

DEPARTMENT OF ENVIRONMENTAL SERVICES  
**CITY AND COUNTY OF HONOLULU**

1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 768-3486 • FAX: (808) 768-3487 • WEBSITE: <http://envhonolulu.org>

PETER B. CARLISLE  
MAYOR



RECEIVED

TIMOTHY E. STEINBERGER, P.E.  
DIRECTOR

MANUEL S. LANUEVO, P.E., LEED AP  
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.  
DEPUTY DIRECTOR

IN REPLY REFER TO:  
DIR 11-008

'11 JUN-1 P3:00

June 1, 2011

DEPT OF PLANNING  
AND PERMITTING  
CITY & COUNTY OF HONOLULU

**VIA HAND DELIVERY**

Mr. Rodney Kim, Chair  
Planning Commission  
c/o Department of Planning and Permitting  
City and County of Honolulu  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Dear Mr. Kim:

Subject: Docket No. SP09-403  
New Special Use Permit  
Waimanalo Gulch Sanitary Landfill

In accordance with the State Land Use Commission Order Adopting the City and County of Honolulu Planning Commission's Findings of Fact, Conclusions of Law, and Decision and Order With Modifications, the attached Second Annual Report is submitted for your information. The report is also being submitted to the Land Use Commission.

Sincerely,

  
Timothy E. Steinberger, P.E.  
Director

Attachment

P12

RECEIVED

**SECOND ANNUAL REPORT**

'11 JUN -1 P3:01

**STATUS OF ACTIONS TAKEN TO COMPLY WITH THE STATE LAND USE  
COMMISSION'S ORDER DATED OCTOBER 2, 2009  
AND  
STATUS OF OPERATIONS  
WAIMANALO GULCH SANITARY LANDFILL**

**Prepared For:**

**Land Use Commission  
State of Hawaii**

**Planning Commission  
City and County of Honolulu**

**Prepared By:**

**Department of Environmental Services  
City and County of Honolulu**

**June 1, 2011**

## TABLE OF CONTENTS

<b>PREFACE</b>	1
<b>STATUS OF IDENTIFYING AND DEVELOPING NEW LANDFILL SITES ON OAHU</b>	2
1.    General	2
2.    Current Status	2
<b>STATUS OF LANDFILL OPERATIONS</b>	4
1.    Tonnage	4
2.    December 2010 and January 2011 Storm Events	4
3.    Current Status of WGSL	4
4.    Landfill Expansion Permits	5
a.    Solid Waste Permit	5
b.    Special Use Permit	5
<b>COMPLIANCE WITH CONDITIONS OF ORDER</b>	7
<b>ALTERNATIVE TECHNOLOGIES</b>	11
1.    H-POWER	11
2.    Sludge Re-Use	12
a.    General	12
b.    Current Actions/Efforts to Re-use Sludge	12
3.    Materials Recycling	13
a.    Curbside Recycling	15
b.    Community Recycling Bin	15
c.    Condo Recycling Program	16
d.    Electronic Waste (e-waste)	16
e.    Business Recycling Programs	17
f.    Public Education	17
4.    Interim Off-island Shipping of Waste	18
<b>CONCLUSION</b>	19

## PREFACE

This report was prepared in accordance with the State of Hawaii Land Use Commission's ("LUC") Order Adopting the City and County of Honolulu Planning Commission's Findings of Fact, Conclusions of Law, and Decision and Order with Modifications, dated October 2, 2009 ("LUC Order"). Under Condition 6 of the LUC Order, the Applicant (Department of Environmental Services, City and County of Honolulu, hereinafter "ENV") is required to submit annual reports to the Planning Commission of the City and County of Honolulu ("Planning Commission") and the LUC regarding the following: (1) the status of identifying and developing new landfill sites on Oahu to supplement or replace the Waimanalo Gulch Sanitary Landfill ("WGSL"); (2) the WGSL's operations; and (3) ENV's compliance with the conditions imposed by the LUC Order. This report shall also address ENV's efforts to use alternative technologies as appropriate, and to seek beneficial re-use of stabilized, dewatered sewage sludge.

This is the second annual report and covers the period from June 2010 through May 2011, or as otherwise stated.

## **STATUS OF IDENTIFYING AND DEVELOPING NEW LANDFILL SITES ON OAHU**

### **1. General**

Condition 4 of the LUC Order requires that, on or before November 1, 2010, ENV shall begin to identify and develop one or more new landfill sites that shall either replace or supplement the WGS�.

### **2. Current Status**

Funding for the new landfill site selection process was appropriated in the City's Fiscal Year ("FY") 2010 budget with additional funds appropriated in FY 2011. In November 2009, ENV contracted a consultant, R.M. Towill Corporation, to facilitate this process, specifically to assist the Mayor's Landfill Site Selection Advisory Committee ("Landfill Advisory Committee"). The Landfill Advisory Committee is charged by the Mayor to provide advisory recommendations to the City concerning the selection of a future site or sites for a landfill to accept municipal solid waste (MSW), ash and residue from the City's H-POWER waste-to-energy facility, and construction and demolition debris waste. The Mayor chose 12 members to serve on the Landfill Advisory Committee based upon numerous criteria including technical expertise and experience, community involvement, and availability to serve.

The original members of the Landfill Advisory Committee were: Bruce Anderson, David Arakawa, Thomas Arizumi, David Cooper, John DeSoto, John Goody, Joe Lapilio, Tesha H. Malama, Janice Marsters, Richard Poirier, Chuck Prentiss, and George West. Due to various personal reasons, however, Bruce Anderson, David Cooper and John DeSoto have since resigned from the committee.

The first meeting of the Landfill Advisory Committee was held on January 20, 2011, and subsequent meetings were held on February 10, March 10, March 31, and May 12, 2011. The next tentatively scheduled meetings are June 23 and July 19, 2011. Additional meetings may be scheduled as needed by the Landfill Advisory Committee. Barring unforeseen delays, the Landfill Advisory Committee's final report is expected to be completed and sent to the Mayor by October 2011. All Committee meetings are open to the public and to public comment. Handouts provided to the Landfill Advisory Committee as well as the Group Memory of each meeting are posted online at [opala.org](http://opala.org).

Following receipt of the Landfill Advisory Committee's recommendations, ENV will work with the City Administration to select a new landfill site or sites to supplement or replace the WGS�. Once a site or sites are selected, as acknowledged in the LUC Order, it will take at least seven years to plan, construct and open a new landfill.

On January 7, 2011, ENV sent a written inquiry to Colonel Robert Rice, Base Commander of Marine Corps Base Kaneohe, as to the availability of land located within

the Bellows Air Force Base Station as a possible location for a new landfill facility. Also on that date, ENV sent a similar inquiry to William Aila, Acting Director of the State Department of Land and Natural Resources, as to the availability of State-owned land located at Waimanalo North (Tax Map Key: 4-1-008:013) as another possible location for a new landfill facility. These letters were sent as part of the effort to determine the availability of various potential landfill sites. As these lands are owned by the federal government and the state, respectively, the City has no ability to condemn these properties. The City would therefore require the consent of the property owner to acquire one or both of these properties. ENV has received response letters from the Marine Corps Base Kaneohe and the State Department of Land and Natural Resources which indicated that both subject sites are not available for a future landfill.

## STATUS OF LANDFILL OPERATIONS

### 1. Tonnage

Over the 12-month period beginning June 1, 2010, through May 31, 2011, the Waimanalo Gulch Landfill received the following amounts of material:

H-POWER Ash.....	83,298 tons
H-POWER Residue.....	61,614 tons
Municipal Solid Waste (MSW).....	175,315 tons

The above tonnages reflect the fact that the landfill was closed to commercial MSW receipts during January 2011 and February 2011 as a result of the heavy flooding associated with the December 2010 and January 2011 storm events described below. In addition, MSW volumes are higher than the previous reporting period due to scheduled H-Power maintenance shutdowns and the disposal of MSW received from the failed off-island shipping project. Ash volumes are consistent with prior reporting as that portion of the landfill was not directly affected by the referenced storm events..

### 2. December 2010 and January 2011 Storm Events

In December 2010, heavy rainfall and at least 2 large storm events caused WGSL to become inundated with flood waters from upstream of the landfill. Further flooding and a discharge of MSW, which included a small amount of sterilized medical waste, occurred on the night of January 12, 2011. Details of the storm events and actions taken by ENV and its contractor, Waste Management of Hawaii, Inc. ("WMH"), are discussed in the Status Report on Waimanalo Gulch Sanitary Landfill dated February 2, 2011, submitted to the LUC.

### 3. Current Status of WGSL

The January 2011 closure of WGSL did not stop ENV's collection of MSW and recyclables deposited into the grey, green, and blue residential collection bins because this waste could be burned at the City's waste-to-energy facility, H-POWER, or recycled. However, the closure of WGSL greatly impacted the disposal of H-POWER residue, bulky item waste, and wastewater sludge, all of which cannot be disposed of at H-POWER and must be disposed of at WGSL, the only permitted facility on O'ahu to accept these types of waste. The closure of WGSL also hampered H-POWER's ability to accept MSW because of the backlog of residue that accumulated at the facility. City refuse transfer stations that depend on H-POWER for waste disposal were also adversely impacted and experienced heavy buildups of trash. City wastewater treatment facilities resorted to temporary on-site storage of sewage sludge to cope with the situation. Further, ENV ceased collection of bulky item wastes, resulting in unsightly piles of waste in many neighborhoods across the island. Generators of other special wastes that are normally disposed of at WGSL had to make their own arrangements to store or otherwise dispose of their waste until the landfill could be reopened.

On January 28, 2011, after WMH completed partial repairs to the damaged cell E-6 and worked around the clock with the State Department of Health (“DOH”) and the United States Environmental Protection Agency (“EPA”), ENV and WMH were able to reopen WGS� for the limited disposal of critical waste that had backlogged as a result of WGS�’s closure, specifically sewage sludge, residue from H-POWER, other special wastes and accumulated bulky item waste from convenience centers.

On January 29, 2011, ENV commenced pick-up of bulky item waste, drawing upon additional resources to make this happen as quickly as possible, despite logistical and financial constraints.

On February 15, 2011, the storm water diversion channel at WGS� became functionally complete and will now carry future storm water originating from up canyon around the active portion of the landfill.

The seventeen day period, from January 12 to January 28, 2011, that WGS� was closed, only highlights the need for a landfill as certain waste cannot be combusted, recycled, reused or shipped. These wastes must be landfilled at WGS�. The closure of WGS� had far reaching impacts upon the City’s ability to dispose of solid waste, with restrictions imposed at all six of the City’s convenience centers, as well as at its three transfer stations. On April 13, 2011, the WGS� and all City refuse facilities resumed normal operations and were opened to the public.

#### 4. Landfill Expansion Permits

##### a. Solid Waste Permit

The final solid waste permit for the proposed lateral expansion was approved by the State of Hawaii, Department of Health (DOH) on June 4, 2010. General site excavation, new cell construction, and improvements to the west side drainage system are ongoing.

##### b. Special Use Permit

A Special Use Permit (“SUP”) application was submitted to the City Department of Planning and Permitting on December 3, 2008. The Planning Commission voted to approve the SUP on July 31, 2009. The LUC subsequently approved the SUP with modifications. Condition 14 restricts WGS� from accepting any MSW after July 31, 2012. ENV appealed that provision, along with Condition Nos. 15 and 16 of the LUC Order, relating to certain reporting requirements imposed upon the City Council, to the Circuit Court of the First Circuit. Oral arguments were presented to the Court on July 14, 2010. On August 3, 2010, the Court denied ENV’s request to strike Condition 14, and modified Conditions 15 and 16 by requiring ENV to comply with these conditions instead of the City Council and City Administration. ENV timely appealed to the



Intermediate Court of Appeals (“ICA”) that portion of the decision which affirmed the July 31, 2012, deadline on acceptance of MSW at the landfill. This case is pending at the ICA.

As indicated during the February 2011 Status Hearing before the LUC, ENV plans to file an application to the City Department of Planning and Permitting to amend the current SUP to allow for the disposal of MSW at WGSL beyond July 31, 2012.

## COMPLIANCE WITH CONDITIONS OF ORDER

The LUC adopted the Planning Commission's Findings of Fact, Conclusions of Law, And Decision and Order dated August 4, 2009, as its own Findings of Fact, Conclusions of Law, And Decision and Order, subject to sixteen (16) conditions. The general description and status of each condition is as follows:

Condition No.	Description
1	<p><b>The Applicant shall obtain all necessary approvals from the State Department of Health (DOH), Department of Transportation, Commission on Water Resources Management, and Board of Water Supply for all onsite and offsite improvements involving access, storm drainage, leachate control, water, well construction, and wastewater disposal.</b></p> <p><u>Status:</u> All applicable permits/approvals have been obtained.</p>
2	<p><b>In accordance with Chapter 11-60.1 "Air Pollution Control," Hawaii Administrative Rules, the Applicant shall be responsible for ensuring that effective dust control measures during all phases of development, construction, and operation of the landfill expansion are provided to minimize or prevent any visible dust emission from impacting surrounding areas. The Applicant shall develop a dust control management plan that identifies and addresses all activities that have a potential to generate fugitive dust.</b></p> <p><u>Status:</u> Dust control measures and management plan have been provided for as part of the Solid Waste Management Permit issued by the DOH.</p>
3	<p><b>The City and County of Honolulu shall indemnify and hold harmless the State of Hawaii and all of its agencies and/or employees for any lawsuit or legal action relating to any groundwater contamination and noise and odor pollution relative to the operation of the landfill.</b></p> <p><u>Status:</u> So noted.</p>
4	<p><b>On or before November 1, 2010, the Applicant shall begin to identify and develop one or more new landfill sites that shall either replace or supplement the WGSL. The Applicant's effort to identify and develop such sites shall be performed with reasonable diligence, and the Honolulu City Council is encouraged to work cooperatively with the Applicant's efforts to select a new landfill site on Oahu. Upon the selection of a new landfill site or sites on Oahu, the Applicant shall provide written notice to the Planning Commission. After receipt of such written notice, the Planning Commission shall hold a public hearing to reevaluate 2008/SUP-2 (SP09-403) is appropriate at that</b></p>

Condition No.	Description
	<p>time. The Planning Commission shall make a recommendation to the Land Use Commission.</p> <p><u>Status:</u> See Status of Identifying and Developing New Landfill Sites on Oahu of this report.</p>
5	<p>The Applicant shall continue its efforts to use alternative technologies to provide a comprehensive waste stream management program that includes H-POWER, plasma arc, plasma gasification and recycling technologies, as appropriate. The Applicant shall also continue its efforts to seek beneficial reuse of stabilized, dewatered sewage sludge.</p> <p><u>Status:</u> See section on Alternative Technologies of this report.</p>
6	<p>The Applicant shall provide, without any prior notice, annual reports to the Planning Commission and the Land Use Commission regarding the status of identifying and developing new landfill sites on Oahu, the WGS�'s operations, and Applicant's compliance with the conditions imposed herein. The annual reports also shall address the Applicant's efforts to use alternative technologies, as appropriate, and to seek beneficial re-use of stabilized, dewatered sewage sludge. The annual reports shall be submitted to the Planning Commission and Land Use Commission on June 1 of each year subsequent to the date of this Decision and Order.</p> <p><u>Status:</u> Subsequent reports will be submitted by June 1 of each year.</p>
7	<p>Closure Sequence "A" for the existing landfill cells at WGS� as shown on Exhibit "A12" must be completed, and final cover applied, by December 31, 2012.</p> <p><u>Status:</u> Closure Sequence "A" will be completed and final cover applied by December 31, 2012.</p>
8	<p>WGS� shall be operational only between the hours of 7:00 a.m. and 4:30 p.m. daily, except that ash and residue may be accepted at the Property 24 hours a day.</p> <p><u>Status:</u> The Solid Waste Management Permit issued by DOH requires that landfill operations be confined to between the hours of 7:00 a.m. and 4:30 p.m. Permission to extend hours to accommodate refuse loads during H-POWER outages shall be obtained from DOH on an as-needed basis.</p>

Condition No.	Description
9	<p><b>The Applicant shall coordinate construction of the landfill cells in the expansion area and operation of WGS� with Hawaiian Electric Company (HECO), with respect to required separation of landfill grade at all times and any accessory uses from overhead electrical power lines.</b></p> <p><u>Status:</u> Coordination with HECO will be done to ensure that landfill construction and operations are adequately separated from overhead electrical power lines.</p>
10	<p><b>The operations of the WGS� under 2008/SUP-2 (SP09-403) shall be in compliance with the requirements of Section 21-5.680 of the Revised Ordinances of the City and County of Honolulu 1990, to the extent applicable, and any and all applicable rules and regulation of the State Department of Health.</b></p> <p><u>Status:</u> Revised Ordinances of Honolulu § 21-5.680 is inapplicable to the WGS� as that Property is a public use and said ordinance therefore does not impact operations at WGS�. The operations of the WGS� are in compliance with any and all applicable rules and regulations of the State Department of Health.</p>
11	<p><b>The Planning Commission may at any time impose additional conditions when it becomes apparent that a modification is necessary and appropriate.</b></p> <p><u>Status:</u> So noted.</p>
12	<p><b>Enforcement of the conditions to the Planning Commission’s approval of 2008/SUP-2 (SP09-403) shall be pursuant to the Rules of the Planning Commission, including the issuance of an order to show cause why 2008/SUP-2 (SP09-403) should not be revoked if the Planning Commission has reason to believe that there has been a failure to perform the conditions imposed herein by this Decision and Order.</b></p> <p><u>Status:</u> So noted.</p>
13	<p><b>The Applicant shall notify the Planning Commission and Land Use Commission of termination of the use of the Property as a landfill for appropriate action or disposition of 2008/SUP-2 (SP09-403).</b></p> <p><u>Status:</u> Respective notifications will be made prior to termination of the use of the property as a landfill.</p>

Condition No.	Description
14	<p><b>Municipal solid waste shall be allowed at the WGS� up to July 31, 2012, provided that only ash and residue from H-POWER shall be allowed at the WGS� after July 31, 2012.</b></p> <p><u>Status:</u> The date restriction on acceptance of MSW at the WGS� was appealed to the Circuit Court of the First Circuit. On August 3, 2010, that court denied ENV's request to strike Condition 14. ENV timely appealed to the Intermediate Court of Appeals ("ICA") that portion of the decision which affirmed the July 31, 2012, deadline on acceptance of MSW at the landfill. The case is pending at the ICA.</p>
15	<p><b>The Honolulu City Council through the City Administration shall report to the public every three months on the efforts of the City Council and the City Administration in regard to the continued use of the WGS�, including any funding arrangements that are being considered by the City Council and the City Administration.</b></p> <p><u>Status:</u> See Condition 16 Status.</p>
16	<p><b>The City Council and the City Administration shall have a public hearing every three months to report on the status of their efforts to either reduce or continue the use of the WGS�.</b></p> <p><u>Status:</u> On August 3, 2010, the Circuit Court of the First Circuit issued its order modifying this condition by substituting ENV for the City Council and the City Administration. That portion of the order was not appealed. Public hearings are being conducted every 3 months to report on the efforts of ENV in regard to the continued use of the WGS�, including any funding arrangements being considered by the City Council and the City Administration. As of the date of this Second Annual Report, four public hearings have been held at Kapolei Hale on January 21, April 21, July 21 and October 19, 2010, and two public hearings have been held at Honolulu Hale on January 18 and April 18, 2011. For the six hearings held to date, a grand total of seven (7) members of the public have attended. On average, one (1) member of the public has attended each meeting. ENV publishes public notice of the public hearings in the newspaper, announces the meetings at the Landfill Advisory Committee meetings and posts notice on opala.org. ENV also requested that the Neighborhood Board Commission notify each Neighborhood Board of forthcoming meetings, which has been done. Reports of what occurred during the hearings are posted online at opala.org.</p>

## ALTERNATIVE TECHNOLOGIES

### 1. H-POWER

The H-POWER waste-to-energy facility continues to process over 600,000 tons per year of municipal solid waste. The facility has operated reliably for over twenty years and has disposed of over 13,000,000 tons of municipal solid waste, generating in excess of \$40,000,000 annually from the sale of electricity and recovered metals, and avoided the importation of 13,000,000 barrels of oil. The facility has been upgraded with state of the art air pollution control equipment and refurbishment is ongoing of major equipment including boiler water walls.

The facility is being expanded with the addition of a third boiler. On May 5, 2011, Mayor Peter Carlisle announced that the H-POWER Third Boiler Expansion Project had reached its halfway point, with construction 50% complete. Permitting, engineering, and procurement are 100% complete. Overall progress achieved to date is 75%. All major components including boiler, air pollution controls and turbine generator are on site and work has commenced on piping, mechanical, electrical power and instrumentation. The project is currently one month behind schedule but a schedule recovery plan is being implemented. The project is within budget. The expanded facility is anticipated to be completed by the end of 2011 and fully operational by July 2012.

Once built, the expanded facility with its new mass burn combustion system will increase waste combustion capacity from the current 600,000 tons per year (TPY) by an additional 300,000 TPY. Combined with implementation of the residential curbside recycling program and other recycling programs, the added capacity will significantly reduce the quantity of MSW that requires landfill disposal.

The expansion of H-POWER will result in increased production of ash and residue, both of which will require landfill disposal. At the end of September 2009, two RFPs were issued, one for the beneficial reuse of H-POWER residue and the other for processing H-POWER ash. Subsequently, the City issued separate RFPs for H-POWER fly ash and H-POWER bottom ash in response to early feedback received. The City received no proposals in response to the H-POWER residue RFP or the H-POWER fly ash RFP. The City received one proposal for the H-POWER bottom ash RFP. That proposal, however, was deemed non-responsive for failure to submit all required documents.

In July 2009, the City also issued an RFP for a Demonstration Waste to Energy Facility. The City received one proposal for this RFP. However, that proposal was rejected as non-responsive for failure to submit all required documents. Subsequently, three parties have made alternative technology presentations to ENV. The technologies include waste-to-energy and ash reuse. ENV is considering issuing RFPs in the near future because of this interest.

2. Sludge Re-use

a. General

The City and County of Honolulu currently operates nine (9) wastewater treatment plants (WWTPs) on Oahu. The percentage of total sewage sludge generated from the nine (9) City WWTPs is as follows:

WWTP	% of Total Sludge
Honouliuli	23
Kahuku	1
Kailua	29
Laie	<1
Paalaa Kai	<1
Sand Island	25
Wahiawa	6
Waianae	10
Waimanalo	1

b. Current Actions/Efforts to Re-use Sludge

Laie WWTP: Compost green waste with sewage sludge using the Windrow process.

Sand Island WWTP: Process sewage sludge to fertilizer pellets using the Synagro process. In FY 09, about 46% of the Synagro pellets were disposed at the landfill and 54% was beneficially reused. In April 2010, about 88% of the Synagro fertilizer pellets were beneficially reused with about 12% of the pellets disposed at the landfill. In June 2010, nearly all of the Synagro fertilizer pellets were beneficially reused in the community, diverting about 25% of the City's sewage sludge away from the landfill. From June 2010 to May 2011, Synagro sent 80% of the product to market and 20% of the product to the landfill.

Kailua, Wahiawa and Honouliuli WWTPs: The City awarded a contract on July 15, 2010, to Hawaiian Earth Recycling ("HER") to process approximately 100,000 tons annually of combined green waste, food waste, and sewage sludge from Kailua WWTP, Wahiawa WWTP, and Honouliuli WWTP. The operation will be based on the In-vessel Conversion process and is anticipated to divert an additional 58% of the City's sewage sludge away from the landfill, while creating a marketable soil amendment product. HER is currently working on an environmental impact statement for the facility as required by the contract with the City.

### 3. Materials Recycling

The table below shows material recycling data by year from 1988 to 2009. Although waste tracking to the landfill and H-POWER is managed every month by ENV, recycling data is provided by commercial recycling companies which are surveyed annually. Recycling data for 2010 is currently being gathered.

There has been an upward trend of general material recycling from approximately 75,000 tons in 1988 to well over 400,000 tons today. Recycling of construction and demolition (“C&D”) materials, such as concrete, rock and asphalt, has added between 100,000 to 200,000 tons to the recycling rates. These C&D recycling rates tend to fluctuate based on the volume and type of construction projects undertaken from year to year, and are shown separately so as not to skew the data. C&D material is diverted from the WGS� to the private PVT landfill for disposal.

<b>Year</b>	<b>General Material Recycling</b>	<b>C&amp;D Recycling</b>	<b>Total Recycled</b>
2009	426,947	116,670	543,617
2008	456,876	216,745	673,621
2007	453,282	148,952	602,234
2006	421,072	121,675	542,747
2005	417,669	193,829	611,498
2004	386,338	173,916	560,254
2003	366,639	106,773	473,412
2002	352,699	139,055	491,754
2001	367,300	114,070	481,370
2000	327,710	165,000	492,710
1999	314,075	225,200	539,275
1998	318,690	148,800	467,490
1997	313,394	204,400	517,794
1996	299,574	95,300	394,874
1995	294,340	44,400	338,740
1994	290,412	35,700	326,112
1993	241,600	30,000	271,600
1991	167,152	0	167,152
1988	73,992	0	73,992



Most recent data shows steady increases in general material recycling rates as a percentage of the total waste. In 2009, the recycling tonnage dropped about 30,000 tons from the previous year, but this decrease is correlated with a similar drop in overall waste generation due to the state of the economy. The actual recycling rate increased from 25% in 2008 to 27% in 2009 for general material recycling (not including C&D recycling). Construction and demolition recycling decreased by 100,000 tons from the previous year.

In comparing 2008 and 2009, although there were moderate decreases across the board for each material, there was an increase in paper recovery from 63,000 tons to 72,000 tons and a slight increase in plastics recycling.

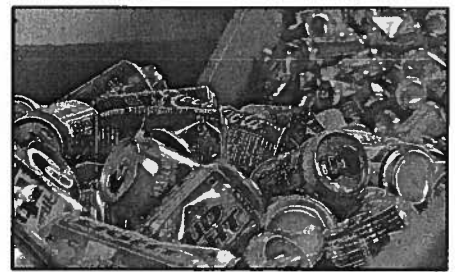
The City's efforts to increase residential recycling have continued with the completed expansion of island-wide curbside recycling in May 2010, community recycling bin program, condo recycling assistance programs and budget commitments to support these efforts. Additionally, the City requires commercial sector recycling through mandatory laws established by City ordinance, and provides assistance to businesses to setup and expand their recycling programs.

Recycling data from 2009 shows the following tonnage diverted from the landfill:

- Paper (72,300 tons)
- Glass (21,300 tons)
- Plastic (4,900 tons)
- Green Waste (88,000 tons)
- Tires (10,300 tons)
- Auto Batteries (6,000 tons)



- Metals (166,000 tons)
- Electronic Scrap (700 tons)
- Wood Waste/Pallets (16,000 tons)
- Construction and Demolition Debris (117,000 tons)



- Food Waste (25,000 tons)
- Sewage Sludge (data in research)
- Other Reuse (16,000 tons)



a. Curbside Recycling

The island-wide expansion of Curbside Recycling for Residential Mixed Recyclables and Green Waste was completed in May 2010. More than 160,000 homes on Oahu are now included in the program and are capturing material at a rate of 20,000 tons of mixed recyclables and 50,000 tons of green waste per year. The following information summarizes the program expansion dates, number of households involved, and communities being serviced.

<b>October 2007</b> (18,500)	Mililani and Hawaii Kai
<b>November 2008</b> (39,000)	Kuliouou to Manoa, Kapahulu; Kailua, Lanikai; Mokuleia to Sunset
<b>May 2009</b> (40,300)	Waipio Gentry to Halawa; Wahiawa, Whitmore, Waipio Estates, Launani Valley; Kaneohe; Waimanalo
<b>November 2009</b> (22,400)	Foster Village to Makiki; Kahuku to Kahaluu
<b>May 2010</b> (36,000)	Makakilo to Waikele, Waipahu; Ewa Beach to West Loch; Honokai Hale to Makua

The City changed how it collects refuse as curbside recycling was integrated into the system. The twice per week refuse pickup shifted to one day for refuse and one day for recycling pickup, alternating weekly between the blue and green recycling carts. The once a week pickup schedule provides households with an incentive to sort and recycle their trash. Households utilize a set of three color-coded carts – gray for refuse, green for green waste and blue for mixed recyclables. Once the program has time to mature, the City projected it would divert approximately 28,000 tons of mixed recyclables and 46,000 tons of green waste, a net gain of 53,000 tons over previous residential recycling activity. Most current data shows steady gains in mixed recyclables collection at a rate of 20,000 tons annually with green waste exceeding expectations at 50,000 tons.



b. Community Recycling Bin

The City continues to maintain community recycling bins at approximately 100 sites around the island. The community recycling bins provide convenient drop-off to areas not serviced by curbside, for residents living in condos, and for the host schools.



The Community Recycling Bin Program began in 1990 and grew from an initial 20 participating schools to approximately 100 locations as of May 2010. The recycling bins are placed at schools around the island and collect plastics, paper, aluminum, and glass from the surrounding communities and are also used by the schools for campus generated recyclable materials from classrooms, administrative offices, cafeteria and vending machines. Revenue from the recyclables goes to the schools, which encourages their participation in the program as well as support from the surrounding community.



The contract provides financial incentives to the schools to encourage more schools to join and increase participation from the community. For fiscal year 2010, the program recovered about 6,000 tons of recyclable material and paid more than \$200,000 to the participating schools. Additional HI-5 only bins are provided to support collection events and campaigns, and offer the schools more opportunity to raise funds.

c. Condo Recycling Program

The City continues to promote condominium recycling through a program that reimburses condominium properties for costs associated with the start up of a recycling program.



Most multi-family dwellings contract with private hauling companies to collect their refuse and would likewise need to establish their own recycling programs. Multi-family recycling

is voluntary. The City provides technical assistance in conducting waste audits, designing recycling systems and identifying private recycling services. The City also provides recycling containers and educational materials. In September 2007, the City launched this new program to provide reimbursement for recycling program start-up costs up to \$2,000, which continues to date.



d. Electronic Waste (“e-waste”)

The City worked with State legislators to enact producer responsibility-based legislation to help provide electronic product recycling through manufacturer-financed opportunities. Legislation introduced in the 2007 session failed to make the list of bills for consideration, but was reintroduced as part of the House and Senate Majority packet in the 2008 session and was passed into law. This law requiring manufacturers to provide take back programs for electronic waste went into effect January 1, 2010, and is administered by the DOH. In general, the covered electronics included computers at

the start in January 2010 and expanded to include televisions in January 2011. DOH has indicated that they are allowing the manufacturers additional time to develop their programs and are also proposing amendments to the legislation that will more clearly specify the criteria and requirements for these programs. Collection data from the manufacturers were due to DOH by March 31, 2011. DOH expects to have collection data sometime thereafter. DOH has indicated that it expects the programs and consumer convenience to evolve as the new program matures. ENV will continue to work in collaboration with DOH and local e-waste recycling companies.

Currently, only commercial e-waste is banned from the Waimanalo Gulch Sanitary Landfill. The ultimate long-term goal is to ban all e-waste from landfills once the manufacturers' take-back programs are fully in place.

e. Business Recycling Programs

The City continues to provide assistance to commercial sector recycling efforts and to ensure compliance with mandatory recycling policy established in the mid 1990's, which requires office buildings to recycle office paper, bars/restaurants to recycle glass and a variety of food operations to recycle food waste. Disposal site bans/restrictions divert materials from landfill and H-POWER, including green waste, cardboard, metals, tires, auto batteries, e-waste. The City provides technical assistance to businesses for designing and implementing recycling programs through how-to guides, workshops and on-site support, and works collaboratively with the State's Green Business Program.

f. Public Education

Public education regarding recycling is ongoing--distribution of brochures and print materials, opala.org website, WasteLine e-newsletter and annual events including Tour de Trash and Discover Recycling. In October 2009, the City and Oceanic Time Warner Cable launched "Opalavision" on The Green Channel at Oceanic 332 and online at opala.org. Short stories about the City's recycling initiatives and programs are featured in 3-minute episodes that educate and entertain. New episodes are produced monthly. The format is interactive, supporting 24/7 viewing of all episodes on demand.

The City coordinates numerous programs targeting our youth and supporting recycling projects in the schools. In addition to providing recycling bins and equipment to support collection activities, the City provides recycling educational professionals to aid teachers in the classroom through the Recycling Teaching Partners program. To further enhance the outreach to schools, the City sponsored two educational shows for our youth in April/May 2011 – Honolulu Theatre for Youth production of "Where Do Things Go?" at the Tenney Theatre and a traveling show to local schools entitled "Sort It Out!" Both shows included distribution of Opala IQ Books and educational materials to students and teachers

#### 4. Interim Off-island Shipping of Waste

No waste was ever shipped to the mainland due to various problems encountered by Hawaiian Waste Systems LLC ("HWS"), the bidder awarded the contract to ship waste to the mainland. These problems culminated in the U.S. District Court, Eastern District of Washington ruling on August 30, 2010 to enjoin the shipment of waste from Hawaii to Washington or Oregon ports on the Columbia River and/or to the Roosevelt Landfill in Washington. Consequently, the U.S. Department of Agriculture canceled the compliance agreement permits of all Hawaii shippers that might otherwise have enabled the shipment of waste to the mainland. At the point where shipping was no longer possible, HWS had approximately 20,000 tons of baled waste stored at three locations. To dispose of this baled waste, HWS agreed to disassemble the bales, sort the waste and take the burnable waste to H-POWER and the non-burnable waste to the Waimanalo Gulch Landfill.

As of January 2011, approximately 11,000 tons had been taken to H-POWER and 140 tons had been taken to WGSL. On January 6, 2011, there was a fire at the HWS facility that damaged the building in which the waste bales were disassembled and processed. The City, however, continued to work with HWS and DOH to dispose of the remaining bales of waste.

On May 12, 2011, the last bale of waste at the HWS facility was removed and delivered to a City waste disposal facility. Of the original 20,000 tons in its possession, HWS delivered 14,779 tons to H-POWER (76%) and 4,565 (24%) tons to WGSL. HWS was able to extract and recycle 1,525 tons of metal.

## **CONCLUSION**

The foregoing report is submitted in accordance with reporting requirements set forth in the LUC Order dated October 2, 2009. This report focuses on the status of ENV's efforts to identify and develop one or more landfill sites that shall either replace or supplement the WGS� and the 16 Conditions contained in the LUC Order. Also discussed are the further progress of WGS�'s operations and the City's active efforts to reduce waste volume that is directed to the landfill, such as the expansion of the H-POWER facility and recycling.

The City intends to continue its efforts to ensure proper solid waste management for the people of O'ahu, in close coordination with applicable regulatory agencies and decision-makers.