



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:

December 18, 2020

The Honorable Ronald D. Kouchi,
President and Members of the Senate
Thirtieth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of
Representatives
Thirtieth State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the

Annual Report on Solid Waste Management pursuant Hawaii Revised Statutes (HRS),
section 342G-15. In accordance with Section 93-16, HRS, I am also informing you that
the report may be viewed electronically at:

<https://health.hawaii.gov/opppd/departments-of-health-reports-to-2021-legislature/>

Sincerely,

A handwritten signature in black ink, appearing to read "Elizabeth A. Char".

Elizabeth A. Char, M.D.
Director of Health

Enclosures

c: Legislative Reference Bureau
Hawaii State Library (7)
Hamilton Library

**OFFICE OF SOLID WASTE MANAGEMENT
ANNUAL REPORT TO THE THIRTY-FIRST LEGISLATURE
STATE OF HAWAI'I
2021**

PURSUANT TO SECTION 342G-15, HAWAI'I REVISED STATUTES,
REQUIRING THE OFFICE OF SOLID WASTE MANAGEMENT TO GIVE AN
ANNUAL REPORT ON SOLID WASTE MANAGEMENT

PREPARED BY:

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
OFFICE OF SOLID WASTE MANAGEMENT
December 2020

I. INTRODUCTION

The Office of Solid Waste Management (OSWM) provides an annual report to the Hawai'i State Legislature to describe progress towards the State's waste reduction goals. The OSWM is part of the Department of Health's Solid and Hazardous Waste Branch (SHWB) and administers the Deposit Beverage Container (DBC) Program, the Electronic Waste and Television Recycling and Recovery Program, and the Glass Advance Disposal Fee (ADF) Program. These three programs play an instrumental role in achieving the State's waste reduction goals.

II. SOLID WASTE MANAGEMENT PRIORITIES AND PRACTICES

Hawai'i Revised Statutes Section 342G-2 requires the Department of Health and the counties to consider solid waste management practices and methods in the following order of priority:

- 1) Source Reduction
- 2) Recycling (to include bioconversion)
- 3) Landfilling and/or incineration

Successfully implementing the first two practices reduces the amount of waste that is landfilled or incinerated.

Source Reduction

Hawai'i Revised Statutes Chapter 342G-1 defines *source reduction* as "the design, manufacture, and use of materials to (1) minimize the quantity or toxicity, or both, of the waste produced; and (2) reduce the creation of waste either by redesigning products or by otherwise changing societal patterns of consumption, use or waste generation." Source reduction is also called "waste prevention" or "waste reduction" and successful source reduction creates or imports less waste into the State. Quantifying source reduction is inherently difficult. In some instances, comparisons may be made to specific waste levels before a source reduction practice is employed with waste levels after, but in most cases an estimate of the amount of waste reduced is all that is possible.

Recycling

"Recycling" is defined by statute as "the collection, separation, recovery, and sale or reuse of secondary resources that would otherwise be disposed of as municipal solid waste, and is an integral part of a manufacturing process aimed at producing a marketable product made of postconsumer material." It is the process by which materials are collected and reprocessed as "raw" materials to create new products. Recycling is the most easily quantified waste diversion activity because an actual material amount can be calculated. Data from recycling facilities are regularly collected by the State and counties.

Hawai'i's commercial recyclers contend with significant issues. Because of the State's small population, and a corresponding small economy, nearly all the State's recyclable materials are shipped out of the State to recycling processors that can better manage the materials cost-effectively. Currently, most of the State's recyclables are shipped to either the U.S. mainland or Asia. Other challenges include high land values (which translate to high lease costs for recyclers), labor costs, and other overhead expenses like utilities and specialized equipment. Volatility in the recycled materials markets (i.e., China's ban on most recyclable plastics in 2018 and other plastic import bans in Southeast Asia shortly thereafter) is an issue that recyclers nationwide have had to manage. However, Hawai'i's recyclers are disproportionately impacted by any market fluctuations because of thinner profit margins as a result of higher overhead and transport costs.

Bioconversion

“Bioconversion” is the process by which organic waste is managed through biological or chemical means like biogasification, pyrolysis, and fermentation. In Hawai‘i, the most common bioconversion process is composting green waste (tree trimmings, grass clippings and similar material). Composting is considered a recycling activity and reported composting weights are included as part of the “Recycling” column in Table 1, below.

Reuse

Although not identified as a priority, OSWM also promotes reuse activities. “Reuse” means using a product again without first having to reprocess it. The product may be used for its original or intended use or may be used in a different capacity. Reuse of products or materials is also difficult to quantify. It is possible to measure reuse by counting the units of a product being reused or by quantifying tonnage, but effectively measuring reuse is impracticable because it takes place at so many levels and on an unregulated and widespread scale. Reusing a plastic kalua pig container to hold a dishwashing sponge or a glass kim chee jar to store pickled cucumbers are examples that contribute to waste reduction but are impossible for the State to accurately measure.

Waste Diversion

In 1991 the State Legislature passed Act 324, codified as Chapter 342G, which included an ambitious waste diversion goal of 25% by 1995. This was similar to the United States Environmental Protection Agency’s (EPA) national goal of 25% at the time, although Chapter 342G also increased the State’s waste diversion goal to 50% by 2000. In November 2020, the EPA revised its national goal to 50% by 2030. This is the first revision of the goal since 1996. The national rate in 2018 was 32.2% (the most recent year for which data is available). The State faces similar challenges with improving its waste diversion goals.

The diversion rates presented below are based on data collected by the Department of Health from permitted solid waste management facilities:

Table 1: Waste Diversion for FY2020 (tons)

County	Generation	Recycling	Disposal	Recycling Rate	Incineration
Hawai‘i	244,694	61,226	183,469	25.0%	
Maui	192,901	128,930	63,971	66.8%	
Honolulu	1,579,821	311,713	1,268,108	19.7%	747,887.0
Kaua‘i	123,544	36,188	87,356	29.3%	
State	2,140,960	538,057	1,602,904	25.1%	

Notes:

Data are sourced from permitted solid waste management facility reports and some recycling data is incomplete. The Department of Health continues to collect data and will provide updates in subsequent legislative reports.

Differences in recycling rates from those published by the counties are attributed to different data collection processes and differences in the classification of recycling and landfill diversion activities as defined by statute.

III. OSWM ACTIVITIES

Deposit Beverage Container Program

The State of Hawai'i Deposit Beverage Container (DBC) Program achieved an annual redemption rate of 61.79% in FY 2020, accounting for over 580 million containers recycled.

The DBC Program's redemption rate is a measure of the program's effectiveness to promote: (1) collecting and redeeming eligible deposit beverage containers; and (2) recycling DBC materials. It is calculated by dividing the number of DBC redeemed by the number of DBC sold.

$$\text{FY 2020 Redemption Rate: } \frac{583,281,597 \text{ (Redeemed)}}{943,942,956 \text{ (Sold)}} = 61.79\%$$

During the Great Recession, the DBC Program saw redemption rates of 71.93% in FY 2008, 78.72% in FY 2009, and 76.11% in FY 2010. OSWM anticipates a significant increase in redemption rates over the next several years as eligible containers are redeemed to supplement lost income due to the economic fallout from the pandemic.

Table 2: DBC Program FY2020 Revenues & Expenditures

Revenue	
- Distributor Payments	\$57,867,367.25
- State Investment Pool Account	\$1,581,443.25
- Other Revenue	\$25,499,520.75
Total Revenue	\$84,948,331.25
Expenditures	
Contracts	
- Redemption Center Reimbursements	\$60,387,474.81
- Encumbered Redemption Center Reimbursements	\$6,999,525.19
- County Recycling Program Support	\$655,632.22
- Encumbered County Recycling Program Support	\$107,682.20
- Other Contracts	\$106,214.99
Contracts Subtotal	\$68,256,529.41
Program Administrative Costs	
- Payroll & Fringe	\$460,076.02
- Encumbered Payroll & Fringe	\$7,758.77
- Supplies & Operating Costs	\$42,094.43
- Encumbered Supplies & Operating Costs	\$9,186.05
- Travel	\$3,851.77
Program Administrative Costs Subtotal	\$522,967.04
Other Miscellaneous Expenditures	\$541,540.76
Total Expenditures	\$69,321,037.21

Electronic Waste and Television Recycling and Recovery Program

The Electronic Waste Recycling Act was adopted in 2008 and created a recycling program for computers, portable computers, computer monitors and computer printers. Products covered by this statute are considered “Covered Electronic Devices” (CEDs). The Electronic Waste and Television Recycling and Recovery Act was adopted in 2009 and expanded the program to cover televisions. Products covered under this portion of the law are termed “Covered Televisions” (CTVs). The dual program is managed by OSWM.

The act requires manufacturers to register with OSWM and submit recycling plans to the department. The plans describe how each manufacturer intends to collect and recycle used CED and CTV products. Table 3 indicates the number of manufacturers registered with the department by year:

Table 3: Number of Registered Manufacturers

Calendar Year	2016	2017	2018	2019	2020
CED	64	63	63	59	59
CTV	24	19	21	21	21

Manufacturer Ranking by Pounds Recycled in 2019

By January 1, 2010, CED manufacturers were required to establish their electronic recycling programs and by January 1, 2011, CTV manufacturers were required to establish their recycling programs in the State.

By law, OSWM is required to rank CED manufacturers by the number of pounds recycled. Table 4 displays the rankings for the manufacturers who reported recycling CEDs in Hawai'i. Nineteen (19) CED manufacturers reported recycling zero (0) pounds of CEDs in Hawai'i and are listed alphabetically in Table 5. Please note that because of the time needed to compile this data (due to CED and CTV reporting, and by OSWM for analysis) there is a two-year lag in the data presented.

Table 4: Manufacturer Ranking by CED Pounds Recycled in 2019

Rank	Manufacturer	CED Pounds Recycled
1	Apple Inc.	321,066
2	HP Inc.	200,207
3	Dell Marketing LP	86,663
4	Samsung Electronics America, Inc.	50,000
5	Acer America Corporation	30,015
6	LG Electronics USA, Inc.	27,165
7	Lenovo (United States) Inc.	24,000
8	Best Buy	16,129
9	Brother International Corporation	6,039
10	Lexmark International, Inc.	5,314
11	VTech Electronics North America LLC	4,152
12	Elo Touch Solutions, Inc.	2,706
13	Planar Systems, Inc.	2,500

Table 4: Manufacturer Ranking by CED Pounds Recycled in 2019 (cont.)

Rank	Manufacturer	CED Pounds Recycled
14	DPI, Inc.	2,000
15	Google LLC	1,503
16	Panasonic Corporation of North America	1,501
17	Funai Corporation, Inc.	1,500
18	Microsoft Corporation	1,000
19	Sharp Electronics	850
20	Cellco Partnership	808
21*	Canon U.S.A., Inc.	750
21*	ASUS Computer International	750
21*	NOOK Digital LLC	750
21*	Oki Data Americas, Inc.	750
21*	Robert Bosch Tool Corporation	750
21*	Venturer Electronics Inc.	750
22*	Dynabook Americas, Inc.	700
22*	Huawei Device USA, Inc.	700
23*	TCT Mobile, Inc.	650
23*	Toshiba America Information Systems, Inc.	650
24	Envision Peripherals, Inc.	600
25*	KYOCERA Document Solutions America, Inc.	500
25*	Amazon.com Services, Inc.	500
25*	Wacom Technology Corporation	500
26	Epson America, Inc.	417
27*	Trans Cosmos America, Inc	300
27*	SMART Technologies	300
28	Optoma Technologies, Inc.	250
29	Motorola Mobility LLC	100
30	Sceptre, Inc.	20

*Indicates manufacturers with identical rankings

Table 5: CED Manufacturers Reporting Zero Pounds Recycled in 2019

Aleph Objects, inc.
American Future Technology Corporation dba: ibuypower
BenQ America Corp.
Cyberpower Inc.
Element TV Company, LP
Fujitsu America Inc.
IBM Corporation (International Business Machines Corporation)
Intel Corporation
Konica Minolta Business Solutions U.S.A, Inc. (KMBS)
Nvidia Corporation
Oracle America Inc. (Oracle)
Razor Inc.
Ricoh USA, Inc.
Stratasys, Inc.
TGCS
Tmax Digital Inc.
TongFang Global
ViewSonic Corporation
Xerox Corporation

In 2019, CED and CTV manufacturers reported recycling 795,805 pounds of CEDs and 2,351,852 pounds of CTVs (see Table 6):

Table 6: E-Waste Recycled (2015-2019)

Calendar Year	Pounds Recycled				
	2015	2016	2017	2018	2019
CED Manufacturer	1,906,345	1,780,235	1,192,408	951,164	795,805
CTV Manufacturer	2,269,664	1,661,062	2,299,611	2,337,605	2,351,852
Total	4,176,009	3,441,297	3,492,019	3,288,769	3,147,657

Registered electronic device manufacturers are required to pay an annual registration fee of \$5,000 and registered television manufacturers are required to pay an annual registration fee of \$2,500. Any manufacturer that sells both CEDs and CTVs are required to pay a combined \$7,500 in annual registration fees. Table 7 indicates program revenue from manufacturer registration fees:

Table 7: Electronic Device Recycling Fund Revenue

Calendar Year	2016	2017	2018	2019	2020
	\$380,000	\$362,500	\$367,500	\$347,500	\$347,500

Funding of County Electronics Recycling Programs

Counties have made electronic waste diversion from landfilling (or incineration) a high priority and developed programs prior to enactment of the State law. However, most of the collection programs have been drastically scaled back because of budget constraints.

New electronics recycling services for the general public have become available in response to the law. The most comprehensive programs have been centered on O'ahu with recyclers accepting all brands of electronics free of charge and even accepting items not covered by the law.

Comprehensive services are centered on O'ahu because of its population concentration. OSWM provides funding to the counties of Hawai'i, Maui and Kaua'i to maintain county electronic waste collection programs. Various manufacturers also pay the shipping costs for electronics collected through these periodic waste collection efforts on the neighbor islands.

Glass Advance Disposal Fee (ADF) Program

OSWM continues to administer a statewide glass recovery program that is funded by a glass ADF. OSWM collects the fee from importers of glass container products that do not qualify as DBC (i.e., wine bottles). OSWM then contracts with each county to operate local glass recovery programs to divert glass from the waste stream for recycling. As directed by statute (HRS §342G-84) the funds are distributed to the counties based on population. Each county is allowed the flexibility to structure its own glass-recycling program to maximize glass recycling. Program revenue and expenditures are indicated in Tables 8 and 9, respectively. Table 10 details the tonnage of glass recycled by the counties as part of the Glass ADF Program.

Table 8: Glass ADF Revenue

Calendar Year	2016	2017	2018	2019	2020
	\$795,188	\$772,991	\$748,684	\$726,678	\$818,424

Table 9: Expenditures for County Collection Programs

Fiscal Year	2016	2017	2018	2019	2020
Hawai'i	\$85,200	\$0	\$110,171	\$85,720	\$113,630
Maui	\$83,000	\$99,100	\$109,390	\$115,390	\$110,040
Honolulu	\$413,900	\$489,100	\$535,360	\$355,469	\$522,930
Kaua'i*	\$0	\$0	\$0	\$0	\$0
State	\$582,100	\$588,200	\$754,921	\$556,579	\$746,600

*The County of Kaua'i was ineligible to receive the allocated ADF funding since it does not have a glass "buy back" program.

Table 10: County Recycled Glass (Tons)

Fiscal Year	2016	2017	2018	2019	2020
Hawai'i	294	0	617	369	2,161
Maui	553	745	547	1,401	849
Honolulu	5,029	5,220	4,859	1,900	2,283
Kaua'i*	0	0	0	0	0
State	5,876	5,965	6,023	3,670	5,293

*The County of Kaua'i was ineligible to receive the allocated ADF funding since it does not have a glass "buy back" program.

Plastic Source Reduction Working Group

In 2019, the Hawai'i State Legislature passed Act 254 to address the State's plastic waste issue and established the Plastic Source Reduction Working Group (Working Group) composed of community stakeholders from various industries, organizations, and agencies. The Working Group was charged with addressing the following seven tasks:

1. Formulate a plan for reducing and recovering plastic from the Hawai'i waste stream;
2. Develop strategies to encourage plastic reduction and reuse in the food service industry, such as reusable container incentive programs for customers;
3. Provide recommendations to encourage reuse, reduction, recycling, and recovery of waste and create value added products to innovate and responsibly manage the life cycle of existing resources;
4. Consult with each county that has already enacted ordinances related to single-use plastics such as plastic bags and polystyrene foam containers and develop recommendations for the implementation of a uniform, statewide policy for these items that can replace existing county ordinances and provide businesses with laws that are consistent throughout the State;
5. Consult with stakeholders to develop appropriate exemptions to address concerns of health and safety, lack of suitable alternative products on the market, and lack of infrastructure;
6. Evaluate potential lifecycle and environmental implications of replacing plastic packaging with alternative products; and
7. Shall submit a report of its findings and recommendations, including recommendations for pilot projects for Hawai'i businesses to phase out single-use plastic packaging, promote reuse, and find sustainable alternatives for packaging, as well as any proposed legislation, to the legislature no later than twenty days prior to the convening of the regular session of 2021.

OSWM hosted and facilitated Working Group meetings throughout 2020 and developed and submitted a report to the legislature in December 2020.

IV. SOLID WASTE MANAGEMENT PROGRAM FUNDING

The Solid Waste Management Disposal Surcharge (Surcharge) is the primary funding source for OSWM's planning staff, Recycling Coordinator, and Solid Waste Coordinator, and one full time equivalent (FTE) position in each of SHWB's Solid Waste and Clerical Sections.

OSWM collects the Surcharge from the owners/operators of disposal facilities within the State. This includes all municipal solid waste and construction and demolition landfills, as well as the H-POWER waste-to-energy incinerator on O'ahu. Tables 11 and 12 detail the annual collections and expenditures of the Surcharge.

Table 11: Solid Waste Disposal Surcharge Collections

Fiscal Year	2016	2017	2018	2019	2020
	\$430,884	\$664,391	\$413,102	\$621,912	\$622,865

Table 12: Solid Waste Disposal Surcharge Expenditures

Fiscal Year	2016	2017	2018	2019	2020
	\$652,659	\$282,810	\$375,185	\$466,575	\$369,698