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**CITY AND COUNTY OF HONOLULU**

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IN REPLY REFER TO:  
RD 13-013

June 25, 2013

VIA HAND DELIVERY

Mr. Kyle J.K. Chock, Commissioner  
Land Use Commission  
Department of Business, Economic Development and Tourism  
State of Hawaii  
235 South Beretania Street, Room 406  
Honolulu, Hawaii 96804

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

Dear Mr. Chock:

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 3<sup>rd</sup> Annual Report is submitted for your information. It is noted that this report covers the period from June 2011 through May 2013. A separate report covering the June 2011 through May 2012 was not submitted previously.

The report is also being submitted to the Planning Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "Lori M.K. Kahikina".

Lori M.K. Kahikina, P.E.  
Director

Attachment

2013 JUN 26 A 10:59  
LAND USE COMMISSION  
STATE OF HAWAII

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**THIRD ANNUAL REPORT**

**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**

LAND USE COMMISSION  
STATE OF HAWAII  
2013 JUN 26 A 10:59

**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 26, 2013**

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## 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 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 third report and covers the period from June 2011 through May 2013, 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 WGSL.

### 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, FY2013, and for FY2014. 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 was 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, David Cooper and John DeSoto resigned from the committee in March 2011 and Bruce Anderson resigned in June 2011.

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, May 12, July 19, November 8, 2011 and February 1, March 16, and April 20, 2012. The Landfill Advisory Committee's final report was completed on September 25, 2012. All Committee meetings were open to the public and to public comment. Handouts provided to the Landfill Advisory Committee, the Group Memory of each meeting, and the final report are posted online at [www.opala.org](http://www.opala.org).

ENV will continue to work with the City Administration to further review and analyze the sites recommended in the final report.

## STATUS OF LANDFILL OPERATIONS

### 1. Tonnage

Over the period beginning June 1, 2011, through May 31, 2013, the Waimanalo Gulch Landfill received the following amounts of material:

	June 1, 2011 Through May 31, 2012	June 1, 2012 Through May 31, 2013
H-POWER Ash.....	87,633 tons	121,500 est. tons
H-POWER Residue.....	73,834 tons	47,500 est. tons
Municipal Solid Waste (MSW).....	168,755 tons	91,500 est. tons

### 2. Current Status of WGSL

Activities conducted during the reporting period include general site excavation and cell construction in the expansion area, construction of the Lower West Side Drainage System to complete the Western Diversion Drainage System, and MSW landfilling in Cells E-5, E-6 and E-7 and ash landfilling in Cell E-8.

Closure of the lower eastern section of the landfill (Closure Sequence "A") commenced in June 2012 and final cover for the lower eastern section of the landfill was substantially completed in December 2012. Excavation of Cell E-8 is expected to be completed in September 2013, after which excavation of the final cell in the expansion area (Cell E-9) will commence. Excavation of Cell E-9 is expected to be completed by June 2014. Closure of the original ash monofill, located at the base of the landfill, is scheduled to commence in December 2013 and is expected to be completed in mid-2014.

### 3. 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 drainage improvements are ongoing.

#### b. Special Use Permit

The current SUP provided that WGSL stop accepting MSW for disposal as of July 31, 2012. As stated in Condition 14 of the SUP, "Municipal solid waste shall be allowed at the Waimanalo Gulch Sanitary Landfill up to July 31, 2012,

provided that only ash and residue from H-POWER shall be allowed at the Waimanalo Gulch Sanitary Landfill after July 31, 2012.” While some types of MSW may be disposed of at H-POWER, certain wastes such as sewage sludge, animal carcasses, and treated medical sharps cannot be disposed of at H-POWER. Moreover, because H-POWER’s operating permit requires a permitted landfill as a back-up disposal option, it is conceivable that H-POWER will have to shut down if WGSL is required to stop accepting MSW.

On June 28, 2011, ENV filed a SUP Amendment Application with the City Department of Planning and Permitting, to delete Condition No. 14 of the SUP. This will allow WGSL to continue accepting municipal solid waste until the landfill reaches its capacity as permitted by the State Department of Health.

The City and County of Honolulu Planning Commission (Commission) convened a public hearing on October 5, 2011, to consider ENV’s application to delete Condition No. 14 of the SUP. The Commission heard public testimonies and granted petitions to intervene in the SUP proceeding to Ko Olina Community Association, Maile Shimabukuro, and Schnitzer Steel Hawaii Corp. With the granting of the petitions to intervene, the matter proceeded as a contested case. A pre-hearing conference to discuss procedural and others matters in the contested case was held on October 12, 2011. A contested case hearing began on December 7, 2011, with opening statements given by ENV and interveners. The contested case hearing continued on January 11, 25, February 8, March 7, 14, April 4, 11, 23 and May 25, 2012. On May 25, 2012, the Commission stayed the matter for six (6) months in light of the Hawaii Supreme Court’s (Supreme Court’s) decision to strike Condition No. 14 of the SUP described below.

The City had filed an appeal to the Supreme Court on February 22, 2012 to delete Condition No. 14. On May 4, 2012, the Supreme Court ruled in favor of the City and struck down Condition No. 14, which was the State Land Use Commission’s condition imposing the MSW deadline. The Supreme Court further ordered that the matter be remanded to the Circuit Court and the Land Use Commission for action on the SUP consistent with the Supreme Court decision. The State Land Use Commission convened on July 5, 2012, to discuss procedural options only, in light of the Supreme Court remand and stayed Commission proceeding.

Upon request by ENV, the LUC directed the parties to file written briefs regarding the proper procedural steps. ENV argued that the case decided by the Supreme Court remain with the LUC for decision-making. The interveners argued to remand the Supreme Court case back to the Planning Commission with a request to consolidate the amendment application and the Supreme Court cases. The LUC decided at its meeting on September 14, 2012, to remand the Supreme Court case to the Planning Commission with a recommendation to consolidate the two cases. On December 19, 2012, the Planning Commission continued its consideration of the LUC request to consolidate the two cases to



allow the incoming City administration to weigh in on the matter and the possibility of a joint recommendation from the parties. On February 20, 2013, the Planning Commission again continued its consideration of the LUC request to consolidate based upon the parties' representation that they intended to file a joint recommendation to the Planning Commission regarding both the consolidation and the subject matter of the remand.

The landfill will continue operations under the current SUP while the deadline for receipt of MSW is resolved by the Planning Commission and the LUC.

## 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" was commenced in June 2012 and the final cover was applied and substantially completed in December 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 WGSL up to July 31, 2012, provided that only ash and residue from H-POWER shall be allowed at the WGSL after July 31, 2012.</b></p> <p><u>Status:</u> The landfill will continue operations under the current SUP while the deadline for receipt of MSW is resolved by the State Land Use Commission. See: 3. Landfill Expansion Permits b. Special Use Permit.</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 WGSL, 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 WGSL.</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 WGSL, including any funding arrangements being considered by the City Council and the City Administration. During the reporting period, 6 public hearings were held at Honolulu Hale on July 18 and October 10, 2011, January 9 and April 16, 2012, January 14 and April 15, 2013, and 2 public hearings were held at Kapolei Hale on July 16 and October 15, 2012. For the 8 hearings held during the period, a grand total of 31 members of the public have attended. On average, 3 members of the public have attended each meeting. ENV publishes public notice of the public hearings in the newspaper and posts notice on <a href="http://opala.org">opala.org</a>. 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 also posted online at <a href="http://opala.org">opala.org</a>.</p>

## ALTERNATIVE TECHNOLOGIES

### 1. H-POWER

The H-POWER waste-to-energy facility, operated by Covanta, 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 \$30,000,000 annual net revenues from the sale of electricity, recovered metals and tipping fees, and avoided the importation of 13,000,000 barrels of oil. The original refuse-derived fuel (RDF) facility has been upgraded with state of the art air pollution control equipment (fabric filter baghouses) in 2009 and refurbishment of major equipment such as boiler water walls, shredders, and magnets has been ongoing since 2010.

The facility's capacity to process municipal solid waste was increased by 50% in 2012 with the addition of a third boiler, which utilizes mass-burn (MBN) technology. The third boiler was open to commercial operations on August 4, 2012. The MBN unit allows the facility to process and burn bulky waste that previously had to be disposed at the landfill. With the addition of the MBN unit, H-POWER now plays an even larger role in reducing waste disposal at the landfill. Combined with the expansion of the City's residential curbside recycling program and other efforts to divert waste from the landfill, HPOWER's third boiler will significantly reduce the quantity of MSW disposed of at the landfill.

#### a. Sludge

Plans are underway to construct a sewage sludge receiving station at the MBN unit that will receive, store, and process wastewater treatment plant (WWTP) sludge currently being disposed at the landfill. As of May 2013, the facility design and Environmental Assessment (EA) have been completed; however, construction is on hold pending modification and approval of H-POWER's Clean Air Permit.

#### b. Medical Waste

Treated medical waste is currently disposed at the landfill because medical sharps, which H-POWER will not accept, are not separated from the treated medical waste that can be disposed of at H-POWER prior to disposal by medical waste generators. The City is currently discussing the matter with the DOH and medical waste industry (treatment facilities and waste generators) to develop a plan to segregate the medical sharps so that the combustible portion of the treated medical waste can be disposed of at H-POWER.

c. Tires

Presently, tires cannot be disposed of at H-POWER. However, pursuant to the City's and Covanta's efforts, DOH granted a permit variance to allow a one (1) year demonstration project to burn a limited quantity of tires at H-POWER. During the project period, Covanta will develop standard operating procedures for processing and burning tires. Air emissions will be closely monitored to establish limits on the amount of tires that can be burned under varying operating conditions. A report with Covanta's findings and recommendations will be submitted to the DOH at the conclusion of the demonstration project.

d. Process Residue

The City is discussing residue reprocessing options with Covanta to reduce/eliminate residue disposal at the landfill. A plan to capture more of the metal fraction in the process residue is being devised to allow the residue to be re-introduced into the MBN unit.

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	36.8
Kahuku	1.0
Kailua	8.3
Laie	<1
Paalaa Kai	<1
Sand Island	35.7
Wahiawa	10.7
Waianae	6.7
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 into 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 FY 10, about 29% was disposed at the landfill and 71% was reused. In FY 11, about 20% of the pellets were

disposed at the landfill and about 80% was beneficially reused. In FY 12, approximately 12% of the product went to the landfill and about 88% of the product was reused.

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 completed an environmental impact statement for the facility as required by the contract with the City.

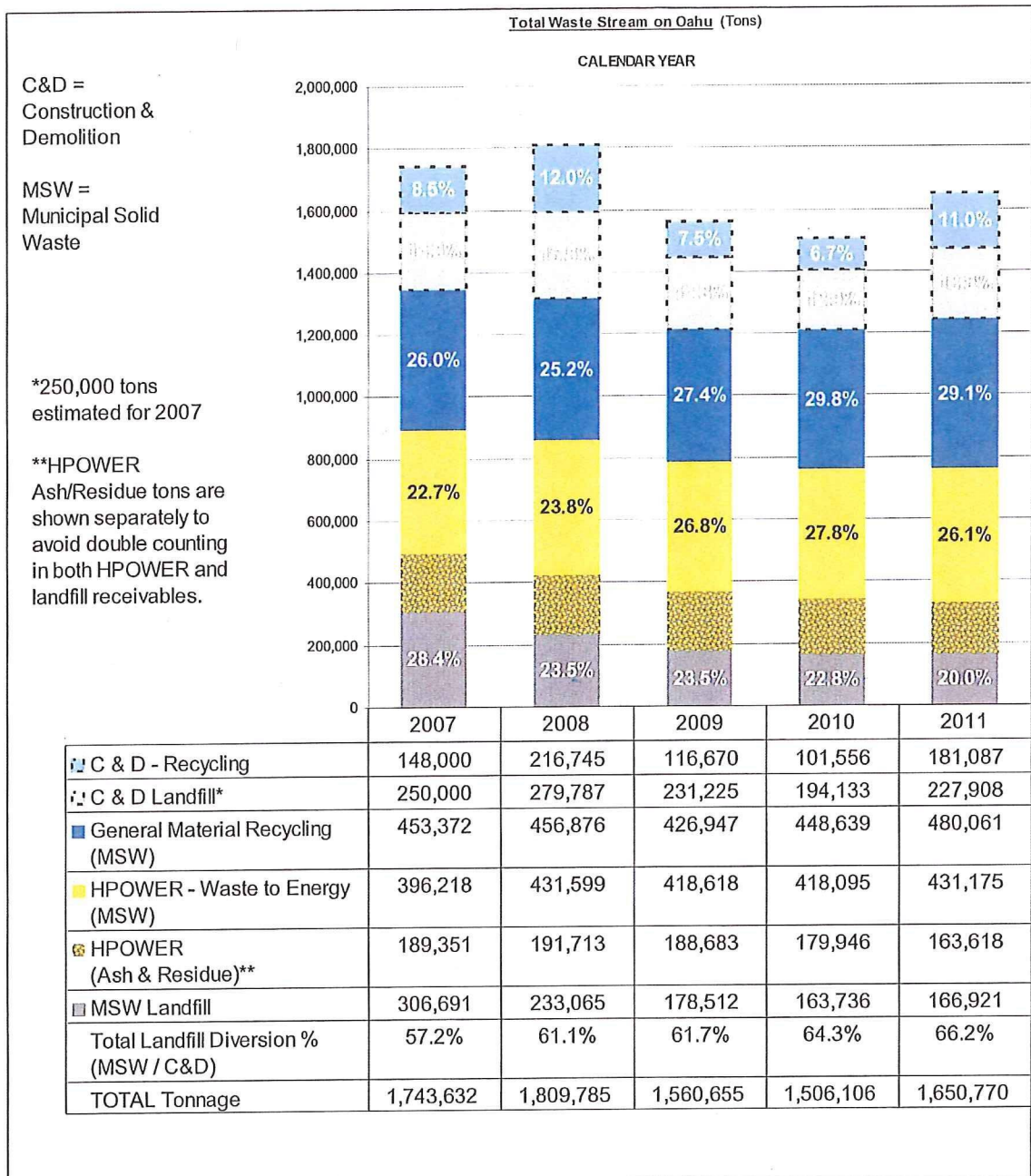
3. Other Request For Proposals (RFPs) for Alternative Waste Disposal Technologies

To further reduce the amount of waste disposed of at the landfill, the City issued RFPs for demonstration waste-to-energy facilities, for recycling H-POWER fly ash, and for recycling H-POWER bottom ash. The City did not receive any responses to these RFPs.



#### 4. Materials Recycling

To present a complete waste flow picture, the most recent available data is for calendar year 2011. 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 2012 will be gathered and compiled during the first quarter of 2013, and an updated chart and analysis will be posted online at [www.opala.org](http://www.opala.org) mid year.

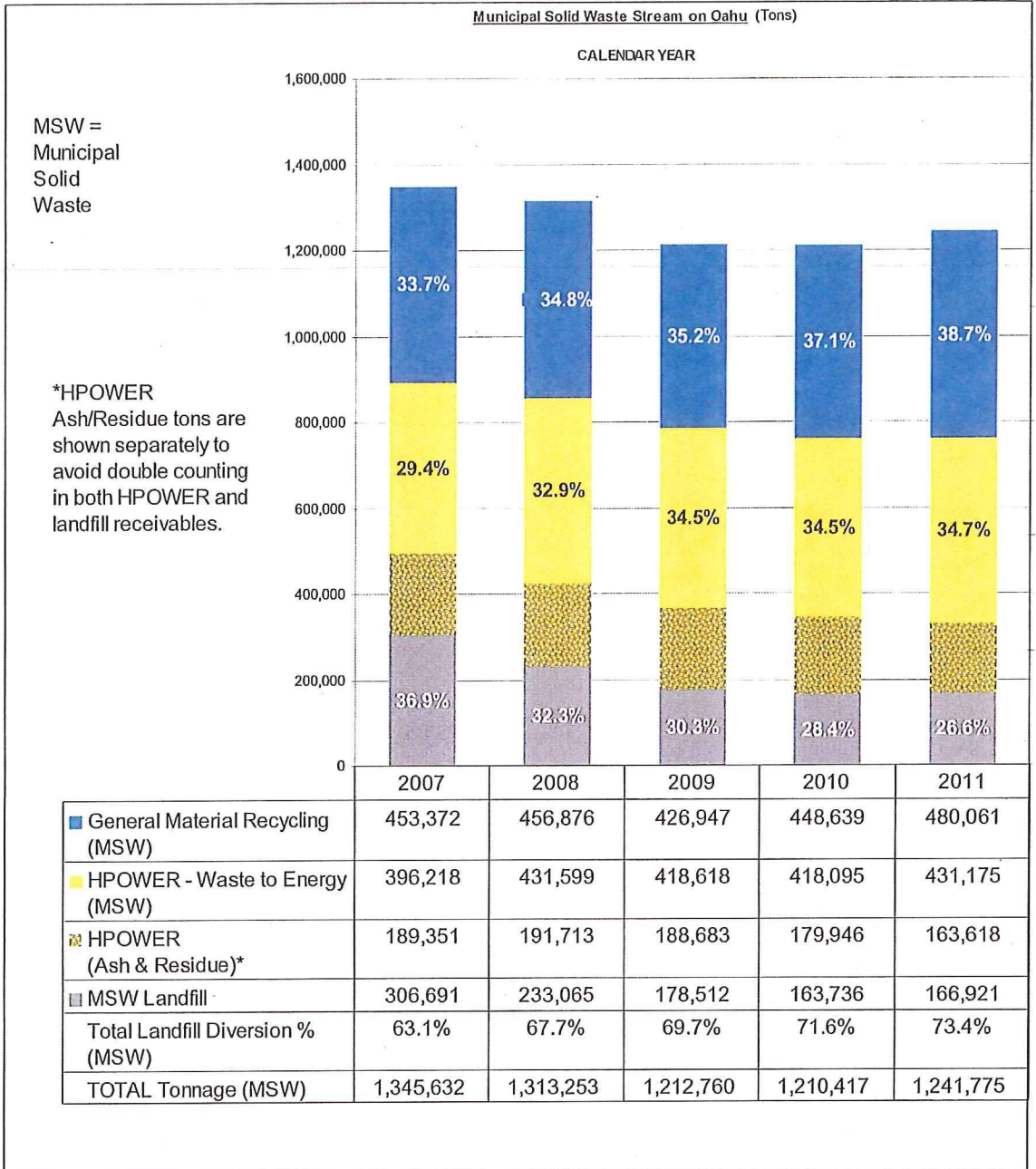


The data in the chart above presents the annual quantity of waste (in tons) that is processed through recycling, waste-to-energy or landfilling for the most recent five (5) calendar years (2007–2011).

*Brief analysis:* The data shows how Oahu's waste has been diverted from landfill through recycling and waste-to-energy. The general trend shows annual increases in recycling and waste-to-energy, and decreases in landfill disposal. Note that overall waste generation decreased significantly in 2009-11, most likely due to the down-turn in the economy. Total waste generation dropped from 1.8 million tons in 2008 to 1.5 million tons in 2010, with some increase noted in 2011. The general material recycling rate (shown in the darker blue) increased from 25 percent (2008) to 27 percent (2009) and to more than 29 percent (2010 and 2011). The total landfill diversion rate continued to increase from 57 percent (2006/2007) to 62 percent (2009) to 64 percent (2010) and to 66 percent (2011), with continued reductions of waste disposed in landfill.

Total waste includes waste of all types disposed/recycled on Oahu, including construction and demolition waste. There are two landfills on Oahu: the City's Waimanalo Gulch Sanitary Landfill (WGSL), which is designated for MSW, and the private PVT Landfill, which is permitted for construction and demolition waste only. When analyzing municipal solid waste (MSW) only and landfill diversion specific to the WGSL, the landfill diversion rate achieved through recycling and waste-to-energy is over 73% and the general material recycling rate is 38%. See the chart below for a fuller comparison of diversion rates for WGSL over the most recent five (5) years.

Municipal Solid Waste Stream on Oahu (Tons)



*Recycling data:* The tables below provide detail of what was recycled by material type. The City has gathered annual recycling data since 1988 (except for 1989 and 1990). Note the 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 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.

Year	General Material Recycling	C&D Recycling	Total Recycled
2011	483,707	181,087	664,794
2010	448,639	101,556	550,195
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

<b>Oahu Recycling 2011</b>	
<b>Material Type</b>	<b>Amount in tons</b>
<b>PAPER</b>	
Corrugated Cardboard	45,984
Newspaper	10,251
Office Paper	12,689
Other Paper	3,755
<b>METALS</b>	
Ferrous (includes autos)	182,393
Non-Ferrous (includes aluminum)	24,372
<b>GLASS</b>	24,140
<b>PLASTIC</b>	6,161
<b>TIRES</b>	13,504
<b>AUTO BATTERIES</b>	7,959
<b>ELECTRONIC SCRAP</b>	2,414
<b>GREEN WASTE (yard trimmings)</b>	103,666
<b>WOOD WASTE/PALLETS</b>	10,058
<b>CONSTRUCTION &amp; DEMOLITION (rock, concrete, asphalt)</b>	181,087
<b>FOOD WASTE</b>	15,228
<b>SEWAGE SLUDGE (Tonnage data being researched)</b>	-
<b>OTHER REUSE (Goodwill, Salvation Army)</b>	17,274
<b>TOTAL</b>	<b>664,794</b>

<b>Oahu Recycling 2010</b>	
<b>Material Type</b>	<b>Amount in tons</b>
<b>PAPER</b>	
Corrugated Cardboard	41,805
Newspaper	12,596
Office Paper	11,177
Other Paper	6,944
<b>METALS</b>	
Ferrous (includes autos)	163,166
Non-Ferrous (includes aluminum)	18,247
<b>GLASS</b>	22,833
<b>PLASTIC</b>	5,385
<b>TIRES</b>	9,518
<b>AUTO BATTERIES</b>	5,383
<b>ELECTRONIC SCRAP</b>	1,375
<b>GREEN WASTE (yard trimmings)</b>	91,413
<b>WOOD WASTE/PALLETS</b>	15,514
<b>CONSTRUCTION &amp; DEMOLITION (rock, concrete, asphalt)</b>	101,556
<b>FOOD WASTE</b>	26,677
<b>SEWAGE SLUDGE (Tonnage data being researched)</b>	-
<b>OTHER REUSE (Goodwill, Salvation Army)</b>	16,607
<b>TOTAL</b>	<b>550,196</b>

The City's efforts to increase residential recycling have continued with the expansions of island-wide curbside recycling, recycling centers, 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.

a. Curbside Recycling

ENV completed the final phase expansion of the fully-automated 3-cart curbside recycling program in May, 2010. There are currently 160,000 homes participating in the program, and capturing material at a rate of 20,000 tons of mixed recyclables and 50,000 tons of green waste per year. In November 2011, the City completed an evaluation of the first year of full operation, which indicated that the program had achieved a 77% capture rate for green waste and 53% capture rate for mixed recyclables. Increased public experience with identifying and sorting recyclables should produce higher results for the mixed recyclables as the program continues to mature. The program continues to be evaluated to identify strategies for improving participation and efficiencies. Additionally, the City is moving forward to further expand curbside recycling to the remaining 20,000 homes around Oahu still serviced with a manual collection system, starting with a pilot program on the North Shore tentatively scheduled to start October 2013.

b. Community Recycling Bin

The City formerly maintained approximately 100 Community Recycling Bin sites on Oahu, but phased out this drop-off program in favor of more convenient recycling systems with greater potential to further increase recycling rates. With the implementation of curbside recycling, recovery rates decreased significantly in the bins. The service contract closed at the end of June 2012, and the City is increasing efforts to further expand curbside recycling, develop recycling programs in condos, and assist schools and the State Department of Education in establishing campus recycling systems. Additionally, HI-5 redemption centers now accept the full array of recyclable materials, providing the community with a one-stop recycling center for all their materials.



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, and additionally



provides technical assistance, educational materials, wheeled carts and guidance in establishing collection services.

d. Electronic Waste (e-waste)

State law requiring manufacturers to provide take back programs for e-waste went into effect January 1, 2010, and is administered by the DOH. In general, the covered electronics include computers and televisions. Collection and recycling of e-waste has increased, but the law is weak in its requirements for the manufacturers to achieve recovery goals or to provide consumer convenience in take back programs. DOH is looking for ways to strengthen the collection programs and proposed bills in both the 2012 and 2013 State legislative sessions. The most recent bill had been developed with input from a task force of all the state, county and industry stakeholders. The bill was deferred in committee. ENV will continue to work in collaboration with DOH and local e-waste recycling companies to support local programs and legislative proposals.

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, ENV 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. New episodes are produced annually with an archive of dozens to keep viewers entertained. The format is interactive, supporting 24/7 viewing of all episodes on demand. City ENV supports recycling education for our youth through school recycling projects, classroom activity books and recycling education shows presented by the Honolulu Theatre for Youth. The third season of performances were just completed, with a theatre presentation which ran in November/December plus a traveling show to local schools entitled "Sort It Out!" for January through March. The shows include distribution of Opala IQ Books and educational materials to students and teachers.

## 5. 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� 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 Oahu, in close coordination with applicable regulatory agencies and decision-makers.