

## **SECTION 1**

### **INTRODUCTION**

#### **1.1 PROJECT OVERVIEW**

This report was prepared for the City & County of Honolulu (City), Department of Environmental Services, Refuse Division. This evaluation was conducted as part of an overall study addressing six key areas of the City's waste collection and diversion programs. This introduction provides a summary of the solid waste system when the evaluation was conducted.

The evaluations were conducted by R. M. Towill Corporation (RMTC) in association with Solid Waste Associates (SWA), which provided project management support and prepared two evaluations. Other companies that participated in the evaluation are listed below.

- *A Waste Composition Analysis* of the residential, commercial, and self-haul waste streams. Cascadia Consulting Group, Inc., Sky Valley Associates and SWA conducted this analysis.
- *A Study of Managed Competition* in waste collection services. HDR Engineering, Inc., prepared this study.
- *An Evaluation of Green Waste Collection, Processing, and Marketing* to address the infrastructure needed for expanded green waste collection. This evaluation was prepared by SWA in association with Total Compliance Management, Inc.
- *An Evaluation of Once-Per-Week Waste Collection* to assess the cost savings and operational impacts of collecting residential waste from single-family dwellings once per week rather than twice per week. Franklin Associates prepared the evaluation.
- *An Evaluation of Curbside Recyclable Collection* from single-family dwellings. This evaluation, conducted by Franklin Associates, was to determine the cost of implementing a curbside program compared to the existing drop-off system.
- *New Systems Research for Refuse Disposal* to identify new and innovative technologies that might be appropriate for the City to investigate further. ATG, Inc., prepared this evaluation.
- *An Evaluation of Market Strategies for Recyclable Materials* prepared by Skumatz Economic Research Associates (SERA).

## 1.2 EXISTING SYSTEM

### 1.2.1 General

These reports are based on conditions that existed between January 1998 and September 1998. The data on the waste collection, diversion, and disposal systems were for 1997, the latest full year for which data were available. The waste composition information was taken between April 1998 and September 1998. The waste sampling schedule for the waste composition study was based on 1997 disposal amounts and vehicle counts at the facilities sampled. The 1997 data used to prepare the sampling program were checked against the actual disposal in 1998 to confirm that the 1997 data were representative of the 1998 data.

While the data for 1997 were determined to be adequately representative of the 1998 disposal for waste composition sampling plan purposes, the amount of disposal at the City's disposal facilities has decreased in 1998. The amount of waste handled at the Waimanalo Gulch Landfill and at H-POWER in the last two fiscal years is shown in **Table 1-1, Changes in Amount of Waste Disposal**. The increase at H-POWER was due to increased availability of the plant, not an increase in waste generation, and would account for part of the decline at Waimanalo Gulch Landfill.

**Table 1-1**  
**Changes in Amount of Waste Disposal**  
**(Tons)**

	H-POWER	Waimanalo Gulch Landfill	Total
FY 96-97	588,939	385,248	974,187
FY 97-98	639,286	278,374	917,660
Difference	9%	-28%	-6%

### 1.2.2 Collection System

The City & County is divided into seven collection districts. Waste from the districts is either sent through one of three transfer stations or directly to the disposal site, depending on distance from the route to the disposal point.

The Refuse Division collects waste from single-family dwellings and from some apartment buildings and small commercial facilities. Waste from most large commercial facilities and apartments is collected by private waste haulers.

Residential waste is collected twice per week. In areas with automated collection services, green waste is collected separately once per month. On-call green waste collection is provided in some automated areas due to the large amount of green waste generated. In areas with manual collection, green waste is collected with the rubbish.

Both automated side-loaders and manual rear-loader trucks are used for waste collection. About 78 percent of the routes are automated. The Refuse Division staff anticipates converting a total of about 90 percent of the routes to automated collection over the next several years. In the automated areas, green waste is collected with manual trucks.

The City operates a system of six convenience centers where householders can drop off waste. The centers have bins designated for recycling, H-POWER, and landfill. The customer places the waste in the proper bin.

### 1.2.3 Diversion

The waste diversion program includes the following components:

- A drop-off system currently located at schools around the island. Materials collected include paper, plastic, aluminum cans, and glass. The drop-off system is being expanded to additional schools and some commercial facilities, such as grocery stores and supermarkets.
- Green waste processing is done at three locations, two private operations and one operated by the Refuse Division (located at the Kapaa Landfill). The private operations produce both mulch and compost. The finished product from private facilities is marketed in retail stores and in wholesale bulk. The Refuse Division operation produces mulch, which is provided free to the City Parks and Recreation Department and other departments and to the public.

- A statewide advance disposal fee of 1.5 cents that is collected for each glass container entering the state provides an incentive for recycling that material. The processor is paid six cents per pound by the State for recycling glass.
- The Partnership for the Environment is a City-supported organization comprised of businesses that have extensive commercial recycling activities. The Partnership acts as an information source for expanding commercial recycling on Oahu.
- The City requires recycling of glass containers from bars and restaurants. It also requires office buildings greater than 20,000 square feet in size to recycle office paper, newspaper, and cardboard.
- Restaurants and other facilities that generate food waste are required to recycle that material.
- The City has a program to recycle materials from its offices.
- While not City-sponsored, there are commercial programs to recycle construction and demolition waste, tires, and appliances.

#### 1.2.4 Disposal

The City operates two disposal facilities, and a third is privately operated. The City facilities are the Waimanalo Gulch Landfill and H-POWER. H-POWER is a waste-to-energy plant that processes over 620,000 tons of waste per year (about 2,000 tons per day) and generates electricity. The facility is a refuse derived fuel plant that recycles ferrous metals from the front end processing equipment and ferrous and non-ferrous metals from the ash.

The Waimanalo Gulch Landfill accepts non-combustible waste, including the ash from H-POWER, and other materials, mostly from private waste haulers and commercial self-haulers. Householders do not pay for waste disposal. Commercial customers pay \$65.75 per ton, which includes a state tax of \$0.35 per ton. A six-percent City recycling surcharge is added on to each ton disposed. On July 1, 1999, the fee will become \$72.25 per ton and the surcharge will increase to 12 percent.

PVT Land Company operates the private landfill. It accepts construction and demolition materials at a tip fee of \$25 per ton.

#### 1.2.5 Existing Compost Facilities

Today there are two existing green waste facilities processing approximately 115 tons per day of green material from both commercial and City sources. These existing sites can expand to handle up to 490 tons per day of material.

Hawaiian Earth Products is located in the Campbell Industrial Park and has been in operation since 1993. Kalaheo Green Waste Recycling Facility is located on top of the closed Kalaheo Landfill near the Kapaa Quarry and has been in operation since 1996.