



CHAPTER 10

Department of Environmental Services

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The Department of Environmental Services (ENV) plans, directs, operates and administers the city's wastewater, solid waste, and storm water permit programs. ENV directly supports the mayor's core infrastructure priorities through its various programs and functions.

The department's goals and objectives are:

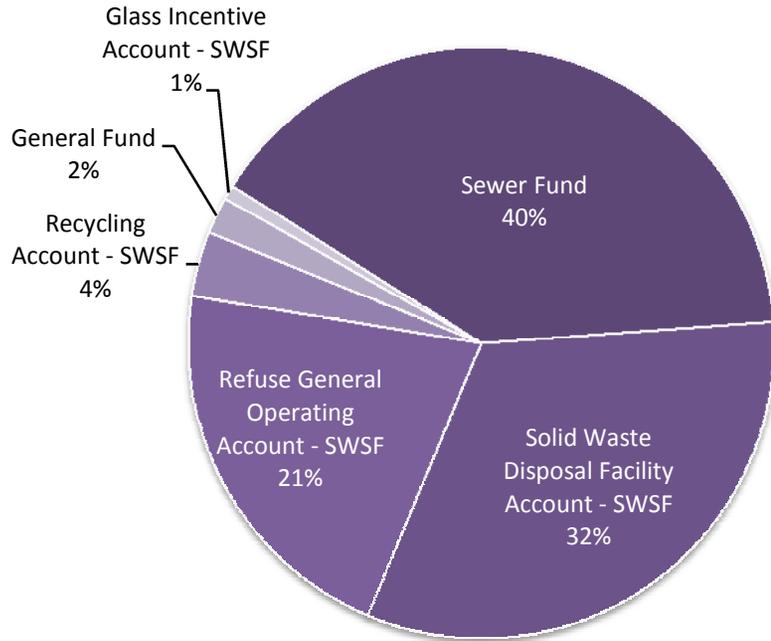
- Sustainability - Ensure that operations and services emphasize sustainable practices.
- Operating as a Business - Provide cost effective, quality service through improved business and work processes.
- Employee Development - Invest in employee development in order to improve operational and fiscal competencies.
- Communication - Improve collaboration and communication with employees, customers, and community.
- Customer Service - Better understand and respond to internal and external customer needs.

ENV is organized into five areas: administration; environmental quality; collection system maintenance; wastewater treatment and disposal; and refuse collection and disposal.

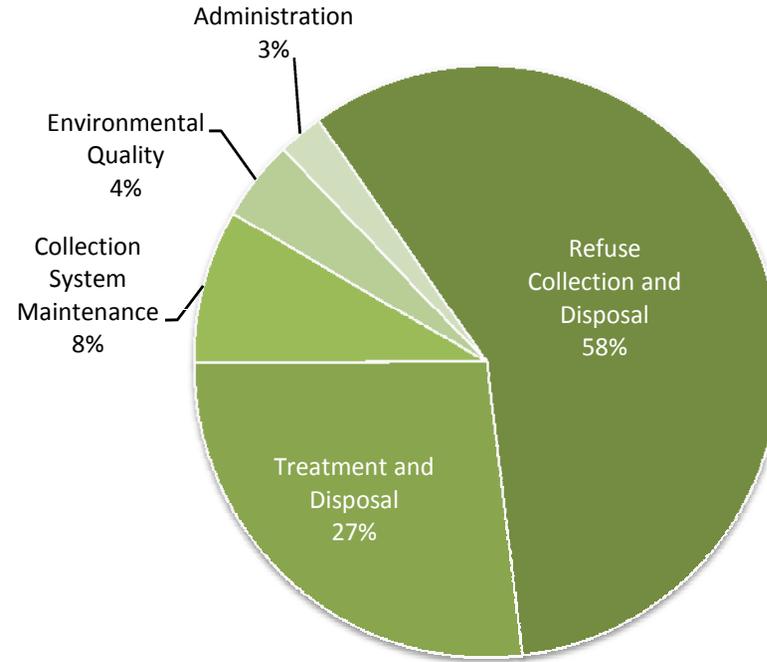
To protect public health and the environment by efficiently and effectively managing the wastewater and solid waste systems of the City and County of Honolulu.

- Mission Statement

Funding Sources



Funding Uses¹



¹Percentages do not total to 100% due to rounding.

	Total Operating Expenditures (\$ million)	Total Revenues (\$ million)	Staffing		Cost Per FTE ²	Overtime Expenditures ³	
			Total Authorized FTE	Total Vacant FTE		Total	Non-Holiday
FY 2009	\$200.4	\$411.7	1,166	283	\$171,881	\$11.5	\$10.1
FY 2010	\$198.2	\$455.0	1,166	298	\$170,005	\$9.9	\$8.6
FY 2011	\$213.8	\$438.2	1,166	322	\$183,345	\$10.5	\$9.2
FY 2012	\$216.1	\$484.1	1,166	323	\$185,304	\$11.0	\$9.8
FY 2013	\$230.1	\$496.8	1,147	301	\$200,597	\$11.3	\$10.1
Change from last year	6%	3%	-2%	-7%	8%	3%	3%
Change over last 5 years	15%	21%	-2%	6%	17%	-2%	0%

Source: Executive Operating Program and Budget (FY 2010-FY 2015) and Department of Budget and Fiscal Services. ²Cost Per FTE = Total Operating Expenditures/Total Authorized FTE. ³Overtime pay is established by bargaining unit agreement, as applicable.

Administration

Over the last five years, the department's operating expenditures increased 15% from \$200.4 million in FY 2009 to \$230.1 million in FY 2013. According to the department, the increase was due to the rising costs of salaries, fringe benefits, utilities, and contractual services.

Total authorized staffing decreased 2% from 1,166 FTE positions in FY 2009 to 1,147 FTE positions in FY 2013. During the same period, vacancies increased 6% from 283 vacant FTE positions in FY 2009 to 301 vacant FTE positions in FY 2013. Overtime expenditures increased by 3% from last year due to the increases in salary rates.

Administration

Administration directs and coordinates the operation and maintenance of the city's wastewater, storm water, and solid waste programs. It provides overall development and management through financial and capital planning, scheduling and tracking, information technology support, and other services.

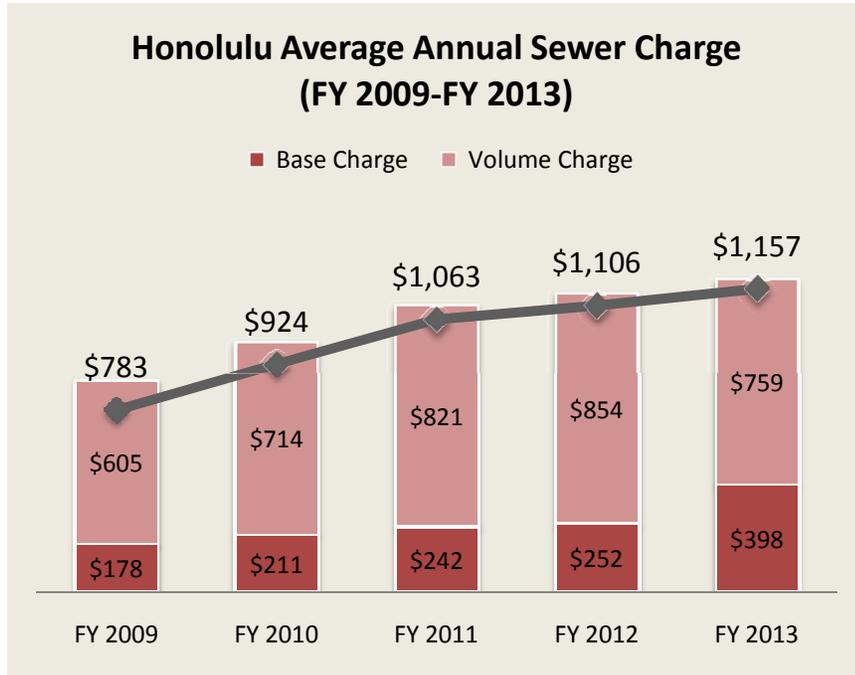
Compliance with the 2010 Wastewater Consent Decree is a priority for the city and the department. The decree provides a program of improvements to the city's wastewater collection and treatment systems. ENV is responsible for capital planning, programming, and compliance reporting requirements for the 2010 consent decree. The Department of Design and Construction (DDC) supports ENV by executing CIP project planning, design and construction for required capital projects.

At the end of FY 2013, the department reported that it had fulfilled 305 of 481 compliance milestones, including the completion of the Beachwalk Emergency Force Main Project, under the 2010 Wastewater Consent Decree.

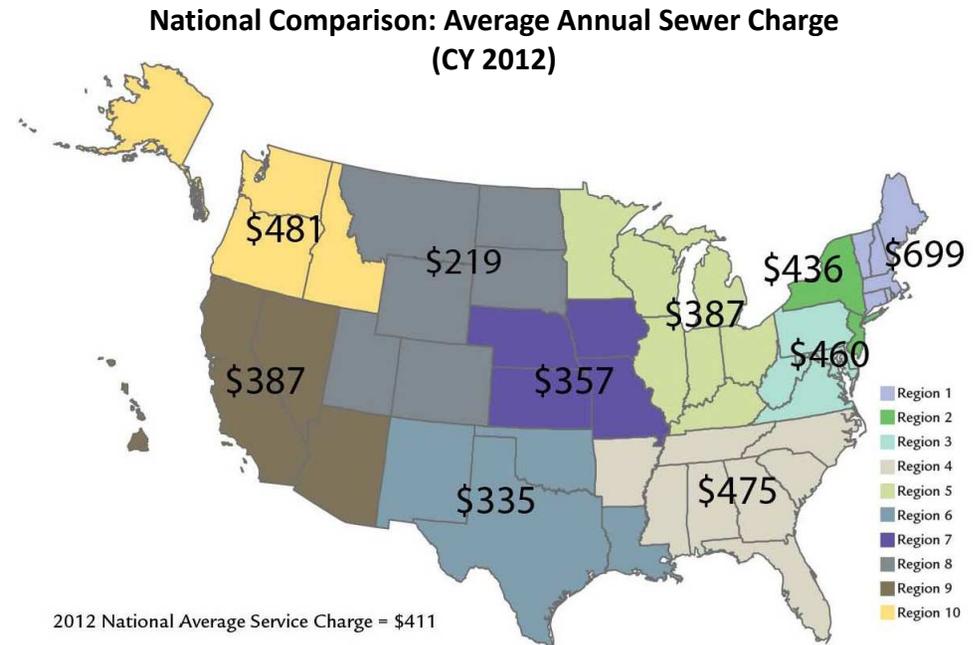
Over the last five years, administration's operating expenditures decreased 45% from \$10.4 million in FY 2009 to \$5.7 million in FY 2013. ENV noted that the decrease was due to fewer contract services. Revenues have increased over the last five years. The division explained that scheduled increase in sewer charges have contributed to the rising trend.

	Operating Expenditures (\$ million)	Revenue Sources (\$ million)				Average Annual Sewage Charge ¹	Bond Rating	Capital Expenditures (\$ million)
		Charges for Services	Utilities or Other Enterprises	Non-Revenue Receipts	Other Revenues			
FY 2009	\$10.4	\$264.4	\$93.1	\$53.5	\$0.7	\$782.88	AA-	\$330.1
FY 2010	\$7.0	\$312.1	\$82.1	\$57.8	\$3.0	\$924.48	AA	\$256.6
FY 2011	\$5.8	\$350.7	\$85.4	\$0.0	\$2.1	\$1,062.60	AA	\$371.4
FY 2012	\$7.1	\$376.1	\$103.6	\$0.0	\$4.5	\$1,105.56	AA	\$135.8
FY 2013	\$5.7	\$370.3	\$104.6	\$0.0	\$3.6	\$1,156.87	AA	\$127.6
Change from last year	-19%	-2%	1%	-	-19%	5%	-	-6%
Change over last 5 years	-45%	40%	12%	-100%	411%	48%	-	-61%

Source: Department of Budget and Fiscal Services and Department of Environmental Services



Source: Department of Environmental Services



Source: National Association of Clean Water Agencies (NACWA), 2012 Service Charge Index

Capital expenditures decreased 61% from \$330.1 million in FY 2009 to \$127.6 million in FY 2013. Major capital expenditures include on-going projects:

- Solid Waste-to-Energy Facility H-POWER Expansion
- Rehabilitation of Sewer Lines
- O`ahu Secondary Landfill Site Selection Study

The average annual sewage charge increased 48% from \$783 in FY 2009 to \$1,157 in FY 2013 partly due to a six year planned rate increase to pay for sewer infrastructure upgrades.

ENV noted that costs in Hawai'i are generally substantially higher than the national averages. Required upgrades to the wastewater collection system under the 1995 and 2010 Consent Decrees have contributed significantly to system costs and supporting rates.

According to the National Association of Clean Water Agencies (NACWA), the national average annual sewer charge in CY 2012 was \$411 per single family dwelling. The average annual sewer charge in Region 9 (which includes Hawai'i) was \$387. ENV reports that Honolulu's average annual service charge per equivalent single family dwelling unit for FY 2013 was \$1,157.

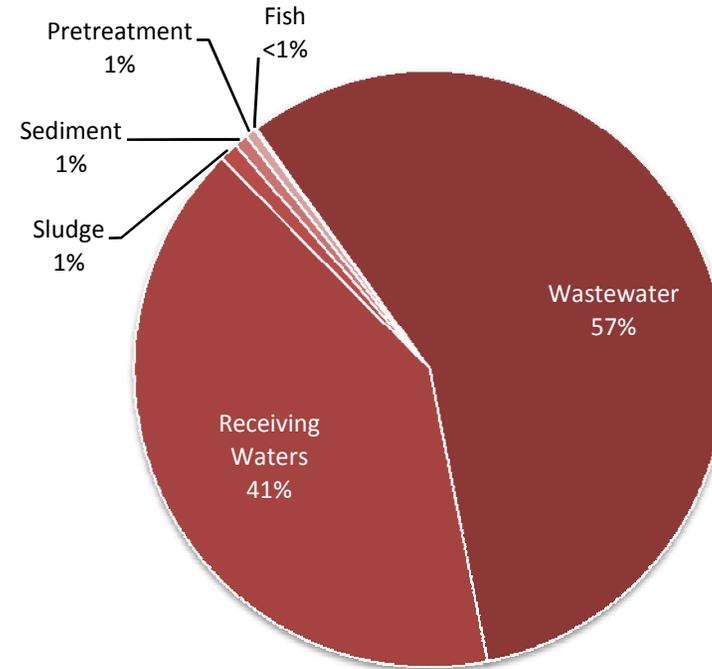
Environmental Quality

The Environmental Quality (EQ) Division directs, coordinates and manages activities related to compliance with state and federal requirements for the city's wastewater, industrial waste, water quality, and storm water programs.

Compliance responsibilities over the wastewater program include issuing permits; conducting inspections and investigations; overseeing the city's effluent and bio-solids reuse; and annual reporting. The division also oversees consent decree requirements including wastewater recycling; monitoring ocean discharges; and conducting air quality monitoring; as well as the city's compliance with the Storm Water Management Plan (SWMP) requirements under the federal Clean Water Act and the National Pollutant Discharge Elimination Systems (NPDES) permits.

Over the last five years, EQ's operating expenditures decreased 24% from \$13.4 million in FY 2009 to \$10.2 million in FY 2013. According to the division, decreases reflect reductions in consultant services with some cuts in salary, supplies, advertising, and other services.

Water Quality Laboratory Samples by Category¹



¹Percentages do not total to 100% due to rounding.

	Operating Expenditures (\$ million)	Regulatory Control ²		Water Quality Laboratory		Storm Water Quality	
		Total Investigations/ Inspections	Total Enforcements	Parameter Results	Samples	Total Investigations Closed	Total Violation Notices Issued
FY 2009	\$13.4	6,977	1,846	-	-	450	32
FY 2010	\$9.9	6,666	1,658	-	-	325	19
FY 2011	\$10.8	5,820	480	45,132	18,449	351	13
FY 2012	\$10.0	4,594	1,000	37,375	16,854	304	15
FY 2013	\$10.2	5,892	397	40,814	17,202	292	16
Change from last year	2%	28%	-60%	9%	2%	-4%	7%
Change over last 5 years	-24%	-16%	-78%	-	-	-35%	-50%

Source: Department of Budget and Fiscal Services and Department of Environmental Services. ²The Regulatory Control Branch regulates commercial operations to determine if wastewater discharge (e.g. fats, oils, and grease) poses a threat to the city's sewer system.

The total number of investigations/inspections conducted declined 16% from 6,977 in FY 2009 to 5,892 in FY 2013. ENV reported that the number of inspections varies with economic development trends and/or changes in program rules or policies. Special investigations associated with collection system problems are being reduced as problems are corrected. The number of enforcements was 397 in FY 2013, compared to 1,846 in FY 2009, a 78% decrease. According to the division, the number of enforcement actions will fluctuate depending on the number of businesses in compliance. Also, the amount of smoke testing conducted by Wastewater Collection System Maintenance (WCSM) Division and its findings can also significantly affect the number of enforcement actions.

The Division of Wastewater Treatment and Disposal operates city wastewater treatment plants and the city received four Peak Performance Awards¹ by the National Association of Clean Water Agencies for excellence in wastewater treatment as measured by their compliance with the National Pollutant Discharge Elimination System (NDPES) permits.²

Refuse Collection and Disposal

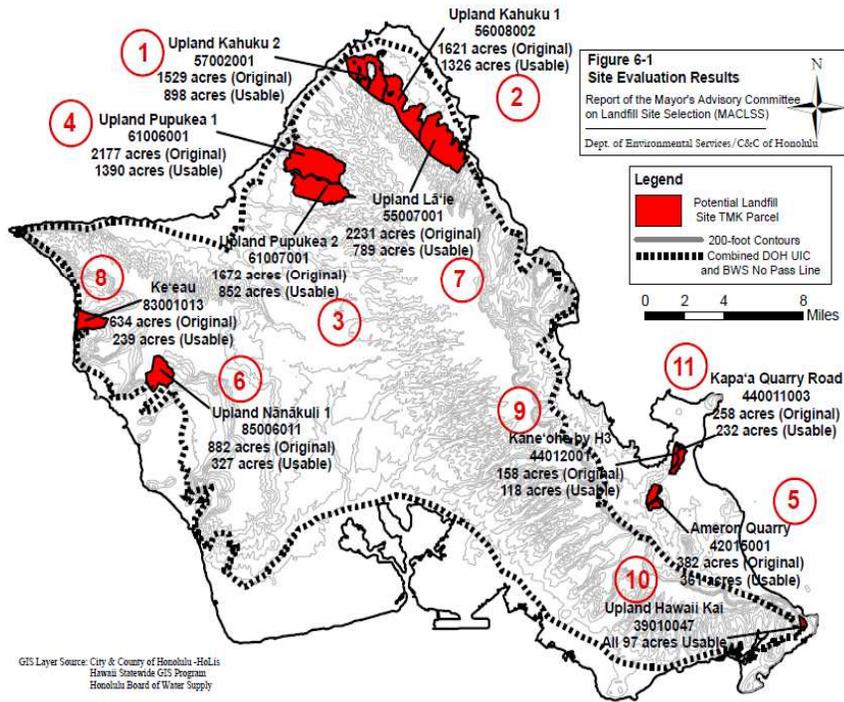
Refuse Collection and Disposal (RCD) Division is responsible for administering, managing, and planning the city’s solid waste program. It collects, transports, and disposes solid waste through recycling, transfer stations, landfills, residential and non-residential collection, and the H-POWER waste-to-energy facility.

There are two landfills on O`ahu: the city’s Waimanalo Gulch Sanitary Landfill (WGSL) designated for municipal solid waste (MSW) and the private PVT Landfill, which is permitted for construction and demolition debris. In 2009, a Land Use Commission (LUC) order required the city to begin the process of identifying one or more landfill sites to supplement or replace the WGSL. As a result, the mayor appointed a 12-member volunteer committee to identify and rank potential new landfill sites for consideration by the city.

	Operating Expenditures (\$ million)	Municipal Solid Waste Disposal (MSW) Categories (Tons)					Total MSW ⁴	MSW Landfill Diversion Rate ⁵
		General Material Recycling	MSW Disposed at H-POWER	H-POWER Ash and Residue	Total MSW Diverted from Landfill ³			
CY 2009	\$106.9	456,876	623,312	191,713	888,475	1,313,253	67.7%	
CY 2010	\$113.8	426,947	607,301	188,683	845,565	1,212,760	69.7%	
CY 2011	\$127.2	448,639	598,042	179,946	866,735	1,210,417	71.6%	
CY 2012	\$120.7	490,061	594,793	163,618	921,236	1,241,775	73.4%	
CY 2013	\$132.9	487,157	613,328	161,665	938,820	1,231,425	76.2%	
Change from last year	10%	-90%	3%	-1%	2%	-1%	4%	
Change over last 5 years	24%	7%	-2%	-16%	6%	-6%	13%	

Source: Department of Budget and Fiscal Services and Department of Environmental Services. ¹The Wahiawa Wastewater Treatment Plant and Waianae Wastewater Treatment Plant received gold awards. The Honouliuli Wastewater Treatment Plant and Kailua Regional Wastewater Treatment Plant received silver awards. ²The Clean Water Act of 1972 introduced the National Pollutant Discharge Elimination System which is a permit system for regulating point sources of pollution. ³Total MSW Diverted from Landfill = (General Material Recycling + MSW Disposed at H-POWER) - H-POWER Ash and Residue. ⁴Total MSW reflects all MSW from the island of O`ahu. ⁵MSW Landfill Diversion Rate = Total MSW Diverted from Landfill ÷ Total MSW.

O`ahu Secondary Landfill Site Evaluation Results



Source: Report of the Mayor's Advisory Committee on Landfill Site Selection, September 2012

In September 2012, the committee reported on 11 potential sites. The committee ranked these sites based on factors such as landfill capacity; location relative to educational institutions, health care facilities, or parks and recreation facilities; location relative to residential concentrations; location relative to H-POWER; etc. The department reported that it will continue its landfill and expansion operations at WGSL until the city further evaluates the sites, submits recommendations to the city council for review and approval, and develops Environmental Impact Statement(s) specific to the selected site(s).

Over the last five years, RCD's operating expenditures increased 24% from \$106.9 million in FY 2009 to \$132.9 million in FY 2013. According to the division, the increase was due to the expansion of the WGSL, the H-POWER 3rd Boiler expansion, the carts required for the automated collection program, and the general increase in costs for all goods and services.

In the 2013 National Citizen Survey, 72% and 64% of Honolulu residents rated garbage collection and yard waste pick-up as *excellent* or *good*, respectively. Both ratings were *similar* to percentages reported nationwide and among cities with populations over 300,000. Among large cities, Honolulu ranked 16th out of 20 cities, equivalent to the 21% percentile for garbage collection. Honolulu ranked 9th out of 11 cities, equivalent to the 20% percentile for yard waste pick-up.

ENV commented that the city provides an extensive refuse collection and yard waste collection program with weekly residential refuse collection, bi-weekly mixed recyclable collection, bi-weekly green waste collection, and monthly bulky item collection. ENV states that this service far exceeds service provided by most other municipalities.

The National Citizen Survey (% Excellent or Good)				
	2010	2011	2012	2013
Garbage Collection	73%	76%	73%	72%
Comparison to National Benchmark	↓↓	↓	↓↓	↔
Yard Waste Pick-Up	64%	65%	64%	64%
Comparison to National Benchmark	↓↓	↓	↓↓	↔

Source: The National Citizen Survey, Trends over Time, Honolulu, HI, 2013

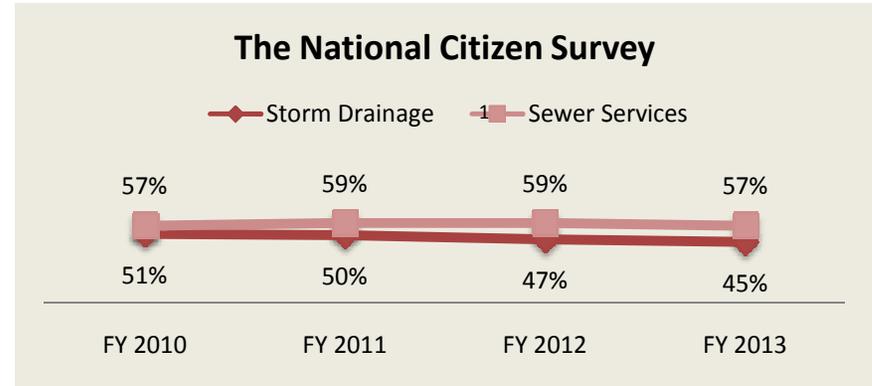
Legend:

- ↑↑ Much higher than national benchmark
- ↑ Higher than national benchmark
- ↔ Similar to national benchmark
- ↓ Lower than national benchmark
- ↓↓ Much lower than national benchmark

Wastewater Collection System Maintenance (WCSM) repairs, operates, and maintains 2,100 miles of mains and pipes in the city’s sanitary sewer system. Wastewater Treatment and Disposal (WTD) collects about 100 million gallons of wastewater daily from toilets, sinks, drains, schools, and businesses on O`ahu. Wastewater travels through WTD’s system of 70 pump stations and four preliminary treatment facilities before reaching one of nine wastewater treatment plants for processing.

According to the mayor, adequate sewer capacity is a critical part of the city’s infrastructure. Without sewer capacity, the city cannot approve new development projects. As a means of addressing capacity issues, the city upgraded the Waipahu Wastewater Pumping station, and completed work on the Beachwalk Force Main project. A second digester at the Sand Island Wastewater Treatment Plant is expected to provide sufficient capacity and redundancy.

Over the past five years, WCSM’s operating expenditures increased 88% from \$10.3 million in FY 2009 to \$19.4 million in FY 2013. The division reported that the increase was due to more sewer maintenance activity and the transfer of pumping station operations from the Division of Wastewater Treatment and Disposal to the Division of Collection System Maintenance.



Source: 2013 National Citizen Survey (Honolulu)

¹The Department of Facility Maintenance is responsible for the maintenance of storm drains in the City & County of Honolulu. ENV only has some regulatory oversight of discharge into storm drains.

In the 2013 National Citizen Survey, 45% and 57% of Honolulu residents rated storm drainage and sewer services as *excellent* or *good*, respectively. These percentages were ranked *lower* to those reported nationwide and *similar* among cities with populations over 300,000. Among large cities, Honolulu ranked 19th out of 21 cities, equivalent to the 10% percentile for storm drainage services. Honolulu ranked 12th out of 13 cities, equivalent to the 8th percentile for sewer services.

	Wastewater Collection System Maintenance				Wastewater Treatment and Disposal	
	Operating Expenditures (\$ million)	Miles of Lines Maintained	Miles of Lines CCTV Inspected	Number of Gravity Main Spills ¹	Operating Expenditures (\$ million)	Wastewater Collected and Treated (mgd) ²
FY 2009	\$10.3	570	39	64	\$59.4	104
FY 2010	\$11.0	871	87	49	\$56.4	106
FY 2011	\$8.4	596	66	64	\$61.6	105
FY 2012	\$17.4	609	359	43	\$60.8	100
FY 2013	\$19.4	519	49	25	\$61.9	99.5
Change from last year	11%	-15%	-86%	-42%	2%	-1%
Change over last 5 years	88%	-9%	26%	-61%	4%	-4%

Source: Department of Budget and Fiscal Services and Department of Environmental Services. ¹Gravity Main Spills are defined as wastewater escaping from a non-pressurized pipe due to backup, breakage, or excessive flow. ²mgd=millions of gallons per day.

Environmental Sustainability - Recycling

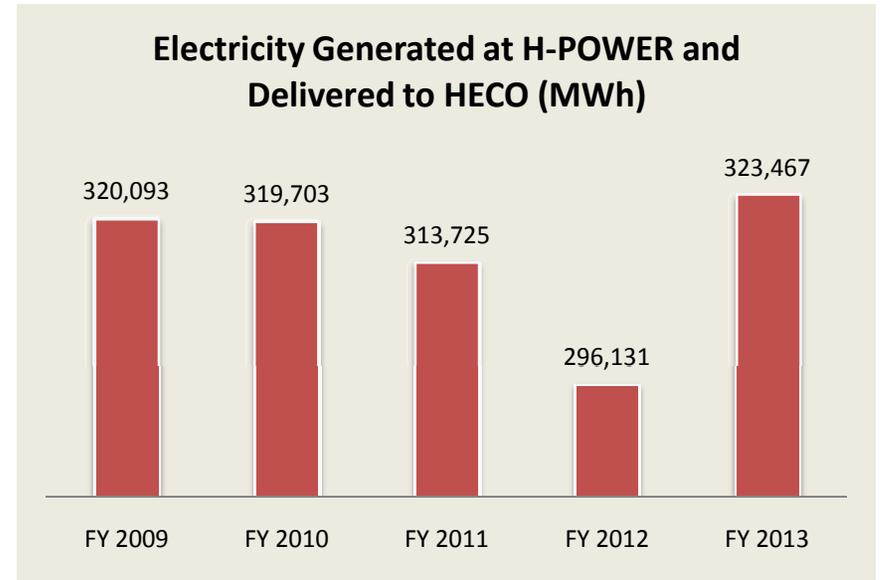
ENV reported that Honolulu is a leader in environmental sustainability. In 2008, the ENV issued the city's 25-Year Integrated Solid Waste Management Plan¹. Recycling, energy conversion, composting and reuse are necessary to minimize the need for landfill disposal.

The city's H-POWER waste-to-energy facility converts solid waste into electricity. Electricity generated by H-POWER is sold to Hawaiian Electric Company (HECO), the island's primary electric utility. In FY 2013, ENV generated and sold 323,467 megawatt hours (MWh) to HECO compared to 320,093 MWh in FY 2009, a 1% increase.

Total tons recycled increased 8% over the last five years. Green waste collected increased 45% from 47,756 tons in CY 2009 to 69,170 tons in CY 2013. Other recyclables increased 36% over the last five years.

According to ENV, total MSW has decreased since 2009, most likely due to a downturn in the economy, but that recycling rates have

¹The Integrated Solid Waste Management Plan, Chapter 342G, HRS; and Section 9-13, ROH.



Source: Department of Environmental Services

maintained or increased, as have landfill diversion rates. This is due to advances in residential curbside recycling, commercial recycling and increased capacity at H-POWER.

Municipal Solid Waste Recycling Categories¹ in CY² (Tons)

	Total MSW Diverted from Landfill by Recycling ¹ (Tons)	Green Waste	Office Paper (City Offices)	Community Recycling Bins ²	Curbside Mixed Recyclables ²	H-POWER MSW Recycled	Other Recyclables ³
CY 2009	521,119	47,756	177	8,899	7,827	419,094	32,534
CY 2010	523,833	58,240	68	5,780	15,772	415,455	41,147
CY 2011	539,541	70,480	60	4,704	20,971	427,106	46,175
CY 2012	550,175	70,860	80	4,359	20,941	418,491	43,710
CY 2013	565,277	69,170	105	-	21,409	451,663	44,339
Change from last year	3%	-2%	31%	-	2%	8%	1%
Change over last 5 years	8%	45%	-41%	-	174%	8%	36%

Source: Department of Environmental Services. ¹Reflects only city collected MSW. ²The city ended the community bin recycling program in late FY 2012. Materials collected in the community recycling bins have since shifted to curbside collection. The curbside recycling tonnage had been previously incorporated into *Other Recyclables*. ³Other recyclables includes white goods, propane tanks, tires, batteries and recovered metals at H-POWER.

In the 2013 National Citizen Survey, 63% of Honolulu residents rated recycling as *excellent* or *good*. This percentage was ranked *lower* compared to other cities nationwide and *similar* among cities with populations over 300,000. Among large cities, Honolulu ranked 19th out of 24 cities, equivalent to 22nd percentile for recycling.

The survey also found that 78% and 89% of Honolulu residents made efforts to make their home more energy efficient and recycled at home, respectively. These ratings were *similar* to the percentages reported for other communities nationwide.

ENV commented that the city provides extensive recycling programs and the most appropriate benchmark is the recycling at home category given that the city provides weekly recycling collection of either mixed recyclables or green waste for 160,000 homes.

The National Citizen Survey			
	Recycling (% <i>Excellent</i> or <i>Good</i>)	Recycled at Home (% of Residents)	Made Home More Energy Efficient (% of Residents)
FY 2010	70%	90%	-
FY 2011	63%	89%	-
FY 2012	63%	90%	-
FY 2013	63%	89%	78%
Change from last year	0%	-1%	-
Change over 4 years	-7%	-1%	-

Source: 2013 National Citizen Survey (Honolulu).

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