective #3: Provide objective reviews and information regarding mitigation projects that may have potential impact on the environment. Continue to review and closely monitor the Environmental Impact Statements and Environmental Assessments for projects that may not be in compliance with the National Environmental Policy Act.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: State Civil Defense (SCD) was represented at every HSERC meeting this fiscal year and

involved in numerous LEPCs on O'ahu and on the neighbor islands. SCD provided input to contingency plans related to hazardous materials and continues to coordinate and support hazardous materials training and exercises for first responders statewide.

B. Goal/Objective #2: In our continuing efforts to reduce trash and preserve the environment, SCD aggressively recycles waste paper and aluminum cans. This in-house recycling program has been successful for many years. In collaboration with the HIARNG Environmental Office, new foliage and a second irrigation system were added to the landscape and surrounding areas leading to Birkhimer facility.

C. Goal/Objective #3: The clearance and disposal of debris was an essential element of the recovery efforts on the Big Island following the November Floods of 2000. The SCD coordinated with various government agencies in the recovery process and restoration of public assets such as soccer fields, roadways, buildings, etc., that were damaged due to the flooding. To date, State and county disaster debris management plans have been developed and published. In March 19-21, 2002, SCD staff participated in FEMA's Environmental and Historical Preservation Compliance course to gain a better understanding of the National Policy Act of 1969, as amended.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Continue to participate in Hawai'i State Emergency Response Commission (HSERC) meetings and Local Emergency Planning Committee (LEPC) meetings to provide input on the development of State contingency plans related to hazardous materials and to support hazardous materials training and exercises for first responders statewide.

B. Goal/Objective #2: Advocate and promote recycling of used paper products (and aluminum cans) and continue to reduce the amount of paper we use in our offices. Ensure all SCD personnel receive annual hazard communication (HAZCOM) training on responsibilities for hazardous material handling and know how to properly dispose of hazardous waste.

C. Goal/Objective #3: Provide objective reviews and information regarding mitigation projects that may have potential impact of the environment. Continue to review and monitor closely the Environmental Impact Statements and Environmental Assessments for projects that may not be in compliance with the National Environmental Policy Act.

Agency Goals

DOD, Office of Veterans Services (OVS)

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Compliance. Conform to environmental regulations to ensure that the cemetery and its surrounding areas are safe from chemical run-off endangering the environment.

B. Goal/Objective #2: Safety/Training. Enhance the safety/training programs to ensure cemetery staff is informed of new laws and regulations concerning the environment and their own personal health. Provide increase awareness to MSDS sheets and complete the re-organization of the safety/hazardous program as HSVC.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Compliance. Continued to monitor program for compliance to applicable laws and regulations related to environmental protection and conservation. Cleaned out drainage areas and will request for future help to maintain these drainage areas.

B. Goal/Objective #2: Safety/Training. Met with the State OSHA representative to discuss the program and what direction it should be headed. Received information and currently implementing the process and procedures to improve the program.

III. Goals/Objectives for FY 2003:

A. Goal/Objective #1: Quality of cemetery grounds. Improve the soil quality of the cemetery and enhance the natural beauty of the grass covering in all areas.

B. Goal/Objective #2: Veteran community awareness. Educate the veteran community on our existence, location and eligibility regulations by holding informational meetings.

Department of Education

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Provide staff development activities for teachers to strengthen critical thinking and inquiry in the classroom, thereby providing the foundation for students to become environmental stewards.

B. Goal/Objective #2: Develop curriculum units to help students achieve the content standards through the study of the environment.

C. Goal/Objective #3: Strengthen and expand partnerships with outside agencies/organizations to provide technical services and resources to enrich classroom instruction through contextual learning.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: The Department offered courses for teachers in grades 4-12 to enhance critical thinking and inquiry in the classroom. Two courses in critical thinking and inquiry for teachers in grades 4-12 were offered. Strategies and informational resources were shared to teach about environmental issues and environmental stewardship. By enhancing students' ability to think critically, the quality of their work and performance will be improved, as reflected in their attainment of the content standards. The Department also offered workshops in the Ohia Project and Energy Education to model integrated contextual learning through which the content standards could be met.

B. Goal/Objective #2: Teachers in the critical thinking and inquiry courses developed standards-driven curriculum units to pilot-test this school year. These teachers will be analyzing the successes and weaknesses of the units and make appropriate revisions as needed. A PowerQuest Energy Education Unit for high schools has been developed with assistance from Hawaiian Electric Company. A fourth grade Exploring the Islands distance learning teacher's guide is being updated to address content standards.

C. Goal/Objective #3: Partnerships with the University of Hawai'i Sea Grant College, the Department of Health Clean Water Branch, the Board of Water Supply, and the Department of Land and Natural Resources have been strengthened to provide technical services and support for project teachers mentioned above.

Partnerships with Hawai'i Nature Conservancy, Conservation Council of Hawai'i, the Moanalua Gardens Foundation, Kilauea Wildlife Refuge, Hawai'i Tropical Botanical Garden, Hawai'i Nature Center, and City and County Recycling Division were also strengthened to provide technical services to schools in conservation education.

The Department also worked closely with the Hawai'i National Volcano Park, Haleakala National Park, US Fish and Wildlife Services, and the Army Corps of Engineers to provide technical support in topical area of biodiversity.

The Polynesian Voyaging Society, Na Kalei Waa O Makali'i Bishop Museum, Kapiolani Community College, Hawai'i Maritime Museum, Kaua'i Community College, and the City and County Parks and Recreation Department provided assistance to public schools studying the marine environment.

Agency Goals

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Provide appropriate staff development activities to improve environmental education in the classroom.

B. Goal/Objective #2: Continue to strengthen and expand partnerships with governmental agencies and community organizations to provide technical services and resources to enrich the instructional delivery of environmental education through contextual learning.

Department of Hawaiian Home Lands

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Encourage management practices that conserve and protect watersheds and water sources, forests, and open space areas.

B. Goal/Objective #2: Cooperate with other governmental agencies and groups to protect endangered, threatened, and rare plant and animal species and habitats native to Hawai'i.

C. Goal/Objective #3: Create opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Planted 10 acres of trees to shade out gorse (*Ulex europaeus*), an invasive weed in Humuula, Hawai'i. Overplanting with trees also minimizes herbicide spraying and burning, a previous treatment method that has had limited success. Collected enough koa seeds to continue planting another 200 acres.

B. Goal/Objective #2: Received cooperative grant monies and technical expertise from the U.S. FWS, Department of Agriculture, Alu Like, the Hawai'i Communities and Forestry Initiative, Hawai'i Agricultural Research Center, and Parker Ranch. Koa supplies food and habitat for several species of native endangered birds.

C. Goal/Objective #3: Job creation in private industry and private, non-profit agencies.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Plant 20,000 koa seedlings across 200 acres to shade out gorse near the Hakalau NWR in Humuula, Hawai'i.

B. Goal/Objective #2: Site prep and plant trees to control the gorse problem on state lands in Kahikinui, Maui.

Department of Health

I. Goals/Objectives for FY 2002 and FY 2003

Because DOH's environmental goals were designed as general goals for long-term use (5 to 10 years), we will retain these goals in their present form for the foreseeable future:

A. Goal/Objective #1: To ensure that Hawai'i's coastal waters are safe and healthy for people, plants and animals.

B. Goal/Objective #2: To protect and restore the quality of Hawai'i's streams, wetlands, estuaries and other inland waters for fish & wildlife, recreation, aesthetic enjoyment and other appropriate uses.

C. Goal/Objective #3: To protect Hawai'i's groundwater from contamination for drinking, irrigation, and other appropriate uses.

D. Goal/Objective #4: To protect Hawai'i's lands from pollutants that endanger people and the environment; and to rehabilitate contaminated lands.

E. Goal/Objective #5: To protect and enhance Hawai'i's air quality for the health of our people.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: DOH supported the passing of the "Bottle Bill" in the State legislature that will encourage residents to recycle their bottles and cans, thus reducing the wastestream as well as eliminating some of the visual pollution that detracts from the beauty of our islands.

B. Goal/Objective #2: To better protect the quality of the State's inland and coastal waters, DOH has completed a Total Maximum Daily Load (TMDL) assessment of Kawa Stream, and is near completion with the Kaneohe and Waialeale Stream TMDLs on O'ahu. Work has begun on TMDLs for streams in the Nawiliwili Bay (Kauai) and Pearl Harbor watersheds.

C. Goal/Objective #3: DOH responded to 222 oil and chemical spills to assure cleanup, prevent adverse health effects, and avoid future contamination.

Department of Land and Natural Resources (DLNR)

Commission on Water Resource Management

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Seek appropriate resources necessary to complete the update of the Water Resource

Agency Goals

Protection Plan and the other remaining components of the Hawai'i Water Plan. Continue efforts to facilitate completion/update of the Agricultural Water Use and Development Plan, Water Quality Plan, and the County Water Use and Development Plans in coordination with the Statewide Framework for Updating of the Hawai'i Water Plan.

B. Goal/Objective #2: Issue the final Legal Framework, Findings of Fact, and Decision and Order in the Waiahole Ditch Combined Contested Case Hearing, which will establish interim instream flow standards for certain windward O'ahu streams. Issuance of the final document, along with the Hawai'i Supreme Court's August 22, 2000 decision, will serve to guide the Commission's efforts, actions, and policies related to enhancing stream protection, management, and restoration.

C. Goal/Objective #3: Establish permanent and adequate number of staff positions, as well as securing necessary resources to implement critical water resource protection and management provisions of the State Water Code. Such positions include additional stream hydrologists/geologists to assist in the establishment of interim/permanent instream flow standards statewide. In addition, a permanent State Drought Coordinator position should be established to continue implementation of key provisions of the Hawai'i Drought Plan (HDP).

II. Results of Efforts for FY 2002

A. Goal/Objective #1: The Commission secured \$50,000 from the U.S. Bureau of Reclamation, Department of the Interior, to develop a prototype state agency water conservation plan, which addresses potable and non-potable water demands through conservation practices and enhanced water use efficiency. The plan will serve as a key component of an overall state agency water conservation plan and will also function as a "cornerstone" for a larger, statewide water conservation plan/framework, which addresses agricultural, municipal, and industrial water conservation planning.

B. Goal/Objective #2: The Commission issued its Legal Framework, Findings of Fact, and Decision and Order for the Waiahole Ditch combined contested case hearing (CCH-OA95-1) on remand, on December 28, 2001.

C. Goal/Objective #3: The Commission has successfully added a permanent surface water hydrologist and an assistant State geologist, and has established a State Drought Coordinator to assist in carrying out the resource management and protection provisions of the State Water Code.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: The Commission will continue to seek appropriate resources to update priority components of

the Hawai'i Water Plan including, but not limited to, the Water Resource Protection Plan and the State Water Projects Plan. The Commission will also continue its efforts to facilitate completion of the Agricultural Water Use and Development Plan and updating of the Hawai'i Drought Plan (Phase 1). One of the drought-related goals for FY 2003 includes development of a Statewide Drought Risk and Vulnerability Assessment and GIS Mapping project to identify areas in the state that are vulnerable to meteorological, hydrological, and agricultural drought.

B. Goal/Objective #2: Continue to use the Commission's final decision and order in the Waiahole case and the Hawai'i Supreme Court's August 22, 2000 decision to guide the Commission's efforts, actions, and policies related to enhancing stream protection, management, and restoration. A few of the areas of concern include Waikolu Valley (Molokai), East Maui, and Lalakea/Waipio (Big Island).

C. Goal/Objective #3: Continue efforts to establish additional permanent staff positions, as well as securing necessary resources to implement critical water resource protection provisions of the State Water Code. Additional positions are needed to augment current staffing to effectively assess and establish quantifiable interim/permanent instream flow standards statewide, including but not limited to, quantification of stream diversions and appurtenant/riparian surface water uses.

DLNR, Division of Aquatic Resources

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Initiate process to protect biota and their supporting ecosystems in state waters throughout the Northwestern Haai'ian Islands.

B. Goal/Objective #2: Begin revision of fishing regulations in accordance with legislative authority to shift from statutes to science-based administrative rules.

C. Goal/Objective #3: Expand and improve the effectiveness of Marine Protected Areas in the main Hawaiian Islands.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: A proposal to create a Fisheries Management Area throughout state waters in the Northwestern Hawaiian Islands was taken to statewide public hearings. Based on comments strongly favoring even more restrictive rules, a new proposal for creation of a marine refuge throughout these waters was developed.

B. Goal/Objective #2: Extensive changes in minimum size and related rules were recommended based on the best scientific information available and after many public informational meetings, an approval to hold public hearings

Agency Goals

was obtained.

C. Goal/Objective #3: The Pupukea Marine Life Conservation District was expanded from 25 acres to 175 acres and associated rules were tightened. The boundary for the Wailoa Fisheries Management Area was expanded. Fish feeding in Hanauma Bay was banned. Most forms of fishing, including the use of throw nets, were banned in Manele/Hulopoe. Public meetings were held to discuss establishment of a Marine Life Conservation District at Waiopae Tidepools. A Marine Protected Area project was implemented to develop a new set of social/economic and biological criteria to manage current sites and apply as designation parameters.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Complete designation of state waters in the Northwestern Hawaiian Islands as a marine refuge.

B. Goal/Objective #2: Implement new minimum size rules for the take of marine life and initiate changes in bag limits and seasons.

C. Goal/Objective #3: Establish Waiopae Tidepools as a new Marine Life Conservation District. Implement an improved plan for selection and management system for Marine Protected Areas.

DLNR, Division of Boating and Ocean Recreation

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Continue the program to substitute synthetic composite materials for wood products for boating facilities.

B. Goal/Objective #2: Continue support for day-use mooring program.

C. Goal/Objective #3: Implementation of Best Management Plans (BMP) to reduce nonpoint source pollution at state boating facilities.

II. Results of Efforts for FY 2002

A. Goal/Objective #1:

- Constructed a pre-fab concrete comfort station at Haleiwa small boat harbor. This effort saved the state approximately \$100,000.

- Replaced "G" dock at the Ala Wai small boat harbor with synthetic decking, providing berthing for 86 vessels.

B. Goal/Objective #2:

- Continued to provide material to volunteers for the installation, maintenance and repairs of the day-use mooring system statewide.

- Partnered with Malama Kai in obtaining a federal grant for additional federal funds to support the mooring system.

C. Goal/Objective #3: All new leases and revocable permits for state facilities now have the requirement to comply with EPA guidelines for BMP. This requirement is included in our new set of rules which are expected to be adopted by the end of calendar year 2002.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Continue program to substitute synthetic composite materials for wood products for boating facilities.

B. Goal/Objective #2: Continue support for day-use mooring program.

C. Goal/Objective #3: Continue implementation of BMP's to reduce non-point source pollution at state boating facilities.

DLNR, Land Division

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Improve regulations of conservation district lands through amending rules, improving staffing, and through better enforcement.

B. Goal/Objective #2: Improve Coastal Lands Program through increasing funds for beach restoration, improving planning through coastal lands development, and improving education.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: DLNR Land Planning Branch held public hearings for rule amendment changes, improved on rule implementation, improved staffing by hiring certified planners, processing violations and processed contested case hearings, protected Waahila Ridge from 138kv power lines.

B. Goal/Objective #2: Developed coastal erosion-avoidance guidance manual, secured federal funding for Waikiki Beach, ordered the removal of several illegal sea-walls, streamlined permit process for small scale beach restoration projects, resolved 30 shoreline encroachment cases.

Agency Goals

III. Goals/Objectives for FY 2003

- A. Goal/Objective #1: Continue to refine administrative rules for regulation of conservation district lands.
- B. Goal/Objective #2: Begin preparation of EIS for Waikiki Beach improvements.
- C. Goal/Objective #3: Improve processing of permit application, contested case hearings, violations, shoreline encroachments.
- D. Goal/Objective #4: Initiate regional sediment analysis for the Waimanalo-Kailua region.

Department of Transportation (DOT)

Airports Division

I. Goals/Objectives for FY 2002

- A. Goal/Objective #1: Implement renewed NPDES permit for Honolulu International Airport (HNL) and enforce Best Management Practices.
- B. Goal/Objective #2: Integrate a new GIS data base to include environmental assets and compliance requirements.
- C. Goal/Objective #3: Develop environmental protection projects for South Ramp, HNL.

II. Results of Efforts for FY 2002

- A. Goal/Objective #1: Permit for HNL renewed. Best Management Practices known to all tenants and inspected monthly by our management.
- B. Goal/Objective #2: Data bases of assets and inspections being kept for all 15 airports.
- C. Goal/Objective #3: Conceptual engineering for environmental improvements for South Ramp, HNL underway. Funds appropriated by Legislature in FY02.

III. Goals/Objectives for FY 2003

- A. Goal/Objective #1: Complete Noise Monitoring System upgrade for HNL.
- B. Goal/Objective #2: Complete Water Quality Monitoring System for HNL.
- C. Goal/Objective #3: Upgrade vehicular washing facilities at Kahului, Kona, Lihue and Hilo Airports.

DOT, Harbors Division

I. Goals/Objectives for FY 2002

- A. Goal/Objective #1: The Harbors Division preserves to balance environmental and economic concerns in the improvement/allocation of harbor facilities.
- B. Goal/Objective #2: The Harbors Division encourages management practices that control and abate pollution.
- C. Goal/Objective #3: To support Hawai'i's lifestyle, the Harbors Division develops transportation facilities in compliance with environmental laws and regulations.

II. Results of Efforts for FY 2002

- A. Goal/Objective #1:
 - Harbors Division's planning endeavors involved governmental agencies, environmental organizations and community interest groups. Through the collaborative planning efforts, the Harbors Division was able to address legitimate environmental concerns to the satisfaction of most of the involved parties.
 - Harbor Division's master plans utilize the environmental review process to ensure proper planning safeguards for harbor facility improvements. As a result of the review process, Harbors Division's projects are designed to minimize environmental impacts through proposed mitigation measures.
- B. Goal/Objective #2:
 - The Harbors Division complies with all environmental requirements in the control and abatement of pollution. Dredging, excavation and ocean dumping projects require the use of silt curtains, filtering pools and water quality monitoring. Asbestos, lead paint, contaminated soil and other hazardous wastes generated by demolition are properly disposed or treated by the appropriated services. Solvents, used oils, oil-based paints, lacquer, thinners, brake fluids and other hazardous wastes are properly disposed. Underground storage tanks are regularly monitored for leaks.
 - Tenants and lessees are advised of appropriate pollution control measures.
 - The Harbors Division practices paper and aluminum recycling. Its daily operations maintain litter control in and around the harbors and harbor facilities.

- C. Goal/Objective #3: Hawai'i's history and tradition

Agency Goals

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 lifestyle of the people and the environment of the State are being perpetuated through the development of additional harbor facilities and the use of more efficient vessels.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Continue to strike a balance between environmental and economic concerns in the improvement/all location of harbor facilities.

B. Goal/Objective #2: Continue to encourage management practices that control and abate pollution.

C. Goal/Objective #3: Continue to develop transportation facilities that are in compliance with environmental laws and regulations.

DOT, Highways Division

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Continue training of personnel and random monitoring of sites regarding MS4 and NPDES until zero violations are achieved.

B. Goal/Objective #2: Remove/abate lead base paint on steel bridges and other structures in the State Highway System.

C. Goal/Objective #3: Complete a statewide Solid Waste Management Program assessment of current work practice and educate Highways Division staff regarding proper solid waste management.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Four hours of NPDES training was provided to over 150 Highways personnel from all four districts and five branches. No violations were reported.

B. Goal/Objective #2: Contracts totaling \$11.6 million for lead based paint removal at the Kapue, Kolekole, Paheehee and Hakalau Bridges on the island of Hawai'i are ongoing.

C. Goal/Objective #3: Preliminary work was started on the Statewide Solid Waste Management Assessment of work practices at our baseyards and funding was obtained for the assessment.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Promote better education of all users of MS4 and NPDES permits.

B. Goal/Objective #2: Continue removal/abatement of lead based paint on steel bridges and other structures under the Highway Division's control.

C. Goal/Objective #3: Complete a statewide Solid Waste Management Program assessment of current work practices at our baseyards.

City and County of Honolulu, Department of Parks and Recreation

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Continue the expansion of the City's beautification and park landscaping efforts.

B. Goal/Objective #2: Upgrade and reconstruct improvements in major urban parks to remove environmental damage resulting from the parks use by the homeless.

C. Goal/Objective #3: Finalize the long-range island wide parks Master Plan.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Completed planting 800+/- Gold Trees and 1,700 other trees in various parks and open spaces. In addition, we planted 28 monkey pod trees on Pali Highway, 14 shower trees along Vineyard Boulevard, and 17 monkey pod trees at Waipio Soccer Field.

B. Goal/Objective #2: Redeveloped Aala Park from a passive to an active sports recreational site with a new softball field, basketball court, play equipment, and a skateboard facility.

C. Goal/Objective #3: Pre-final draft of Island Wide Parks Master Plan has been submitted for final review and approval.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Expand the City's beautification efforts with public street landscaping improvements and continue the City's recycling program where virtually all tree trimmings and other green waste are converted into mulch.

B. Goal/Objective #2: Continue with the Phase 3 development of an aquatics center at Central O'ahu Regional Park.

C. Goal/Objective #3: Complete development of Hanauma Bay Nature Preserve.

Agency Goals

City and County of Honolulu, Department of Transportation Services

I. Goals/Objectives for FY 2002

- 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.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Completed the planning phase for the conversion of Central O'ahu to a hub-and-spoke bus system; selected transit hub sites in Wahiawa and Mililani. Identified transit center site in Waianae. Completed plans for major transit terminal facilities at University of Hawai'i Sinclair Circle and in Waipahu, on Hikimoe Street. Planned temporary transit center in Kapolei. Established first Community Access service, using paratransit vans, providing service between Launani Valley and the Mililani Town Center. Second Community Access service established in Makakilo, providing service between Makakilo and the Kapolei Transit Center. Wheelchair-accessible service now provided with 419 lift-equipped buses out of 525 buses in fleet. Entire TheBus fleet equipped with bike racks. Continued operation of Kaimuki-Kapahulu-Waikiki Trolley. TheBus provided special services for the Mayor's Memorial Day Service at Punchbowl, Easter Sunrise Service, Great Aloha Run, Veterans Day Service, all University of Hawai'i home games (Aloha Stadium Football Express), the Pro Bowl football game, the Sony Open golf tournament, and New Year's Eve-New Year's Day. Continued work on the Primary Corridor Transportation Project. Construction continuing on Ke Ala Pupukea Bikeway Extension, Asing Park Bikeway Extension, Kewalo Basin Bikeway Extension, Pearl Harbor Bike Path-Leeward Community College Spur, Kapiolani Community College Bike Staging Area, Waialua Beach Road Bikeway, and Ala Wai Mauka (clubhouse) Bikeway. Mauka-bound Palolo/10th Avenues bike lane under design. Co-sponsored the Bike to Work Day. Participated in Hawai'i Bicycling League's Bike Ed Program. Purchased and installed 150 "bike" shaped bike racks.

B. Goal/Objective #2: Reviewed, coordinated and processed over 50 environmental impact and assessment documents. Completed work on the Supplemental Draft

Environmental Impact Statement for the Primary Corridor Transportation Project and commenced work on the Final Environmental Impact Statement for the same project. Prepared environmental assessment for Middle Street Transit Center. Continued work on the O'ahu Short-Range Transportation Plan

C. Goal/Objective #3: Continued work on the Primary Corridor Transportation Project. Upon completion of the Pearl City Bus Facility, transportation and maintenance functions at the Halawa Bus Yard relocated to this new facility. Eighty new bus shelter sites are under design; 411 new bus shelters have been installed under this program. Planned, coordinated, and/or implemented approximately 60 traffic calming, traffic improvement or vision projects.

III. Goals/Objectives for FY 2003

- 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 for FY 2002

A. Goal/Objective #1: To take a more active role in working with State and Federal agencies in response to public safety issues. The HFD is a participating member in the following committees: The Department of Health (DOH) and Emergency Medical Services Concerns Group, the City and County of Honolulu and State Terrorist BIO Planning Group, the State Hazard Mitigation Committee, and the State Civil Defense Terrorist Incident Planning Group.

B. Goal/Objective #2: Purchase modern and state-of-the-art equipment to allow for a safer assessment of hazardous materials incidents in order to improve product identification.

C. Goal/Objective #3: Obtain Federal grants in order to supplement City funds to enhance training and equipment for terrorist and hazardous material incidents.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: We are continuing to work with other governmental agencies on public safety issues.

Agency Goals

B. Goal/Objective #2: Due to budgetary constraints, we were unable to purchase a decontamination trailer for hazardous materials incidents. We will continue to strive for this state-of-the-art equipment.

C. Goal/Objective #3:

- The Honolulu Fire Department (HFD) has been awarded \$749,315 in the Assistance to Firefighter Grant Program for Fire Operations and Firefighter Safety Funds under the Federal Emergency Management Agency (FEMA).

- The HFD has applied for and is awaiting an award of up to \$100,000 in the Assistance to Firefighter Grant Program for Fire Prevention and Safety Education Funds under the FEMA.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Through the reconstruction and renovation of various fire stations, we will be meeting the requirements of the National Pollutant Discharge Elimination System guidelines.

B. Goal/Objective #2: Installation of aboveground and underground storage tank electronic monitoring systems.

C. Goal/Objective #3: Continue to utilize and explore environmentally safe chemicals at the fire stations, i.e., cleaning agents such as detergents and solvents, etc.

City and County of Honolulu, O'ahu Civil Defense Agency

I. Goals/Objectives for FY 2002

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

II. Results of Efforts for FY 2002

A. Goal/Objective #1: The County Disaster Preparedness Officer attended nationally certified training in March, 2002. This training was titled Coordinating Environmental and Historical Compliance in Disaster Recovery. The staff officer learned the environmental review process as it pertains to rebuilding and recovering after a disaster.

As a result of his training, the staff officer provided informational workshops to the remainder of the Agency's staff and the volunteers.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: This Agency will closely coordinate with the military Restoration Advisory Boards (RAB), and represent the County government on the same. This will result in awareness and input from the County in respects to military environmental clean up progress and issues.

B. Goal/Objective #2: This Agency will dispose old and out-dated Civil Defense Kits in an environmentally sound manner, ensuring that any hazardous materials are handled and disposed properly.

County of Hawai'i, Department of Parks and Recreation

I. Goals/Objectives for FY 2002

A. Goal/Objective #1:

- Complete wastewater disposal system projects at Miloli'i Beach Park, South Kona and Kolekole Beach Park, South Hilo.
- Secure funding and initiate construction of wastewater disposal system projects at Higashihara Park, North Kona and Hilo Municipal Golf Course, South Hilo.
- Initiate restroom projects at Ahalanui Park and Isaac Hale Beach Park, Puna.

B. Goal/Objective #2:

- Initiate tree planting project at Mo'ohau Park, South Hilo.
- Initiate landscaping projects at Reeds Bay Park, Happiness Gardens, Waiakea-Uka Park, and Kawamoto Swim Stadium, South Hilo.

II. Results of Efforts for FY 2002

A. Goal/Objective #1:

- Construction bids for the Miloli'i Beach, South Kona wastewater disposal system were rejected due to insufficient funds. Design of an alternate wastewater disposal system is being pursued.
- Wastewater disposal system improvements at Kolekole Beach Park, South Hilo were completed.
- Design for the Higashihara Park, North Kona wastewater disposal system project has been completed - awaiting completion of restroom building by volunteers before installing wastewater disposal system.

Agency Goals

- Construction bids for the Hilo Municipal Golf Course, South Hilo project were rejected due to insufficient funds. Design of an alternate disposal system is being pursued.

- Design of new restrooms at Ahalanui Park and Isaac Hale Park, Puna have been completed - awaiting authorization to advertise for construction bids.

B. Goal/Objective #2:

- Tree planting project at Mo'ohau Park, South Hilo was deferred.

- Landscaping project at Reeds Bay Park, South Hilo was completed.

- Landscaping project at Happiness Gardens, South Hilo is on-going.

- Planting of rainbow shower trees at Waiakea-uka Park, South Hilo was completed.

- Tree planting project at Kawamoto Swim Stadium, South Hilo will be initiated upon approval of eagle scout project proposal.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1:

- Complete redesign and construction of wastewater disposal system improvements at Miloli'i Beach, South Kona.

- Install wastewater disposal system for new restroom at Higashihara Park, North Kona.

- Complete redesign and construction of wastewater disposal system improvements at Hilo Municipal Golf Course, South Hilo.

- Construct new restrooms at Ahalanui Park and Isaac Hale Park, Puna.

- Initiate wastewater disposal system improvements at Coconut Island, South Hilo, Kamehameha Park, North Kohala and Spencer Beach Park, South Kohala.

B. Goal/Objective #2:

- Complete tree planting project at Mo'ohau Park, South Hilo.

- Complete landscaping project at Happiness Gardens, South Hilo.

- Complete tree planting project at Kawamoto Swim Stadium, South Hilo.

- Initiate tree planting projects at Hilo Bayfront soccer fields and Aupuni Center parking lot, South Hilo.

County of Hawai'i, Department of Water Supply

I. Goals/Objectives for FY 2002

- A. Goal/Objective #1: Continue to meet Federal Safe Drinking Water Act compliance requirements.

- B. Goal/Objective #2: Continue to replace transite pipes containing asbestos and replace steeltanks that contain lead-base paint.

- C. Goal/Objective #3: Provide electrical power to remote sites to improve system reliability. Implement energy study recommendations.

II. Results of Efforts for FY 2002

- A. Goal/Objective #1: Construction and advertising for bids for deep wells is continuing throughout the island. Continuing with corrosion control treatment islandwide.

- B. Goal/Objective #2: Replacing transite pipes with ductile iron pipe and steel tanks with concrete tanks throughout the island is continuing. This will be an on-going activity.

- C. Goal/Objective #3: Phase I of our energy study was completed. Implementation of the recommendations will commence. Hydro generation study is in progress.

III. Goals/Objectives for FY 2003

- A. Goal/Objective #1: Continue to meet Federal Safe Drinking Water Act compliance requirements. This includes continuing with corrosion control treatment at specified water systems, and constructing wells to replace springs.

- B. Goal/Objective #2: Continue to replace transite pipes containing asbestos and replace steel tanks that contain lead-based paint.

- C. Goal/Objective #3: Provide electrical power to remote sites to improve system reliability, implement energy study recommendations, develop a system to track energy savings, and complete Phase II of energy study.

County of Hawai'i, Office of Housing and Community Development

In its administration of federally funded programs, the OHCD works closely with recipients to assist and coordinate their compliance with 24 CFR Part 58 and Section 343, HRS.

Agency Goals

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: The OHCD will continue to seek training to keep staff abreast of NEPA's and Section 343, HRS rule changes.

B. Goal/Objective #2: The OHCD, as a recipient of CDBG and HOME funds from the Department of Housing and Urban Development (HUD), assumed the responsibility to coordinate compliance with Federal and State environmental rules and regulations under the National Environmental Policy Act, 24 CFR Part 58 and Chapter 343, HRS.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: On September 20, 2002, staff attended a seminar on Section 106-Historic Preservation: Background and Application in Hawai'i.

B. Goal/Objective #2: Carried out environmental review responsibilities for ten CDBG projects and two HOME projects.

III. Goals/Objectives for FY 2003

Same as those identified for fiscal year 2002.

County of Kaua'i, Department of Water

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Continued operation of all of 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 (BMPs) within all of our operations.

C. Goal/Objective #3: Update Department's Chapter 343 Exemption List.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: No violations of DOH/EPA requirements.

B. Goal/Objective #2: Complied with environmental regulations, no violations of HIOSH requirements, involved with HIOSH consultation division for safety improvements, progress on implementing BMPs on projects.

C. Goal/Objective #3: No progress on this goal.

III. Goals/Objectives for FY 2003

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.

C. Goal/Objective #3: Update Department's Chapter 343 Exemption List.

County of Kaua'i, Offices of Community Assistance

In administering federal housing and community development grant programs, the Offices of Community Assistance works with recipients and subrecipients to ensure compliance with regulations governing environmental review procedures at the Federal (24 CFR Part 92) and State (Chapter 343, HRS) levels.

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Assume responsibility for environmental review determinations, decision-making and action that would otherwise apply to HUD grant programs under the National Environmental Policy Act, 24 CFR Part 58. Ensure that activities are environmentally sound.

B. Goal/Objective #2: Afford private citizens and government entities the opportunity to comment on activities that may potentially affect human, physical and social environments.

C. Goal/Objective #3: Provide technical assistance and monitor compliance for activities funded with Community Development Block Grant, HOME Investment Partnerships, and Special Purpose Grant Programs.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Assumed environmental review responsibility for the Kalepa Village - Phase 2B, Waimea Theatre Interior Renovations, ADA Improvements for Various County Facilities, and ADA Improvements for Curbs and Sidewalks, as applicable. Also assisted YMCA consultant with Special Purpose Grant Part 58 environmental review responsibilities for new construction of YMCA facility in Puhi.

Agency Goals

B. Goal/Objective #2: Issued legal public notices, as applicable, and considered all public comments and consultation responses received during the environmental assessment process for the above-mentioned projects.

C. Goal/Objective #3: Maintained environmental review records for each program activity assessed during the responding period. Monitoring to occur through project completion.

III. Goals/Objectives for FY 2003

Same as those identified in FY 2002.

County of Maui, Department of Fire Control

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: The department is in the process of retro-fitting every first line apparatus with a diesel emission system to reduce the levels of exhaust fumes to below the OSHA Permissible Exposure Limits.

B. Goal/Objective #2: The department plans to institute a maintenance program for all above ground fuel tanks at every station.

C. Goal/Objective #3: The department plans to install a biological hazardous materials cleaning system for personal protective equipment cleaning.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: The department has begun to install a Ward diesel exhaust filtration system on our first line fire apparatuses. This fully self-contained, completely automatic system is retrofitted underneath all apparatus regardless of exhaust stack position.

B. Goal/Objective #2: The department has begun to do a systematic repair and maintenance program by addressing the needs of the above ground fuel tanks in our department for repairs and maintenance.

C. Goal/Objective #3: The department plans to install a washer/extractor in its new Wailea Fire Station. Completion of the station is scheduled for December 2002.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: The department will continue to install and maintain energy saving systems for all of their fire stations, such as solar heaters.

B. Goal/Objective #2: The department will continue to provide a program for facilities maintenance and repair for all stations.

County of Maui, Department of Housing and Human Concerns

The County of Maui, Department of Housing and Human Concerns continues to maintain a strong commitment to environmental preservation in its programs and services. DHHC has a wide area of responsibility which encompasses programs in social services and other community sectors. The majority of organizations that do business with the County of Maui are acutely aware of environmental preservation issues and implement environmental protection practices in their workplaces. Collaboration and information networking with regard to environmental issues is supported and encouraged by the County of Maui while environmental protection considerations are maintained in housing development projects, transportation operations and other county-funded activities.

In our community service programs, emphasis has been placed on providing recycling and environmental protection information aimed at both agency personnel and program participants. All agencies under contract with the County of Maui through its Community Partnership Grants (CPG) Program are required to include environmental protection information and recycling practices in their programs and event/activities. This ongoing policy assists us in achieving a consistent level of environmental protection and recycling awareness in community programs and services throughout the county. This effort will remain a priority for community programs administered by DHHC in FY 2003.

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Preserve natural resources and open spaces.

B. Goal/Objective #2: Continuing community education on environmental issues.

C. Goal/Objective #3: Inclusion of environmental sustainability in Community Plan.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Ongoing programs for environmental protection.

B. Goal/Objective #2: Environmental protection information provided through programs.

C. Goal/Objective #3: Community networking and collaboration, advocacy.

Agency Goals

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Maintain EP as priority issue in resource protection planning.

B. Goal/Objective #2: Continue countywide recycling and EP practices in programs.

C. Goal/Objective #3: Enhance efforts for community collaboration.

County of Maui, Department of Parks and Recreation

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Fossil fuel energy reduction.

B. Goal/Objective #2:

- To provide support to the Arborist Committee by facilitating monthly meetings that review planting plans and develop policy on tree protection;
- To celebrate Arbor Week;
- To apply for TreeCity USA designation; and
- To participate in policy questions regarding invasive species.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: Reduced fossil fuel energy consumption at Kahului & Kokua Pools due to solar panel installation.

B. Goal/Objective #2:

- Arbor Week celebrations honored it as the 50th anniversary of Arbor Week on Maui;
- A statewide workshop on invasive species was held with a follow-up presentation on Maui;
- A stand of historical trees was protected from demolition; and
- TreeCity USA was awarded for the 25th time.

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Continue our fossil fuel energy reduction program by installing additional solar units at County of Maui swimming pools.

B. Goal/Objective #2: Present an educational conference entitled "Creating Green Environments" which would bring together citizens to learn and discuss ways that ordinances can be developed that will provide green landscapes.

County of Maui, Department of Public Works and Waste Management

I. Goals/Objectives for FY 2002

A. Goal/Objective #1: Eradicate mosquito breeding areas to minimize or control the effects of dengue fever.

B. Goal/Objective #2: Complete the scale house and recycling center at the Central Maui landfill which should result in an additional 4 percent (4%) diversion rate, open the reuse center, and begin collecting nicad batteries.

C. Goal/Objective #3: Achieve 50 percent (50%) compliance of all restaurants meeting new sizing criteria for grease interceptors. This will greatly reduce the amount of grease blockages within the collection system and directly reduce the amount of raw wastewater overflows.

II. Results of Efforts for FY 2002

A. Goal/Objective #1: A widespread public education campaign was undertaken in order to encourage the public to clean up unwanted receptacles which could hold standing water for mosquito breeding. Public agencies, non-profit groups, private companies and volunteer cleanup efforts were coordinated. Enforcement efforts to clean up individual properties were also stepped up. Efforts to control mosquito breeding within existing bodies of water such as detention basins and wetlands were also initiated. Landfill tipping fees were waived so people would be encouraged to take unwanted trash to the landfill. The result was that mosquito breeding areas were minimized and dengue fever was brought under control.

B. Goal/Objective #2: The discretionary permitting for the scale house and recycling center at the Central Maui Landfill has been completed. Construction is scheduled to begin in January, 2003 with completion scheduled for September, 2003. However, over the past year, the County's diversion rate has increased from 31 percent (31%) to 34 percent (34%). This is likely the result of additional glass recycling. With the completion of the scale house and recycling center, it is anticipated that the diversion rate will increase further. Also, arrangements have been made with a local retailer to collect nicad batteries.

C. Goal/Objective #3: There have been 247 food establishments which have already complied with the new grease interceptor sizing criteria. The number of food establishments in the County always fluctuates to some extent. However, the current average is approximately 495. So, in round numbers, 50 percent (50%) compliance during FY '02 has been achieved.

Agency Goals

III. Goals/Objectives for FY 2003

A. Goal/Objective #1: Amend the grading ordinance to better enforce the protection of coastal dunes.

B. Goal/Objective #2: Initiate planning for a materials recovery facility. Potential sites need to be identified and budget requirements need to be estimated.

C. Goal/Objective #3: Have 75 percent (75%) of all commercial kitchens with grease interceptors sized in accordance with Appendix H of the Uniform Plumbing Code.

