

2012

# Environmental Health Management Report



Environmental Health Administration



HAWAII STATE DEPARTMENT OF HEALTH  
HEALTHY PEOPLE · HEALTHY COMMUNITIES · HEALTHY ISLANDS



### Message from Director Loretta J. Fuddy, A.C.S.W., M.P.H.



The administration challenged the Department of Health (DOH) and other State agencies to envision and pursue “A New Day in Hawai‘i.” A vital part of this New Day includes ensuring the quality of our environment. In 2011, the DOH enacted a strategic plan to align our foundational principles of sustainability, health promotion and prevention, equity, emergency preparedness, and quality and service excellence. These principles guide all of our policies, protocols, programs, and new initiatives. At the close of 2012, the DOH is on course to continue in its path toward reaching Hawai‘i’s environmental health goals by reinvesting in programs that received a reduction in budget and staffing due to past fiscal constraints. The DOH takes seriously its responsibility of working with the people of Hawai‘i to protect and improve public health and the environment. Our work, as outlined in this 2012 Environmental Health Management Report,<sup>1</sup> has led to a revitalization of essential public health and environmental protection programs. We look forward to a new year in which we will continue to work with public and private partners in pursuing our vision – Healthy People. Healthy Communities. Healthy Islands.

### Message from Deputy Director Gary Gill



The Environmental Health Administration (EHA) plays a key role in ensuring the health and safety of the air we breathe, the ocean and streams we enjoy, the water we drink, the food we eat, products we use, and safely processing the waste we create. The administration of such a wide array of programs, as outlined in this 2012 Environmental Health Management Report, is an exciting yet challenging responsibility. At EHA we take seriously this responsibility because environmental health issues intricately touch upon almost every aspect of public life. EHA has delegated authority from the U.S. Environmental Protection Agency to implement a number of environmental Federal statutes. EHA also works closely with the U.S. Food and Drug Administration and the Centers for Disease Control and Prevention. Together with these Federal partners we ensure that we meet national standards, while also focusing on issues unique to our islands. Within this Environmental Health Management Report we provide EHA highlights from 2012, and look forward to finding ways to better protect and improve public health and the environment in 2013 and beyond.

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<sup>1</sup> Unless otherwise indicated, findings and information provided in this Report refer to State Fiscal Year 2012 (July-June 2012).

## Acknowledgements

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Hawai'i State Department of Business, Economic Development & Tourism (DBEDT)

Hawai'i State Department of Land and Natural Resources (DLNR)

Hawai'i State Department of Hawaiian Home Lands (DHHL)

Hawai'i State Department of Transportation (DOT)

Hawai'i State Department of Agriculture (DOA)

University of Hawai'i (UH)

**Photo 2: Haleakala**



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- Note: all photos are the copyright of DOH*

**Photo 3: Honokanaia, Kaho`olawe**



## Frequently Used Acronyms

AQS	Air Quality System (IT)
CAA	(US) Clean Air Act
CAB	(DOH/EHA) Clean Air Branch
CAO	(DOH/EHA) Compliance Assistance Office
CDC	(US) Centers for Disease Control and Prevention
CMA	Content Management Application
CWA	(US) Clean Water Act
CWB	(DOH/EHA) Clean Water Branch
DBC	Deposit Beverage Container
DOH	(State of Hawai'i) Department of Health
DWSRF	Drinking Water State Revolving Fund
EHA	(State of Hawai'i) Environmental Health Administration
EHSD	(DOH/EHA) Environmental Health Services Division
EHW	Environmental Health Warehouse (IT)
EIM	Environmental Information Manager
EMD	(DOH/EHA) Environmental Management Division
EPA	(US) Environmental Protection Agency
EPO	(DOH/EHA) Environmental Planning Office
HAR	Hawai'i Administrative Rules
HEER	(DOH/EHA) Hazard Evaluation & Emergency Response Office
HERE	Homeland Emergency Response Exchange (IT)
HRS	Hawai'i Revised Statutes
ICIS	Integrated Compliance Information System (for NPDES)
IRHB	(DOH/EHA) Indoor & Radiological Health Branch
IM	Information Management
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MRDL	Maximum Residual Disinfectant Level
NAAQS	National Ambient Air Quality Standards
NPDES	National Pollutant Discharge Elimination System
OEQC	(DOH) Office of Environmental Quality Control
RCRA	(US) Resource Conservation and Recovery Act
RVP	Reid Vapor Pressure (in regards to CAA)
SANB	(DOH/EHA) Sanitation Branch (Food Inspection)
SATS	Sample Analysis Tracking System (IT)
SCRS	Sample Collection & Reservations System (IT)
SDWA	(US) Safe Drinking Water Act
SDWB	(DOH/EHA) Safe Drinking Water Branch
SDWIS	Safe Drinking Water Information System (IT)
SHWB	(DOH/EHA) Solid & Hazardous Waste Branch
SLD	(DOH/EHA) State Laboratories Division
TRI	Toxic Release Inventory
UST	Underground Storage Tank
WPC	Water Pollution Control System (IT)
WWB	(DOH/EHA) Wastewater Branch



## Executive Summary

The Environmental Health Administration (EHA) protects and monitors Hawai'i's environment. In addition to general and special funds, EHA received over 25 different Federal grants from the U.S. Environmental Protection Agency and the U.S. Centers for Disease Control and Prevention in order to:

- Conduct inspections of facilities that discharge pollutants into the air, land or water;
- Test and analyze samples to assure compliance with State and Federal standards;
- Collect and monitor data that indicate environmental health;
- Prevent the spread of disease from food manufacturers and restaurants;
- Reduce environmental threats from oil and chemical spills or contamination;
- Review and issue pollution control and food related permits;
- Update environmental rules and regulations; and
- Enforce national and State standards of environmental practice.

## The DOH Strategic Plan: Five Foundations for Healthy Generations

In 2011, the DOH enacted a strategic plan to align our foundational principles of equity, health promotion and prevention, emergency preparedness, sustainability, and quality and service excellence. These principles guide all of our policies, protocols, programs, and new initiatives. Under **Foundation 1, Health Equity**, the EHA worked with environmental justice staff from the EPA to provide funds to non-profit community organizations, and is in the process of creating an environmental justice policy for Hawai'i. Under **Foundation 2, Health Promotion & Disease Prevention**, the EHA increased the adoption of evidence-based interventions to improve health through its State Laboratories Division. Under **Foundation 3, Emergency Response & Preparedness**, the EHA increased the State's readiness to mitigate, respond to, and recover from external threats through its Hazard Evaluation and Emergency Response Office and Environmental Health Services Division. Under **Foundation 4, Clean & Sustainable Environments**, the EHA improved environmental protection through programs in its Environmental Management Division, improved consumer health through programs in its Environmental Health Services Division, and improved industry's ability to protect the environment through its Compliance Assistance Office and Environmental Planning Office. Finally, under **Foundation 5, Quality & Service Excellence**, the EHA worked toward providing timely, accurate, useful and clear public health information and risk communication through its Environmental Information Manager.

## Emerging Needs

Over the next year, EHA will:

- Respond to increases in marine debris;
- Examine the environmental impacts of new sources of renewable energy;
- Increase the use of new information technology;
- Release more information to the public on its activities;
- Increase transparency;
- Increase fees to maintain existing programs; and
- Be more effective and efficient.

## Introduction

The Environmental Health Administration (EHA) tracks key environmental indicators as well as compliance and enforcement data in accordance with environmental laws, the State of Hawai'i "A New Day Plan in Hawai'i Plan" (The New Day Plan), the State of Hawai'i Strategic Plan, the State of Hawai'i Department of Health (DOH) Strategic Plan, and the U.S. Environmental Protection Agency (EPA) Region IX's Strategic Plan and initiatives. This report supports the reporting requirements for the National Accreditation of the DOH, annual reporting by the DOH Environmental Council, and EPA Region IX. This report is also developed to provide the public with an overview of the Environmental Health Administration (EHA). However, it is important to keep in mind that government programs for the protection of health and the environment are implemented by a combination of local, State and Federal agencies.

Accurate and timely information is essential to environmental enforcers to protect public health, to deter and prosecute those that violate environmental laws and regulations, and to create a level playing field for business competition. Public transparency has been identified to promote efficiency and effectiveness in government. With examination of how to improve data collection and integrate its access to the public, our enforcement partners and the public should have greater confidence that the targeted areas of enforcement and the resources we expend are fruitful.

## State Laws & Plans

### Laws

Title 19 of the Hawai'i Revised Statutes (HRS) focuses on Health. Chapters 321 – 344 provide the general and administrative provisions in greater depth. These HRS Chapters can be accessed at:

[http://www.capitol.hawaii.gov/hrscurrent/Vol06\\_Ch0321-0344/](http://www.capitol.hawaii.gov/hrscurrent/Vol06_Ch0321-0344/)

Hawai'i Administrative Rules (HAR) that pertain to health programs can be found at:

<http://hawaii.gov/health/about/rules/index.html>

The State of Hawai'i New Day Plan, the Hawai'i State Strategic Plan and the Department of Health Strategic Plan provide guidance and direction in environmental health management.

### A New Day in Hawai'i Plan

The current Hawai'i State Administration presents a comprehensive plan entitled 'A New Day in Hawai'i'. This plan provides a section on Environment and Natural Resources. The plan is available at:

<http://governor.hawaii.gov/a-new-day-in-hawaii-plan/>

The New Day Plan recognizes the need to:

- Invest in education and rebuild our economy;
- Sustain our Hawai'i for future generations; and
- Restore public confidence.

The State of Hawai`i has the following Environmental Goals:

- 70% clean energy by 2030
- 1990 Greenhouse Gas (GHG) levels by 2020
- 50% solid waste stream reduction by 2020

### Hawai`i State Strategic Plan

The draft State Strategic Plan has many lines of business. Environmental Health Management is one of these lines of business, led by the DOH.

### DOH Strategic Plan

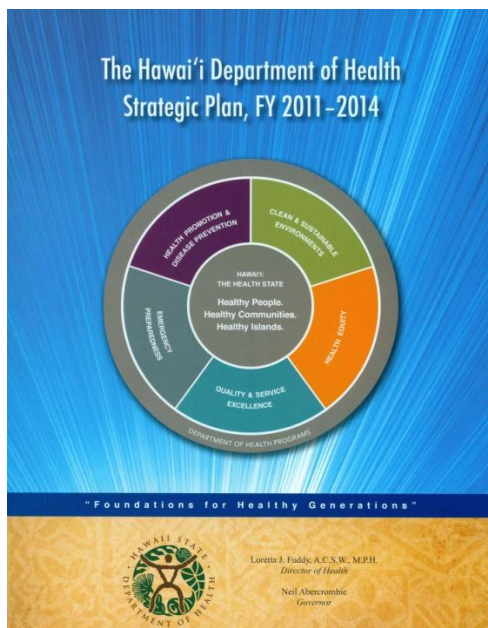
The Hawai`i Department of Health Strategic Plan, FY 2011-14 sets out goals, strategies, and initiatives.

The plan is available at: <http://hawaii.gov/health/opppd/strategicplan.html>

The rolling work plan provides responsibilities and performance measures. The Strategic Plan focuses on a sustainable economy, investing in people and transforming government. The Five Foundations for Healthy Generations includes:

1. Eliminating disparities and improving the health of all groups throughout the State of Hawai`i.
2. Attain lifelong quality health free from preventable disease, avoidable disability, and premature death;
3. Mitigate, respond to, and recover from external natural or man-made threats impacting individual and community well-being.
4. Create social and physical environments that promote and support good health for all; and
5. Develop internal systems to assure timely consumer responsiveness and satisfaction.

**Photo 4: DOH Strategic Plan Cover**



### EHA Section of DOH Strategic Plan

Based on the DOH Strategic Plan, the EHA has created an Environmental Health Administration Work Plan for 2011 to 2014.

#### Environmental Health Administration Work Plan 2011-2014

FOUNDATIONS & GOALS	INITIATIVES
<b>FOUNDATION 1: HEALTH EQUITY</b>	
<b>GOAL 1: Eliminate disparities and improve the health of all groups throughout Hawaii</b>	
<b>Influence government practice and policy to support health equity goals</b>	Update State guidelines on environmental justice
<b>FOUNDATION 2: HEALTH PROMOTION &amp; DISEASE PREVENTION</b>	
<b>GOAL 2: Attain lifelong quality health free from preventable disease, avoidable disability, and premature death</b>	
<b>Implement meaningful use of client and community health data</b>	Employ enhanced molecular technology to detect and respond to respiratory and food-borne illnesses
<b>FOUNDATION 3: EMERGENCY RESPONSE &amp; PREPAREDNESS</b>	
<b>GOAL 3: Mitigate, respond to, and recover from external natural or man made threats impacting individual and community well-being</b>	
<b>Increase DOH staff and partner agencies' knowledge of mitigating health and environmental threats</b>	Provide on-going professional development, training, and technology support for new and classic methods of infectious disease detection and identification
<b>FOUNDATION 4: CLEAN &amp; SUSTAINABLE ENVIRONMENTS</b>	
<b>GOAL 4: Create social and physical environments that promote and support good health for all</b>	
<b>Enforce state and national standards for clean air, land, coastal and inland water, drinking water, and wastewater</b>	Support and regulate statewide recycling efforts Protect island ground water from contamination and misuse Promulgate rules for reduction of greenhouse gas emissions to 1990 levels
<b>Collaborate with stakeholders to protect the environment</b>	Public and private partnerships to actively clean up contaminated lands
<b>Support DOH staff capacity to protect the environment</b>	Provide cross-training for the environmental workforce on a consolidated environmental health campus
<b>Strengthen environmental health protection policies</b>	Require application of national health standards for pharmaceutical purity, retail food, and food manufacturing facilities Introduce comprehensive E-waste recycling legislation Reestablish the shellfish sampling and testing program
<b>Protect the public from harmful substances</b>	Monitor exposure to harmful noise, radiation, lead, and asbestos Control alien and harmful species that can spread disease to humans Assure the purity and safety of the water we drink, the air we breathe, the land we live on, and the ocean we live in Enhance and enforce tobacco and smoke-free policies Launch an app-based ocean water quality alert system Debut a website with near real-time alerts for hazard evaluation and emergency response information Activate the online restaurant sanitation inspection report system
<b>Increase industry knowledge of environmental protection regulations and practices through educating businesses</b>	Conduct informational workshops to improve education to businesses about environmental regulations and laws that may affect them
<b>Continue to enforce environmental regulations</b>	Monitor and regulate solid and hazardous waste facilities and practices
<b>FOUNDATION 5: QUALITY &amp; SERVICE EXCELLENCE</b>	
<b>GOAL 5: Develop internal systems to assure timely consumer responsiveness and satisfaction</b>	
<b>Expand user-friendly web-based applications</b>	Create a publicly accessible electronic warehouse of environmental permit and facility information

### EPA Region IX Strategic Plan

The Strategic Plan of EPA Region IX is also relevant to environmental health management in Hawai`i. The EPA Region IX Strategic Plan 2011-2014 is available at:

<http://www.epa.gov/region9/strategicplan/>

### State Information

The EHA is challenged in achieving prescribed environmental health management goals due to ever-increasing pressures associated with a growing population and expanding tourism and defense activities. In carrying out its mission, the EHA is mindful of the underlying forces that can stress the environment and influence the effectiveness of environmental regulation, enforcement and policies. The State of Hawai`i Data Book, produced annually by the Department of Business, Economic Development and Tourism (DBEDT) provides a wealth of information on many of these related factors that affect environmental health. Section 2 of the Data Book provides specific health statistics. The 2011 State of Hawai`i Data Book can be reviewed at:

<http://hawaii.gov/dbedt/info/economic/databook/db2011/>

Additional information can be accessed at: <https://data.hawaii.gov/>

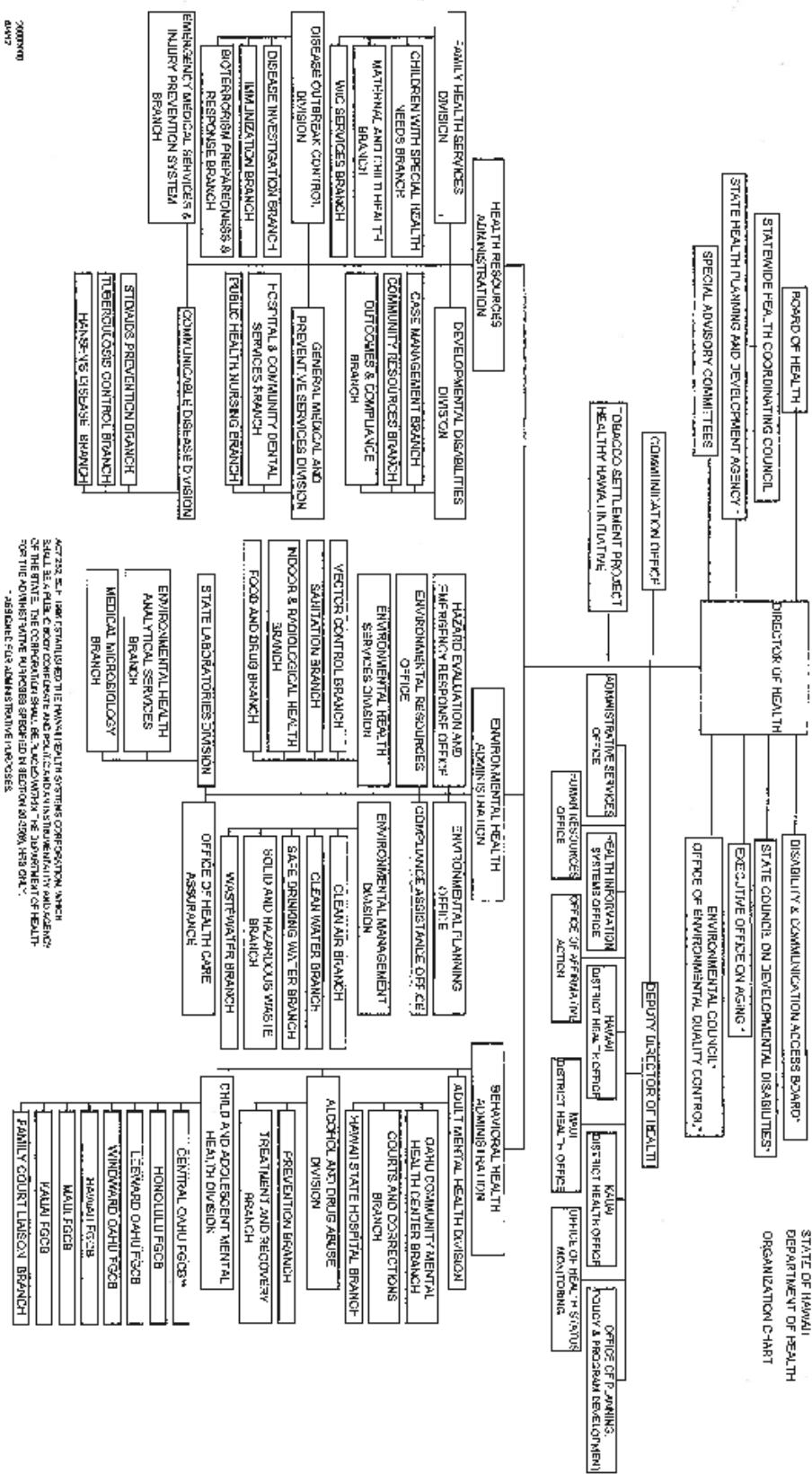
**Appendix A** provides actual and forecast of key economic indicators for Hawai`i from 2010 to 2015.

### Organization of the Department of Health

DOH is one of the largest, most diverse, and multifaceted State departments in Hawai`i. DOH has a broad mandate to monitor, protect, and enhance the health and environment of Hawai`i. The department includes such areas as environmental health, behavioral health, health promotion and wellness, disease outbreak and control, infectious disease management, and primary prevention for people of all ages, ethnicities, and communities on every island.

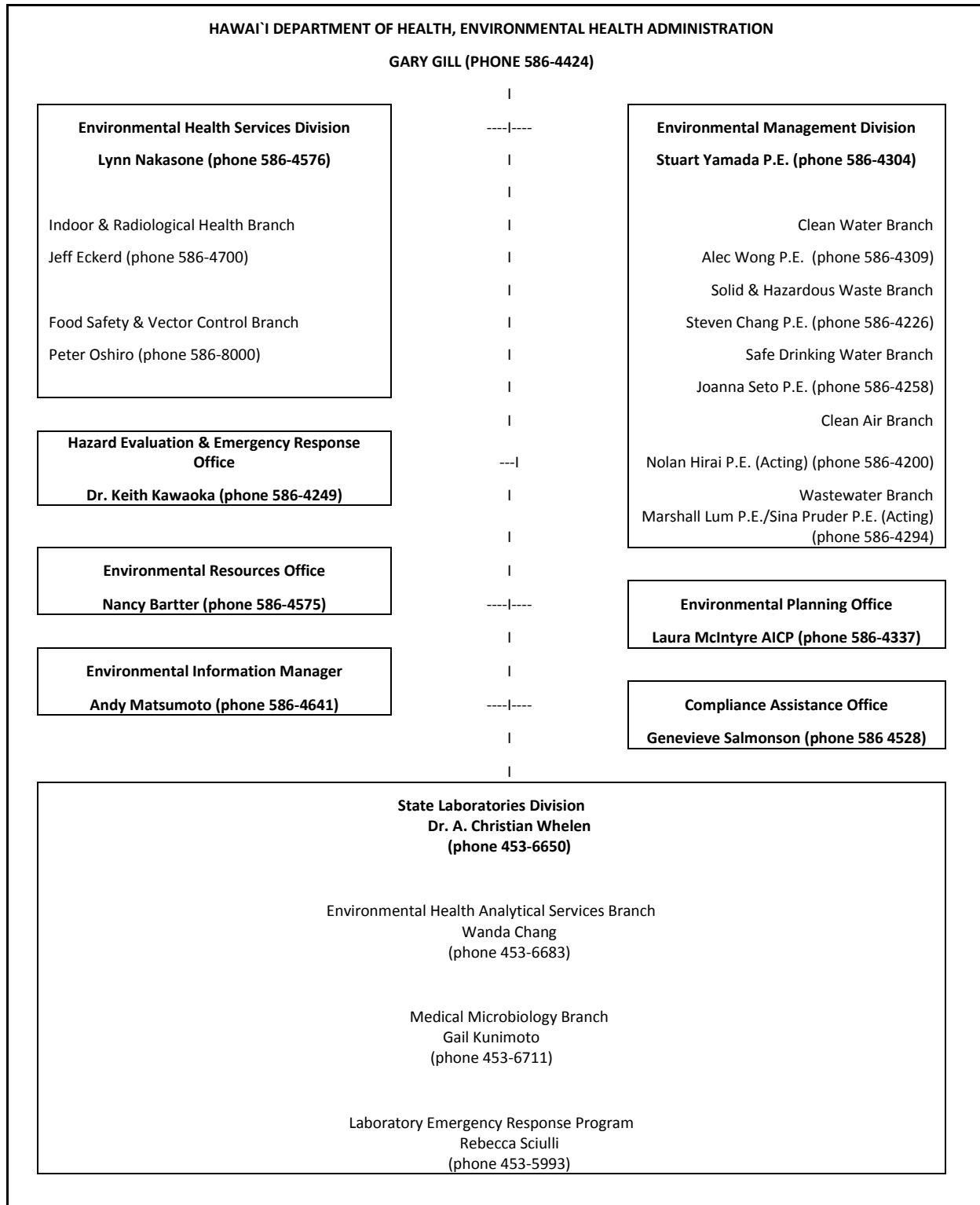
DOH is comprised of four administrations including, Environmental Health; Health Resources; Behavioral Health; and General Administration. DOH has four neighbor island district health offices located on Hawai`i, Maui and Kauai. DOH also has a range of administratively attached agencies including: Disability and Communications Access Board (DCAB); State Council on Developmental Disabilities (DD); Executive Office on Aging (EOA); Office of Environmental Quality Control (OEQC); State Health Planning and Development Agency (SHPDA); and Hawai`i Health Systems Corporation (HHSC).

### Figure 1: DOH Organizational Chart



\*FCGB'S ARE ABBREVIATIONS FOR THE HAWAII COUNTY DISTRICT COMMUNITY MENTAL HEALTH SERVICES GROUPS. THE HAWAII COUNTY DISTRICT COMMUNITY MENTAL HEALTH SERVICES GROUPS ARE ABBREVIATIONS FOR THE HAWAII COUNTY DISTRICT COMMUNITY MENTAL HEALTH SERVICES GROUPS. THE HAWAII COUNTY DISTRICT COMMUNITY MENTAL HEALTH SERVICES GROUPS ARE ABBREVIATIONS FOR THE HAWAII COUNTY DISTRICT COMMUNITY MENTAL HEALTH SERVICES GROUPS.

**Figure 2: EHA Organizational Chart**



## Clean Water, Safe Drinking Water and Wastewater Branches

In line with the Federal Clean Water Act; Safe Drinking Water Act; relevant Federal regulations; HRS 321 (partial), 322 (partial), 340E, 340F, 342D, 342E; and sections of HAR Title 11, the EHA water branches have made great strides to improve Hawai'i's water quality over the last forty years. The water branches protect State waters by ensuring compliance with laws, issuing permits and by taking enforcement actions against illegal discharges of pollutants in surface and ground waters. For all its clean-water successes, Hawai'i still faces many challenges. The water branches regulate a growing number of potential pollution sources. The water branches coordinate Hawai'i's efforts to reach and maintain health-based Federal and State water quality standards and to protect the public from exposure to pollutants. Vigorous enforcement ensures that these efforts achieve the anticipated results. More information on Water Quality can be found at

<http://hawaii.gov/health/environmental/water/index.html>

### Activities

The Clean Water Branch (CWB) conducted over 3,000 tests on ocean water samples to ensure public safety. CWB did ocean water tests on Oahu, Kauai, Maui and the Big Island. CWB reminded residents to take precautions during flood related clean-ups. EHA remained informed of issues related to potential debris from the 2011 Japanese Tsunami. CWB also reduced polluted runoff into streams and provided funds to develop watershed plans.

The Safe Drinking Water Branch (SDWB) conducted tests to ensure safe drinking water systems and issued 24 drinking water violation letters. The Wastewater Branch (WWB) inspected over 60 wastewater treatment plants, received 124 wastewater complaints, conducted 296 wastewater inspections, issued 106 wastewater related warning notices and issued 44 wastewater field citations. EHA encouraged the reuse of wastewater for watering plants.

### Enforcement

Large enforcement actions included the settlement of the Mailiili Stream enforcement case.

### Water Indicators

The CWB tracks a number of indicators including the number of impaired coastal waters, the total number of days of shoreline postings and the number of impaired streams. SDWB also tracks a number of indicators including: the percent of the State population served drinking water in compliance with maximum contaminant levels (MCL's); the number and regularity of surveys of safe drinking water systems; and the number and percent of underground injection control (UIC) permits. The WWB tracks the number and percent of waste water treatment plants in compliance with State laws and the percentage of wastewater recycled.



## Clean Water Branch

### *Number of Impaired Coastal Waters Listed*

The coastal water impairment indicator is based on the 2008-10 State of Hawai`i Water Quality Monitoring and Assessment Report: Integrated Report to EPA and the U.S. Congress. The report is available at:

[http://hawaii.gov/health/environmental/water/cleanwater/integrated/2010\\_Integrated\\_Report/Report.pdf](http://hawaii.gov/health/environmental/water/cleanwater/integrated/2010_Integrated_Report/Report.pdf)

**Photo 5: Ala Moana Beach**



The report identified waters where our analysis of readily available data indicated non-attainment of State water quality standards. The report's 303d list contains a total of 204 marine segments. Turbidity was the most common pollutant to marine water with 151 occurrences. The CWB believes these are due to polluted runoff, and is focusing its polluted runoff control program on selected watersheds to make measurable improvements.

**Table 1: Number of Hawaiian Coastal Waters\* Assessed\*\* by Island (2008 & 2010)**

Island	Number of Coastal Waters	Number of Impaired Coastal Waters	Percentage of known Impaired Coastal Waters by Island	% of Known Impaired Coastal Waters by State Total
Hawai`i	83	33	40%	16%
Kauai	64	23	36%	11%
Lanai	12	8	67%	4%
Maui	84	72	86%	35%
Molokai	32	3	9%	1%
Oahu	114	65	57%	32%
<b>TOTAL</b>	<b>389</b>	<b>204</b>	<b>52%</b>	<b>100%</b>

Source: Department of Health, Clean Water Branch (goes to EPA assessment database)

\* Coastal Waters means beaches, bays, harbors, and coastal estuaries

\*\* Assessed according to DOH, CWB, means tested for any of the following: enterococci (a pathogen which negatively affects recreation), nitrogen, nitrates, phosphorus, turbidity, other (including trash)

Photo 6: View of Waikiki during the beach replenishment project



Table 1A: Coastline\* Assessed by CWB by Island (2010) in miles

Island	Hawai`i Coastline (miles)	Length of coastline assessed by CWB (in miles)	Percent of coastline assessed
Hawai`i	266	35	13%
Kauai	90	68	76%
Lanai	47	20	43%
Maui	120	61	51%
Molokai	88	18	20%
Oahu	112	88	79%
<b>TOTAL</b>	<b>723</b>	<b>290</b>	<b>40%</b>

Source: Department of Health, Clean Water Branch (Draft Data)

**Number of Shoreline Postings due to Sewage or Other Water Pollution**

Sewage, chemical spills, and other releases can restrict the public’s enjoyment and use of the shoreline and affect aquatic life. The table below shows the number of times shoreline waters were posted with warning signs (unsafe due to water pollution) by the counties, military, private parties or the Department of Health. Since 2005, the reports consider all shoreline recreational waters. Reports prior to 2005 only covered sandy beaches. Although harbors are not considered recreational waters, they were included to be consistent with the 2005 annual report. For any sewage spills, shorelines are first posted, and then sampling occurs. The CWB then reviews bacteria data prior to allowing the removal of warning signs.

**Photo 7: Beach posting of contaminated water**



**Table 2: Total Days Per Year of Shoreline (Water Quality) Postings**

Calendar Year	Total	Days Posted from Sewage Events
2006	529	368
2007	151	151
2008	159	159
<b>State FY</b>		
2009	310	310
2010	403	403
2011	61	61

Source: Department of Health, Clean Water Branch (see notes below)

- I These numbers do not reflect postings of warning signs on streams, lakes and other inland waters, such as the Ala Wai Canal.
- II Other agencies may also post other shoreline warning signs.
- iii These numbers do not include 'brown water advisories' which are general media releases anticipating or responding to heavy storm water runoff and are not accompanied by actual postings.

**Photo 8: View of Ala Wai Canal**



***Number of Impaired Steams***

This stream quality indicator is based on the 2008-2010 State of Hawai`i Water Quality Monitoring and Assessment Report. The report identifies waters where analysis of readily available data indicated non-attainment of State water quality standards. The stream quality indicator refers only to the inland part of a watershed with

freshwater flows that have salinity lower than 0.5 parts per thousand (ppt), including all stream tributaries. The identification of these streams initiates a process that identifies pollutant sources so that agencies, non-profits, businesses, and community groups can begin to control these sources of pollution, improve water quality, and protect and enhance aquatic ecosystems.

**Table 3: Number of Hawaiian Perennial\* Streams Assessed\*\* by Island\*\*\***

Island***	Number of Perennial Streams	Number of Impaired Streams 2002	Number of Impaired Streams 2004	Number of Impaired Streams 2006	Number of Impaired Streams 2008	Number of Impaired Streams 2010	Percentage of Impaired Streams by State Total in 2010
Hawai`i	132	12	15	16	17	17	19%
Kauai	61	8	11	20	16	16	18%
Maui	90	9	10	11	11	11	12%
Molokai	36	0	0	1	1	1	1%
Oahu	57	30	34	45	46	46	51%
<b>TOTAL</b>	<b>376</b>	<b>59</b>	<b>70</b>	<b>93</b>	<b>91</b>	<b>91</b>	<b>100%</b>

Source: Department of Health, Clean Water Branch

\* Perennial means that the stream flows all year long

\*\* Assessed according to DOH, CWB, means tested for any of the following: enterococci (a pathogen which negatively affects recreation), nitrogen, nitrates, phosphorus, turbidity, other (including trash)

\*\*\* Kahoolawe, Lanai and Niihau had no Perennial Streams

### Safe Drinking Water Branch

The Safe Drinking Water Branch’s (SDWB) primary function is to ensure public water systems meet State and Federal health related standards for drinking water. These standards include: 75 maximum contaminant levels (MCLs), 10 treatment technique requirements, and 3 maximum residual disinfectant level (MRDL) requirements.

### Percentage of Population Served Safe Drinking Water

**Photo 9: Drinking Fountain at Ala Moana Beach**



Water that exceeds MCLs is believed to be harmful to human health. In State calendar year 2011, 99.90% of Hawai`i’s residents and visitors were served drinking water that met all of the MCLs on a monthly basis. Even with conservative assumptions, the compliance rate has consistently exceeded 99.0%. Whenever a violation is found, the public is notified through electronic media, hand-delivered notices, or published notices. About 40,000 persons are served by small, unregulated systems such as individual home catchments. These systems are excluded from the statistics presented below.

**Table 4: Percentage of Population Served Safe Drinking Water (2006-2011\*)**

Calendar Year/FY*	Total Population Served Drinking Water	Population Served Water Below MCLs	Percentage Population Served Water in Compliance with MCLs
2006	1,341,430	1,335,929	99.59%
2007	1,341,430	1,329,748	99.13%
2008	1,416,384	1,411,729	99.67%
2009	1,440,715	1,432,116	99.40%
2010	1,471,887	1,470,664	99.92%
2011	1,473,960	1,472,420	99.90%

Source: Department of Health, Safe Drinking Water Branch

\*=Calendar Year 2006-2008, State Fiscal Year (July-June) from 2009-2010, Calendar Year 2011

The SDWB employs many programs to strengthen the public water system protection.

**Groundwater Protection Program** – Hawai`i's heavy dependence on groundwater as a source of drinking water places great importance on groundwater protection. There are many county, State and Federal agencies that directly or indirectly affect groundwater. These impacts can range from educational/advisory to information/research to regulatory to planning/zoning. Besides coordinating with these agencies, the Program collects groundwater data and will be conducting its own monitoring in accordance with a monitoring strategy that is currently being developed.

**Source Water/Wellhead Protection Programs** - These programs involve the delineation of zones of contribution to drinking water sources and identification of potential sources of contamination within those zones. Financial assistance is available for the planning and implementation of programs to protect wellheads.

**Drinking Water State Revolving Fund (DWSRF)** - The DWSRF is a low-interest loan program which will help water systems make needed improvements to prevent contamination or improve treatment.

**Photo 10a: Proposed DWSRF Project**



**Photo 10b: Completed DWSRF Project**



**Capacity Development Program** - The purpose of this program is to make sure water systems have the technical, managerial and financial (TMF) capacity (knowledge and ability) to properly operate and maintain a public water system and if necessary, expand these capabilities. This program involves direct technical assistance to individual water systems and general training sessions on system operations.

### ***Cumulative Sanitary Surveys of Safe Drinking Water Systems***

Sanitary surveys are one of the most significant activities conducted by the SDWB because they provide a review of the field conditions of water systems. Sanitary surveys are conducted periodically to determine the condition of various aspects of the public water system including; sources, facilities, record-keeping, management, financial status, operation, and more. The DOH goal is to conduct "Sanitary Surveys" of all public water system source, treatment, and distribution operations in a five-year period. That averages 26 surveys per year. The SDWB completed the five-year cycle in 2011.

**Table 5: Cumulative Sanitary Surveys of Drinking Water Systems**

Calendar Year	Target Number of Systems Surveyed in a year*	Surveys Actually Completed Annually	Target Cumulative Number of Systems Surveyed*	Actual Cumulative Number of Systems Surveyed
2007	26	23	26	23
2008	26	31	52	54
2009	26	28	78	82
2010	26	27	104	109
2011	26	41	130*	150

Source: Department of Health, Safe Drinking Water Branch (SDWB)

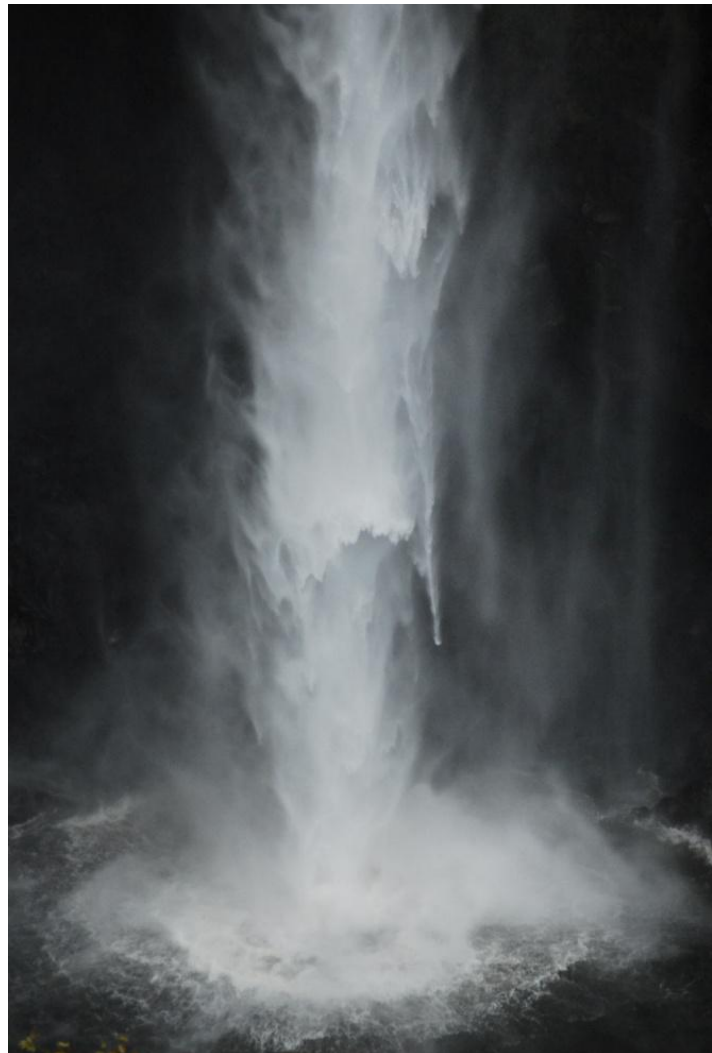
\* There were a total of 130 Drinking Water Systems in 2011

**Underground Injection Control Program** - The goal of this program is to preserve existing and potential sources of drinking water from contamination by injected fluid wastes. It does this by administering a permit program for injection well facilities and limiting the areas available for this type of disposal.

*Percentage of Underground Injection Control (UIC) Wells in Compliance with a Permit*

**Photo 11: Hawaiian Waterfall**

The overall percentage of underground injection well facilities in compliance with State and Federal regulations (those with a current permit) for the fiscal year 2012 has increased to 57% from 55% in 2011. Most non-compliant injection well facilities were those for drainage injection wells; wells used for rainfall runoff disposal. Injection well facilities for sewage disposal and industrial related wastewater disposal had a higher compliance percentage at 71%. Permit renewals for sewage and industrial related injection are processed before permit renewals for drainage injection because of the higher risk for groundwater contamination from sewage and industrial related injection.



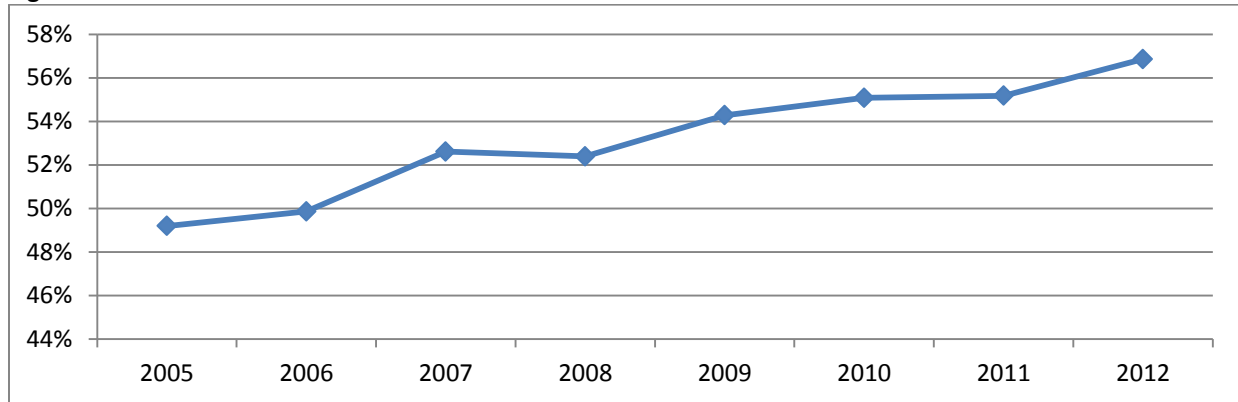
**Table 6: Underground Injection Control (UIC) Well Compliance**

Calendar Year*	Total UIC Permits	Total Expired Permits	Percent of Total with Current Permits	Percent of Current Sewage & Industrial Permits
2005	679	345	49%	57%
2006	714	358	50%	56%
2007	768	364	53%	60%
2008	796	379	52%	60%
2009	818	374	54%	63%
2010	857	385	55%	67%
2011	879	394	55%	67%
2012	911	393	57%	71%

Source: Department of Health, Safe Drinking Water Branch

\*= Calendar Year 2005-2008, State Fiscal Year (July-June) from 2009-2012

**Figure 3: Percent of Total UIC Wells with Current Permits**



**New Source Approvals** - All new sources of water intended to serve a public water system are required to be approved by the Director of Health. Approval is based on satisfactory submission of an engineering report addressing many aspects of the source including water quality.

**Photo 12a: Well**



**Photo 12b: Surface Intake**



**Photo 12c: Rain-Water Catchment**



**Treatment Plant Approvals** - The addition of new treatment facilities is generally considered a major or substantial modification of a public water system which is also required to be approved by the Director of Health.



**Photo 12d: Granular Activated Carbon**



**Photo12e: Packed Tower Aeration**



**Photo 12f: Reverse Osmosis**



**Water Treatment Plant and Distribution System Operator Certification** - This program is designed to ensure that water treatment plant and distribution system operators have the proper education and experience to operate the treatment plants and distribution systems they operate. In State fiscal year 2012, there were approximately 212 water treatment plant operators holding certifications in the State. At the present time, there are 18 systems requiring Grade 1 operators, 11 systems requiring grade 2 operators and five systems requiring grade 4 operators.

The distribution system can be a source of contamination. Water main breaks and stagnation are two of many ways that the distribution system can affect the quality of drinking water. Operators must know to address these and other conditions and maintain the best quality water possible. At the present time, there are 128 public water systems that require certified distribution system operators and 512 DSOs certified in the State.

**Photo 13: Koolaus**



## Wastewater Branch

### *Wastewater Treatment Plant Operation & Maintenance Compliance*

In 2011, 91% of wastewater treatment plants were in compliance.

**Table 7: Wastewater Treatment Plant Operations & Compliance**

Calendar Year	Total Number of Plants	Number of Plants Inspected	Number of Plants Rated Unsatisfactory	Percentage in Compliance
2006	180	93	14	92%
2007	180	102	33	82%
2008	180	34	15	92%
2009	180	119	38	79%
2010	180	114	13	93%
2011	180	62	17	91%

Source: Department of Health, Wastewater Branch

### *Percentage of Wastewater Recycled Annually*

Wastewater recycling (or the reuse of water treated to a level appropriate for irrigation purposes) has remained in the range of 19.64 to 24.6 million gallons per day (MGD) between 2006 and 2011. The EHA plans to encourage reuse to approximately 30 MGD, or 20% by 2015.

**Table 8: Wastewater Recycled**

Calendar Year	Total Wastewater Treated (MGD)*	Wastewater reused (MGD)	Percentage Reused
2006	150	24.60	16.40%
2007	150	24.40	16.27%
2008	150	23.91	15.94%
2009	150	23.91	15.94%
2010	145	22.98	15.85%
2011	141	19.64	13.93%

Source: Department of Health, Wastewater Branch

\*= Millions Gallons per Day (MGD)

## Clean Air Branch

In line with the Clean Air Act; Hawai'i air pollution control laws, including HRS chapters 342B and 342C; and HAR title 11 chapters 59 and 60.1, the Clean Air Branch (CAB) has made great strides to improve Hawai'i's air quality over the last forty years. The CAB has delegated authority from the EPA to administer the Federal Clean Air Act in Hawai'i. However, for all its clean-air successes, Hawai'i still faces many challenges, ranging from diesel pollution to climate change. The Branch regulates an ever growing number of air pollution sources. The CAB coordinates Hawai'i's efforts to reach and maintain the health-based Federal and State air quality standards and to protect the public from exposure to toxic air contaminants. Vigorous enforcement ensures that these efforts achieve the anticipated emissions reductions and provides a level playing field among the regulated community. More information on the Clean Air Branch and indoor air quality can be found at:

<http://hawaii.gov/health/environmental/air/index.html>

## Activities

CAB has been very busy. It has:

- Completed more than 1,400 air related inspections and complaint investigations;
- Established new rules (amendments to HAR 11.60.1) to restrict open burning on all islands;
- Drafted rules to reduce greenhouse gas emissions to 1990 levels by 2020;
- Worked with the community to reduce dust in Nanakuli;
- Issued approximately 200 agricultural burning permits; and
- Issued more than 75 air permits.

**Photo 14: Sunrise over Haleakala from Kaho`olawe**



## Enforcement

CAB issued over 70 air-related warning notices and more than a dozen formal air violations.

### Air Indicators

CAB monitored ambient levels of eight air pollutants including airborne particulates (PM<sub>10</sub> and PM<sub>2.5</sub>); sulfur dioxide (SO<sub>2</sub>); nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), lead (Pb), carbon monoxide (CO), and hydrogen sulfide (H<sub>2</sub>S). Vog is measured as PM<sub>2.5</sub> and SO<sub>2</sub>.

### Greenhouse Gas Emissions (1990-2010)

Climate change and global warming have the potential to severely affect Hawai`i’s economy, public health, natural resources, and environment. In 2007, a State law (Act 234) was passed, committing the State to reduce its greenhouse gas (GHG) emissions (primarily caused by fossil fuel based electricity generation and transportation uses) to, or below 1990 levels by 2020. Act 234 created a Greenhouse Gas Emissions Reduction Task Force to oversee development of a work plan to achieve this goal. The Clean Air Branch is currently developing the administrative rules.

**Table 9: Greenhouse Gas Emissions 1990-2010 (MMTCO2Eq)\***

Greenhouse Gas Emissions By Type	1990	2010	2020 Goal
Energy**	8.08	8.85	8.08
Ground Transport	3.23	3.10	3.23
Marine Transport	1.65	2.15	1.65
Freight	1.53	1.37	1.53
Waste	0.85	1.10	0.85
Land Uses	0.98	***0.83	0.98
<b>TOTAL</b>	<b>16.32</b>	<b>16.57</b>	<b>16.32</b>

Source: ICF International (DBEDT Consultant for the GHG Task Force), Proposed GHG Reduction Work Plans for Hawai`i, 10 November 2008

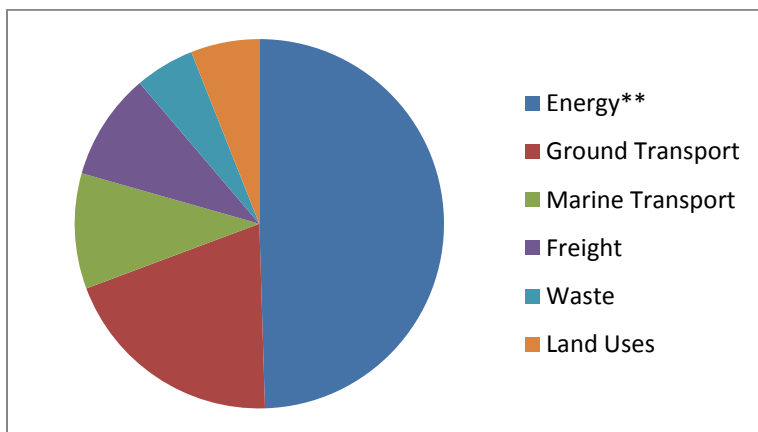
\*MMTCO2Eq = Million Metric Tons of Carbon Dioxide Equivalent

\*\*Energy= residential, commercial, industrial, electric power, oil and gas

\*\*\*= 2010 estimate unavailable, 2007 ICF estimate is shown instead

Note: Aviation emissions are excluded from Act 234, and thus are not included in this table

**Figure 4: Greenhouse Gas Emissions (MMTCO2Eq) by Type (2020)**



**Ambient Levels of Air-borne Particulates**

At the Honolulu monitoring station, located in the heart of downtown, the ambient annual average concentration of air-borne particulates continues to be well below the national standard, set by EPA.

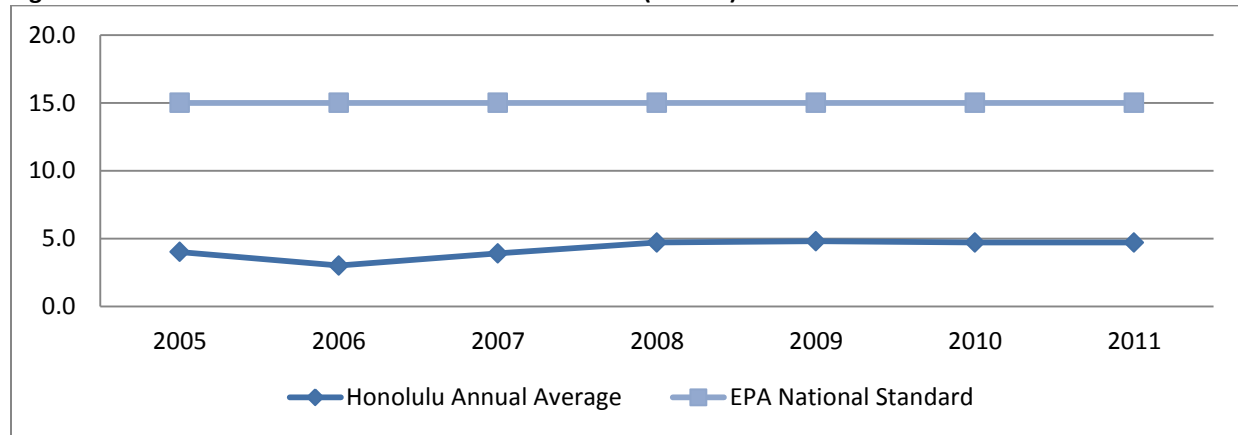
**Table 10: Ambient Annual Levels of Airborne Particulates (PM2.5\*) in Honolulu**

Year	Honolulu Annual Average	EPA National Standard
2005	4.0	15
2006	3.0	15
2007	3.9	15
2008	4.7	15
2009	4.8	15
2010	4.7	15
2011	4.7	15

Source: Department of Health, Clean Air Branch

\*PM2.5 = Particulates with an aerodynamic diameter less than or equal to 2.5 microns

**Figure 5: Ambient Annual Levels of Airborne Particulates (PM2.5\*) in Honolulu**



**Photo 15: Ala Moana Beach**



### *Volcanic Emissions*

Existing activity from Kilauea Volcano on the Big Island continues to increase sulfur dioxide and fine particulate matter emissions, resulting in occasional exceedence of the EPA National Ambient Air Quality Standards (NAAQS).

**Table 11: Number of Exceedences of Vog Emissions (SO<sub>2</sub>) 24 Hour Standard from Kilauea Volcano**

LOCATION	2009	2010	2011
<b>Pahala</b>	16	40	5
<b>Mountain View</b>	2	4	0
<b>Kona</b>	0	0	0
<b>Hilo</b>	0	1	0
<b>Ocean View</b>	na	1	0
<b>TOTAL</b>	18	46	5

Source: Department of Health, Clean Air Branch

Note: The Ocean View Monitor began operating in April 2010

**Photo 16: Halemaumau Crater, Kilauea, Big Island**



### *Ambient Levels of Sulfur Dioxide*

The national standard for sulfur dioxide concentrations is set by EPA. The Honolulu air monitoring station is located atop the DOH building downtown. The results show that sulfur dioxide concentrations in Honolulu are consistently, well below the national standard.

**Table 12: Ambient Annual Levels of Sulfur Dioxide (SO<sub>2</sub>)**

Year	Honolulu Average (ppm)	National Standard (ppm)
2005	0.001	0.030
2006	0.000	0.030
2007	0.001	0.030
2008	0.001	0.030
2009	0.001	0.030
2010	0.001	0.030
2011	0.001	0.030

Source: Department of Health, Clean Air Branch

ppm=parts per million

### *Ambient Levels of Carbon Monoxide*

EPA sets the 1-hour average limit for carbon monoxide concentrations in ambient air. Hawai'i statistics are taken from the Honolulu monitoring station located in downtown. The Honolulu data clearly shows that levels are consistently well below the national standard.

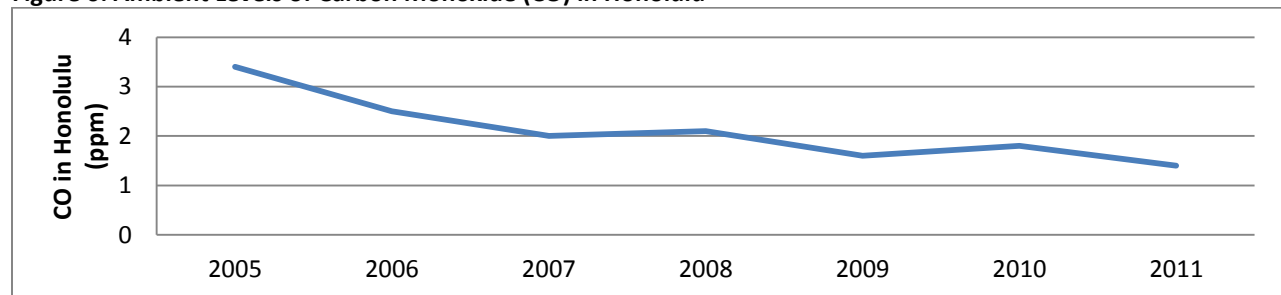
**Table 13: Ambient Levels of Carbon Monoxide (CO) in Honolulu**

Year	Highest 1-hour Average (ppm)	National Standard (ppm)
2005	3.4	35
2006	2.5	35
2007	2	35
2008	2.1	35
2009	1.6	35
2010	1.8	35
2011	1.4	35

Source: Department of Health, Clean Air Branch

ppm=parts per million

**Figure 6: Ambient Levels of Carbon Monoxide (CO) in Honolulu**



**Photo 17: View from Diamond Head Summit**





## Solid & Hazardous Waste Branch

The Solid and Hazardous Waste Branch (SHWB) operates under the Federal Resource Conservation and Recovery Act (RCRA), HRS chapters 342G, 342H, 342I, 342J, 342L, and 342N, and relevant sections of HAR Title 11. The SHWB consists of the hazardous waste section, office of solid waste management, pollution prevention and waste minimization program, underground storage tank section, Hawai'i electronic device recycling program, and Hi-5 deposit beverage container (DBC) recycling program. The hazardous waste section regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. Solid waste management involves landfills, incinerators, transfer stations, recycling, composting facilities, and illegal dumping. More information on SHWB is available at:

<http://hawaii.gov/health/environmental/waste/index.html>

## Activities

### Photo 18: Recyclable bottle



SHWB encouraged the recycling of solid waste, drafted E-waste recycling legislation, helped to clean up leaking underground storage tanks, and to properly dispose of solid waste. SHWB noted that participation in HI-5 recycling program remained strong.

### Enforcement

SHWB investigated over 200 solid and hazardous waste complaints, conducted over 800 waste related inspections, sent over 160 waste warning notices and issued 34 waste field citations. Large enforcement actions included the citing of: Charles Lee and PRC Corporations for solid waste violations; Kapunakea Partners for underground storage tank (UST) violations; Atlas Recycling Centers for deposit beverage container violations; and the Hawai'i Prince Hotel Waikiki for a UST violation.

### Solid Waste Indicators

The SHWB tracks several key indicators including the amount of solid waste recycled, the number of leaking underground storage tanks (LUST), and the Hi-5 DBC redemption rate.

### *Solid Waste Recycled in Hawai'i*

In accordance with increases in population, the amount of waste being produced, land-filled and recycled has increased. The addition of the third boiler, mass burn at the HPOWER facility was completed in May 2012. By calendar year end, the expanded facility is expected to be fully operational with the capacity to process an additional 300,000 tons of waste per year and to divert bulky combustible waste from the landfill. The combined H-POWER facilities will have the total capacity to process 2,900 tons per day and to sell 73 megawatts of renewable energy to HECO.

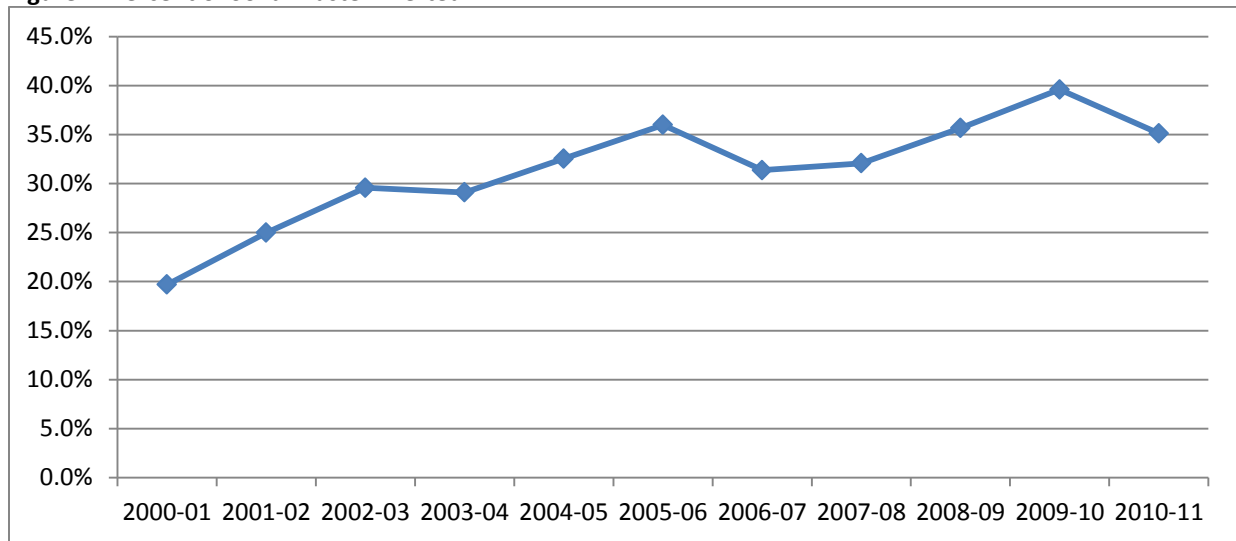
**Table 14: Solid Waste Recycled in Hawai'i (in tons)**

Year (FY*)	Generated	Disposed	Diverted	Percent Diverted
2000-01	1,794,496	1,441,000	353,496	19.7%
2001-02	1,971,336	1,478,668	492,668	25.0%
2002-03	2,115,313	1,489,974	625,339	29.6%
2003-04	2,140,648	1,517,915	622,733	29.1%
2004-05	2,116,724	1,427,904	688,820	32.5%
2005-06	2,227,124	1,425,752	801,373	36.0%
2006-07	2,526,134	1,733,889	792,245	31.4%
2007-08	2,617,350	1,778,009	839,341	32.1%
2008-09	2,532,370	1,629,397	902,973	35.7%
2009-10	1,636,298	988,444	647,854	39.6%
2010-11	1,786,343	11,159,027	627,316	35.1%

Source: Department of Health, Solid & Hazardous Waste Branch

\* FY = State Fiscal Year (July-June)

**Figure 7: Percent of Solid Waste Diverted**



### Number of Leaking Underground Storage Tanks (LUST)

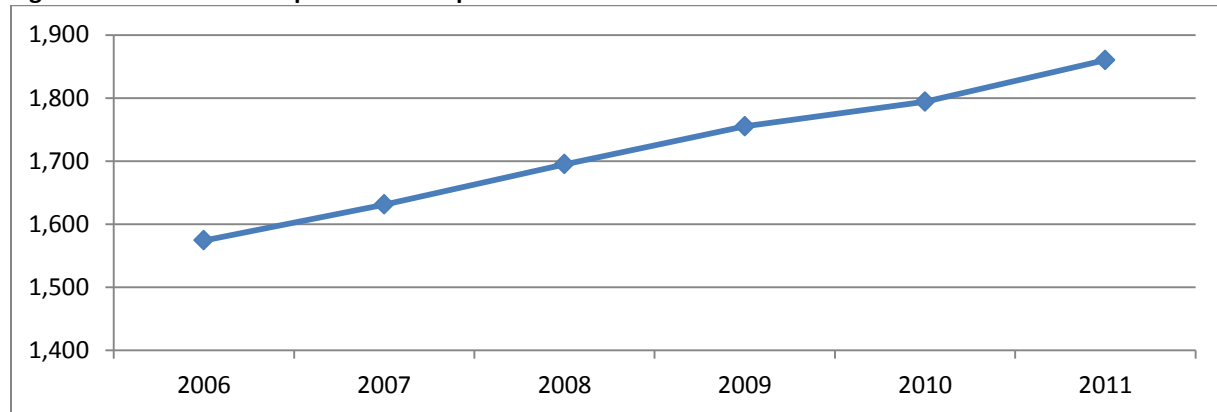
The number of cumulative clean-ups of LUST as of 2011 reached 1,860.

**Table 15: Leaking Underground Storage Tanks**

Calendar Year	Total Tanks	Active Tanks	Closed Tanks	Confirmed Releases	Clean-ups Partially Addressed	Clean-ups Not Initiated	Cumulative Completed Clean-ups
2006	7,832	2,001	5,831	1,875	206	94	1,574
2007	7,916	1,895	6,021	1,909	192	86	1,631
2008	7,845	1,770	6,075	1,955	184	76	1,695
2009	7,873	1,701	6,172	1,989	154	80	1,755
2010	7,897	1,679	6,248	2,019	180	45	1,794
2011	7,904	1,639	6,265	2,037	142	35	1,860

Source: Department of Health, Solid & Hazardous Waste Branch

**Figure 8: Cumulative Completed Clean-ups of LUST**



### Deposit Beverage Container Redemption Rate

The Hi-5 DBC redemption rate continues to remain high. For the last four years, more than three in every four beverage containers has been recycled.

**Table 16: Deposit Beverage Container Redemption (DBC) Rate (FY 2005-2012)**

Year (FY*)	Units Sold (in millions)	Units Redeemed (in millions)	DBC Redemption Rate
2005-06	930	628	68%
2006-07	936	632	68%
2007-08	947	681	72%
2008-09	895	705	79%
2009-10	901	686	76%
2010-11	907	686	76%
2011-12	907	697	77%

Source: Department of Health, Solid & Hazardous Waste Branch

\* FY = State Fiscal Year (July-June)

## Environmental Health Services Division

The Environmental Health Services Division (EHSD) operates in line with the Federal Food, Drug, and Cosmetic Act (FD&C Act); HRS chapters 321, 322, 328, 328C-E, 330, 330C, 342F, 342P, 466J, 469; and relevant HAR Title 11 chapters. EHSD currently has three branches: Food and Drug, Sanitation, and Indoor and Radiological Health.

### Sanitation Branch

The Sanitation Branch administers Hawaii sanitation laws in the areas of inspection and enforcement, permit and license issuance, licensing of professionals, and education. The branch is one of the core programs of public health that affects the broadest range of health-related activities. Its programs are established by statutes and administrative rules as statewide programs. The function of the Sanitation Branch is to promote and maintain a sanitary and healthful environment for the people and visitors of Hawaii by implementing legally required programs for food protection, assessing and assuring that hospitals and medical facilities meet sanitation requirements, licensing of tattoo artists and embalmers and regulating barber shops, beauty parlors, massage parlors, tattoo shops, mortuaries and public swimming pools. Due to recent organizational changes, the branch now includes a Vector Control Section which identified a mosquito species at the Honolulu International Airport not seen on Oahu in 60 years.

**Photo 19: Restaurants at Ward Warehouse**



The Sanitation Branch focuses on its food protection program which has evolved into a complex program focusing on public health practices through education, partnerships, prevention, assessment and compliance. The branch permits 10,044 food establishments statewide. This past fiscal year the branch conducted 9,135 food establishment inspections. On Oahu there were

5,040 routine and follow-up inspections which identified 6,264 violations of which 3,767 were major violations. Of the 9,878 food establishments inspected state-wide, 1,812 of these inspections pertained to complaints, of which 254 were food-borne illness complaints. In 2012, the branch: Issued 4,800 permit renewals, 658 new permits, 3,254 temporary food permits, and conducted 563 building plan reviews for food establishments.

More information about the Food and Drug Branch is available at:

[http://hawaii.gov/health/environmental/food\\_drug/index.html](http://hawaii.gov/health/environmental/food_drug/index.html)

More information about the Sanitation Branch is available at:

<http://hawaii.gov/health/environmental/sanitation/index.html>

**Table 17: Food Establishment Permitting & Plan Reviews (2011-12\*)**

Type	Number of Permit Applications Received, Completed, & Issued
Food Establishment (renewals)	4,800
Food Establishment (new)**	658
Temporary Food Permits	3,254
Building Plan reviews*** (Restaurants etc.)	563

Source: Department of Health, Environmental Health Services Division

\* State Fiscal year

\*\* Permits are issued within 24 hours of inspection

\*\*\* Plans are reviewed within 48 hours

## Enforcement

Large enforcement actions included:

- Suspension of Kanemitsu Bakery's permit for unsanitary conditions
- Settlement of an enforcement case with Koyo USA Corporation
- State and Federal agencies addressed the improper use of pesticides used on basil grown at Oahu farms
- An order to a local farm to cease the sale of green onions due to pesticide violation
- The citing of professional training in Hawai'i for asbestos training violations

## Indoor and Radiological Health Branch

The Indoor and Radiological Health (IRH) Branch consists of the following programs: Community Noise; Radiation Control; Air-Conditioning/Ventilation; Asbestos; Lead-Based Paint; and Indoor Air Quality. In addition, the IRH branch operates the State Radiological Response Team under State Civil Defense; conducts community health assessments for noise, radiation and indoor air pollution; provides for access to essential services; and directs its resources towards problems that pose the greatest risk to public health and the environment. For example, the IRH Branch has been conducting quarterly or monthly shoreline surveillance since April 2011 (shortly after the Japan tsunami). IRH has partnered with NOAA to provide training and detection equipment for debris and shoreline monitoring on the Northwestern Hawaiian Islands (NWHI). IRB has also provided training to non-profit volunteer beach cleanup groups when requested. Thus far, no radiation levels above normal have been detected in marine debris.

The branch conducts investigations of health and environmental-related problems, and performs regulatory functions to monitor compliance with applicable statutes and rules. These functions include permit issuance, monitoring, and enforcement. The IRH Branch also conducts consultative services, works toward building partnerships, and participates in programs for public outreach and education. Additional information on the IRH Branch can be found at:

<http://hawaii.gov/health/environmental/noise/index.html>

## State Laboratories Division

In line with Federal and State regulatory agencies and partners, the EHA State Laboratories Division (SLD) provides a wide range of public health and environmental analytical services as well as some oversight of community laboratory quality. For all its successes, Hawai'i still faces many challenges, ranging from unpredictable disease burdens to keeping current with technological advances. The Division tests for an ever growing number of known and emerging health risks. The Division supports Hawai'i's efforts to reach and maintain health-based Federal and State environmental quality standards. Test results are used to protect the public from exposure to dangers and toxins. Analyses conducted under vigorous quality management produces data that ensures the State can make informed and evidence-based decisions.

The State Laboratories facility on Oahu and the three District Health Laboratories on Hawai'i, Kauai, and Maui, are all certified by the Centers for Medicare and Medicaid Services to perform human diagnostic testing, and by the EPA for testing drinking water for microbial contaminants. The Hawai'i District Health Laboratory is further certified by the U.S. Food and Drug Administration (USFDA) to conduct analyses of dairy products. SLD is certified by the EPA for Chemical Analysis of Safe Drinking Water and by the USFDA for shellfish. The Oahu State Laboratories are networked nationally as a member of the Centers for Disease Control and Prevention Laboratory Response Network for antiterrorism testing, the U.S. Department of Agriculture National Animal Health Laboratory Network for animal diseases that affect human health, and the Food Emergency Response Network for food defense and emergency response.

To learn more about SLD go to: <http://hawaii.gov/health/laboratories/index.html>

## Activities

SLD continues its role in public health lab leadership. SLD is a member laboratory in the Association of Public Health Laboratories (APHL), and hosted Emerging Infectious Disease Fellowships, Environmental Public Health Fellowships, and undergraduate internships. SLD hosted local microbiologists and a South Korean contingent in biological agent detection.

SLD conducts shellfish water and shellfish meat analyses. The USFDA determined in January 2012 that SLD is a conformed Shellfish laboratory (according to the National Shellfish Sanitation Program) with the capabilities to test water and meats from the shellfish industry. Sampling of two Oahu ponds has begun with other farmers on the neighbor islands also showing interest in sanitary surveys of potential growing areas.

SLD's Chemical Response Laboratory in addition to chemical terrorism preparedness, provides value-added bio-monitoring and environmental monitoring services. Examples include testing for mercury and arsenic from the DOH's Women, Infants and Children (WIC) program participants, testing fish and fish feed for mercury and selenium, and analyzing Pacific blue marlin fish jerky for mercury.

SLD continued surveillance for respiratory pathogens, influenza test support for the U.S. Affiliated Pacific Islands, evaluation of new technology platforms to detect multiple viruses, anti-viral resistance sequencing, and detection of Influenza A (H3N2) variant in a Maui resident.

SLD continues to update its information technology. SLD overhauled its website and upgraded online licensing for clinical lab personnel to release 3.0. SLD created or improved electronic data reporting to the public, CDC, EPA, and community laboratories.

Representative analytical services (microbial or chemical contaminants) per year include 655,000 air samples, 5,500 recreational water samples, 600 food products (including shellfish), 5,000 drinking water samples, and 40,000 human clinical or surveillance specimens.

## Highlights

- Hawai'i State Laboratories Director elected to the Association of Public Health Laboratories Board of Directors.
- Virology Laboratory of SLD detected the 18<sup>th</sup> case of a rare swine influenza A (H3N2) variant in the U.S. from a Maui resident.
- Bacteriology Laboratory found the only two cases of high level azithromycin drug resistant gonorrhea in the United States reported to date.
- Chemical Response Laboratory awarded the only Environmental Public Health Laboratory Fellowship nationwide, which will allow development of advanced methods for analyzing mercury accumulation in humans and foods.
- Hawai'i Five-O consulted with the State Laboratories for its episode on smallpox outbreak.

## Testing

SLD continues to increase the number of air samples tested. SLD analyzed over 655,000 air samples in 2011.

**Table 18: Number of Air Samples (Tests) Performed (2006-2011\*)**

Number of Sampling Tests	2006	2007	2008	2009	2010	2011
Oahu	263,673	263,673	263,673	307,167	291,837	353,022
Kauai**	0	0	0	0	0	45,990***
Maui	35,162	35,162	35,162	35,040	35,040	35,040
Hilo	254,040	254,040	289,080	289,080	297,900	219,000
TOTAL	554,881	554,882	589,923	633,296	626,787	655,063

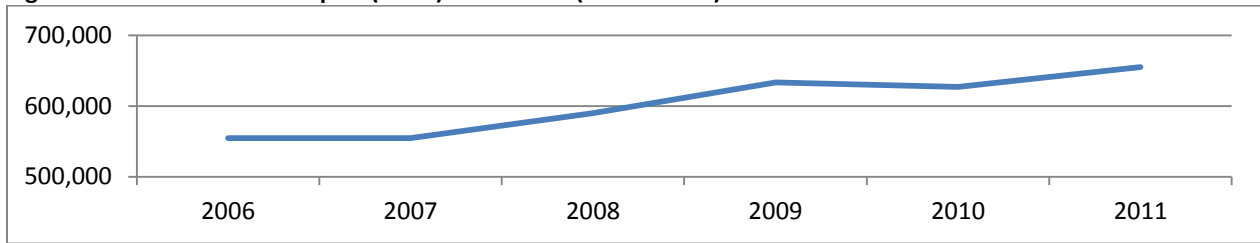
Source: Department of Health, State Laboratories

\* Calendar year

\*\* No ambient air monitoring stations were on Kauai from 2006-10

\*\*\* In 2011, the Kauai station was established to monitor the impact of cruise ship emissions

**Figure 9: Number of Air Samples (Tests) Performed (2006-2011\*)**



In 2011, SLD tested for *Salmonella*, Avian Influenza, and Norovirus, and analyzed over 3,000 ocean water samples.

**Table 19: Representative Tests (2006-2011\*)**

Number of Selected** Samples Tested	2006	2007	2008	2009	2010	2011
<i>Salmonella</i> DNA fingerprinted	300	352	310	357	335	327
Birds for Avian Influenza	412	942	637	434	386	214
Norovirus outbreak specimens	130	144	147	94	83	55
<b>Ocean Water</b>						
Oahu State Lab	2,661	3,472	3,115	3,081	871	952
Kauai District Lab	864	858	923	777	973	1,007
Maui District Lab	590	909	1,204	1,109	1,219	823
Hawai'i (Hilo) District Lab	761	816	996	1,207	985	1,211
Subtotal Ocean Water	2,215	2,583	3,123	3,093	3,177	3,041

Source: Department of Health, State Laboratories (SLD)

\* Calendar year

\*\* SLD tests a wide variety of samples as needed. Not all tests by SLD are shown above.

**Figure 10: Number of Ocean Water Tests (2006-2011\*)**

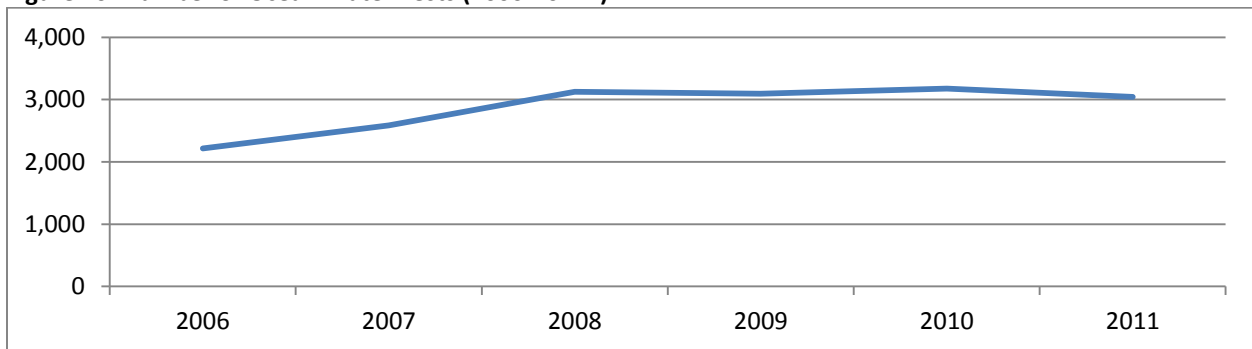




Figure 11: Percent of Ocean Water Tests by County (2011\*)

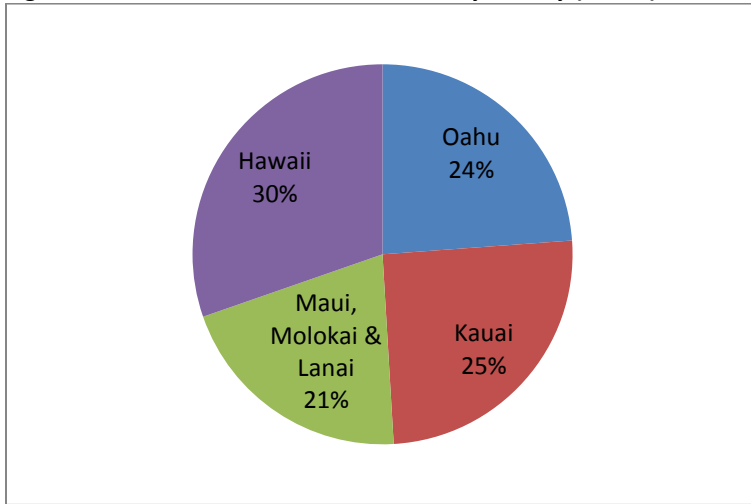


Photo 20: Wave at Walls, Waikiki



## Offices

EHA has a number of offices including the Hazard Evaluation and Emergency Response (HEER) Office, Environmental Resource Office (ERO), Environmental Planning Office (EPO), Compliance Assistance Office (CAO), and the Environmental Information Manager.

## Hazard Evaluation and Emergency Response Office

In line with the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (commonly known as Superfund); HRS 128D; and HAR Title 11, Chapter 11-451, the Hazard Evaluation and Emergency Response (HEER) Office works to clean up hazardous waste spills and sites. More information on the HEER office is available at:

<http://hawaii.gov/health/environmental/hazard/index.html>

## Activities

HEER monitored over 400 known contaminated sites in Hawai'i. When a contaminated site is discovered and confirmed, immediate actions are taken to ensure public safety. HEER helped to clean up a former pesticide mixing area in a residential community in Kilauea, Kauai.

## Hazard Indicators

The HEER office tracks several indicators including toxic releases; oil and chemical releases.

### *Toxics Release Inventory (TRI)*

The EPA provides a TRI State Fact Sheet. 2011 data has been updated as of September 2012 and is available at:

[http://iaspub.epa.gov/triexplorer/tri\\_broker\\_statefs.broker?p\\_view=STCO&trilib=TRIQ1&state=HI&SFS=YES&year=2011](http://iaspub.epa.gov/triexplorer/tri_broker_statefs.broker?p_view=STCO&trilib=TRIQ1&state=HI&SFS=YES&year=2011)

**Table 20: Toxic Release Inventory (TRI) (in pounds)**

Calendar Year	Total On-site Disposal or Other Releases	Total Off-site Disposal or Other Releases	Total On- and Off-site Disposal or Other Releases	Total Production-related Waste Managed
2007*	2,859,554	155,948	3,015,502	
2008*	3,000,373	245,151	3,245,524	
2009*	2,603,536	343,705	2,947,241	
2010	2,365,432	130,173	2,495,605	3,045,978
2011	2,382,866	214,203	2,597,069	3,281,829

Source: EPA, TRI Explorer State of Hawai'i Fact Sheets (Hawai'i Department of Health, HEER)

Note: Data as of September 2012 update

\* Chemical releases only

***Oil and Chemical Releases to Land and Water***

Any releases of oil or chemicals must be reported to DOH. The HEER office crews respond to roughly 370 oil and chemical spills each year. Most are minor, a few are major, and some are false alarms.

**Table 21: Oil and Chemical Releases (2006-2011)**

<b>Calendar Year</b>	<b>Oil Releases to Land</b>	<b>Oil Releases to Water</b>	<b>Total Oil Releases</b>	<b>Chemical Releases to Water</b>	<b>Chemical Releases to Land</b>	<b>Total Chemical Releases</b>	<b>Total Oil &amp; Chemical Releases</b>
2006			<b>206</b>			<b>178</b>	<b>384</b>
2007			<b>289</b>			<b>200</b>	<b>489</b>
2008			<b>198</b>			<b>107</b>	<b>305</b>
2009	56	87	<b>143</b>	62	63	<b>125</b>	<b>268</b>
2010	126	92	<b>218</b>	65	131	<b>196</b>	<b>414</b>
2011	185	72	<b>257</b>	63	51	<b>114</b>	<b>371</b>

Source: Department of Health, HEER

**Photo 21: Waste**

## Environmental Resources Office

The Environmental Resources Office (ERO) is tasked with managing grants and State Revolving Funds (SRF) loans as well as tracking enforcement payments.

**Table 22: Number of Grants Managed (2006-2011\*)**

Type of Grant	2006	2007	2008	2009	2010	2011
Air Pollution	2	2	3	3	4	4
Lead	1	1	1	1	1	1
Asbestos Removal	1	1	1	1	1	1
Surface Water Pollution Control	6	6	6	6	7	7
Drinking Water Protection	3	3	3	3	4	4
Solid Waste Management & Protection	3	3	3	3	4	4
Wastewater Treatment	1	1	1	1	2	2
Hazard Evaluation, Emergency Response	2	2	2	2	2	2
Environmental Information	2	2	2	2	2	2
<b>TOTAL NUMBER OF GRANTS</b>	<b>21</b>	<b>21</b>	<b>22</b>	<b>22</b>	<b>27</b>	<b>27</b>

Source: Department of Health, Environmental Resources Office

\* Calendar year

**Photo 22: Naupaka**



## Compliance Assistance Office

In line with HRS 342B-63, the Compliance Assistance Office (CAO) is a one-stop, non-regulatory office that can assist small businesses understand and comply with environmental regulations administered by DOH. CAO services are confidential, free of charge, and provide a point of access to government thereby facilitating the exchange of information and communication. As a neutral party and mediator, CAO can help by investigating and resolving disputes, and increase the understanding of small business concerns within the DOH and other government agencies. The CAO works with government and business representatives to develop proposals which remove unwarranted hurdles to small businesses. CAO conducts voluntary site assessments of a business' compliance with applicable environmental regulations; provides regulatory guides and other documents; and assists businesses which have exhausted readily available dispute resolution mechanisms within DOH.

CAO held over 60 meetings with members of the business community to improve their understanding of environmental regulations and laws.

## Business Assistance Indicators

**Table 23: Number of Meetings Held with the Business Community (2008-2011\*)**

Type of Meeting	2008	2009	2010	2011
Workshops	1	8	5	3
Association - contractors	12	10	11	11
Meeting for permits	24	42	25	53
TOTAL NUMBER OF MEETINGS	37	60	41	67

Source: Compliance Assistance Office

\* Calendar year

**Photo 23: Rainbow**



## Environmental Planning Office

EPO assists with collecting and disseminating EHA related internal and external indicators; providing information; strategic planning; and reporting. EPO works on a range of DOH initiatives including future DOH accreditation and health equity (environmental justice). EPO also assists with the development of new EHA initiatives. EPO provides a range of environmental Geographic Information System (GIS) services and reviews and disseminates land use documents. EPO also participates in a number of other initiatives led by other departments, including the revision of the Ocean Resources Management Plan (ORMP), under the direction of the Coastal Zone Management team at DBEDT. More information on EPO is located on the web at: <http://hawaii.gov/health/environmental/env-planning/index.html>

### Activities

Typically, EPO reviews about 185 land use documents a year. This includes:

- Notification, draft and final environmental assessments;
- Notification, draft and final environmental impact statements; and
- Supplemental notification, draft and finals of environmental assessments and environmental impact statements.

### Land Use Environmental Health Review Indicator

**Table 24: Number of Land Use Documents Reviewed\* (2006-2012\*\*)**

Calendar Year	2006	2007	2008	2009	2010	2011	2012
All Land Use Documents reviewed	220	244	143	174	na***	285	229

Source: Department of Health, Environmental Planning Office

\* Includes PreEA, DEA, FEA, PreEIS, DEIS, FEIS, SEIS, SDEIS, & SFEIS

\*\* Calendar year

\*\*\* na = not available as land use position was RIFed

### Photo 24: HART Rail Stations and DOH Office Locations



## The Office of Environmental Quality Control (OEQC)

The Office of Environmental Quality Control (OEQC) is an attached office under the direct administration of the Director of DOH, receives and reviews on average 240 land use documents a year.

Year	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Draft Environmental Assessment (DEA)	124	122	145	109	88	91	93
Final Environmental Assessment (FEA)	117	102	111	117	83	89	80
Pre-notification Environmental Impact Statement (PEIS)	15	16	13	11	16	9	4
Draft Environmental Impact Statement (DEIS)	5	13	13	11	7	4	10
Final Environmental Impact Statement (FEIS)	6	8	8	9	9	6	7
Supplemental Pre-Notification of EIS (S PN EIS)	0	0	0	1	0	0	1
Supplemental Draft Environmental Impact Statement (SDEIS)	0	0	0	2	0	0	0
Supplemental Final Environmental Impact Statement (SFEIS)	0	0	0	0	0	0	0
<b>TOTAL **</b>	<b>267</b>	<b>261</b>	<b>290</b>	<b>260</b>	<b>203</b>	<b>201</b>	<b>195</b>
Source: Department of Health, Office of Environmental Quality Control (OEQC) - draft data							
* State FY (July-June)							
Note: numbers may not reflect pre-consultation letters, exemption declarations, withdrawal notices, etc.							

**Photo 25: Coconut Tree**



## Environmental Information Manager

The Environmental Information Manager (EIM) oversees the coordination, strategic planning, and facilitation of EHA's information management and information technology (IM/IT) activities. The primary and most challenging goal of the EIM is to provide data integration across all programs within the EHA, thereby facilitating better, more informed decisions.

### Activities

A soft-launch of the new e-Permitting Portal application was made available to the regulated community and public for all environmental permit applications. This is a central web site where one can learn about, find, complete, and submit EHA's environmental permit applications online. It also allows for applicants to pay online for the permit application fees and track the status of their submitted application(s). This e-Permitting Portal was developed to streamline the environmental permitting process.

The Environmental Health Warehouse (EHW) was developed and implemented providing EHA programs integrated access to environmental facilities and sites in geospatial mapping and tabular formats. The EHW includes facilities related to National Pollutant Discharge Elimination System (NPDES) permits, drinking water, underground storage tanks (UST), and hazardous waste. The goal of the EIM is to include all EHA program facilities in the EHW. This would enable EHA to make better environmental decisions by sharing information across programs. After quality review, this data will be provided to the public. Currently, only the Leaking Underground Storage Tanks (LUST) facilities portion of the EHW is available to the public at: <http://healthuser.hawaii.gov/health/environmental/waste/ust/index.html>

The EIM has assisted the following programs with new IT systems.

### *Clean Air Branch*

- Air Quality System (AQS) Data Flow to the EPA
- Integrated System Assessment
- Integrated System Design (In-progress)

### *Clean Water Branch*

- Water Quality Data Viewer (Beach & Stream Warnings, Advisories, Postings)
- Water Pollution Control (WPC) System Assessment
- WPC System Implementation
- Beach Notification Data Exchange Flow to EPA
- Mobile Field Inspection Pilot (In-progress)
- Integrated Compliance Information System (ICIS)-NPDES Data Exchange Flow to EPA
- WPC and e-Permitting Integration (In-progress)

### *Safe Drinking Water Branch*

- Safe Drinking Water Information System (SDWIS) Viewer
- GPS Unit Location Coordinate Capture Application
- Sample Analysis Tracking System (SATS)



- Sample Collection & Reservations System (SCRS) (In-progress)

#### *Solid and Hazardous Waste Branch*

- Publicly accessible Environmental Health Warehouse (EHW) of all Leaking Underground Storage Tank (LUST) facilities in mapping or tabular formats

#### *Hazard Evaluation and Emergency Response Office*

- Website Redesign & Content Management Application (CMA)
- iHEER System (In-progress)
- Homeland Emergency Response Exchange (HERE) Application (In-progress)

#### *State Laboratories Division: Environmental Health Analytical Services Branch*

- Sample Analysis Tracking System (SATS)
- Sample Collection & Reservations System (SCRS) (In-progress)

#### *Office of Environmental Quality Control*

- System Assessment Project (for the submission and management of Environmental Impact Statements (EIS) and Environmental Assessments (EA) documents and its process)

**Photo 26: Plumeria**



## Appendix A – Driving Forces

Economic Indicators	2010	2011	2012	2013	2014	2015
	Actual		Forecast			
Total population (thousands)	1,363	1,375	1,389	1,402	1,416	1,431
Visitor arrivals (thousands) <sup>1</sup>	7,018	7,284	7,754	7,923	8,115	8,305
Visitor days (thousands) <sup>1</sup>	65,463	69,015	73,259	74,794	76,615	78,447
Visitor expenditures (million dollars) <sup>1</sup>	11,057	12,762	13,915	14,398	15,023	15,691
Honolulu CPI-U (1982-84=100)	234.9	243.6	250.9	258	264.4	271
Personal income (million dollars)	56,647	59,190	62,031	65,133	68,520	72,083
Real personal income (millions of 2000\$) <sup>2</sup>	42,521	42,834	43,582	44,515	45,687	46,891
Total wage & salary jobs (thousands)	593.2	599	608.3	618.9	628.2	636.4
Gross domestic product (million dollars) <sup>3</sup>	66,760	68,869	71,721	74,838	78,167	81,644
Real gross domestic product (millions of 2005\$) <sup>3</sup>	59,329	60,062	61,383	62,795	64,302	65,845
Gross domestic product deflator (2005=100) <sup>3</sup>	112.5	114.7	116.8	119.2	121.6	124
Annual Percentage Change						
Total population	1.2	0.8	1	1	1	1
Visitor arrivals <sup>1</sup>	7.7	3.8	6.5	2.2	2.4	2.3
Visitor days <sup>1</sup>	7.6	5.4	6.2	2.1	2.4	2.4
Visitor expenditures <sup>1</sup>	10.6	15.4	9	3.5	4.3	4.4
Honolulu CPI-U	2.1	3.7	3	2.8	2.5	2.5
Personal income	3.7	4.5	4.8	5	5.2	5.2
Real personal income <sup>2</sup>	1.5	0.7	1.7	2.1	2.6	2.6
Total wage & salary jobs	-0.8	1	1.5	1.7	1.5	1.3
Gross domestic product <sup>3</sup>	2	3.2	4.1	4.3	4.4	4.4
Real gross domestic product <sup>3</sup>	1.2	1.2	2.2	2.3	2.4	2.4
Gross domestic product deflator <sup>3</sup>	0.8	1.9	1.9	2	2	2
<p>1/ Visitors who came to Hawai'i by air or by cruise ship.</p> <p>2/ DBEDT calculated using BEA estimate of nominal personal income deflated by U.S. Bureau of Labor Statistics Honolulu CPI-U.</p> <p>3/ The 2011 value is estimated by DBEDT.</p>						
Source: Hawai'i State Department of Business, Economic Development & Tourism, May 7, 2012.						

## Appendix B – Environmental Health Management Acronyms

1 acre	43,560 square feet
205A HRS	Coastal Zone Management statute
234 Act	State Act - Hawai'i's Global Warming Solutions Act
303d	TMDL, listing of waters not meeting WQS (list due Apr 1, 12 & every 2 years) (WQ Limit)
305(b)	Water Quality Reports due every 2 years on even years
Sec 308	CWA Inspections (enforcement, compliance)
319	Non-point source polluted runoff grants (1990 started, 2003 peaked)
401	Water Quality Certification
402	NPDES
404	Administered by USACE (regulates the discharge of dredged, excavated or fill materials)
Sec 608	CAA, minimize the emission of refrigerants
Sec 609	CAA, establishing standards and requirements regarding servicing of motor vehicle air conditioners
ACE	Air, Climate, and Energy (research)
ADR	Alternative Dispute Resolution
AFO	Animal feeding operations
ASHERA	Asbestos Hazard Emergency Response Act
AQI	Air Quality Index
APA	American Planning Association
ARRA	American Recovery and Reinvestment Act of 2009
AWWA	American Water Works Association
BACT	Best Available Control Technology
BMP	Best Management Practices
BOEM	Federal Bureau of Ocean Energy Management (wind not OTEC)
BWA	Brown Water Advisory (EPA indicator bacteria - enterococcus) (Clostridium perfringens bacteria) (vibrio vulnificus deadly 3 days)
BWS	C&C of Honolulu Board of Water Supply
CAA	Clean Air Act (1970 1990)
CAFO	Concentrated Animal Feeding Operations
CARE	Community Action for a Renewed Environment
CDC	Centers for Disease Control and Prevention
CERCLA	Superfund law (Comprehensive Environmental Response, Compensation and Liability Act)
CGP	Construction Grant Program for wastewater infrastructure
CNPCP	Coastal non-point control Program (June 1996)
CO	Carbon Monoxide
CSO	Combined Sewer Overflow (wastewater and storm runoff - older cities)
CTAHR	UH College of Tropical Agriculture and Human Resources
CWA	Clean Water Act (1972, 87 Amendments) Implementation: NPDES, 319, 401, 404, SRF
CWRM	DLNR Commission on Water Resource Management
CW SRF	Clean Water State Revolving Funds (loans) 80% Federal, 20% State
CZARA	Coastal Zone Reauthorization Amendment (Section 6217)

CZM	Coastal Zone Management (operated by OP with funds from NOAA)
DBC	Deposit Beverage Container
DECA	Department of Commerce and Consumer Affairs
DLNR	Department of Land and Natural Resources
DMR	Discharge Monitoring Report (NPDES)
DOCARE	DLNR Division of Conservation and Resource Enforcement
DOFAW	DLNR Division of Fish and Wildlife
DPs	Development Plans
DU	Designated Uses - WQS
DWSRF	Drinking Water State Revolving Fund (loans) 80% Federal, 20% State
EISA	US Energy Independence and Security Act of 2007
EPA	US Environmental Protection Agency
EPAct	US Energy Policy Act of 2005
EPCRA	Emergency Planning and Community Right-to-Know Act
ER3	Environmentally Responsible Redevelopment and Reuse
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FTA	Federal Transit Administration
HACD	Hawai'i Association of Conservation Districts
HAPA	Hawai'i Administrative Procedure Act
HAR	Hawai'i Administrative Rule
HCEI	Hawai'i Clean Energy Initiative
HISC	Hawai'i Invasive Species Council
HRS	Hawai'i Revised Statute
ICAP	Center for Island Climate Adaptation and Policy
IPP	Independent Power Producers
ISE	Informal Science Education
IWS	Individual Wastewater System
MACT	Maximum Achievable Control Technology (air)
MOS	Margin of Safety (TMDL)
MS4	Municipal Separate Storm Sewer System
MWSP	Master Watershed Steward Program
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System (six digit code, updated every 5 years)
NACCHO	National Association of County and City Health Officials
NEHA	National Environmental Health Association
NELHA	Natural Energy Laboratory of Hawai'i Authority
NEPA	National Environmental Policy Act (1969)
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System Permit (5 year term) (Individual & General) Self-monitoring, Elements (effluent limits, BMP, Compliance schedule)
NSPS	New Source Performance Standards (air)
NSR	New Source Review (air)
NWP	National Water Program (EPA)

OCCL	DLNR Office of Conservation and Coastal Lands
ODS	Ozone depleting substances (cfc, hcfc, halons, methyl bromide, carbon tetrachloride etc)
OECA	EPA Office of Enforcement and Compliance Assurance (civil and criminal)
OECD	Int'l Organization for Economic Co-operation and Development
ORMP	Hi Ocean Resources Management Plan
OTEC	Ocean Thermal Energy Conversion
POTW	Publicly owned treatment works
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RFID	Radio Frequency Identification Microchip (to track food cradle to grave)
RFS	Renewable Fuel Standard
RISA	(The Pacific) Regional Integrated Sciences and Assessment Program
SCPs	Sustainable Communities Plans (Honolulu 8 regional plans to be updated every 5 years)
SDWA	Safe Drinking Water Act
SEP	Supplemental Environmental Project
SLH	Session Laws of Hawai'i
SNAP	Significant New Alternatives Policy (EPA CAA)
SOEST	UH School of Ocean and Earth Science and Technology
SPCC	Spill Prevention, Control and Countermeasure
SSO	Sanitary Sewer Overflows
STP	Sewage Treatment Plant
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plans
Title VI	Clean Air Act - regulations (protect the stratospheric ozone layer)
TMDL	Total Maximum Daily Loads (for impaired waters not meeting WQS)
TRI	Toxics Resources Index (NAICS code system adopted in 2006)
TSCA	Toxic Substances Control Act
UH	University of Hawai'i
UIC	Underground Injection Control
USACE	US Army Corp of Engineers
USGCRP	United States Global Change Research Program
WMP	Watershed Management Plans (BWS has 8)
WQS	Water Quality Standards
WRRC	UH Water Resources Research Center
WWTP	Waste Water Treatment Plant