

**Report to the Twenty-Third Legislature
State of Hawai'i
2006**

**2005 Annual Report:
Pursuant to HRS 341-6, Requesting that the State Environmental Council Make an Annual
Report with Recommendations for Improvement**

**Prepared by:
State of Hawai'i
Department of Health
Environmental Council**

State of Hawai'i Environmental Council



2005 Annual Report

(Prepared pursuant to Hawai'i Revised Statutes Chapter 341)

Environmental Report Card 2005

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Introduction

This Annual Report

This report contains an update of the key Environmental Indicators, reflecting varying degrees of progress made in the State of Hawaii to address the balance between economic and environmental concerns with the ultimate goal of preserving and protecting our environment. Students, policy makers, government agencies, and the public can use this document as a report card in managing the key issues of our natural and urban environment.

This Annual Report also presents the responses by various government agencies to the questionnaire which the Council sent earlier this year in order to find out the agencies' environmental goals and achievements.

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 express our many thanks to the OEQC staff and Faith Caplan for compiling this report.

Recommendations to the Governor

STATE OF HAWAII LAND USE POLICY AND THE ENVIRONMENT

Land use policy and its impact on environmental quality

The theme for the Environmental Council's Annual Report for 2005 is land use policy and its impact on environmental quality. The Environmental Council selected this theme to highlight the connection between land use and the environment.

We use the term "environment" in its fullest meaning. Typically the term "environment" is associated with the following:

- § Natural resources: air, water, biota
- § Cultural/historical resources
- § Scenic views/open space
- § Aesthetics
- § Public health and safety
- § Recycling
- § Energy efficiency

However, we want to emphasize that "environment" engages a fuller range of issues and resources, including:

- § Land ownership
- § Land use compatibility
- § Economics
- § Education
- § Employment
- § Housing
- § Infrastructure
- § Security
- § Transportation

These resources areas and issues are very much interrelated. As an example, consider goals for agricultural land use in Hawai'i and criteria for Important Agricultural Lands (IAL). State policy decisions guide the establishment of goals for agricultural land use in Hawai'i and criteria for IAL. From an economic perspective, the State must determine what level of government incentives, such as subsidies, are appropriate to meet the State goals for agriculture. A related goal can be met by prioritizing subsidies for energy producing crops, both to meet State Goals of energy self-sufficiency as well as agricultural prosperity. Addressing non-IAL lands involves further related goals and concerns, including the preservation of open space and scenic views, expansion of existing infrastructure and services to undeveloped areas, and provision of housing and schools for a growing population while sustaining natural resources.

Data Collection

The Annual Report Committee of the Environmental Council conducted an informal survey of non-government organizations, professional organizations, government agencies, academics and other people recognized in the community as experts on land use policy. We attended public presentations on land use issues, and reviewed newspaper articles and position papers. We reviewed State land use policies, plans and regulations to gain a basic level of understanding of the issues. The key question was "What would you (your organization) like to see the Governor/ legislature do this legislative session with respect to land use policy and the Environment?"

Findings

The topics foremost on people's minds during our research ranged from the recent legislation regarding Important Agricultural Lands (IAL) to urban sprawl and energy self sufficiency.

The findings listed here were identified during the limited research period (August to November 2005). These findings reflect issues that were reported in the media and foremost on people's minds. The detail provided for each issue reflects the depth of information provided to us and should not be interpreted as an indication of importance.

Agricultural Land Use: There is much discussion in the community related to agricultural land use and two pieces of legislation that were enacted in 2005, Act 183 and Act 205.

1. The constitutional amendment of 1978 Article XI, Section 3 says the State shall:

§ Conserve and protect agricultural lands, promote diversified agriculture and assure the availability of agriculturally suitable lands

§ Identify IAL that shall not be reclassified or rezoned unless it meets standards and criteria and is approved by 2/3 of the body responsible for reclassification or rezoning.

2. Act 183 of 2005 addresses incentives to promote agriculture and outlines the system for identifying IAL. There appears to be general support for this recent legislation to support the requirements of the 1978 constitutional amendment.

3. There is considerably more land in the Agricultural District than would be required for State food supply self-sufficiency and to meet the land requirements for all those who are interested in being farmers in Hawai'i (under current conditions that provide few incentives to farm).

Recommendations to the Governor

4. Act 205 of 2005, which was intended to protect Hawai'i's farmers and the land they farm from land speculation and development as "fake farms," is generally perceived as a good start; however, more legislation is required to close loopholes allowing unintended uses. Land Use Commission (LUC) was granted responsibility to clarify uses of agricultural and rural lands and, working with Counties, to facilitate the redefinition, expansion and enhancement of uses on rural land. Golf courses are prohibited from agricultural land, but permitted in rural areas.

5. Hawai'i is in transition from large mono-crop agricultural products to diversified agriculture. The infrastructure, soil, climate, security, harvest, process and distribution requirements of multiple crop production are different from historical mono-crops of sugar and pineapple. Furthermore, there is variation in these requirements among the range of crops currently in production; this variation adversely affects economies of scale and Hawai'i's competitive advantage that might be achieved through shared harvest, process, distribution, and marketing capital to bring products to market as efficiently as possible.

Open Space is valued by the public but assigning a value or even a definition is difficult. The debate about permitted uses in non-IAL lands includes concern for the preservation of Open Space and control of Urban Sprawl.

State Boundary review: The periodic (5-year) State Boundary review is overdue and should be undertaken.

Limited understanding of land use policy and regulation: Unless one is intimately involved with Hawai'i land use policy and regulation through financial investment, regulation, career, or cultural or academic interest, the average understanding of land use policy and regulation in Hawai'i is low and the learning curve is steep.

Reassessment of current land use policy: The American Planning Association Hawai'i chapter issued a position paper¹ in September 2005 that outlines the issues and proposes reforms. The issues include:

1. Development approvals take too long
2. The state and county review processes are duplicative
3. Uncertainty regarding permitted uses
4. Reliance on litigation to resolve planning and zoning issues
5. Public resources spent on individual projects rather than planning
6. Poor coordination between State and Counties in terms of land use planning and capital program planning

7. Public participation lacking at long-range planning resulting in contentious project-specific hearings.

Energy crisis: Hawai'i is in the midst of an energy crisis. It is too dependent on imported goods and non-renewable energy resources. Ideas to address this issue are:

1. Conversion from petroleum-based fuel to biodiesel. Sources: recycled cooking oil, soybeans or algae. Support the proposal for federal biodiesel tax incentives.
2. Encourage use of solar and photo-voltaic
3. State rebates for hybrid vehicles (other states offer rebates)
4. Encourage import of diesel engines (for diesel retrofit to enable use of biodiesel).
5. Tax new vehicles at purchase according to published carbon dioxide generated per mile (practiced in Europe)

Affordable housing shortage: There is a shortage of affordable housing and gap housing, but segregated housing by income level is not preferred. Creative design could result in mixed income housing developments.

Commuting times: People of Hawai'i are spending too much time commuting. Ideas to address this include:

1. Adjusted school schedules
2. Bus service for students
3. Reduce distance traveled by increasing density of housing in existing housing areas instead of creating new communities.

Environmental justice: Some communities appear to have more industrial or not-in-my-backyard (NIMBY) developments that serve the greater public good than other communities. Ideas to address this include:

1. Establish an Environmental Justice Policy for the State
2. Compensate these communities for bearing the burden for the State or County services

Smart Growth: Smart Growth planning principles address sustainability of natural resources and improved quality of life. Increasingly, communities around the country are adopting these principles to manage development and growth. Principles of Smart Growth include:

1. Encourage mixed land use
2. Encourage compact building design
3. Create a range of housing choices
4. Create walkable and pedestrian-friendly communities
5. Foster distinctive attractive communities with a strong sense of place

Recommendations to the Governor

6. Preserve open space, farm land, natural beauty and critical environmental areas
7. Direct development toward existing communities
8. Make efficient use of public money, infrastructure, and resources (i.e., potable water)
9. Provide a variety of transportation choices
10. Make development decisions predictable, fair and cost effective
11. Encourage community and stakeholder collaboration in development decisions

Sustainable building: Use of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System provides objective measurement of sustainable building design, construction and operation. LEED is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.

Recommendations

Realignment and clarification of State Goals, Objectives and Policies: The Environmental Council recommends that Hawaii Revised Statutes (HRS) 226 be rewritten with a more detailed list of specific State Goals followed by objectives and policies under specific resource areas or responsible agency that tie directly to the State Goals. The State Goals will pervade agency and department goals and objectives and ensure that all are working to meet overarching State Goals.

There are a number of reasons for this recommendation:

1. **Ambiguity of currently stated State Goals:** The State Planning Act (HRS Chapter 226-5) establishes three State Goals as follows:
 - a. A strong, viable economy characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.
 - b. A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
 - c. Physical Social and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring and of participation in community life.
2. **Disconnected Goals, Objectives and Policies:** The State Goals are followed by long lists of Objectives and Policies for the economy that are distinct from those of the "physical environment", "facility systems" and "socio-cultural advancement" (HRS 226-5 et seq.)

There are important State policy statements "buried" in the Objectives and Policies of individual resources areas when they should be clearly stated upfront in the State Goals (HRS §226-4). For example: "Encourage urban developments in close proximity to existing services and facilities" (HRS §226-13) is listed as an objective under Physical Environment—Land, Air, and Water Quality. This is an important State objective that could be tied to a more general overarching State Goal that supports infill of existing developed areas prior to expansion into undeveloped areas for the following reasons: minimize capital expenditure, protection of open space, limit urban sprawl.

3. **Outdated Objectives and Policies:** Some of the Objectives and Policies in HRS 226 are outdated, such as: "Planning for the State's economy with regard to agriculture shall be directed toward continued viability of Hawai'i's sugar and pineapple industries." (HRS §226-7) The State Goals (HRS §226-4) have not been updated since 1993, and the subsequent Objectives and Policies were last updated between 1983 and 1993.

Revise State Goals: Based on the findings described above, the Environmental Council recommends that the revised State Goals address these issues:

1. Acknowledge the energy crisis in Hawai'i and include specific goals and timelines for State energy self-sufficiency.
2. Endorse Smart Growth planning principles.
3. Describe the purpose and specify goals for agriculture in Hawai'i as an economic sector, as a means of reducing dependence on imported food, and as a valued aspect of Hawai'i's agrarian culture.
4. Emphasize the importance of sustaining natural resources for future generations through careful consideration of short-term gains versus long-term losses associated with actions and their irreversible and irretrievable commitments of resources.
5. Endorse the LEED Green Building Rating System.
6. Protect minority and low-income populations from disproportionately high adverse impacts.
7. Support land use policy reform as outlined in the American Planning Association, Hawai'i Chapter position paper entitled, "The Land Between: Renewing Hawai'i's system of Land Use Planning and Regulation (September 2005)."

Further work: Revising HRS 226 is just the beginning of recommended HRS revisions. Once there is a revised HRS 226, revisions to Environmental Policy (HRS 344) and Land Use Policy (HRS 205) are recommended to be consistent with the Hawai'i State Goals of HRS 226.

(Footnote):¹ The Land Between: Renewing Hawai'i's System of Land Use Planning and Regulation

OEQC's Report

According to the Chinese zodiac, the Year of the Rooster brings new fashion and practicality. We have seen this new fashion in *The Environmental Notice*. Thanks to OEQC's creative secretary, Elsie Watanabe, *The Environmental Notice* was redesigned to include maps, plans and photographs of project proposals. This new format gives community members a better picture of project proposals and thus encourages greater public comments and participation in the environmental review process.

OEQC and the Environmental Council jointly conducted a statewide workshop with cultural consultants, government agencies and private consultants to improve understanding of the cultural impact assessment process. This workshop opened an avenue for dialogue among the participants to seek further improvements in the implementation of the cultural impact assessment process. With the success of the workshop, we will continue to conduct similar outreach projects in the coming year.

Previously, OEQC supported the passage of Act 55 of 2004. This act requires waste to energy facilities, landfills, wastewater treatment units (servicing 50 or more homes), fossil fuel generating facilities or oil refineries to prepare an environmental assessment regardless of whether they are privately or publicly held. This new act provides disclosure and community input before permits are issued. We will continue to seek legislative support to help protect the environment.

All of this could not be possible without the sincere dedication and teamwork of my staff. I thank all of you who have helped OEQC with our accomplishments this past year.

Genevieve Salmonson
OEQC Director

Environmental Indicators

2005 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 | 2005 |
|----------------------------------|-------------|
| Energy Use | D |
| Use & Recycling of Resources | C |
| Biodiversity Maintenance | C |
| Air Quality | A+ |
| Water Quality | B- |
| Terrestrial Quality | B |
| Public Awareness & Concern | C |
| Overall Grade | 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:

- The assessment is based on a sample of 20 environmental indicators. This small sample is not a full representation of Hawai'i's environment.
- 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.
- 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 (Latest Data Year 2003) | 0.0 | 5.3 | 25.0 | 21 | D- |
| Greenhouse gas emissions in million tons (2003) | 25.0 | 21.7 | 15.7 | 35 | D+ |
| Water Consumption in Million Gallons (2004) | 100,000 | 78,345 | 50,000 | 43 | C- |
| % of Treated Wastewater Reused (2003) | 0 | 15.7 | 25 | 63 | B- |
| Daily per capita Waste Generated in pounds (2003) | 10.8 | 9.1 | 3.6 | 24 | D- |
| % of Waste Diverted (2003) | 0 | 29 | 75 | 39 | D+ |
| Hazardous Waste Generated in Tons (2001) | 3,000 | 781 | 500 | 89 | A |
| Watershed Partnerships (2004) | 0 | 725,000 | 1,000,000 | 73 | B |
| Main HI Islands Onaga Spawning Potential Rate (2003) | 0 | 10 | 50 | 20 | D- |
| Particulate Levels as a % of Federal standards (2003) | 100 | 32 | 75 | 100 | A+ |
| CO2 Levels as a % of Federal standards (2003) | 100 | 7 | 75 | 100 | A+ |
| Number of Impaired Streams (2004) | 100 | 70 | 0 | 30 | D |
| % of Population Served Water Below MCLs (2004) | 90 | 99.5 | 100 | 95 | A |
| Conservation Land Area in million acres (2004) | 1.03 | 1.97 | 2.25 | 77 | B+ |
| Number of Oil and Chemical Spills (2003) | 1000 | 386 | 100 | 68 | B |
| % of State Funding for Environment (2004) | 0 | 2.04 | 2.50 | 82 | A- |
| Number of Motor Vehicles per capita (2004) | 1 | 0.78 | 0.33 | 33 | D |
| Noise Complaints (2004) | 1000 | 432 | 100 | 63 | B- |
| Bikeway Miles (2004) | 0 | 214 | 1309 | 16 | F |
| Annual TheBus Boardings in millions (2004) | 0 | 61.3 | 124 | 49 | 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 | 21 | 50% | 28 | D | 15% | 59 | C+ |
| | Greenhouse Gas Emissions | 35 | 50% | | | | | |
| Use & Recycling of Resources | Water Consumption in Million Gallons | 43 | 20% | 51 | C | 15% | 59 | C+ |
| | % of Treated Wastewater | 63 | 20% | | | | | |
| | Daily per capita Waste Generated in pounds | 24 | 20% | | | | | |
| | % of Waste Diverted | 39 | 20% | | | | | |
| | Hazardous Waste Generated in Tons | 89 | 20% | | | | | |
| Biodiversity Maintenance | Watershed Partnerships | 73 | 50% | 46 | C | 10% | 59 | C+ |
| | Onaga Spawning Potential Rate | 20 | 50% | | | | | |
| Air Quality | Particulate Levels as % of National Standard | 100 | 50% | 100 | A+ | 15% | 59 | C+ |
| | CO2 Levels as % of National Standard | 100 | 50% | | | | | |
| Water Quality | Impaired Streams | 30 | 50% | 63 | B- | 15% | 59 | C+ |
| | % of Pop. Served Water Below MCLs | 95 | 50% | | | | | |
| Terrestrial Quality | Conservation Land Area in million acres | 77 | 50% | 73 | B | 15% | 59 | C+ |
| | Number of Oil & Chemical Spills | 68 | 50% | | | | | |
| Public Awareness & Concern | % of State Funding for Environment | 82 | 20% | 49 | C | 15% | 59 | C+ |
| | Number of Motor Vehicles per capita | 33 | 20% | | | | | |
| | Noise Complaints per 100,000 People | 63 | 20% | | | | | |
| | Bikeway Miles | 16 | 20% | | | | | |
| | Annual TheBus Boardings in millions | 49 | 20% | | | | | |

Environmental Indicators

Assumptions:

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

- a) Renewable Energy: The 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 25 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) Watershed Partnerships: Optimally, half of the state's conservation land should be in partnerships.
- i) Onaga SPR: The optimum level is 50%.
- j) Particulate Levels: The optimum level is 75% of the federal standard.
- k) CO2 Levels: The optimum level is 75% of the federal standard.
- l) Impaired Streams: 100 impaired streams 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 |

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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. Based on the indicators presented, the following trends are evident:

- 1) Renewable energy:
 - a. There is an increase in the number of miles of bikeways between 1995 and 2004.
 - b. The ridership of The Bus peaked in 2002 and subsequently declined due to increases in bus fares and a bus strike. The ridership is likely to increase if the price of fuel continues to increase.
 - c. Hawai'i is dependent on non-renewable resources for approximately 95% of its energy consumption.
 - d. The number of motor vehicles in Hawai'i increases with population. In turn, there is an increase in the use of non-renewable resources to operate these vehicles and greater production of carbon dioxide.
- 2) Waste Minimization, Recycle, & Reuse:
 - a. Wastewater reuse has reached a maximum of approximately 16% in recent years.
 - b. The amount of per capita solid waste generated is rising and reached 9.1 pounds per capita in 1993.
 - c. Solid waste diversion has reached a maximum of approximately 30% in recent years.
 - d. Hazardous waste generation has steadily declined, likely due to Federal and state regulations.
- 3) Biodiversity:
 - a. The acreage of forested lands has remained relatively stable between 1995 and 2003.
 - b. Department of Land & Natural Resources, Division of Forestry and Wildlife continues to reintroduce endangered bird species.
- 4) Manage Growth for Sustainability of Resources:
 - a. Population in Hawai'i continues to grow with an estimated 2020 population of 1.72 million.
 - b. Water consumption generally increases with population growth, but the rate of consumption is slower in recent years presumably due to public awareness.
 - c. More than 200,000 acres of important watershed areas in Hawai'i are protected through public-private partnerships.
 - d. Based on the spawning potential ratio, there is evidence of bottomfish overfishing, specifically Ehu and Onaga, in waters off the main Hawaiian islands.
 - e. In 2004, public beaches were closed approximately 33 days in the calendar year due to water pollution.
 - f. Air and drinking water quality continue to be high in Hawai'i.
 - g. Department of Health identified and actively monitors 70 impaired streams.
 - h. Between 1995 and 2004 approximately 7,000 acres was converted to Urban from Agriculture or Conservations land designation.

These indicator trends and the overall C+ grade, indicate that the people of Hawai'i and their State and County officials and agencies could do much more to protect the environment. Not all environmental problems can be addressed with more money, but in 2004, only 2% of the State budget was allocated to environmental protection.

Population

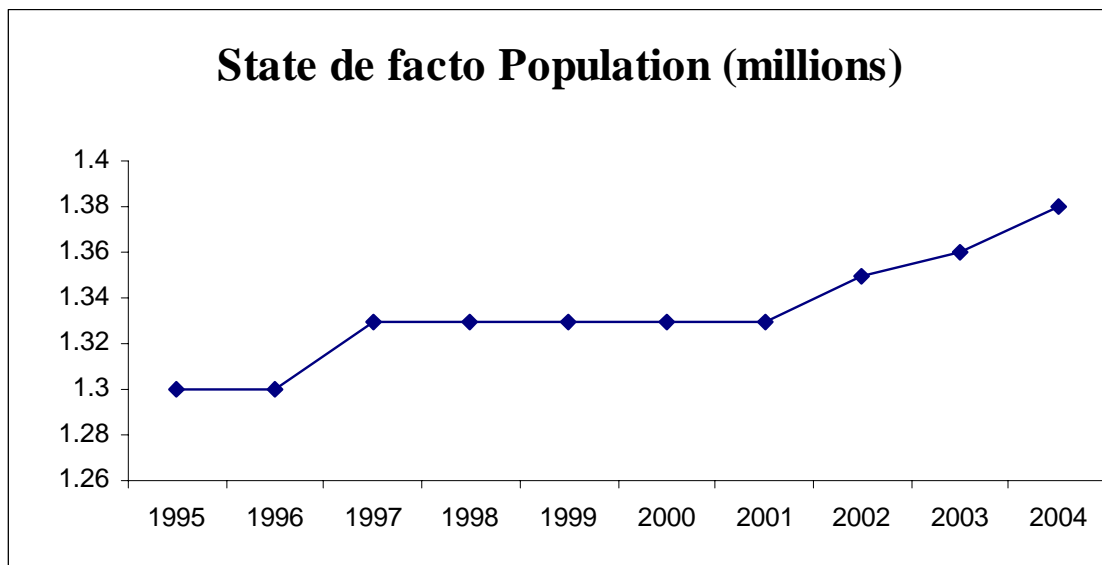
State Population

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. 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 (July 1) and visitor numbers (calendar year)

| Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|------|------|------|------|------|------|------|------|------|------|
| State <i>de facto</i> Population (million) | 1.30 | 1.30 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.35 | 1.36 | 1.38 |
| Visitor Arrivals (million) | 6.5 | 6.7 | 6.8 | 6.6 | 6.7 | 6.9 | 6.3 | 6.4 | 6.4 | 6.9 |
| Visitor Days (million) | 57.3 | 57.9 | 57.4 | 57.4 | 60.0 | 61.7 | 57.8 | 58.5 | 58.8 | 62.8 |

Source: State of Hawai'i Data Book 2004.
 Note: The vertical axis does not begin with zero.



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.

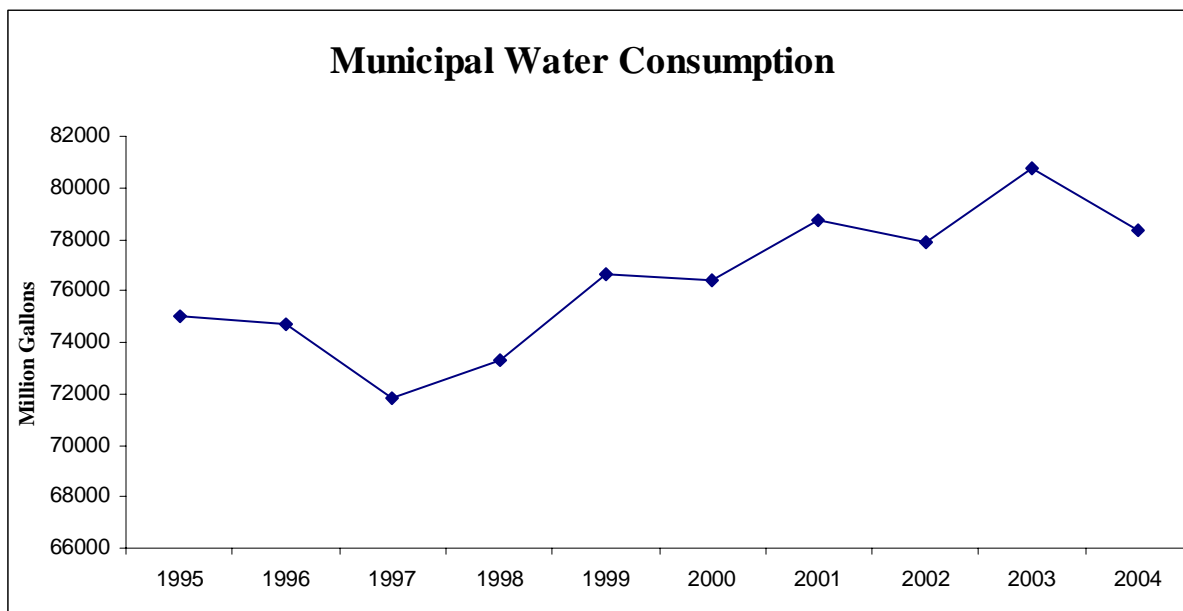
Municipal Water Consumption During the Year Ending June 30 (in millions of gallons)

| Fiscal Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Honolulu | 51,006 | 50,682 | 48,624 | 49,265 | 51,614 | 51,020 | 52,608 | 52,405 | 54,576 | 52,245 |
| Kauai | 4,114 | 4,206 | 3,944 | 4,148 | 4,373 | 4,309 | 4,631 | 4,226 | 4,298 | 4,343 |
| Hawaii | 8,378 | 8,363 | 7,804 | 8,159 | 8,097 | 8,353 | 8,676 | 8,925 | 9,166 | 9,321 |
| Maui | 11,494 | 11,477 | 11,438 | 11,729 | 12,547 | 12,719 | 12,833 | 12,312 | 12,695 | 12,436 |
| Total (MG) | 74,992 | 74,728 | 71,810 | 73,301 | 76,631 | 76,401 | 78,748 | 77,868 | 80,735 | 78,345 |

Source: [The State of Hawai'i Data Book 2004](#) prepared by the Department of Business, Economic Development and Tourism; Honolulu Board of Water Supply; Hawai'i County Department of Water Supply; Kaua'i Department of Water; and Maui Department of Water Supply.

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

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.

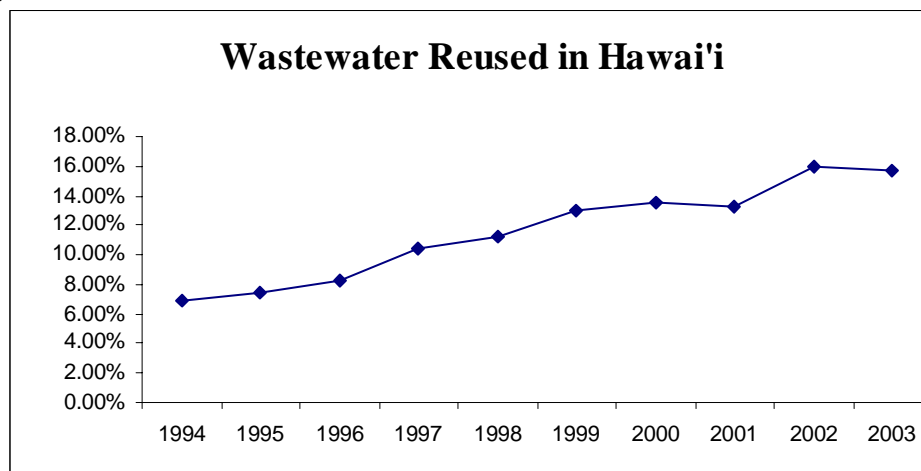
The table below shows the rate wastewater was treated and reused in millions of gallons per day (MGD).

Total Statewide Wastewater Treatment and Reuse by Federal Fiscal Year (Oct. to Sept.)

| Federal Fiscal Year | Total Wastewater 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% |
| 2002 | 150.0 | 24.0 | 16.0% |
| 2003 | 150.0 | 23.5 | 15.7% |

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 by Federal Fiscal Year (Oct. to Sept.)

| 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 | 1.29 | 8.3 | 1,616 | 337 | 17% |
| 1995 | 2,023 | 1.30 | 8.6 | 1,620 | 403 | 20% |
| 1996 | 2,122 | 1.30 | 9.0 | 1,619 | 503 | 24% |
| 1997 | 2,132 | 1.33 | 9.1 | 1,599 | 533 | 25% |
| 1998 | 2,004 | 1.33 | 8.5 | 1,524 | 481 | 24% |
| 1999 | 1,884 | 1.33 | 8.0 | 1,424 | 460 | 24% |
| 2000 | 1,794 | 1.33 | 7.6 | 1,441 | 353 | 20% |
| 2001 | 1,971 | 1.33 | 8.4 | 1,479 | 493 | 25% |
| 2002 | 2,115 | 1.35 | 9.0 | 1,490 | 625 | 30% |
| 2003 | 2,141 | 1.36 | 9.1 | 1,518 | 623 | 29% |

Source: Hawai'i Department of Health and Department of Business, Economic Development and Tourism, Data Book 2004 (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.

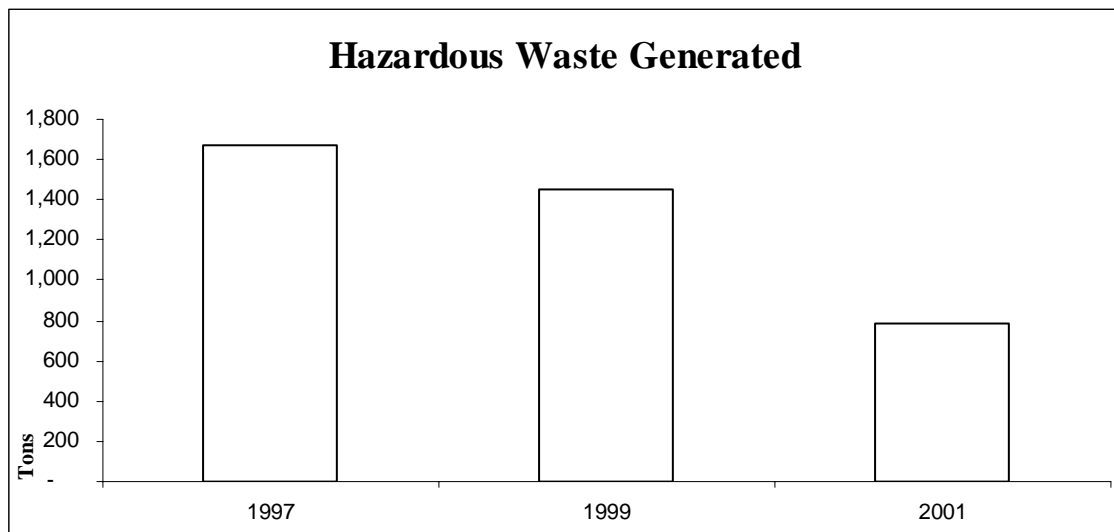
Total Hazardous Waste Generated by Large Quantity Generators in Hawai'i Fed. Fiscal Yr. (Oct- Sept)

| Federal Fiscal Year | 1989 | 1991 | 1993 | 1995 | 1997 | 1999 | 2001 |
|-------------------------------------|-------|-------|-------|------|-------|-------|------|
| Hazardous Waste Generated (in tons) | 1,499 | 1,343 | 1,702 | NA | 1,669 | 1,456 | 781 |

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

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 as of June 30 of each year

| 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 |
| 2002 | 643,134 | 328,742 | 109,164 |
| 2003 | 643,134 | 328,742 | 109,164 |

Source: State of Hawai'i Data Book 2003.

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.

The council is always looking for improvements to its biodiversity indicators. Please contact OEQC if there are better indicators for the future.



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

Kaua'i Watershed Alliance (75,000 acres)

Ben A. Dyre Family Limited Partnership
Kaua'i Department of Water
Kamehameha Schools
Kaua'i Ranch, LLC
Lihue Land Company
McBryde Sugar Company, Ltd.
Princeville Corporation
State Department of Land and Natural Resources
Grove Farm Company, Incorporated

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 Gov Bd
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

Leeward Haleakala Watershed Partnership (43,175 ac.)

Department of Hawaiian Home Lands
James Campbell Estate
Haleakala National Park
Haleakala Ranch
Kaonoulou Ranch
Nu'u Mauka Ranch
State Department of Land and Natural Resources
Ulupalakua Ranch
John Zwaanstra

Kohala Watershed Partnership (31,325 acres)

Parker Ranch
Kahua Ranch
Ponoholo Ranch
Kamehameha Schools
The Queen Emma Foundation
Department of Hawaiian Homelands
Department of Land and Natural Resources

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 | Number Released |
|-------------|------------------------|
| 1993 | 5 |
| 1994 | 7 |
| 1995 | 18 |
| 1996 | 2 |
| 1997 | 23 |
| 1998 | 17 |
| 1999 | 14 |
| 2000 | 34 |
| 2001 | 15 |
| 2002 | 34 |
| 2003 | 41 |
| 2004 | 10 |

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 Pacific Islands Fisheries Science Center of the National Marine Fisheries Service. Archipelagic SPR values of less than 20% are interpreted to mean that the overall stock is subject to recruitment overfishing. For more localized areas, such as the Main Hawaiian Islands, low values of SPR reflect relatively high reductions in localized abundance. Although localized reductions in abundance contribute to the overall stock condition, their significance is primarily measured in the context of sociological and economic factors within the fishery.

Main Hawaiian Islands Bottomfish Spawning Potential Ratio by Calendar Year

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|-------------------|------|------|------|------|------|------|------|------|------|------|
| Ehu | 6 | 7 | 3 | 8 | 4 | 7 | 4 | 9 | 8 | 5 |
| Hapu'upu'u | 33 | 21 | 15 | 23 | 16 | 27 | 24 | 30 | 26 | 29 |
| Onaga | 9 | 6 | 4 | 5 | 5 | 6 | 6 | 3 | 5 | 10 |
| Opakapaka | 37 | 35 | 25 | 32 | 24 | 28 | 33 | 33 | 32 | 32 |
| Uku | 37 | 40 | 35 | 29 | 29 | 47 | 33 | 26 | 27 | 20 |

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 by Calendar Year

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|-------------------|------|------|------|------|------|------|------|------|------|------|
| Ehu | 38 | 41 | 43 | 42 | 38 | 37 | 39 | 40 | 37 | 36 |
| Hapu'upu'u | 51 | 48 | 49 | 49 | 44 | 47 | 49 | 51 | 45 | 50 |
| Onaga | 39 | 33 | 39 | 25 | 22 | 34 | 27 | 26 | 26 | 31 |
| Opakapaka | 53 | 54 | 52 | 52 | 47 | 46 | 52 | 51 | 47 | 48 |
| Uku | 52 | 56 | 57 | 51 | 50 | 55 | 52 | 48 | 45 | 43 |

Source: National Marine Fisheries Service.

Environmental Indicators

Environmental Quality

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 by Calendar Year

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Federal Standard |
|---|------|------|------|------|------|------|------|------|------------------|
| PM₁₀ (ug/m³) | 14 | 8 | 9 | 14 | 14 | 16 | 15 | 16 | 50 |
| CO (ug/m³) | 2127 | 4133 | 6726 | 4788 | 3990 | 5244 | 3990 | 2850 | 40,000 |
| SO₂ (ug/m³) | 3 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 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

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.

Days Beaches Posted as Unsafe Due to Pollution by DOH by Calendar Year

| Year | Days beaches closed |
|------|---------------------|
| 1994 | 20 |
| 1995 | 16 |
| 1996 | 45 |
| 1997 | 28 |
| 1998 | 13 |
| 1999 | 26 |
| 2000 | 16 |
| 2001 | 20 |
| 2002 | 36 |
| 2003 | 0 |
| 2004 | 33 |

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.

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 table below shows the number of oil and chemical spills.

Oil and Chemical Spills in Hawai'i Federal Fiscal Year (Oct. to Sept.)

| 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 |
| 2002 | 218 | 268 | 486 |
| 2003 | 240 | 146 | 386 |

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 (Oct. to Sept.)

| 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 | 99.7% |
| 2002 | 100.0% |
| 2003 | 100.0% |
| 2004 | 99.5% |

Source: Hawai'i Department of Health.

Stream Quality

The ancient Hawaiian concept of ahupua'a embraces the watershed perspective linking the mountains to the sea. This stream quality refers to the inland part of a watershed, including all stream tributaries.

Number of Impaired Streams Listed Statewide by Calendar Year

| Year | Number of Impaired Streams |
|-------------|-----------------------------------|
| 2002 | 59 |
| 2004 | 70 |

Source: Hawai'i Department of Health. DOH published a list of impaired streams in 2002 and

Environmental Indicators

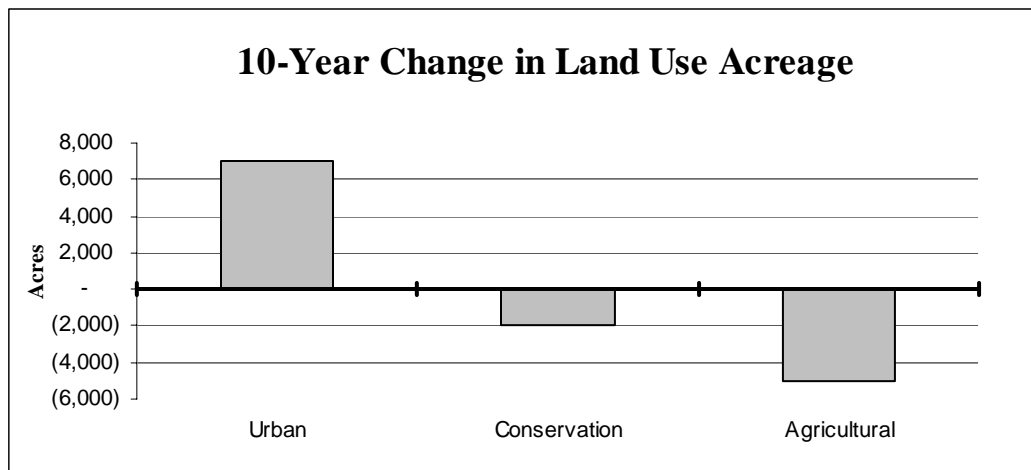
Statewide Land Use District Acreage

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.

State Land Use District Acreage as of December of Each Year

| Year | Land Area in Thousand Acres | | | |
|-------------|-----------------------------|--------------|--------------|-------|
| | Urban | Conservation | Agricultural | Rural |
| 1995 | 190 | 1,976 | 1,936 | 10 |
| 1996 | 192 | 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 | 1,934 | 10 |
| 2002 | 195 | 1,974 | 1,933 | 10 |
| 2003 | 196 | 1,974 | 1,932 | 10 |
| 2004 | 197 | 1,974 | 1,931 | 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).

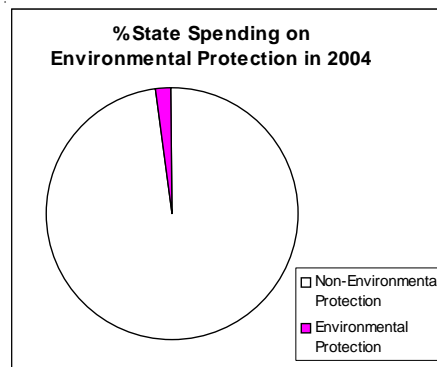
More funding to promote the goals of Hawai'i's environmental programs will result in better overall state environmental quality. The portion of expenditures for environmental protection reflects the priority given to environmental programs relative to other functions.

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 by State Fiscal Year (July-June)

| Fiscal Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| State Expenditures (million \$) | 5,092 | 4,906 | 5,338 | 5,393 | 5,315 | 5,538 | 6,175 | 6,710 | 7,198 | 7,367 |
| Environmental Expenditures (millions \$) | 30 | 61 | 45 | 60 | 69 | 69 | 51 | 64 | 66 | 150 |
| Environmental Spending as % of State Expenditures | 0.59% | 1.25% | 0.85% | 1.10% | 1.30% | 1.24% | 0.83% | 0.95% | 0.92% | 2.04% |

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 by Calendar Year

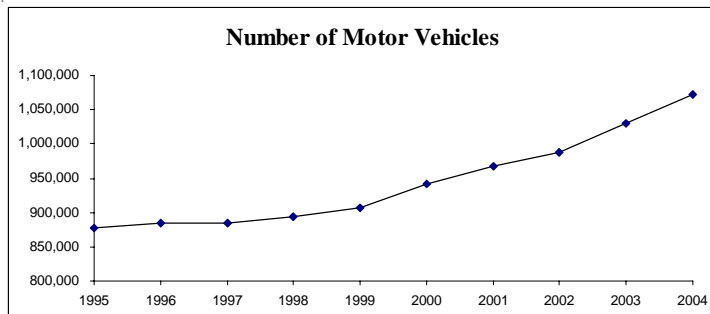
| Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Number of Motor Vehicles (in thousands) | 878 | 885 | 884 | 893 | 907 | 941 | 967 | 988 | 1,031 | 1,072 |
| State de facto Pop. (million) | 1.30 | 1.30 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 | 1.35 | 1.36 | 1.38 |
| Vehicles per Person | 0.68 | 0.68 | 0.66 | 0.67 | 0.68 | 0.71 | 0.73 | 0.73 | 0.76 | 0.78 |

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 by Calendar Year

| Type of Complaint | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Agricultural | 3 | 1 | 0 | 0 | 0 | 6 | 8 | 0 | 3 | 1 |
| Aircraft | 11 | 5 | 6 | 0 | 1 | 3 | 1 | 0 | 2 | 1 |
| Commercial | 6 | 3 | 13 | 4 | 13 | 8 | 11 | 11 | 7 | 3 |
| Construction | 142 | 140 | 112 | 146 | 106 | 250 | 231 | 193 | 147 | 216 |
| Industrial | 2 | 3 | 7 | 9 | 2 | 9 | 14 | 14 | 5 | 3 |
| Miscellaneous | 12 | 12 | 14 | 18 | 12 | 14 | 10 | 7 | 10 | 12 |
| Refuse Collection | 35 | 41 | 68 | 43 | 33 | 30 | 35 | 23 | 22 | 10 |
| Stationary | 112 | 109 | 104 | 75 | 93 | 97 | 96 | 106 | 92 | 95 |
| Unknown | 13 | 8 | 8 | 13 | 11 | 8 | 7 | 8 | 13 | 6 |
| Animal | 24 | 16 | 14 | 12 | 8 | 14 | 14 | 8 | 7 | 12 |
| Hobby | 9 | 9 | 12 | 4 | 6 | 10 | 9 | 13 | 11 | 3 |
| Maintenance | 37 | 27 | 21 | 25 | 20 | 17 | 19 | 22 | 5 | 14 |
| People | 12 | 13 | 13 | 5 | 8 | 2 | 7 | 4 | 4 | 9 |
| Sound Production | 48 | 40 | 45 | 51 | 47 | 42 | 44 | 35 | 22 | 32 |
| Vehicular | 21 | 30 | 24 | 22 | 12 | 26 | 17 | 11 | 13 | 15 |
| Total | 487 | 457 | 461 | 427 | 372 | 536 | 523 | 455 | 363 | 432 |

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.

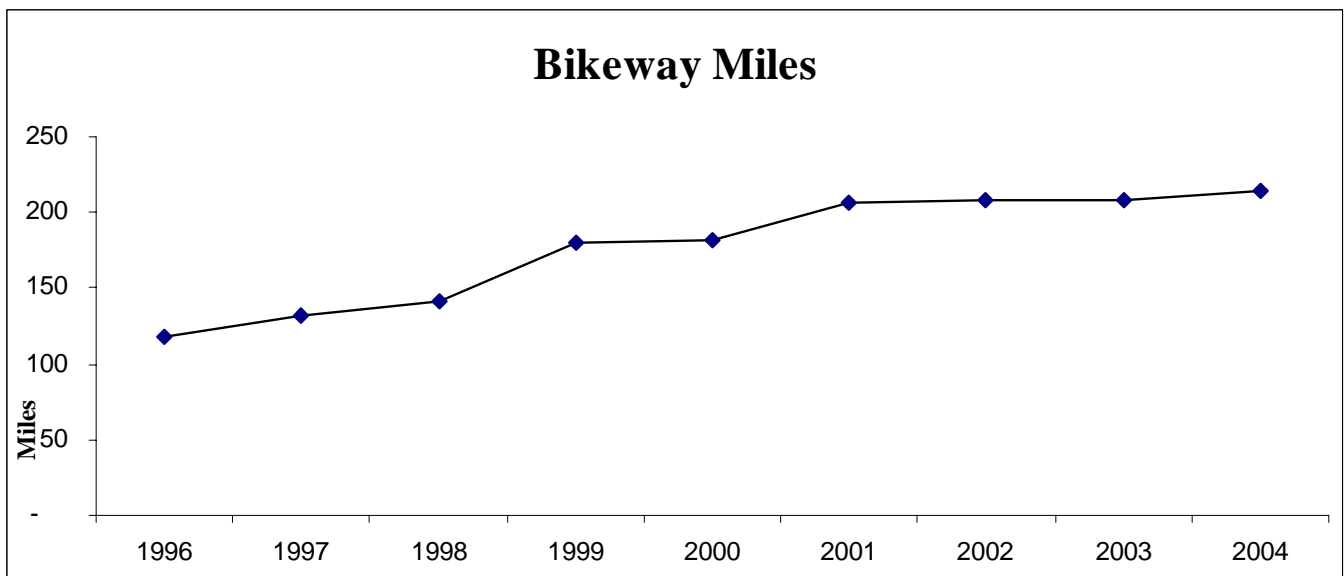
Miles of Bikeways in Hawai'i by Calendar Year

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|-----------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Kaua'i | 3.8 | 3.8 | 6.8 | 6.5 | 6.2 | 6.2 | 21.0 | 22.2 | 22.2 | 20.9 |
| O'ahu | 55.4 | 66.1 | 56.6 | 60.3 | 73.7 | 75.1 | 94.2 | 98.0 | 98.0 | 106.6 |
| Maui | 19.6 | 40.0 | 40.8 | 43.3 | 67.1 | 67.1 | 60.3 | 60.4 | 60.4 | 63.3 |
| Hawai'i | 8.2 | 8.2 | 27.8 | 30.8 | 32.7 | 32.7 | 31.3 | 27.4 | 27.4 | 23.4 |
| Statewide | 87.0 | 118.1 | 132.0 | 140.9 | 179.7 | 181.1 | 206.8 | 208.0 | 208.0 | 214.2 |

Source: State Department of Transportation, Highways Division

Note: i) Bikeway miles are those within State and County jurisdiction.

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



Environmental Indicators

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.

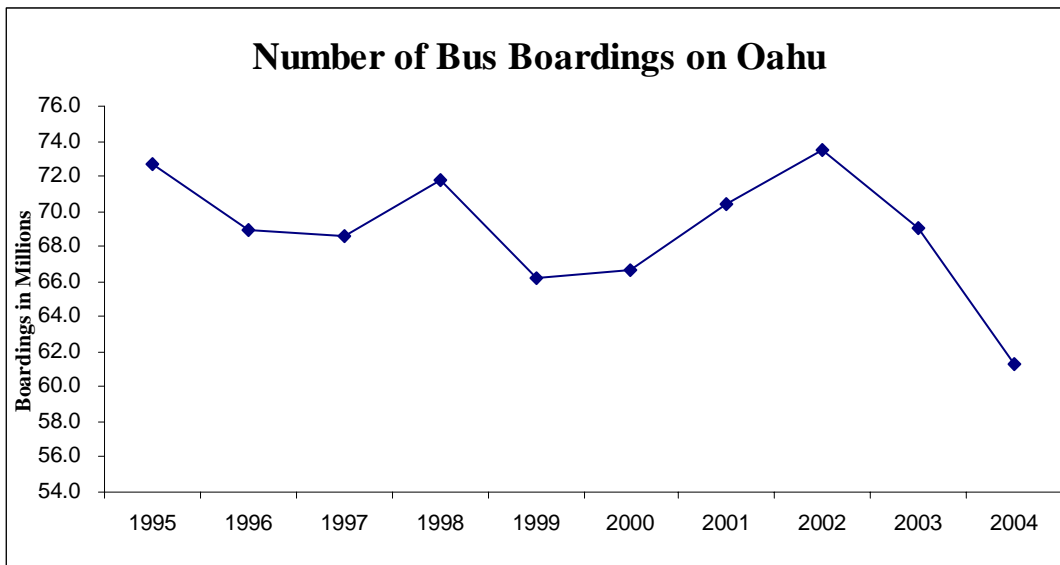
Number of Bus Boardings on O'ahu by Calendar Year

| Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|------|------|------|------|------|------|------|------|------|------|
| Total Number of Bus Boardings (in millions) | 72.7 | 68.9 | 68.6 | 71.8 | 66.2 | 66.6 | 70.4 | 73.5 | 69.1 | 61.3 |

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

Note: i) Figures include residents and visitors.

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



Environmental Indicators

Energy Use

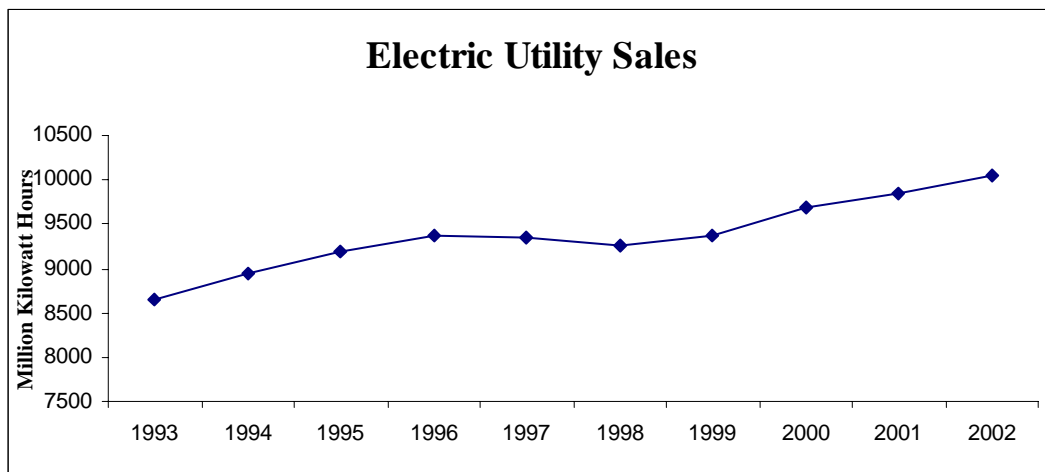
Electric Utility Sales

The table below depicts the growth in electricity sales in Hawai'i. It should be noted that, in 2000, electric utility sales accounted for 95% of all electricity generation in Hawai'i. Hawai'i's electric utility sales generated 59.6% of total electricity generation, while independent power producers (IPP) and the sugar industry produced the remaining 40.4%. The IPPs and sugar mills sold 88% of their generation to the utilities (35.4% of total generation), and used 12% in their own operations (5% of total generation). Transmission losses accounted for the remaining 5.2% of total generation.

Hawai'i Electric Utility Sales

| Year | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| State Utility Sales (Million kWh) | 8,658 | 8,948 | 9,187 | 9,378 | 9,346 | 9,261 | 9,380 | 9,690 | 9,854 | 10,049 |

Sources: State of Hawai'i DBEDT, Strategic Industries Division, Energy Data Services; Utility FERC-1 and Annual Reports to the Public Utilities Commission.
Note: The vertical axis does not begin with zero.



Environmental Indicators

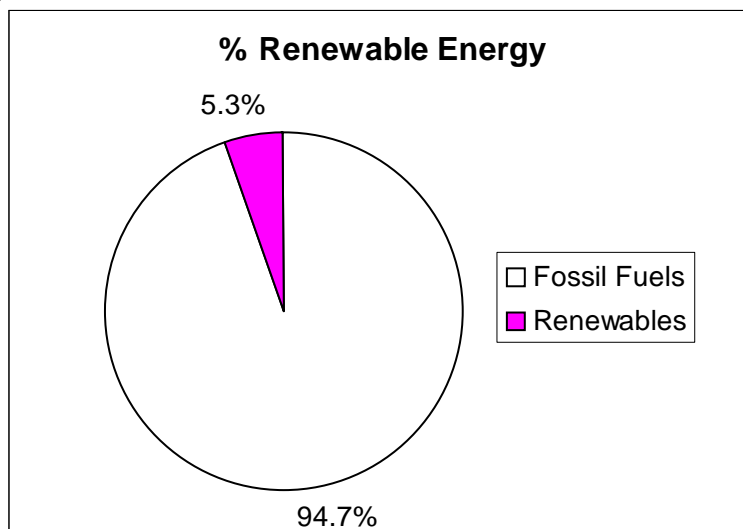
Energy Used in Hawai'i

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. In 2002, geothermal production was reduced due to problems with the wells providing steam to generators at Puna on the Big Island.

Total Energy Used in Hawai'i in Trillion BtU

| Source | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Petroleum | 285.5 | 274.0 | 277.1 | 278.3 | 269.1 | 272.5 | 290.2 | 273.8 | 272.8 |
| Coal | 13.6 | 16.5 | 16.9 | 16.8 | 14.8 | 14.5 | 15.5 | 15.8 | 17.1 |
| Biomass | 16.4 | 11.8 | 10.4 | 9.0 | 7.5 | 9.2 | 7.1 | 3.4 | 5.6 |
| Solar Hot Water | 2.3 | 2.8 | 3.1 | 3.1 | 3.1 | 3.5 | 3.6 | 3.7 | 4.0 |
| Hydroelectric | 1.5 | 1.1 | 1.1 | 1.0 | 0.8 | 1.2 | 1.0 | 1.0 | 1.0 |
| Wind | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.1 |
| Geothermal | 1.8 | 2.3 | 2.4 | 2.4 | 2.3 | 2.0 | 2.6 | 2.1 | 0.8 |
| Solid Waste | 6.2 | 6.4 | 4.7 | 5.3 | 5.1 | 5.1 | 5.1 | 4.5 | 4.7 |
| Photovoltaic | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0020 | 0.0027 | 0.0043 | 0.01 | 0.01 |
| Total | 327.5 | 315.1 | 315.9 | 316.1 | 302.9 | 308.0 | 325.2 | 304.4 | 306.1 |

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



Environmental Indicators

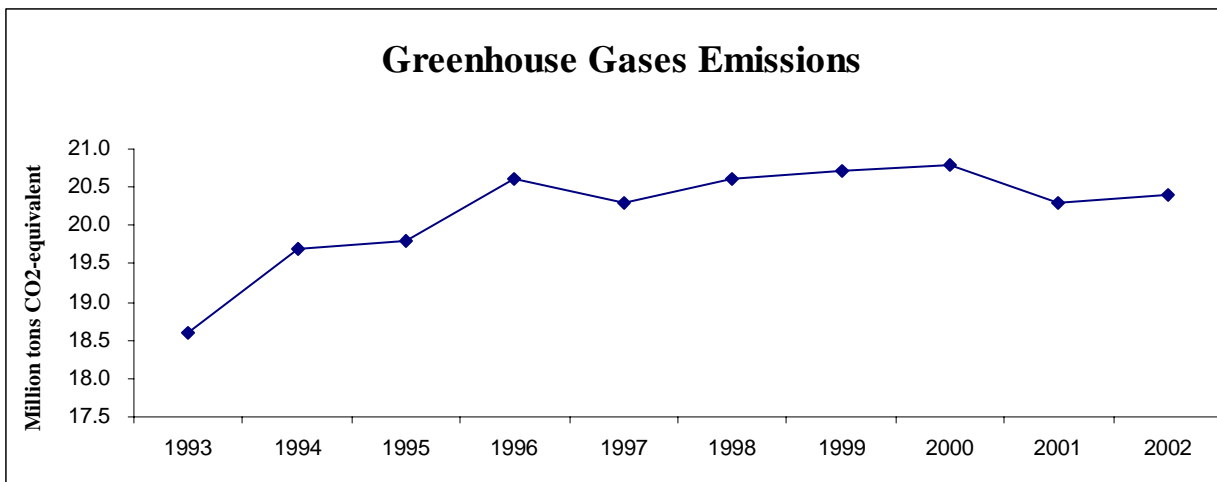
Estimated Greenhouse Gas Emissions

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

| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|------|------|------|------|------|------|------|------|------|------|
| Greenhouse Gasses (Millions of Tons Carbon Dioxide Equivalent) | 18.6 | 19.7 | 19.8 | 20.6 | 20.3 | 20.6 | 20.7 | 20.8 | 20.3 | 20.4 |

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 | 2002 |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Crude Oil | 323.9 | 298.2 | 301.9 | 296.4 | 299.6 | 272.5 | 289.4 | 300.8 | 282.3 |
| Refined Oil Products | 10.6 | 13.7 | 31.3 | 37.3 | 39.3 | 49.6 | 58.7 | 25.5 | 17.7 |
| Coal | 14.2 | 16.5 | 16.1 | 16.8 | 14.8 | 14.5 | 15.7 | 15.8 | 17.1 |
| Total | 348.7 | 328.4 | 349.3 | 350.5 | 353.7 | 336.6 | 363.8 | 342.1 | 317.1 |

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

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

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 | 2002 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Electricity Production (Oil) | 82.2 | 78.6 | 84.2 | 83.2 | 85.6 | 87.2 | 91.8 | 87.2 | 87.0 |
| Electricity Production (Coal) | 13.6 | 16.5 | 16.9 | 16.8 | 14.8 | 14.5 | 15.5 | 15.8 | 17.1 |
| Transportation - Ground & Water (Oil) | 81.5 | 82.1 | 75.9 | 74.0 | 78.8 | 75.9 | 76.6 | 73.1 | 79.7 |
| Transportation - Air (Oil) | 90.0 | 96.5 | 102.4 | 102.7 | 93.3 | 92.3 | 102.7 | 92.8 | 86.0 |
| Other Sectors (Oil) | 17.7 | 9.3 | 15.1 | 18.4 | 11.5 | 17.1 | 19.1 | 20.7 | 19.1 |
| Total | 285.0 | 283.0 | 294.5 | 295.1 | 284.0 | 287.0 | 305.7 | 289.6 | 288.9 |

Source: DBEDT, Energy Division, Energy Data Services.

Outstanding Agencies

Outstanding Environmental Agencies for 2004



Photograph courtesy of Celyn Chong Kee, Lieutenant Governor's Public Liaison Officer

June 8, 2005, Environmental Awards Ceremony at the Capitol. *Front Row Left to Right:* Maurice Kaya (Department of Business, Economic Development and Tourism), Fire Chief Attilio Leonardi (Honolulu Fire Department), Kymm Solchaga (Kaua'i Department of Water Supply), Genevieve Salmonson, Monalisa Gallego, Michael Faye. *Back Row:* Victor Kimura, Faith Caplan, Douglas Hooper, Eileen O'Hora-Weir, Lieutenant Governor James Aiona, Chester Saito, Shad Kane, Gail Grabowsky, James Rodrigues, and Elsie Watanabe.

The Environmental Council selected the following agencies and their representatives to receive an award for their environmental excellence. They were presented with a plaque to acknowledge their achievements in attaining their environmental goals for 2004.

The Honolulu Fire Department represented by Fire Chief Attilio Leonardi and Battalion Chief Douglas Hooper, for implementing the "no smoke" diesel exhaust filtration system.

State Department of Business, Economic Development & Tourism represented by Mr. Maurice Kaya, for making good progress towards establishing Hawai'i as a leader in renewable energy use.

County of Kauai Department of Water represented by Ms. Kymm Solchaga, for its innovative environmental education and water conservation projects.

Outstanding Environmental Agencies for 2005

State Department of Hawaiian Home Lands

State Department of Transportation

Honolulu Board of Water Supply

Maui Department of Public Works and Environmental Management

Environmental Goals

The Environmental Council asked selected state and county agencies the five questions listed below. Responses by the agencies are reprinted in the following pages.

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?
2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?
3. What are your environmental goals for the period from July 2005 to June 2006?
4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?
5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

State Accounting & General Services

WHAT ARE YOUR AGENCY'S TOP ENVIRONMENTAL GOALS FOR THE PERIOD FROM JULY 2004 TO JUNE 2005?:

Goal/Objective: The DAGS Public Works Division's goal was to implement the Construction Waste Management Program to increase recycling, salvage, and reuse of construction and demolition waste in all construction projects. The Construction Waste Management draft guide specification will be pared down so that it can be approved and finalized. Only requirements that do not increase the cost of the project will be included in the specification. However, Contractors can still pursue additional recycling, salvage, and reuse options if they so choose.

WHAT ARE THE RESULTS OF YOUR AGENCY'S EFFORTS IN ACHIEVING YOUR JULY 2004 TO JUNE 2005 GOALS?:

Goal/Objective: The DAGS Public Works Division has written a comprehensive Construction Waste Management Guide Specification, which is currently in draft form. The draft has been given to a consultant to be reviewed and put in final form. The final document, originally due on June 30, 2005, is now due by October 31, 2005.

WHAT ARE YOUR ENVIRONMENTAL GOALS FOR THE PERIOD FROM JULY 2005 TO JUNE 2006?:

Goal/Objectives: 1) Implement / enforce comprehensive Construction Waste Management Guide Specification and Measure Compliance. 2) Implement a reverse-vending machine program to support the HI-5 bottle/can recycling law. Reverse-vending machines will be set up at select State facilities for the public to redeem their cans or bottles.

WHAT ARE THE BARRIERS THAT PREVENTED YOU FROM ACHIEVING ANY OF YOUR ENVIRONMENTAL GOALS AND WHAT ARE YOUR SUGGESTIONS FOR REMOVING THE BARRIERS?:

Provide additional funding, legislation, and direct executive branch support for implementing all our environmental goals.

WHAT RECOMMENDATIONS CAN YOU PROVIDE TO CHANGE LAND USE PLANNING AND MANAGEMENT IN HAWAII TO IMPROVE ENVIRONMENTAL QUALITY?:

DAGS' has no recommendations on land use planning and management.

King Kamehameha Celebration Commissions, which is attached to DAGS, promotes the preservation of Hawaiian culture.



State Department of Attorney General

Question #1: What are your agency's top environmental goals for the period from July 2004 to June 2005?

Response: Goal #1: Improve the State's environmental regulation and enforcement by providing effective and timely legal counsel and training for our clients.

Goal #2: Expedite enforcement actions.

Goal #3: Improve coordination with other state and federal agencies, and where appropriate, bring criminal enforcement actions.

Question #2: What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Response:

Actions to achieve goal #1: Deputy Attorneys General assigned to support state environmental agencies conducted regular coordination meetings with their clients to ensure timely instigation of potential enforcement cases and to facilitate amendments to administrative rules. During the course of those meetings, and through the course of actual casework, the assigned Deputy Attorneys General provided training to their clients on the appropriate application of enforcement statutes and administrative rules.

Actions to achieve goal #2: Deputy Attorneys General worked closely with state environmental enforcement agencies to institute timely and effective enforcement actions or to initiate settlement negotiations with alleged violators.

Actions to achieve goal #3: Deputy Attorneys General who handle environmental matters maintained regular contact with the relevant federal environmental enforcement agencies and coordinated civil and criminal investigations and enforcement actions. The Attorney General's Environmental Crimes Unit obtained noteworthy results for environmental crimes violations in the following cases: Pflueger case resulted in criminal fines of \$500,00.00; King case resulted in criminal fines of \$25,000.00; and the Kerwin case resulted in a one-year jail sentence, with six months jail time suspended.

Question #3: What are your environmental goals for the period from July 2005 to June 2006?

Response: Improve the effectiveness of statewide civil and criminal environmental enforcement actions. Continue to provide timely and comprehensive legal support to state agencies that regulate and enforce environmental laws. Assist in the coordination of state and federal environmental enforcement actions.

Question #4: What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Response: Increasing the number of state environmental enforcement agency staff personnel would enhance the ability of those agencies to handle multiple complex actions and to expedite processing of relatively routine enforcement actions.

Question #5: What recommendations can you provide to change land use planning and management in Hawaii to improve environmental quality?

Response: None at this time.

The Environmental Crimes Unit, established earlier this year, is a joint effort of the Attorney General, the Department of Health, and the U.S. Environmental Protection Agency. It allows for a coordinated response and investigation when an environmental crime occurs. The public is encouraged to report environmental crimes to the Attorney General's Investigation Division at (808) 586-1240.

State Department of Education

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

To comply with environmental regulations, including cesspool removal and MS4 storm water requirements.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Completed MS4 required reports for seven schools. Received \$11 million for cesspool removals from the 2005 Legislature.

3. What are your environmental goals for the period from July 2005 to June 2006?

To comply with environmental regulations, including cesspool removal and MS4 storm water requirements.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Adequate funding is critical to meeting environmental goals.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

None.

State Hawaiian Home Lands

1. TOP ENVIRONMENTAL GOALS FOR FY 2005

Goal #1: Sustainable Growth. Continue to generate trust income and support homesteading programs and services through forest-based opportunities.

Goal #2: Partnering. Continue existing partnerships and establish new ones to support our forest management plan. Assist our beneficiaries to turn their vacant homestead agricultural lots into tree farms.

Goal #3: Conservation. Champion the idea that forestry may be the highest and best use of former pasture and cane lands. Increase the acreage and improve the health of our forested lands.

2. RESULTS OF DHHL'S EFFORTS TO ACHIEVE GOALS

Goal #1: Sustainable Growth. Our forestry program added to the agricultural sector by creating jobs through invasive weed control, salvage harvesting, and planting and maintaining trees, a value-added land use that benefits both the trust and our beneficiaries.

Goal #2: Partnering. Partnered with (1) the US Fish and Wildlife Service on the Big Island to fence a high elevation, native bird wildlife corridor as part of our forest management plan; (2) the University of Hawaii on four research projects to better understand the site specific impacts of invasive species, improve protocols for eradicating those species, and enhance koa forest restoration; (3) community groups on Molokai to test plant valuable tree species; and, (4) other private parties statewide in two Watershed Partnerships.

Goal #3: Conservation. Degraded pasture on Maui and the Big Island is being transitioned into forest through fencing, removal of feral ungulates, scarification, hand-planting, and salvaging and recycling of wood products. 240 acres in 2004-2005 were planted and maintained in koa and other tree species. An additional 32 acres of previous plantings were maintained.

3. TOP THREE ENVIRONMENTAL GOALS FOR FY 2006

Goal #1: Sustainable Growth. Continue to generate trust income and support homesteading programs and services through forest-based opportunities.

Goal #2: Partnering. Continue existing partnerships and establish new ones to support our forest management plan. Assist our beneficiaries to turn their vacant homestead agricultural lots into tree farms.

Goal #3: Conservation. Champion the idea that forestry may be a higher and better use of some former pasture and cane lands. Increase the acreage and improve the health of our forested lands, with a focus on the latter.



Department of Health

I. Goals/Objectives for FY 2005 and FY 2006

DOH retains the general environmental goals it developed with public input for its strategic plan in 1999 and 2001. DOH reviewed the goals with its Environmental Management Advisory Group in 2005:

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 indoor and outdoor air quality for the health of our people.

II. Results of Efforts for FY 2005

DOH annually reports on the quality of Hawaii's air, water, and land in its Indicators of Environmental Quality, most recently published in January 2005, available on the web at: <http://www.hawaii.gov/health/environmental/env-planning/goals/goalsandindicators.html>. Some of the indicator information has also appeared elsewhere in the Environmental Council's annual reports. The DOH also produces other annual or bi-annual reports.

We report certain activities that relate to our goals.

A. Goal/Objective #1: DOH produces a list of state waters that do not meet water quality standards every two years under the federal Clean Water Act. The 2004 List of Impaired Waters can be found at: <http://www.hawaii.gov/health/environmental/env-planning/wqm/wqm.html-303pcd>

DOH has improved its beach monitoring and warning system. DOH has increased the number of routine sampling sites from 58 to 100 statewide, and developed a web page to inform the public of noteworthy test results. The DOH has also initiated routine health advisories during the periods of heavy rainfall to warn citizens of the hazards of swimming or recreating in muddy water. DOH cautions that in tropic climates such as ours, high indicator bacteria test results often result from natural sources of such bacteria instead of sewage spills. EPA developed and required the particular test to deal with sewage contamination of recreational waters.

DOH is also pursuing enforcement cases against waste discharges to our inland and coastal waters, including manmade sources of polluted runoff.

B. Goal/Objective #2: To better protect the quality of the State's inland and coastal waters, DOH has established pollutant load limits (Total Maximum Daily Load (TMDL) pollutant allocations) for Kawa Stream, Ala Wai Canal, and Waimanalo Stream and completed plans for implementing the required pollutant load reductions. TMDLs are near completion for streams draining into Nawiliwili Bay (Kaua'i) and Pearl Harbor (O'ahu), as well as for Kane'ohe and Kapa'a Streams (O'ahu). New TMDL development projects are underway for streams in Hanalei (Kaua'i), Ka'elepulu (O'ahu), and Kaukonahua (O'ahu), and for Waiakea and Alenaio Streams (Hawai'i).

Department of Health

C. Goal/Objective #3: In 2005, no illnesses were reported from consuming drinking water. Drinking water from DOH-regulated water systems continues very high levels of compliance that meet required drinking water quality standards. No advisories were issued to consumers to boil water as a precaution against possible contamination. DOH continues talking with the Department of Land & Natural Resources and the Department of Agriculture about whether on the groundwater is at risk from chemicals used in irrigation well water systems without a proper backflow preventors. DOH started talking with all County Planning Offices on using the completed Source Water Assessment Plan (SWAP) for protection of their drinking water sources.

D. Goal/Objective #4: DOH responded to 350 oil and chemical spills to assure cleanup, prevent adverse health effects, and avoid future contamination. In addition, it closed out 36 other previously identified contaminated sites.

E. Goal/Objective #5: Hawaii's air continues to be much cleaner than federal standards set to protect human health. DOH continues to operate 16 air quality monitoring stations throughout the state and provides nearly real-time access to the monitoring data through its Online Air Quality Data web page at: <http://www.hawaii.gov/doh/air-quality/index.html>. DOH plans to expand its air monitoring network into areas frequently impacted by the volcanic emissions and to improve its air advisory system for the public.

DOH continues to protect the public from exposure to asbestos and lead by implementing the Lead Based-Paint Program and obtaining federal delegation for the Asbestos in Schools and Model Accreditation Program.

III. Barriers to Achieving Environmental Goals

A. Improving DOH internal processes for permitting, monitoring, and enforcement, is challenging, especially because we must do ever-increasing amounts of work with essentially stable resource levels. We are working to improve our information technology and other systems, and we periodically review our priorities.

B. While the U.S. Environmental Protection Agency (EPA) is a strong partner of the DOH, it does have many timelines and requirements, especially for reporting.

C. Lack of local markets for recycled goods.

D. Need to have stronger efforts to conserve water for the future, as Hawaii does not have an infinite supply of fresh water.

IV. Recommendations for Changing Land Use Planning and Management in Hawaii to Improve Environmental Quality.

A. Careful attention to mixed uses and buffers between zones such as residential and agriculture or light industrial could help to reduce the environmental effect some uses. For example, homes allowed near farms have led to some new residents to complain about farm odors, dust and noise. While the State has a right to farm law to provide legal protection for farmers, that does not necessarily end public discontent.

B. Stricter County ordinances and enforcement of land use laws.

State Land & Natural Resources

Commission on Water Resource Management:

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

Goal #1: The Commission will continue development of its Stream Protection and Management Program towards the setting of Instream Flow Standards.

Goal #2: The Commission will continue working towards the siting and drilling of deep monitor wells within aquifer systems to monitor the effects of withdrawal of potable ground water for municipal, domestic, and other purposes.

Goal #3: The Commission will conduct an assessment of statewide reporting of ground water pumpage in efforts to initiate full compliance with reporting requirements under the State Water Code.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Goal #1: The Commission has prepared a Stream Protection and Management Program Implementation Plan which identifies goals, strategic issues, actions, and tasks that must be implemented to provide the foundational elements of an instream flow standard methodology. The Commission adopted statewide surface-water hydrologic units to aid in the development of statewide instream flow standards. The Commission also developed a surface-water hydrologic unit database and a stream-diversion works and declarations of water use database, two fundamental components of a comprehensive surface-water information management system (SWIM), and continues to work on the design of other databases related to SWIM.

Goal #2: The Commission constructed two deep monitor wells in Ewa-Kunia and Waimalu on Oahu, outfitted with data collection equipment. Additional funding was also secured to construct deep monitor wells in Iao and Waihee, Maui.

Goal #3: Although comprehensive water use reporting by well owners/operators was not achieved, the Commission has improved its water use databases and digitized all available groundwater pumpage data. The Commission continues to work on verifying the extent of well uses which has been delayed due to the large number of wells in the State.

3. What are your environmental goals for the period of July 2005 to June 2006?

Goal #1: Update the water use permitting process by requiring applicants to identify and analyze alternative sources of water that may be used to meet their projected water demands. By using alternative sources of water where practical, public trust resources (i.e., ground and surface waters) may remain in their natural state, in the streams and in the underground aquifers, which supports the health of stream life and near-shore waters.

Goal #2: Begin setting instream flow standards for streams with initial focus on West Maui and East Maui to establish appropriate environmental flows.

Goal #3: Complete Phases I and II of the refinement and modification of Robust Analytical Model (RAM) to update the sustainable yield estimates for those areas that have deep monitor wells, and to use this analysis to extrapolate to regions within the State that do not have deep monitor wells. Accurate sustainable yield estimates will provide the Commission with information to balance reasonable and beneficial uses with protection of the groundwater resources.

4. What are the barriers that prevented you from achieving your environmental goals and what are your suggestions for removing these barriers?

Goal #3: Lack of well owner/operator contact information and a shortage of personnel to research and identify wells that are in use has hampered efforts to get all well owners/operators to fully comply with groundwater use reporting requirements. In many cases for wells constructed long ago, there is no contact information on the well owner/operator. Due to the large number of wells in the State, it is difficult and time consuming to research, identify, and verify existing well uses.

A statewide assessment and field investigative study is needed to identify owners of all wells, which have no records or discontinued records of pumpage.

5. What recommendations can you provide to change land use planning and management in Hawaii to improve environmental quality?

Recommendation #1: Require applicants for State Land Use designation and zone changes to identify any existing wells within the parcel, and require that wells that are no longer needed for water supply be properly sealed.

Recommendation #2: Require developers of large subdivisions or projects (using > 1 million gallons per day of ground water) to drill and/or finance a deep monitor well, with provisions for long-term access and use by the State to monitor aquifer conditions. Increased population/development places a burden on the resources of that area. Protection of the resource is paramount, and drilling a deep monitor well can help provide for that protection.

Recommendation #3: Require the seller and/or buyer of land, upon which unused or abandoned wells exist, to properly seal the well when land ownership is conveyed. Proper abandonment and sealing of unused wells is critical to protecting the ground water from contamination.

State Land & Natural Resources

The goals for the Engineering Division are as follows:

1. Develop water and land resources to provide support to the programs that are designated to achieve the State's economic, agricultural, environmental and social goals, with priority given the State-sponsored projects. Traditional and alternative water sources are investigated and developed to meet the increasing demands of State-sponsored projects.
2. Provide engineering services to other divisions of the Department and other State agencies to execute Capital Improvements Program and/or operating, maintenance and repair projects.
3. Protect people and their property from unwise floodplain development, and to protect society from the costs associated with developed floodplains through floodplain management activities and regulation of dams and reservoirs. The Engineering Division's environmental goal is to mitigate its project's impact on the environment.



State Land & Natural Resources

Division of Forestry and Wildlife

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

Native ecosystem restoration, invasive species control & prevention, funding and environmental education.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Sustain efforts in funding and management.

3. What are your environmental goals for the period from July 2005 to June 2006?

Native ecosystem restoration, invasive species control & prevention, funding and environmental education.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Funding, (i.e. P-card), procurement, bureaucracy and staffing shortages. These barriers exist to prevent government abuse but they will continue to prolong frustration to accomplishing management goals. Make it easier to do business in Hawaii.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

Education.

State Department of Public Safety

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

The Department began construction of a new wastewater treatment plant at the Kulani Correctional Facility (KCF) on the Big Island. The new system replaces noncompliant cesspools that were closed earlier this year.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

The new wastewater treatment plant at KCF was completed ahead of schedule and under budget. The use of inmate labor produced substantial savings and improved the overall efficiency of construction.

3. What are your environmental goals for the period from July 2005 to June 2006?

The Department has initiated another project to upgrade the wastewater treatment plant at the Waiawa Correctional Facility (WCF) in Waipahu, Oahu.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

The current project at WCF has been delayed for a number of years due to funding issues that has since been resolved.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

No recommendation(s) at this time.

State Department of Transportation

1. What were your agency's top environmental goals for the period from July 2004 to June 2005?

Goal #1: Promote better education of all users of MS4 and NPDES permits through classroom training and training at highway construction sites.

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

Goal #3: Start to plan, develop and implement an Environmental Management Program that will include procedures, checklists, monitoring and training for the use, handling and management of solid waste and hazardous materials at the baseyards and other facilities and structures under the division's control.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Goal #1: One hundred thirty seven (137) construction and design personnel were trained in 6-hour classes on "Erosion and Sediment Control for Highways". One hundred thirty nine (139) maintenance personnel were trained in 2-hour classes on "Best Management Practices for Maintenance Operations." Pre-construction meetings that review NPDES and erosion control requirements, including documentation, were held for all applicable State Highway construction projects.

Goal #2: Lead based paint abatement or removal at the Hawaii District baseyards was completed at Waimea, almost completed at Naalehu, and bids were opened for the North Kona baseyard on June 23, 2005. Design contracts were issued to remove lead based paint from the Kukaiau, Kuwaikahi, Ninoole, and Maulua bridges.

Goal #3: The Highways Division contracted the U.S. Army Corp of Engineers to assist in the development and implementation of an Environmental Management Program. The draft format for the overall program was developed and consists of the following subprograms:

- Chemical Applications
- Construction BMP
- Hazard Communications
- Hazardous Waste Management
- Solid Waste Management
- Petroleum, Oil and Lubricants Management
- Facility Maintenance Management.

A draft version of the Chemical Applications Program and its associated training program was developed. Drafts were 50% complete for the Hazard Communications, Hazardous Waste Management and Solid Waste Management programs.

Additionally, site inspectors were conducted at each of the Oahu Maintenance baseyards to develop Storm Water Pollution Control Plans (SWPCP). A draft SWPCP along with its corresponding training guide/users manual was prepared for each Oahu baseyard.

3. What are your environmental goals for the period from July 2005 to June 2006?

Goal #1: Finalize the Environmental Permitting Guideline Manual and provide training on the Manual.

Goal #2: Develop Permanent Best Management Practices (BMP) Criteria for Highway Design Engineers to minimize pollution and develop a Highway Maintenance Best Management Practices (BMP) procedures manual for use by baseyard engineers and maintenance personnel.

State Department of Transportation

Goal #3: Complete the following components of the Environmental Management Program and train personnel on the components: Chemical Application, Construction Best Management Practices (BMP), Hazardous Communications, Hazardous Waste Management, and Solid Waste Management.

Goal #4: Reduce pollution entering impaired water areas from State Highway drainage systems and from the State Highway right of way.

Goal #5: Remove or abate lead based paint on steel bridges and other structures under the Highways Division's control.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Barriers to Goal #1: Lack of DOT and Highways Division organizational structure to address environmental compliance in project delivery, construction and maintenance; limited resources; and staff shortages. Reorganizing the department to allocate more resources and staff to the division would help remove barriers.

Barriers to Goal #2: High cost of lead removal procedures is a barrier to rapid progress. Instead of trying to remove the barrier, we make slow but steady progress each year.

Barriers to Goal #3: Being an island state sometimes makes it difficult and costly to bring the proper district personnel together to share ideas and discuss operations to develop an effective statewide program. For State FY 2006, we will use our video conferencing equipment to facilitate communication between the districts.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

The State should encourage the counties to develop comprehensive land use plans for sustainable communities.

Kaua‘i Planning Department

1. What are your agency’s top environmental goals for the period from July 2004 to June 2005?

Goal #1: To ensure that land use and development projects are assessed for conformity to the goals and policies of the Kauai County General Plan and supporting zoning ordinances with respect to maintaining Kauai as the “Garden Island” by sustaining the unique landscape, natural ecology and environmental character of the Island.

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

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

2. What are the results of your agency’s efforts in achieving your July 2004 to June 2005 goals?

Goal #1: Discretionary permits and applications are referred to various governmental agencies for comments (and HRS 343 process when applicable) and adjoining property notification and public hearings are held to further identify and address impacts. The County’s updated General Plan provides guidance for land use policies regarding environmental and other development issues, along with helping to guide the location and character of new private and government development and infrastructure.

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

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

3. What GOALS/OBJECTIVES FOR FY 2005

The current environmental goals/objectives apply to FY 2005.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Planning projects are routed to various governmental agencies at the County, State and Federal levels for review with respect to addressing and mitigating project impacts under the purview of that particular agency. Adequate funding for these agencies with regulatory functions for staffing, new technology, the development of clear and appropriate standards and functional rules/plans with enforcement support and interagency coordination are areas which could enhance the effectiveness of the overall development process.

5. What recommendations can you provide to change land use planning and management in Hawaii to improve environmental quality? See number 4 above.

Honolulu Board of Water Supply

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

Goal/Objective #1:

Water Conservation:

- 1) Promote and educate the public on conservation methods through a year-round media campaign.
- 2) Complete construction of the Kakaako district seawater cooling system to save potable water normally lost through evaporation from cooling. Initiate additional deep well cooling projects in Waikiki and in Kapolei.

Goal/Objective #2:

Alternative Resource Development:

- 1) Our previous goal was to begin the design of the Wahiawa/Central Oahu Recycled Water Facility, which would provide recycled water for irrigation needs along Kamehameha Highway in Mililani Central Oahu Regional Park and the future Waiawa development.
- 2) Our previous goal was to complete the preliminary engineering study of the Waianae Wastewater Treatment Plant Recycled Water Facility to determine its feasibility. One-half or 5 mgd of Waianae's water is imported from Pearl Harbor and about 3 mgd of secondary treated wastewater is discharged into the ocean. This study will evaluate using recycled water for irrigation in Waianae.

Goal/Objective #3:

Watershed Management Planning:

- 1) Complete the Waianae and Koolauloa Watershed Management Plan including the extensive public outreach, which is planned.
- 2) Fund Watershed Management Plans for Koolaupoko and the North Shore land use districts in FY 2006 Budget.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Goal/Objective #1:

Water Conservation:

- 1) Promote and educate the public on conservation methods through a year-round media campaign.

STATUS: Extensive year-round conservation media campaign was initiated in 2004.

- 2) Complete construction of the Kakaako district seawater cooling system to save potable water normally lost through evaporation from cooling. Initiate additional deep well cooling projects in Waikiki and in Kapolei.

STATUS: Construction of the Kakaako district seawater cooling system has been completed. A test well to determine suitability of source water for district cooling at the International Marketplace in Waikiki is under construction. District cooling in Kapolei has not been initiated.

Honolulu Board of Water Supply

Goal/Objective #2:

Alternative Resource Development:

1) Begin the design of the Wahiawa/Central Oahu Recycled Water Facility, which would provide recycled water for irrigation needs along Kamehameha Highway in Mililani Central Oahu Regional Park and the future Waiawa development.

STATUS: Design funds have lapsed and will not be rebudgeted until outstanding issues with the City are resolved regarding joint development of recycled water distribution and treatment.

2) Complete the preliminary engineering study of the Waianae Wastewater Treatment Plant Recycled Water Facility to determine its feasibility. One-half or 5 mgd of Waianae's water is imported from Pearl Harbor and about 3 mgd of secondary treated wastewater is discharged into the ocean. This study will evaluate using recycled water for irrigation in Waianae.

STATUS: The study was cancelled.

Goal/Objective #3:

Watershed Management Planning:

1) Complete the Waianae and Koolauloa Watershed Management Plans including the extensive public outreach, which is planned.

STATUS: The Waianae and Koolauloa Watershed Management Plans are progressing and may be completed by end of 2005.

2) Fund Watershed Management Plans for Koolaupoko and the North Shore land use districts in FY 2006 Budget.

STATUS: Plans have been deferred to FY 2007 due to other higher priority projects.

3. What are your environmental goals for the period from July 2005 to June 2006?

Goal/Objective #1:

Water Conservation:

1) Complete and implement the Board of Water Supply (BWS) water conservation program development study to expand water conservation programs for residential, non-residential customers in alignment with national best practices. Evaluate and measure the results from the year-round media campaign to the public on conservation methods.

2) Establish an Internal Conservation program to reduce water loss in the existing BWS distribution system. Improve data acquisition, meter efficiencies, corrosion protection and proactive leak repair to reduce main break frequency and damage.

Goal/Objective #2:

Alternative Resource Development:

1) Work with affected agencies to advance recycled water use on Oahu with particular emphasis on joint development agreements.

Honolulu Board of Water Supply

2) Expand seawater district cooling projects in Kakaako and Ko Olina as a conservation measure and business development program.

Goal/Objective #3:

Watershed Management Planning:

1) Implement a Watershed Protection grant program to fund watershed enhancement projects and programs.

2) Fund Watershed Management Plans for Koolaupoko and the North Shore land use districts in the FY 2007 budget or as a FY 2006 budget amendment.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Funding and agency cooperation were barriers that affected our environmental goals as it relates to the five-key themes mentioned in your letter:

- i. 1999 – Improving Hawaii’s Solid Waste Recycling Rate;
- ii. 2000 – Global Warming and Recommendations to Reduce the Greenhouse Effect;
- iii. 2001 – Preserving Hawaii’s Biodiversity;
- iv. 2002 – Preserving our Hawaiian Forests;
- v. 2003 – Minimizing Population Growth Impacts on Environmental and Cultural Resources.

5. What recommendations can you provide to change land use planning and management in Hawaii to improve environmental quality?

Land use planning and management in Hawaii may be improved through increased consideration of the potential impacts of land uses on the island’s groundwater resources. Developing guidelines and regulations on land uses above source wells could reduce source contamination that would require expensive treatment or abandonment. Integrating the findings of our on-going watershed management plans into the sustainable communities and development plans of Oahu.

Honolulu Facility Maintenance

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

Maintain compliance with environmental rules and regulations. Acquire staff to improve awareness of environmental laws and updates.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Complied in general with environmental laws but received citation for inadequate UST recordkeeping. Worked with State Department of Health on procedure for identifying and properly disposing of hazardous wastes dumped on City property. Failed to hire engineer experienced in environmental matters due to lack of applicants and competition from other agencies.

3. What are your environmental goals for the period from July 2005 to June 2006?

Improve compliance with environmental rules and regulations. Acquire engineer staff experienced in environmental matters. Update environmental assessment exemption list.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

Unable to acquire engineer experienced in environmental matters due to reduced applicant pool caused by upturn in economy and increased construction activities. Increased salary differential to match State salaries should improve recruitment of staff.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

Require increased funding for maintenance of infrastructure commensurate to increased responsibilities for maintenance. Require installation of maintainable pollution controls to ensure continued environmental quality.

Honolulu Fire Department

1. What are your agency's top environmental goals for the periods from July 2004 to June 2005?

- a. Replace existing stock of Aqueous Film Forming Foam with environmentally friendly foam.
- b. Continue conversion of installation of solar water heating at the fire stations.
- c. Replace light fixtures and ballasts in the fire stations with energy efficient systems.
- d. Explore the use of Photovoltaic systems in new fire stations.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

- a. The Honolulu Fire Department (HFD) inventoried all foam stored at its Iwilei storage depot and is in the process of eliminating old and odd lot foams.
- b. All new stations must have solar water heaters installed as part of the energy code.
- c. All fire stations have had their light fixtures and ballasts replaced with more energy efficient systems.

3. What are your environmental goals for the period from July 2005 to June 2006?

- a. Complete foam disposal project.
- b. Explore feasibility of reviving solar water heating in all fire stations.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

The conversion of older existing stations to solar water heating was delayed due to other priority and resource allocations. The HFD will work with the Department of Design and Construction to reprioritize conversion in its capital improvement budget.

However, the design guidelines on fire stations designated as historic landmarks make it difficult and cost prohibitive to retro fit these stations with solar water heating.

In addition, the Hawaiian Electric Company's requirement for a backup water heater shut down is from 5-9 p.m. or no rebate. These are peak hours for our fire suppression personnel.

That HFD support all environmentally sound planning and management programs established by Federal, State and Local governments.



Honolulu Parks and Recreation

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?

Goal 1: Maintain the City's beautification and park landscaping improvements.

Goal 2: Schedule upgrading of cesspools in City parks to septic systems or connection to sanitary sewers.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Goal 1: The Department of Parks and Recreation planted 1499 trees and 34,257 s.f. of landscape material.

Goal 2: Identified all cesspools in the City and have either upgraded or programmed to upgrade all of them to alternative wastewater systems.

3. What are your environmental goals for the period from July 2005 to June 2006?

Goal 1: Continue the City's beautification and park landscaping efforts through tree planting and other landscape improvements.

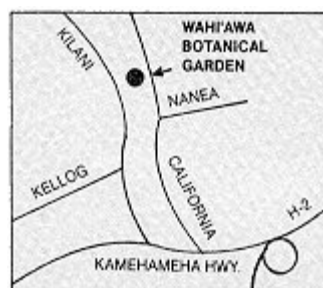
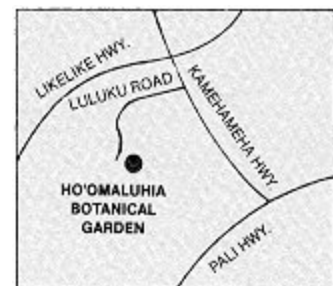
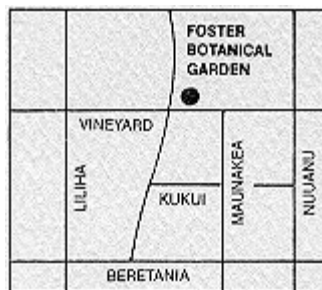
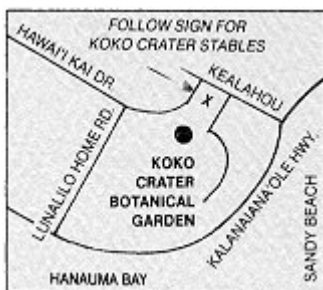
Goal 2: Continue the conversion of virtually all green waste from residential collection as well as from all City parks and botanical gardens to mulch and compost. Compost not utilized in our parks and botanical gardens is made available, free of charge, to the public at Hoomaluhia Botanical Gardens and at the Ala Wai, Manoa, Makiki and Wahiawa community gardens.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

None

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

None



Honolulu Planning & Permitting

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?
 - a. To support the Board of Water Supply in the preparation of the Oahu Water Use and Development Plan.
 - b. To participate in the Oahu Metropolitan Planning Organization planning process, in particular, to assure coordination of transportation planning with county land use and population planning.
 - c. To develop community and neighborhood plans that help to promote adopted regional plans and meet specific neighborhood goals.
2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?
 - a. We have met this goal.
 - b. We have met this goal.
 - c. We have met this goal.
3. What are your environmental goals for the period from July 2005 to June 2006? The above-mentioned goals are the same and continue for the period from July 2005 to June 2006.
4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers? Adequate funding both in the planning and implementation phases is a barrier to successful community and neighborhood plans.
5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

Reliable and adequate sources of funding would provide the resources to change land use planning and management in Hawaii. Evaluation of the role and perspective of the State Land Use Commission would help to streamline the overall entitlement process and free up state and city resources which could be used in other land use issues, such as environmental quality.

Honolulu Transportation Services

1. *What are your agency's top environmental goals for the period from July 2004 to June 2005?*

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

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

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

2. *What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?*

Goal #1: Continued work on the Primary Corridor Transportation Project, in preparation to implement the initial operating segment of the Bus Rapid Transit project from Downtown to Waikiki. Awarded construction contracts for two early phases of the Middle Street Intermodal Center, Mililani Transit Center and Waianae Transit Center. Completed two phases of the Bus Stop ADA Access Improvement Project for preliminary design of bus stops. Hub and spoke plans for Honolulu (Pearl City to Hawaii Kai) and Windward Oahu being developed. Installed Smart Card technology being reassessed. The Bus provided special services for the Mayor's Memorial Day Service at Punchbowl, Easter Sunrise Service, Great Aloha Run, Veteran's Day Service, Aloha Stadium Football Express for all UH home games, Pro Bowl football game and New Year's Eve-New Year's Day. Constructed Keolu Drive and Waialua Beach Road Bikeways. Kapiolani Community College Bike Staging Station and Kamehameha Highway Bikeway were being constructed. McCully Street Bikeway and Waialae Avenue Bikeway were under design. Purchased and distributed various bicycle safety education materials to the public. Conducted four bicycle traffic safety training sessions with new TheBus drivers. Served as grant manager for Hawaii Bicycling League's Bike Ed Program. Purchased and installed 25 "street art" functional "bike" shaped bike racks.

Goal #2: Reviewed, coordinated and processed approximately 58 environmental impact and assessment documents. Administered and completed the Waikiki Livable Community Project. Administered the contract for professional services for the North-South Road Project. Continued work on the Waipio Point Access Road Study. Completed planning work on the Kaimuki Business District Parking Master Plan and the Manana Sub-Area Traffic Study. Initiated planning studies for Kamokila Boulevard Extension and Makakilo Drive Extension Projects. Prepared professional services procurement for rail planning study. Prepared professional services procurement for a ferry project Request for Proposals.

Goal #3: Took delivery of 10 hybrid electric low floor articulated buses. Contracted for 40 hybrid electric low floor buses and 32 Handi-Van buses. Managed and administered design contract work for the Bus Rapid Transit Project. Proceeded with final engineering design work on Dillingham Boulevard Bus Pullouts and related improvements. Managed consultant contract to plan and design intersection improvements at the Waimano Home Road/Kuala Street/Moanalua Road intersection. Review of existing City bus stop spacing and removal of several mid-block bus stops initiated. Awarded construction contract for bus bay and ADA improvements at the bus stop on Diamond Head Road at Kapiolani Community College. Awarded a design services contract to install concrete bus pads on Waialae Avenue, Beretania Street, School Street and Leolua Street. Installed first 40 of a total of 80 design/build bus shelters. Awarded construction contract to upgrade 40 non-compliant bus stops to ADA standards; second phase is under design. Installed 73 new bus stop benches and purchased 80 litter containers. Demonstration project implemented to evaluate solar lighting at two bus shelters, one in Salt Lake and the other at the entrance to Leeward Community College. Installed three new traffic signals and three left turn signal modifications. Completed design for fiber optic cable expansion to add additional traffic cameras. Connecting City's Traffic Management Center with State's H-3 Tunnel Management Center with fiber optic cable.

3. *What are your environmental goals for the period from July 2005 to June 2006?*

Honolulu Transportation Services

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

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

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

4. *What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?*

None.

5. *What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?*

None.



Maui Department of Parks & Recreation

1. What are your agency's top environmental goals for the period from July 2004 to June 2005?
Plan, develop, and maintain parks and recreational facilities using sound environmental management practices and recognizing environmentally sensitive areas.
2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?
We were successful in accomplishing said goals.
3. What are your environmental goals for the period from July 2005 to June 2006?
The same.
4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?
No comments.
5. What recommendations can you provide to change land use planning and management in Hawaii to improve environmental quality?
Provide more open space and park land.



Maui Public Works & Env. Mgt.

I. What are your agency's top environmental goals for the period from July 2004 to June 2005?

A. Adopt amendment to County drainage rules requiring the incorporation of storm water pollution-control measures and Best Management Practices into subdivision design and fully implement rules.

B. Construct/Install drainage grease traps for all County Highways baseyards with garage/shop facilities.

C. Formulate Central Maui Wastewater Planning Study recommendations. Work with Maui County Council to obtain resolution of support. Begin planning and design of recommended alternative.

II. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

A. An initial draft of the rules was prepared, however, a comprehensive re-write of the rules is required based on comments from the State, Department of Health (DOH) and the Environmental Protection Agency (EPA). A list of questions and proposals was sent to both agencies for clarification and we are currently waiting for responses. Upon receipt of the requested clarifications, we will proceed to re-write and adopt the rules.

B. The County Highways baseyards were reviewed by the County's Wastewater Reclamation Division for compliance. The conditions in the baseyards are such that grease traps were not required.

C. The broad-based citizen committee met several times to establish project goals, alternative evaluation criteria, and weighting of the criteria. Once the group selected the top 10 alternatives, alternative evaluation was completed. Working on development of recommendation to the Council.

III. What are your environmental goals for the period from July 2005 to June 2006?

A. Continue working on getting the adopted amendment to County drainage rules requiring the incorporation of storm water pollution-control measures and Best Management Practices into subdivision design and fully implement rules.

B. Continue working on the Central Maui Wastewater Planning Study recommendations. Work with Maui County Council to obtain resolution of support. Begin planning and design of recommended alternative.

C. To adopt the Outdoor Lighting ordinance to minimize the outdoor light pollution and light trespass through regulation of the type and use of the outdoor lighting.

IV. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

A. Staffing shortages made it difficult to work on items such as rule amendments. New staff has been hired and all attempts will be made to adopt new rules.

B. As the project is about to be presented to the Council, Council action could delay the project from moving forward. Lack of information by Council Members could become the barrier. Efforts to ensure Council action are in place to provide as much information as possible.

C. Delays by the Outdoor Lighting Advisory Committee has slowed the progress of the ordinance. A proactive approach in responding to the committee's review requests has helped to keep the project progressing.

V. What recommendations can you provide to change land use planning and management in Hawaii to improve environmental quality?

A. Increase the amount of the fines for violations and eliminate the need for multiple written warnings prior to issuance of a fine. Fines should be handed out immediately like is done for traffic violations.

B. Require better coordination between infrastructure expansion and upgrades and new developments, balance the needs for new construction and housing with conservation, provide better administration of existing regulation, eliminate outdated regulations, and eliminate jurisdictional boundaries by creating a single agency to administer, monitor and enforce all land development and construction regulations.

Hawai'i Environmental Management

1. **What are your agency's top environmental goals for the period from July 2004 to June 2005?**
 - A. Address large capacity cesspool replacements owned by the County and for which the Department of Environmental Management is responsible.
 - B. Increase recycling/implement Beverage Container Deposit Program, curb illegal dumping, Brownfields investigations.
2. **What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?**
 - A. We have received, or will be receiving, consultants on board to address the problem by performing preliminary engineering studies.
 - B. Diversion rate increased from 15.7% to 19.7%.
 - C. Estimated recovery rate of beverage containers is 67%.
 - D. Kealakehe Recycles @ Kona TS recycling center was opened through EPA grant funds.
 - E. We obtained Brownfields inventory and assessment funding.
3. **What are your environmental goals for the period from July 2005 to June 2006?**
 - A. Continue to move forward with large capacity cesspool closure efforts and work closely with US EPA.
 - B. Enhance current permitted County Solid Waste convenience centers with CDBG & EPA funding.
 - C. Increase opportunities for recycling through County Diversion Grant Program.
 - D. Enforce illegal dumping regulations against violators.
4. **What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?**
 - A. No significant barriers encountered where QEQC is concerned.
 - B. No dedicated staff to deal with illegal dumping investigations & enforcement. Too little funding to enhance significant numbers of County SW convenience centers.
5. **What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?**
 - A. Move towards land use planning that limits urban sprawl and prevents unmanageable population growth and its accompanying effects on services provided by the County.
 - B. Increase impact fees to offset County services impacts.

Hawai'i Housing and Community Dev.

1. What are your agency's top environmental goals for the period July 2004 to June 2005?

Goal #1: The Office of Housing and Community Development (OHCD) will continue to seek training to keep staff abreast of the National Environmental Policy Act (NEPA) and Section 343 Hawai'i Revised Statutes rule changes.

Goal #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, Hawai'i Revised Statutes.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Goal #1: The staff of the OHCD attended an environmental compliance training on July 13, 2004 to July 16, 2004. The training was sponsored by the U.S. Department of Housing and Urban Development (HUD) and covered NEPA and 24 CFR Part 58.

Goal #2: Conducted environmental review responsibilities for seven CDBG projects and two HOME projects.

3. What are your environmental goals for the period from July 2005 to June 2006?

The goals would be the same as identified for fiscal year 2004.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing the barriers?

One of the barriers that are preventing our agency in achieving our environmental goal is lack of training for Section 343 Hawai'i Revised Statutes. This lack of training in Section 343 not only affects the County of Hawaii but all other Counties in the State of Hawaii. Through turnover some Counties have new staffs that are not properly trained in Section 343. We would like to see the State conduct a Section 343 training for State and County agencies.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?



Hawai'i Department of Water Supply

I. ENVIRONMENTAL GOALS/OBJECTIVES FOR FISCAL YEAR 2005:

- A. Goal Objective No. 1: Continue to meet Federal Safe Drinking Water Act compliance requirements.
- B. Goal Objective No. 2: Continue to replace transite pipes containing asbestos and replace steel tanks that contain lead-base paint.
- C. Goal Objective No. 3: Provide electrical power to remote sites to improve system reliability. Implement energy study recommendations.

II. RESULTS OF EFFORTS TO ACHIEVE GOALS/OBJECTIVES FOR FISCAL YEAR 2005:

- A. Goal Objective No. 1: Construction and advertising for bids for deep wells is continuing throughout the island. Continuing with corrosion control treatment islandwide.
- B. Goal Objective No. 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 No. 3: Phase I of our energy study was completed. Implementation of the recommendations will commence. Hydro generation study is in progress.

III. ENVIRONMENTAL GOALS/OBJECTIVES FOR FISCAL YEAR 2006:

- A. Goal Objective No. 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 No. 2: Continue to replace transite pipes containing asbestos and replace steel tanks that contain lead-based paint.
- C. Goal Objective No. 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.

IV. BARRIERS PREVENTING ACHIEVEMENT OF GOALS - None

V. RECOMMENDATIONS - None

Hawai'i Parks and Recreation

1. What are your agency's top environmental goals for the period from July 2004 to July 2005?

None were identified last year.

2. What are the results of your agency's efforts in achieving your July 2004 to June 2005 goals?

Not applicable.

3. What are your environmental goals for the period from July 2005 to June 2006?

- i. Promote the landscaping of parks and park lands with native and climate appropriate trees, shrubs and groundcovers through volunteer efforts (eagle scout projects, service groups, etc.), park development projects and with staff through park beautification and enhancement projects.
- ii. Implement conversion of large capacity cesspools at park facilities to approved Individual Wastewater Systems.
- iii. Restore the shoreline and public park lands at Lehia Beach Park "Pu'umaile" to provide additional safe shoreline recreational opportunities for East Hawai'i residents by removing the illegal dwellings and occupants that have illegally existed there for several years and remove all refuse and waste associated therewith.
- iv. Assess older park structures for the presence of hazardous building materials, such as lead paint, determine a course of action for mitigation or remediation and implement the plan in phases as they are scheduled for repairs or improvements.

4. What are the barriers that prevented you from achieving any of your environmental goals and what are your suggestions for removing barriers?

Not applicable.

5. What recommendations can you provide to change land use planning and management in Hawai'i to improve environmental quality?

None at this time.

Environmental Goals

Please contact the following agencies directly for their environmental goals and achievements.

State Department of Agriculture, State Department of Business, Economic Development & Tourism, State Department of Defense, Honolulu Department of Design & Construction, Honolulu Department of Environmental Services, Oahu Civil Defense Agency, Hawaii Fire Department, Hawaii Planning Department, Hawaii Department of Public Works, Kauai Department of Public Works, Kauai Office of Economic Development, Kauai Fire Department, Kauai Department of Water, Maui Department of Fire Control, Maui Department of Housing & Human Concerns, Maui Department of Planning, Maui Department of Water Supply.