

**STRATEGIC PLAN FOR SUSTAINING  
AND REPLICATING THE KEA‘AU  
RECYCLING AND REUSE CENTER**

**Prepared by  
Hawai‘i Island Economic Development Board**

**with assistance from  
Rural Community Assistance Corporation**

**February 2004**

# **STRATEGIC PLAN FOR SUSTAINING AND REPLICATING THE KEA‘AU RECYCLING AND REUSE CENTER**

**February 2004**

*The preparation of this plan was funded in part by a grant from the U. S. Environmental Protection Agency; a solid waste management grant from the Rural Community Assistance Program and the U. S. Department of Agriculture, Rural Utilities Service; a rural community development initiative grant from the U. S. Department of Agriculture and a grant from the U. S. Department of Health and Human Services.*

*Printed on 30% Postconsumer Recycled Paper*



# TABLE OF CONTENTS

EXECUTIVE SUMMARY .....		1
I. INTRODUCTION .....		2
1.1 Definitions .....		2
1.2 About This Plan .....		4
1.3 Purpose of This Plan .....		4
1.4 Structure of This Plan .....		5
II. OVERVIEW OF THE KEA‘AU PROJECT .....		6
2.1 Project Purpose and Funding Source .....		6
2.2 Project Organization and Planning .....		6
2.3 KRRC Operations .....		7
2.4 Accomplishments .....		8
2.5 Problems Encountered and Lessons Learned .....		10
2.6 Relationship to County Solid Waste System .....		14
2.7 Planned Improvements at KRRC .....		15
III. EXISTING SITUATION .....		16
3.1 Kea‘au Transfer Station .....		16
3.2 Other Transfer Stations .....		16
3.3 Hilo Landfill .....		18
3.4 Reduction, Recycling, and Reuse .....		18
IV. GOALS AND OBJECTIVES .....		25
4.1 Goals and Objectives for Sustaining and Replicating the Kea‘au Project .....		25
V. THE KEA‘AU MODEL .....		27
5.1 The Model At A Glance .....		27
5.2 Classification of Existing Transfer Stations .....		28
5.3 Sites and Infrastructure – General .....		32
5.4 Community Enterprise Center .....		34
5.5 Deposit Container Redemption Center .....		40
5.6 Enterprise Zone .....		42
5.7 Mixed Rubbish and Household Recyclables Dropoff Zone .....		43
5.8 Greenwaste Dropoff Zone .....		47
5.9 Scrap Metals Dropoff Zone .....		50
5.10 Disaster Debris Dropoff Zone .....		52
5.11 Future of the Model .....		54
VI. ACTION PLAN FOR SUSTAINING AND REPLICATING THE MODEL.....		55
6.1 Introduction .....		55
6.2 Planning Phase .....		55

6.3	Pre-development Phase .....	59
6.4	Design Phase .....	61
6.5	Construction Phase .....	62
6.6	Operations Phase .....	68
APPENDIX A .....		A-1

### List of Tables

2.1	KRRC Monthly Tonnage and Costs .....	9
3.1	Transfer Station Characteristics .....	18
3.2	Population Served Per Rubbish Chute .....	19
3.3	Transfer Station Tonnage, FY 2000 – FY 2003 .....	20
3.4	Average Annual Tonnage Received By Rubbish Chutes .....	21
3.5	Distances Between Transfer Stations .....	22
3.6	Transfer Station Rankings Based on Data From Tables 3.1 Through 3.5 .....	23
5.1	NRC Features By Class .....	26
5.2	Transfer Station Rankings By Selected Criteria From Table 3.6 .....	29
6.1	Parcel Size Disparities .....	54
6.2	Transfer Station Enhancement Priorities .....	54
6.3	Potential Sources of Revenue .....	56
6.4	Budget Template for Conversion of Transfer Stations.....	57
6.5	Design Checklist .....	59

### List of Figures

5.1	Proposed Neighborhood Recycling Centers .....	30
-----	--	----

## EXECUTIVE SUMMARY

The Department of Environmental Management, County of Hawai‘i is in the process of redesigning its entire solid waste management system. This initiative is in response to several factors:

- An updated integrated solid waste management plan, completed December 1, 2002.
- Projected closing of the Hilo landfill within approximately one to two years.
- Rising costs for solid waste management.
- Budget restrictions.
- Long-standing problems requiring immediate resolution.

This plan is intended to:

- facilitate integration of the Kea‘au recycling and reuse center into the evolving County solid waste management system;
- identify ways to sustain the Kea‘au recycling and reuse center as a permanent part of the County solid waste management system; and
- outline a process for creating a system of neighborhood recycling centers by replicating the Kea‘au model at other transfer stations.

Chapter II gives an overview of the Kea‘au pilot community recycling and reuse project, including its history, structure, accomplishments, and lessons learned. This plan was heavily influenced by lessons learned during the Kea‘au project.

Chapter III provides a brief overview of the current situation in all aspects of the county solid waste management system. The chapter includes available data projections through year 2020. The data are used in Chapter V to reclassify 21 existing transfer stations and one new facility.

Chapter IV establishes goals and objectives relative to completing, sustaining, and replicating the Kea‘au model. A key goal is to complete conversion of existing transfer stations within ten years.

Chapter V describes in detail the completed Kea‘au model. The model was shaped by experiences and lessons learned from the pilot project, as well as by input from community residents. The model now encompasses a system of four classes of neighborhood recycling centers (NRCs), each with a standard set of features. Chapter V describes in detail the physical facilities, customer base, staffing, materials accepted, markets for materials collected, linkages to community needs, operations policies and standards, and disaster mitigation measures for each class of NRCs.

Chapter VI is an action plan for completing and sustaining the Kea‘au model, integrating the model into the County solid waste management system, and adapting and replicating the model island-wide. Chapter VI builds upon and synthesizes material in the previous five chapters.

# I. INTRODUCTION

## 1.1 Definitions

For purposes of this plan only, the following words, terms, and acronyms shall have the meanings indicated.

- 1.1.1 County. The County of Hawai‘i.
- 1.1.2 County recycling and reuse center. A public facility which accepts a wide range of household recyclable and reusable materials for processing and use on site, donation to site users, or transport to a regional facility for processing and disposition.
- 1.1.3 Customer. Any authorized user of a County transfer station, recycling and reuse center, or other solid waste management facility.
- 1.1.4 Deposit beverage container. As defined in Section 342G-101, Hawaii Revised Statutes: "The individual, separate, sealed glass, polyethylene terephthalate [sic], high density polyethylene, or metal container less than or equal to sixty-four fluid ounces, used for containing, at the time of sale to the consumer, a deposit beverage intended for use or consumption in this State."
- 1.1.5 Greenwaste. Scrap plant materials, such as hedge and lawn clippings, tree limbs, and brush. At the NRCs, acceptable materials must be no more than ten inches in diameter, unless the County's contractor specifies otherwise. Greenwaste does not include root balls, soil, or any non-vegetative matter.
- 1.1.6 HIEDB. The Hawai‘i Island Economic Development Board.
- 1.1.7 Household recyclables. Paper fibers (newspaper, cardboard, and various grades of office and mixed paper), and containers (aluminum, glass, and plastics #1 and #2) commonly discarded by residential households and small businesses. The County uses a two-stream recycling system (see Section 1.1.20 for definition) for household recyclables, with a private contractor specifying the sort.
- 1.1.8 Kea‘au pilot community recycling and reuse project (the project). A joint project of the County and HIEDB, funded by a \$400,000 congressional appropriation channeled through the U. S. Environmental Protection Agency, which established the Kea‘au recycling and reuse center.
- 1.1.9 Kea‘au model. The permanent neighborhood recycling center resulting from the Kea‘au pilot community recycling and reuse project.

- 1.1.10 Kea‘au recycling and reuse center (KRRC). A County recycling and reuse center established at the Kea‘au transfer station on March 29, 2003.
- 1.1.11 Kea‘au transfer station. One of 21 existing County transfer stations.
- 1.1.12 Mixed rubbish. A mixture of materials and items commonly discarded by residential households and small businesses.
- 1.1.13 Neighborhood recycling center. A public facility which integrates the functions of a transfer station and a County recycling and reuse facility. The term applied to transfer stations upgraded to conform with the Kea‘au model.
- 1.1.14 Recyclables targeted for local value-added cottage industries. Materials targeted by the County for diversion to local cottage industries manufacturing value-added products. See Chapter V for a list of targeted materials.
- 1.1.15 Recycle Hawai‘i. A non-profit educational organization whose mission is to promote resource awareness and recycling on the Island of Hawai‘i.
- 1.1.16 Resource agency. Any agency with skills, knowledge, and resources the agency is willing and able to make available to the County to facilitate implementation of this plan.
- 1.1.17 Reusable household and office furnishings. Furniture, appliances and electronics equipment in working order, kitchen utensils, books, and other items commonly found in residential households and small offices, all in new or serviceable condition.
- 1.1.18 Reusable construction and demolition (C &D) materials. Dimensional lumber, plywood, new unpainted gypsum wallboard, roofing materials, doors, windows, plumbing and electrical fixtures, cabinets, hand and power tools, and other fixtures and materials commonly used in building construction, all in new or serviceable condition. Reusable C & D materials does not include concrete, block, or asphalt rubble.
- 1.1.19 Scrap metals. Recyclable metal items, including, but not limited to, large appliances, bicycles, lawn mowers, cabinets, furniture, tools, and sheet metal roofing, free of oil, fuels, refrigerants, and other liquids.
- 1.1.20 Scrap vehicles. Discarded passenger motor vehicles, including automobiles, pickup trucks, passenger vans, and sport utility vehicles, free of oil, fuels, refrigerants, and other liquids.
- 1.1.21 Transfer station. A public facility, owned and operated by the County, accepting mixed municipal solid waste from customers, for transport to a disposal facility. Similar to facilities known as public convenience centers in many jurisdictions.

1.1.22 Two stream recycling. A recycling system in which standard household recyclables are sorted into two bins at collection centers or at curbside. Common sort options include:

<b>Option</b>	<b>Bin 1</b>	<b>Bin 2</b>
1	Glass containers	All other household recyclables
2	All containers (aluminum, glass, plastic, tin)	All paper fibers ( newspaper, cardboard, office paper, mixed paper)
3	Deposit beverage containers	Non-deposit beverage containers and all paper fibers

1.1.23 White goods. A solid waste industry term for large appliances predominately made of metal, such as refrigerators, stoves, washers, dryers, and water heaters.

## 1.2 About This Plan

This plan focuses on principles, best practices, criteria, and standards for designing, constructing, and operating neighborhood recycling centers based on the Kea‘au model. The plan does not present or recommend any conceptual or engineering design for upgrading any specific transfer station. Neither does the plan discuss or recommend specific facility locations.

## 1.3 Purpose Of This Plan

The County’s Department of Environmental Management is in the process of redesigning its entire solid waste management system. This initiative is in response to several factors:

- An updated integrated solid waste management plan, completed December 1, 2002.
- Projected closing of the Hilo landfill within approximately one to two years.
- Rising costs for solid waste management.
- Budget restrictions.
- Long-standing problems requiring immediate resolution.

This plan is intended to:

- facilitate integration of the Kea‘au recycling and reuse center into the evolving County solid waste management system;
- identify ways to sustain the Kea‘au recycling and reuse center as a permanent part of the County solid waste management system; and
- outline a process for creating a system of neighborhood recycling centers by replicating the Kea‘au model at other transfer stations.

## **1.4 Structure of This Plan**

Chapter II gives an overview of the Kea‘au pilot community recycling and reuse project, including its history, structure, accomplishments, and lessons learned.

Chapter III provides a brief overview of the current situation in all aspects of the county solid waste management system. The chapter includes available data projections through year 2020.

Chapter IV establishes goals and objectives relative to completing, sustaining, and replicating the Kea‘au model.

Chapter V describes in detail the completed Kea‘au model, as shaped by experiences and lessons learned from the pilot project and by public input. It covers physical facilities, customer base, staffing, materials collected, markets for materials collected, linkages to community needs, operations policies and standards, and disaster mitigation measures.

Chapter VI is an action plan for completing and sustaining the Kea‘au model; integrating the model into the County solid waste management system; and adapting and replicating the model island-wide. Chapter VI builds upon and synthesizes material in the previous five chapters.

## **II. OVERVIEW OF THE KEA‘AU PROJECT**

### **2.1 Project Purpose and Funding Source**

The County and HIEDB were awarded a grant by the U. S. Environmental Protection Agency (EPA) to "establish and implement a community development model for renewable resource management by upgrading solid waste transfer stations into community recycling centers." The grant resulted from a congressional appropriation initiated by U. S. Senator Daniel Inouye. The grant enabled establishment of the KRRC at the Kea‘au transfer station. The project began officially in February 2002, with the KRRC opening to the public on March 29, 2003.

### **2.2 Project Organization and Planning**

The County was the grantee for this project. The County was responsible for oversight of the project and financial management. HIEDB served as project manager, under contract with the County. HIEDB was responsible for implementation of the scope of work, including contracting for services, leasing equipment, and coordinating with key stakeholders. HIEDB subcontracted with Recycle Hawai‘i to conduct a public education program, operate the pilot KRRC, and produce a conceptual site plan for a permanent KRRC. HIEDB contracted with Rural Community Assistance Corporation (RCAC) to produce this strategic plan, specifically including a cultural component, for the KRRC.

The project was organized into three components:

2.2.1 Development of a new model. Three tasks were included in this component:

- Design of the temporary recycling and reuse center.
- Identification of materials to be collected and their disposition.
- Production of conceptual drawings for a permanent KRRC.

2.2.2 Operation and evaluation of the new model. Since construction was not an allowable activity under the EPA grant, the KRRC was developed as a temporary facility to collect targeted recyclable and reusable materials. The objective was to maximize collection of those materials during a nine-month demonstration, which ended December 29, 2003. Recycle Hawaii implemented an extensive public awareness and involvement campaign in connection with the demonstration. Results of the demonstration were measured, evaluated and reported.

2.2.3 Production of a strategic plan. The planning component was included to address long-term sustainability and replicability of the project beyond the EPA-funded demonstration.

### **2.3 KRRC Operations**

The components of Recycle Hawai‘i’s operation at the pilot KRRC were:

2.3.1 Administration. A full-time project coordinator, Nelson Ho, and three part-time attendants comprised the staff of KRRC. The project coordinator was responsible for:

- scheduling and supervision of attendants;
- establishment of operational policies and rules;
- administration of the contract with HIEDB;
- interfacing with HIEDB, Recycle Hawai‘i’s subcontractors, and volunteer groups; and
- measurement and reporting of achievements.

Site attendants:

- monitored recycling and reuse activities to prevent/minimize contamination;
- enforced operations policies and rules;
- monitored incoming and outgoing reuse transactions;
- provided public education; and
- assisted customers as necessary.

Recycle Hawai‘i also administered a volunteer program. Volunteers donated 1,221 hours during the project, performing site attendant and site maintenance duties.

2.3.2 Customer education. Efforts to publicize KRRC and educate customers included:

- a mailing to all Puna District households announcing the opening of KRRC;
- a grand opening ceremony on March 29, 2003;
- distribution of handouts at KRRC;
- a quarterly newsletter;
- dedicated pages on Recycle Hawai‘i’s web site;
- one on one education of individual customers;
- educational workshops at KRRC;
- an Art and Objects From Opala show at KRRC; and
- a community incentive fund to entice community groups to donate services to and become involved with KRRC.

Recycle Hawai‘i contracted with Jay West, owner of Peak Creations, to schedule, publicize, and conduct workshops related to high value-added glass manufacturing, and to create art for the project site; with Jon Olson to conduct workshops on reuse of old appliances; and with Loretta Nussbaum to conduct Keiki Kraft reuse workshops. Eighteen workshops were conducted, nine for adults and nine for keiki, with a total attendance of 203 adults and 52 keiki.

According to Recycle Hawai‘i’s project coordinator, many requests were received from persons desiring to conduct workshops at KRRC. He estimates about 90 percent of the requests related to recycling.

2.3.3 Hauling and processing. Recycle Hawai‘i contracted with Business Services Hawai‘i (BSH) to haul and recycle paper fibers (except newspaper); glass, plastic, and aluminum containers; greenwaste; and scrap metal. Puna Kamali‘i Flowers recycled newspaper, with the exception of newspaper inserts, which it gave to BSH.

2.3.4 Site supervision and maintenance. Activities included:

- monitoring of customer dropoff activities.
- operation of the reuse facility.
- maintenance and striping of the internal roadway and speed bumps.
- supervision of volunteer work crews.

## 2.4 Accomplishments

Overall, KRRC exceeded expectations, in terms of tonnage of materials collected and public enthusiasm. See Table 2.1 for tonnage hauled by material by month. A limited traffic survey conducted by Recycle Hawai‘i from July 22 through August 9, 2003 recorded an average of 83 vehicles per hour entering the transfer station site. Actual vehicle counts ranged from 38 to 126 per hour. On average, 21.6% of the vehicles entering the transfer station stopped at KRRC. Actual participation at KRRC ranged from 16.1% to 49.5% on an hourly basis.

For the 9-month project period, 794.97 tons of recyclable materials and 123.46 tons of reusable materials were diverted from Hilo landfill. During the same period, 4,704 tons of mixed solid waste were hauled from the Kea‘au transfer station. This represents a 16.34% diversion rate achieved by KRRC, short of the project goal of 25%. Tons diverted exceeded the project goal by 358.43 tons, or 64% over the project goal.

Unit costs for hauling materials from KRRC ranged from \$0 for aluminum containers (due to relatively high scrap value) and reusable items (which remained on site until claimed by a customer), to \$240 per ton for glass containers. The cost for glass reflected not only hauling costs, but also costs for grinding the glass and marketing the product locally. The average unit cost for all materials diverted from the landfill by KRRC was \$75.68 per ton.

**Table 2.1: KRRC Monthly Tonnage and Costs**

Month	Aluminum	Cardboard	Glass	Greenwaste	Magazines & Newspaper	Mixed Paper	Newspaper Only	Plastics #1 & #2	Scrap Metal	White Paper	Reusable Items	Total Recycling & Reuse Tonnage	Keau Transfer Station Tonnage	% Diverted from Landfill
Costs/Ton		\$ 85	\$ 240	\$ 50	\$ 65	\$ 85	\$ 65	\$ 200	\$ 50	\$ 85				
Apr-03	0.65	7.77	13.21	22.05	2.28	0.50	4.23	0.56	9.94	0.23	2.92	64.34	488.00	11.65%
May-03	0.60	6.86	13.02	20.24	2.66	0.67	2.90	1.51	12.80	0.19	9.86	71.31	514.00	12.18%
Jun-03	0.63	7.46	14.21	38.63	4.49	0.79	3.95	2.23	13.73	0.71	13.44	100.27	513.00	16.35%
Jul-03	0.71	9.00	14.48	32.52	4.29	0.66		0.96	16.51	0.26	13.63	93.02	523.00	15.10%
Aug-03	0.73	11.87	14.21	35.24	5.40	1.10	2.35	2.49	23.06	0.70	12.80	109.95	545.00	16.79%
Sep-03	0.76	8.76	13.70	43.40	4.53	0.51	2.96	0.92	25.52	0.43	13.32	114.81	492.00	18.92%
Oct-03	0.77	7.79	14.77	43.56	4.39	0.90	3.52	1.03	24.20	0.60	16.35	117.88	506.00	18.89%
Nov-03	0.62	8.14	13.35	34.41	3.81	0.76	2.51	1.20	23.95	0.51	17.71	106.97	519.00	17.09%
Dec-03	0.82	11.29	16.20	53.49	5.40	1.32	3.73	1.06	22.41	0.73	23.43	139.88	604.00	18.80%
Total Tonnage	6.29	78.94	127.15	323.54	37.25	7.21	26.15	11.96	172.12	4.36	123.46	918.43	4,704.00	
Total Cost	\$ -	\$ 6,710	\$ 30,516	\$ 16,177	\$ 2,421	\$ 613	\$ 1,700	\$ 2,392	\$ 8,606	\$ 371	\$ -	\$ 69,505		

**Tonnage Diversion**

9-Month Project Goal =	560 Tons
% of Project Goal Achieved =	164.01%
Average Cost/Ton for Diversion =	\$ 75.68

**Percentage Diversion**

Pre-Project Percentage Diversion =	2.00%
9-Month Project Goal =	25.00%
Actual Percentage Diversion =	16.34%

## 2.5 Problems Encountered and Lessons Learned

Information and data presented in this section were taken from published data from KRRC contractors and vendors, from a limited traffic survey conducted by Recycle Hawai'i, from a limited user survey conducted by RCAC, and from interviews with key persons conducted by RCAC.

2.5.1 Contamination. Contamination was a problem from the beginning, although it decreased with customer education efforts, improvements in signage, and increased staffing at KRRC. Contamination included:

- Plastic bags, metal, and tires in the greenwaste bin.
- Plastic bags in the plastics bin.
- Motor vehicle parts containing used motor oil and other fluids in the scrap metal bin.
- Bags of rubbish left adjacent to recycling bins because people did not want to stop twice to unload.

Paying the full tip fee on contaminants removed from recycling bins was a hardship for vendors contracted to remove the materials from KRRC. Vendors had little or no control over the level of contamination in any given bin. Also, the level of contamination in bins varied widely and could not be predicted by vendors when they prepared cost proposals to Recycle Hawai'i. This is a difficult issue, especially in a dropoff environment, but one that must be resolved if the County intends to rely on private vendors to service its recycling centers.

2.5.2 Education. Educational workshops for adults were successful. Activities for keiki were less successful, perhaps because the site environment with its heavy traffic was not suitable for children. Jay West suggested that more workshops be offered, and that workshops could be a potential source of revenue. A permanent education center more remote from dust and noise sources such as traffic would enhance KRRC's ability to draw workshop participants.

Due to liability issues, Recycle Hawai'i was constrained by contract from allowing outsiders to sponsor events at KRRC, so was unable to meet demand for more workshops. KRRC appears to have potential for becoming a community focal point and gathering place for environmental activities and education, given proper facilities. It may also have potential as a cottage industry incubator site.

Signs created by Jay West helped considerably with customer education by instructing people as to how and where to recycle various materials. Nelson Ho recommended more signs, specifically focusing on the *why* of recycling. The temporary workshop area was not secure enough. Some customers removed art work and workshop materials, apparently thinking they were free for the taking like items in the adjacent reuse center.

2.5.3 Equipment. Several equipment problems/needs were noted:

- Lack of spare or backup bins resulted in bans on dumping materials for approximately four hours whenever a full bin was hauled out.
- The greenwaste bin blocked access to the scrap metal bin, so had to be moved in order for the vendor to gain access to the scrap metal bin. Customers could not recycle either material for approximately four hours.
- The project coordinator expressed a desire for compactor bins to reduce hauling frequency and down time.
- The internal road should be paved, striped properly, and constructed with speed bumps.
- Lights are needed during evening hours in winter months.
- Facility staff need permanent restroom/shower facilities. Many customers asked for a place to wash their hands after dumping recyclables.
- Infrastructure should include protection for users from sun and rain. This directly affected the recycling rate, since the Kea‘au site was often either very hot or very wet.
- A set of hand tools for the site would be helpful.

2.5.4 Interface with transfer station operation. The transfer station and diversion functions were not well integrated during the pilot project. During interviews with RCAC, key persons reported:

- Negative comments from transfer station customers about being routed through KRRC to reach the rubbish chutes.
- Transfer station customers ignoring traffic control devices to create shortcuts to the rubbish chutes.
- Negative comments from transfer station security guards to customers regarding recycling and KRRC.

2.5.5 Interface with private recycling vendors. Full containers at KRRC were hauled as needed, rather than on a fixed schedule. Problems were encountered with the greenwaste and scrap metal bins, particularly on weekends. At times the bins filled so quickly that the vendor received inadequate notice. This resulted in closure of the bins and diversion of recyclable materials to the transfer station rubbish chutes.

Recycling vendors prefer pavement under rolloff bins rather than crushed rock. This reduces the amount of space needed for pulling the bins.

Standardized or specialized equipment specified by the County in a permanent facility would not be a problem for private haulers, provided contract terms allow adequate amortization periods for new equipment, or the County purchases the equipment. The former arrangement is preferred, as it eliminates potential conflicts over liability and maintenance.

2.5.6 KRRC customers. RCAC conducted a limited survey of KRRC customers over seven days: Saturday, August 2, 2003; Friday, August 8, 2003, and daily Sunday, August 10 through Thursday, August 14, 2003. A tabulation of survey results is included in Appendix A.

A total of 354 persons participated in the survey to some degree. Some gave only their communities of residence; some only the items being recycled that day. Some interviews were interrupted by rain. Most survey respondents were residents of Puna District, but a few came from distant communities.

Customers were asked why they chose to use Kea‘au transfer station that day. Of the 325 responding, 40% said it was the closest transfer station to home; 29% said it was on the way to work or shopping; 22% stopped because the facility took recyclable and reusable materials; and 10% gave other reasons (many of these related to recycling and reuse activities at KRRC). Thus, the presence of KRRC was not the primary draw for at least 69% of respondents, but they were recycling and reusing anyway.

Customers were asked where they normally took their recyclable materials. Of the 306 respondents, 85% said KRRC; 5% identified another transfer station; 7% indicated the recycling center on Railroad Avenue; and 3% gave other locations.

When asked where they normally take their rubbish, 76% of the 308 respondents answered Kea‘au transfer station; 22% said other transfer station; and 2% indicated other (primarily private collection service).

The reader is encouraged to review responses to Questions 7, 8, and 9 in Appendix A, which influenced recommendations in Chapter VI:

7. What features of this recycling and reuse center do you like best?
8. What features of this recycling and reuse center do you not like?
9. What would you change or add in a permanent recycling and reuse facility here?

2.5.7 Nuisances. Reported nuisances included:

- Numerous feral cats living at the transfer station, habituated by a local resident who feeds them. The cats' ubiquitous waste products and associated odors are an ongoing problem.
- Feral chickens and associated waste.
- Wild pigs on site.
- Aggressive bees attracted to the glass bin.
- Flies during workshops.
- Disposable diapers and other rubbish left adjacent to the emergency water spigot near the transfer station entrance. While not within the domain of KRRC, such rubbish represents a continuing eyesore and health issue. A volunteer work crew cleaned the area, but it was messy again within a few days.

2.5.8 Private v. public operator for KRRC.

- Users generally liked the private operation. Some made negative comments about county workers.
- Any private operator should be experienced in similar operations, and be able to price services accurately.

2.5.9 Reuse. The reuse center at KRRC was extremely popular. Items dropped off generally remained at the site a very short time before being claimed by a new owner. Recycle Hawai‘i was forced to place limits on certain individuals who frequented the site, attempting to snag the best items. Recycle Hawai‘i’s policy of accepting only items that were serviceable or repairable was prudent, and no doubt reduced the number of items moved from the reuse center to the transfer station.

Reuse is a potential source of revenue; some people may be willing to pay for higher value items.

2.5.10 Site maintenance. Ongoing maintenance issues included:

- Maintenance of the gravel roadway and speed bumps.
- Erosion where water runs off the transfer station pavement onto the KRRC gravel road. A temporary fix improved this situation, but more work is needed.
- Rubbish left by users of the emergency water spigot near the transfer station entrance.
- Rapid vegetative growth in the wet environment.

2.5.11 Staffing. Recycle Hawai‘i began the operation with two part-time site attendants. It quickly became apparent that this was insufficient, so one additional attendant was hired. This was still inadequate at peak traffic times. Staff schedules were adjusted to allow a one hour overlap of daily shifts. On-site staff was essential to provide education, assist certain customers to unload/load items, manage the reuse center, and prevent contamination. The project coordinator recommended finding good people who are assertive, believe in recycling, and can tolerate verbal abuse.

2.5.12 Traffic pattern/flow. Highway 130 fronting the Kea‘au facility is a heavily traveled two-lane highway, particularly during morning and evening rush periods. Left turns into or out of the facility are especially dangerous. One fatal accident occurred at this location during the project. The internal traffic flow pattern at Kea‘au transfer station was modified to encourage use of KRRC. All customers entering the site were routed through KRRC, whether recycling or disposing of rubbish. Some customers complained about this arrangement. Problems encountered included:

- Customers stopping in the through lane to unload recyclables, thus blocking traffic to the transfer station rubbish chutes.
- Excessive speed, which had to be controlled by speed bumps.
- Rolloff trucks blocking traffic when pulling bins.
- Impermanence of chalk lines used for marking the internal roadway and parking spaces by the recycling bins.

According to Recycle Hawai‘i’s traffic survey, Kea‘au transfer station experienced peak traffic Fridays through Mondays. Tuesdays through Thursdays were slower. Traffic was lighter on rainy days than on dry, sunny days.

Transfer trailers moving through KRRC did not create any problems.

2.5.13 Volunteers/community incentive fund. Use of volunteers, both individuals and groups, was a positive experience. This enabled Recycle Hawai‘i to supplement site staff, improve site monitoring and education efforts, and perform needed tasks on site. Recycle Hawai‘i established a community incentive fund to attract community group volunteers. A \$100 donation was given for a minimum of four volunteers each performing four hours of work. Volunteers donated a total of 1,221 hours at KRRC.

While extremely helpful, volunteers have other commitments and interests. Caution must be exercised before relying upon volunteers to perform repetitive or time-sensitive tasks. Keys to a successful volunteer program include flexibility, ability to match individual/group interests with project needs, incentives, and ability to provide necessary tools and supplies to the volunteers if they cannot furnish their own.

## **2.6 Relationship to County Solid Waste System**

The Kea‘au project was intended to be a demonstration of the waste diversion potential at rural transfer stations. As such, it was successful. The next step is to refine the Kea‘au model and replicate it at other transfer stations around the island. Any permanent facility should be a neighborhood recycling center compatible with the County's integrated solid waste management plan and with the proposed East Hawai‘i regional sort station. The sort station, as currently proposed, will incorporate a two-stream recycling system into the East Hawai‘i solid waste management system. This will require some adjustments on the part of private sector recycling businesses and residential recyclers. A two-stream recycling system also will complicate diversion of recyclables to local small-scale entrepreneurs producing value-added products.

## **2.7 Planned Improvements at KRRC**

Recycle Hawai‘i, through its subcontractor Big Island Resource Conservation and Development Council, prepared a conceptual drawing of a permanent KRRC. This plan does not reflect Recycle Hawai‘i's work, because Recycle Hawai‘i's product was submitted to HIEDB about the same time as the final draft of this plan. County staff found funding to continue KRRC operations beyond December 29, 2003, and plan to eventually install permanent infrastructure. The final design of the permanent KRRC will be influenced by this plan, Recycle Hawai‘i's conceptual drawing, a transfer station enhancement plan in preparation by the County's consulting engineer, and input from customers at design workshops sponsored by HIEDB and RCAC.

### III. EXISTING SITUATION

#### 3.1 Kea'au Transfer Station

One of 21 County transfer stations, the Kea'au facility is situated on 19.54 acres of land leased from W. H. Shipman, Ltd. It accommodates two transfer trailers, which transported 6,040.88 tons of mixed solid waste during the County's Fiscal Year 2003.

Before KRRC was established, the transfer station's recycling capacity was limited to one small bin (placed by Business Services Hawai'i) for glass and aluminum containers, and one small bin (placed by Puna Kamali'i Flowers) for newspaper. The diversion rate then was only two percent.

#### 3.2 Other Transfer Stations

3.2.1 Overview. Tables 3.1, 3.2, 3.3, 3.4, 3.5, and 3.6 contain relevant data about all transfer stations. Each table is discussed below. The proposed Kahuku transfer station at Hawaiian Ocean View Estates (HOVE) is included in the tables since it has been partially funded, but no data are included for it. The County has committed to development of a transfer station at Waikoloa, but has not committed funding or established a time frame for the project. The data in Tables 3.1 through 3.6 are used in Chapter V to assist in sorting transfer stations into classes, each featuring a standard set of diversion activities and services.

3.2.2 Table 3.1. This table provides an overview of the physical characteristics of and services provided by transfer stations. Information in the *Notes* column is based on a single site visit in September 2003, and is not necessarily indicative of usual conditions.

3.2.3 Table 3.2. The purpose of Table 3.2 is to provide a measure of relative capacity among transfer stations and districts, based on population. The approximate service area population for each transfer station relates to a geographic area, not necessarily to origin of facility customers. A customer origin study at each transfer station would provide a more accurate picture of the customer base for each facility.

Beginning at the far right of Table 3.2, in the section labeled County Perspective, the County population at year 2000 and the projected populations through year 2020 are divided by the total number of refuse chutes currently existing. Assuming the number of chutes to be adequate, we may say that each chute ideally would serve approximately 5,000 customers.

From the district perspective (center section of Table 3.2), individual chutes actually serve from 1,720 to 7,898 customers, based on year 2000 population.

This implies that some districts are underserved and some overserved by refuse chutes. The North Kona and South Kohala Districts come closest to the ideal.

From the transfer station perspective, the disparity is even greater. Individual rubbish chutes serve 700 to 10,500 customers on average.

Again, the preceding analysis may be misleading, absent a customer origin study at every transfer station. For this reason, the same analysis was performed on the basis of tonnage deposited. That analysis appears in Table 3.4. Tonnage is a more reliable measure of current capacity, because the County collects scale data for each transfer station rubbish chute.

3.2.4 Table 3.3. The table is self-explanatory. Of interest is the several transfer stations that experienced increases or decreases in tonnage over the four year period. The table would be more useful if it included waste projections by district, similar to the population projections included in Table 3.2. No such waste projections currently exist.

3.2.5 Table 3.4. The purpose of Table 3.4 is to provide a measure of relative capacity among transfer stations and districts, based on tonnage received. This is a more accurate measure of relative capacity than the population data in Table 3.2, as it indicates where customers actually deliver their rubbish, which may not be the transfer station closest to home.

Beginning at the far right of Table 3.4, in the section labeled County Perspective, the County average annual tonnage over four years is divided by the total number of refuse chutes currently existing. Assuming the number of chutes to be adequate, we may say that each chute ideally would receive approximately 2,300 tons per year.

From the district perspective (center section of Table 3.4), individual chutes actually receive about 1,130 to 3,400 tons. As with the population analysis, some districts appear to be underserved and some overserved by refuse chutes. Contrary to the population analysis, which showed the North Kona and South Kohala Districts closest to the ideal, on a tonnage basis these are some of the most underserved districts. Puna and South Hilo Districts are also underserved on a tonnage basis.

From the transfer station perspective, disparities also are evident. Individual rubbish chutes receive 739 to 3,396 tons annually on average.

3.2.6 Table 3.5. Table 3.5 shows gaps in coverage in the transfer station system that certainly produce some measure of customer inconvenience, and may contribute to illegal dumping. Gaps of concern are:

- Puako to Ka‘auhuhu, 25 miles.
- Puako to Kealakehe, 28 miles.

- Waiohinu to Waiea, 32 miles. This gap will be reduced when the Kahuku (Hawaiian Ocean View Estates) facility comes on line.
- Waimea to Ka‘auhuhu, 20 miles.

The gap between the Volcano and Pahala transfer stations is 28 miles, but is not of concern because the intervening area is mostly undeveloped national park land.

3.2.7 Table 3.6. This table ranks the transfer stations on each of 12 criteria selected from Tables 3.1 through 3.4. The rankings are used in Chapter V to sort transfer stations into classes, each featuring a standard set of diversion activities and services.

### **3.3 Hilo Landfill**

Hilo landfill is projected to reach capacity within two years of completion of this plan. The County must close the landfill at that time. The County's intent is to develop a regional sort station and implement aggressive recycling measures as a short-term solution, while evaluation of more complex technologies continues.

### **3.4 Reduction, Recycling, and Reuse**

The County's diversion rate was 13% in Fiscal Year 1999. The update to the integrated solid waste management plan completed in 2002 outlines an aggressive program to increase diversion. The program includes the East Hawai‘i regional sort station and enhancements to transfer stations. County staff expect an immediate two percent increase in diversion from the sort station, and an additional five percent in each of the next two years as transfer station enhancements are utilized. An additional three percent per year is expected from improved utilization of diversion opportunities and additional services provided from private contractors. The diversion rate is expected to level out at around 45 percent by 2014.

Table 3.1: Transfer Station Characteristics

Station	Population Served	District	District Population	Average Annual Tonnage FY 2000 Through FY 2003	No. of Chutes	Parcel Size (Acres)	Greenwaste	Scrap Metal/ Appliances	Traditional Recyclables	Redemption Containers	Reuse	Hazards	Notes
Glenwood	4,300	Puna	31,335	2,285.76	1	1.97							Vacant land on 3 sides. Small landscaped area to left of chute might hold 1 rolloff, but area would have to be elevated/leveled.
Hilo	42,000	S. Hilo	47,386	11,802.97	4	72.70	Yes	Yes	ONP				Plenty of room for expansion.
Honoka'a	5,100	Hamakua	6,108	3,258.82	1	0.73			G, UBC				Has security guard. Private residence adjacent to entrance. Some room for additional recycling at existing site. Trailer must be compacted at 5:30 pm daily or will overflow by morning. Glass bin a mess - goes as long as 2 weeks without being emptied.
Honomu	3,400	S. Hilo		1,243.27	1	0.84							Private residence next door. Vacant land on 2 sides. Existing site too small for additional activity.
Ka'auhuhu (Kohala/Hawi)	6,000	N. Kohala	6,038	3,395.95	1	17.28			UBC				Vacant land on 3 sides. No room for recycling at existing facility. County site has plenty of room for additional activity. Very messy - paved area and adjacent slopes. Not sure if has security guard - was attended by a man sitting in for a friend who would normally have been there.
Kahuku (Ocean View)				0.00	0								Planned new facility.
Kalapana	1,200	Puna		738.77	1	13.20						● Possible lava flow zone	Vacant land on 3 sides. Some room for recycling at existing facility. County site has plenty of room for additional activity.
Kea'au	11,700	Puna		6,379.76	2	19.54	Yes	Yes	*		Yes	● Ingress/egress - heavy traffic ● Buried waste ● Feral cats	Plenty of room for expansion at existing facility. Adjoining 40 acre parcel not available until 2016.
Kealakehe (Kailua-Kona)	21,000	N. Kona	28,543	8,020.65	3	30.32	Yes	Yes	G, UBC			● Landfill fires ● Scrap metal	Has security guard. Some room for expansion of recycling activities at existing transfer station site. Overall, site is too small for existing activities.
Keauhou	8,500	N. Kona		4,940.96	2	5.47			G, UBC				Transfer station can accommodate limited amount of additional recycling. County site has additional space, but it is on same level as transfer trailer.
Ke'ei	5,600	S. Kona	8,589	2,015.36	1	11.60						● Narrow, steep, winding access road	Vacant land on 4 sides. No room for recycling at existing facility.
Laupahoehoe	1,700	N. Hilo	1,720	1,130.26	1	1.02							Vacant land on 3 sides. Has greenwaste pile - probably unauthorized. Room for some recycling at existing facility.
Miloli'i	700	S. Kona		91.65	1	0.17						● Narrow, steep, winding access road	Has one 40 cy rolloff. Bin and surrounding area messy. No room for expansion. Access road prohibits transfer trailers.
Pa'auilo	1,800	Hamakua		1,195.75	1	0.85							Vacant land on 3 sides. Room for some recycling at existing facility - between road and transfer trailer.
Pahala	1,700	Ka'u	5,827	1,163.92	1	0.75							Vacant land on 4 sides. Room for recycling at existing facility.
Pahoa	9,400	Puna		4,494.96	2	3.77			G, UBC				Vacant land on 4 sides. Room for additional recycling at existing facility.
Papaikou	5,800	S. Hilo		2,888.31	1	0.57							Vacant land on 3 sides. No room for recycling at existing facility.
Puako	5,600	S. Kohala	13,131	2,297.10	1	8.90			G, UBC				Has security guard. Vacant land on 4 sides. Large area covered with crushed rock belongs to County. Lot of greenwaste going in transfer trailer.
Volcano	2,000	Puna		1,408.52	1	2.19							Vacant land on 4 sides. Gated rock storage area behind chute. Large area covered with crushed rock to left of chute.
Waiea	3,300	S. Kona		2,055.08	1	2.28						● Egress - short sight distance	No room for additional activity. Site is on steep slope.
Waimea	11,700	S. Kohala		5,160.49	2	0.31			G, UBC, R			● Fires in old landfill adjoining site.	Vacant land on 3 sides.
Waiohinu	3,000	Ka'u		2,357.61	1	31.65							Vacant land on 4 sides. County site is large enough for additional activity.
<b>Totals</b>	<b>155,500</b>		<b>148,677</b>	<b>68,325.92</b>	<b>30</b>								

G = Glass bottles

ONP = Old newspaper

R = Rags

UBC = Aluminum cans

\* Keaau Recyclables

Aluminum cans

Glass bottles

Old corrugated cardboard

Old magazines and catalogs

Old newspaper

Paper - office pack

Paper - white ledger

Plastic #1

Plastic #2

Table 3.2: Population Served Per Rubbish Chute

Transfer Station Perspective				District Perspective													County Perspective				
Station	Approximate Service Area Population <sup>1</sup>	No. of Chutes	Population Served Per Chute	Districts	District Population 2000 <sup>2</sup>	District Population 2005 <sup>2</sup>	District Population 2010 <sup>3</sup>	District Population 2015 <sup>3</sup>	District Population 2020 <sup>3</sup>	20 Year Population Increase/Decrease (%)	Number of Lots 2003	No. of Chutes	Population Served Per Chute 2000	Population Served Per Chute 2005	Population Served Per Chute 2010	Population Served Per Chute 2015	Population Served Per Chute 2020	Year	County Population <sup>2</sup>	No. of Chutes	Population Served Per Chute
Glenwood	4,300	1	4,300	Hamakua	6,108	6,196	6,561	6,933	7,328	19.97	3,872	2	3,054	3,098	3,281	3,467	3,664	2000	148,677	30	4,956
Hilo	42,000	4	10,500	Ka'u	5,827	6,443	7,050	7,698	8,408	44.29	16,956	2	2,914	3,222	3,525	3,849	4,204	2005	159,907	30	5,330
Honoka'a	5,100	1	5,100	N. Hilo	1,720	1,643	1,720	1,798	1,879	9.24	1,583	1	1,720	1,643	1,720	1,798	1,879	2010	176,938	30	5,898
Honomu	3,400	1	3,400	N. Kohala	6,038	6,622	7,917	9,446	11,273	86.70	3,177	1	6,038	6,622	7,917	9,446	11,273	2015	195,965	30	6,532
Ka'auhuhu (Kohala/Hawi)	6,000	1	6,000	N. Kona	28,543	30,467	34,024	37,922	42,275	48.11	12,374	5	5,709	6,093	6,805	7,584	8,455	2020	217,718	30	7,257
Kahuku (Ocean View)		0		Puna	31,335	36,351	42,591	49,801	58,246	85.88	57,654	7	4,476	5,193	6,084	7,114	8,321				
Kalapana	1,200	1	1,200	S. Hilo	47,386	46,273	47,477	48,614	49,791	5.08	19,708	6	7,898	7,712	7,913	8,102	8,299				
Kea'au	11,700	2	5,850	S. Kohala	13,131	15,659	18,184	21,072	24,426	86.02	6,915	3	4,377	5,220	6,061	7,024	8,142				
Kealahou (Kailua-Kona)	21,000	3	7,000	S. Kona	8,589	10,253	11,414	12,681	14,092	64.07	5,987	3	2,863	3,418	3,805	4,227	4,697				
Keauhou	8,500	2	4,250	Total								30									
Ke'ei	5,600	1	5,600																		
Laupahoehoe	1,700	1	1,700																		
Miloli'i	700	1	700																		
Pa'auilo	1,800	1	1,800																		
Pahala	1,700	1	1,700																		
Pahoa	9,400	2	4,700																		
Papaikou	5,800	1	5,800																		
Puako	5,600	1	5,600																		
Volcano	2,000	1	2,000																		
Waiea	3,300	1	3,300																		
Waimea	11,700	2	5,850																		
Waiohinu	3,000	1	3,000																		
Total # Chutes		30																			

<sup>1</sup>Data provided by the County of Hawai'i, Department of Environmental Management

<sup>2</sup>Data from U. S. Census of Population, 2000

<sup>3</sup>Economic Assessment, PKF Hawaii, January 2000; U. S. Census, 2000; and Hawaii County Department of Research and Development

**Table 3.3: Transfer Station Tonnage, FY 2000 - FY 2003**

Station	Annual Tonnage				4 Year Totals	Average Annual Total Tonnage	% Increase/Decrease Over 4 Years
	FY 2000	FY 2001	FY 2002	FY 2003			
Glenwood	2,190.32	2,328.95	2,337.91	2,285.84	9,143.02	2,285.76	4.36
Hilo	11,454.63	11,883.27	12,102.70	11,771.29	47,211.89	11,802.97	2.76
Honoka'a	3,159.58	3,205.79	3,425.02	3,244.87	13,035.26	3,258.82	2.70
Honumu*		1,661.20	1,703.00	1,608.86	4,973.06	1,243.27	
Ka'auhuhu (Kohala/Hawi)	3,005.18	3,345.27	3,431.56	3,801.79	13,583.80	3,395.95	26.51
Kahuku (Ocean View)					0.00	-	
Kalapana	625.80	675.00	807.81	846.48	2,955.09	738.77	35.26
Kea'au	6,043.78	6,672.93	6,761.45	6,040.88	25,519.04	6,379.76	-0.05
Kealakehe (Kailua-Kona)	7,304.98	7,909.86	8,363.99	8,503.76	32,082.59	8,020.65	16.41
Keauhou	4,265.66	5,042.89	5,224.57	5,230.70	19,763.82	4,940.96	22.62
Ke'ei	1,834.96	2,144.31	2,019.23	2,062.94	8,061.44	2,015.36	12.42
Laupahoehoe	983.85	1,186.52	1,216.01	1,134.67	4,521.05	1,130.26	15.33
Miloli'i*	156.23	134.87		75.49	366.59	91.65	
Pa'auilo	1,108.79	1,161.08	1,177.99	1,335.15	4,783.01	1,195.75	20.42
Pahala	1,165.98	1,067.58	1,219.51	1,202.62	4,655.69	1,163.92	3.14
Pahoa	4,338.86	4,716.26	4,456.82	4,467.89	17,979.83	4,494.96	2.97
Papaikou	2,832.20	2,959.83	2,852.01	2,909.21	11,553.25	2,888.31	2.72
Puako	2,343.24	2,474.03	2,215.01	2,156.10	9,188.38	2,297.10	-7.99
Volcano	1,365.73	1,363.73	1,465.63	1,438.97	5,634.06	1,408.52	5.36
Waiea	1,959.01	1,968.06	2,059.19	2,234.07	8,220.33	2,055.08	14.04
Waimea	4,863.47	4,879.68	5,318.97	5,579.85	20,641.97	5,160.49	14.73
Waiohinu	2,211.46	2,337.18	2,451.72	2,430.08	9,430.44	2,357.61	9.89

\*Data in 4 Year Totals and Average Annual Tonnage columns are for 3 years due to one year of missing data.

% increase/decrease was not calculated due to missing data.

**Table 3.4: Average Annual Tonnage Received By Rubbish Chutes**

Transfer Station Perspective				District Perspective				County Perspective		
Station	Average Annual Tonnage	No. of Chutes	Average Annual Tonnage Per Chute	Districts	District Average Annual Tonnage	No. of Chutes	Average Annual Tonnage Per Chute	County Average Annual Tonnage	No. of Chutes	Average Annual Tonnage Per Chute
Glenwood	2,285.76	1	2,285.76	Hamakua	4,454.57	2	2,227.29	68,325.90	30	2,277.53
Hilo	11,802.97	4	2,950.74	Ka'u	3,521.53	2	1,760.77			
Honoka'a	3,258.82	1	3,258.82	N. Hilo	1,130.26	1	1,130.26			
Honomu	1,243.27	1	1,243.27	N. Kohala	3,395.95	1	3,395.95			
Ka'auhuhu (Kohala/Hawi)	3,395.95	1	3,395.95	N. Kona	12,961.61	5	2,592.32			
Kahuku (Ocean View)		0		Puna	15,307.77	7	2,186.82			
Kalapana	738.77	1	738.77	S. Hilo	15,934.55	6	2,655.76			
Kea'au	6,379.76	2	3,189.88	S. Kohala	7,457.59	3	2,485.86			
Kealakehe (Kailua-Kona)	8,020.65	3	2,673.55	S. Kona	4,162.09	3	1,387.36			
Keauhou	4,940.96	2	2,470.48	Total		30				
Ke'ei	2,015.36	1	2,015.36							
Laupahoehoe	1,130.26	1	1,130.26							
Miloli'i	91.65	1	91.65							
Pa'auilo	1,195.75	1	1,195.75							
Pahala	1,163.92	1	1,163.92							
Pahoa	4,494.96	2	2,247.48							
Papaikou	2,888.31	1	2,888.31							
Puako	2,297.10	1	2,297.10							
Volcano	1,408.52	1	1,408.52							
Waiea	2,055.08	1	2,055.08							
Waimea	5,160.49	2	2,580.25							
Waiohinu	2,357.61	1	2,357.61							
Total # Chutes		30								

**Table 3.5: Distances Between Transfer Stations  
(All Distances in Miles)**

<b>Station</b>	<b>Glenwood</b>	<b>Hilo</b>	<b>Honoka'a</b>	<b>Honomu</b>	<b>Ka'auhuhu</b>	<b>Kahuku</b>	<b>Kalapana</b>	<b>Kea'au</b>	<b>Kealakehe</b>	<b>Keauhou</b>	<b>Ke'ei</b>	<b>Laupahoehoe</b>	<b>Miloli'i</b>	<b>Pa'auilo</b>	<b>Pahala</b>	<b>Pahoa</b>	<b>Papaikou</b>	<b>Puako</b>	<b>Volcano</b>	<b>Waiea</b>	<b>Waimea</b>	<b>Waiohinu</b>
Glenwood		17						12											8			
Hilo	17							9									7					
Honoka'a														7								15
Honomu												12					8					
Ka'auhuhu																		25			20	
Kahuku																						
Kalapana																12						
Kea'au	12	9														10						
Kealakehe										11								28				
Keauhou									11		14										15	
Ke'ei										14											11	
Laupahoehoe				12										12								
Miloli'i																					15	27
Pa'auilo			7									12										
Pahala																			28			16
Pahoa							12	10														
Papaikou		7		8																		
Puako					25				28													14
Volcano	8														28							
Waiea										15	11		15									32
Waimea			15		20													14				
Waiohinu													27		16					32		

Table 3.6: Transfer Station Rankings Based on Data From Tables 3.1 Through 3.5

Station	Parcel Size (Acres)	Rank	Service Area Population	Rank	Service Area Population Served Per Chute	Rank	District Population Served Per Chute 2020	Rank	Projected District Population 2020	Rank	% District Population Increase/ Decrease Over 20 Years	Rank	Number of Lots 2003	Rank	Station Average Annual Tonnage Per Chute	Rank	District Average Annual Tonnage Per Chute	Rank	Station Average Annual Tonnage Total	Rank	FY 2003 Tonnage	Rank	% Tonnage Increase/ Decrease Over 4 Years	Rank
Glenwood	1.97	13	4,300	12	4,300	11	8,321	3	58,246	1	85.88	3	57,654	1	2,285.76	11	2,186.82	6	2,285.76	12	2,285.84	11	4.36	12
Hilo	72.70	1	42,000	1	10,500	1	8,299	4	49,791	2	5.08	9	19,708	2	2,950.74	4	2,655.76	2	11,802.97	1	11,771.29	1	2.76	15
Honoka'a	0.73	18	5,100	11	5,100	9	3,664	8	7,328	8	19.97	7	3,872	7	3,258.82	2	2,227.29	5	3,258.82	8	3,244.87	8	2.7	17
Honomu	0.84	16	3,400	13	3,400	13	8,299	4	49,791	2	5.08	9	19,708	2	1,243.27	16	2,655.76	2	1,243.27	16	1,608.86	15		19
Ka'auhuhu (Kohala/Hawi)	17.28	5	6,000	7	6,000	3	11,273	1	11,273	6	86.70	1	3,177	8	3,395.95	1	3,395.95	1	3,395.95	7	3,801.79	7	26.51	2
Kahuku (Ocean View)		22		22		22		10		10		10	0	10		22		10		22		22		22
Kalapana	13.20	6	1,200	20	1,200	20	8,321	3	58,246	1	85.88	3	57,654	1	738.77	20	2,186.82	6	738.77	20	846.48	20	35.26	1
Kea'au	19.54	4	11,700	3	5,850	4	8,321	3	58,246	1	85.88	3	57,654	1	3,189.88	3	2,186.82	6	6,379.76	3	6,040.88	3	-0.05	18
Kealakehe (Kailua-Kona)	30.32	3	21,000	2	7,000	2	8,455	2	42,275	3	48.11	5	12,374	4	2,673.55	6	2,592.32	3	8,020.65	2	8,503.76	2	16.41	5
Keauhou	5.47	9	8,500	6	4,250	12	8,455	2	42,275	3	48.11	5	12,374	4	2,470.48	8	2,592.32	3	4,940.96	5	5,230.70	5	22.62	3
Ke'e'i	11.60	7	5,600	9	5,600	7	4,697	6	14,092	5	64.07	4	5,987	6	2,015.36	14	1,387.36	8	2,015.36	14	2,062.94	14	12.42	9
Laupahoehoe	1.02	14	1,700	18	1,700	18	1,879	9	1,879	9	9.24	8	1,583	9	1,130.26	19	1,130.26	9	1,130.26	19	1,134.67	19	15.33	6
Miloli'i	0.17	21	700	21	700	21	4,697	6	14,092	5	64.07	4	5,987	6	91.65	21	1,387.36	8	91.65	21	75.49	21		21
Pa'auilo	0.85	15	1,800	17	1,800	17	3,664	8	7,328	8	19.97	7	3,872	7	1,195.75	17	2,227.29	5	1,195.75	17	1,335.15	17	20.42	4
Pahala	0.75	17	1,700	19	1,700	19	4,204	7	8,408	7	44.29	6	16,956	3	1,163.92	18	1,760.77	7	1,163.92	18	1,202.62	18	3.14	13
Pahoa	3.77	10	9,400	5	4,700	10	8,321	3	58,246	1	85.88	3	57,654	1	2,247.48	12	2,186.82	6	4,494.96	6	4,467.89	6	2.97	14
Papaikou	0.57	19	5,800	8	5,800	6	8,299	4	49,791	2	5.08	9	19,708	2	2,888.31	5	2,655.76	2	2,888.31	9	2,909.21	9	2.72	16
Puako	8.90	8	5,600	10	5,600	8	8,142	5	24,426	4	86.02	2	6,915	5	2,297.10	10	2,485.86	4	2,297.10	11	2,156.10	13	-7.99	20
Volcano	2.19	12	2,000	16	2,000	16	8,321	3	58,246	1	85.88	3	57,654	1	1,408.52	15	2,186.82	6	1,408.52	15	1,438.97	16	5.36	11
Waiea	2.28	11	3,300	14	3,300	14	4,697	6	14,092	5	64.07	4	5,987	6	2,055.08	13	1,387.36	8	2,055.08	13	2,234.07	12	14.04	8
Waimea	0.31	20	11,700	4	5,850	5	8,142	5	24,426	4	86.02	2	6,915	5	2,580.25	7	2,485.86	4	5,160.49	4	5,579.85	4	14.73	7
Waiohina	31.65	2	3,000	15	3,000	15	4,204	7	8,408	7	44.29	6	16,956	3	2,357.61	9	1,760.77	7	2,357.61	10	2,430.08	10	9.89	10

## IV. GOALS AND OBJECTIVES

### 4.1 Goals and Objectives for Sustaining and Replicating the Kea‘au Project

A goal is a general statement describing something to be accomplished in the future. An example is “To reduce the impact of discarded materials on our island environment.”

An objective describes a future accomplishment that will contribute toward achievement of a goal. An objective is both measurable and time sensitive. Relative to the sample goal in the preceding paragraph, one objective could be “To increase the recycling rate to 50% by the end of calendar year 2010.” Another objective could be “To implement a ban on disposal of greenwaste in landfills by the end of calendar year 2005.”

The County’s goals and objectives with respect to sustaining and replicating the Kea‘au project are:

**Goal 1: Improve, sustain, and replicate the successful model established at the Kea‘au transfer station.**

Objective 1.1: By December 31, 2004, produce for each class of NRCs a conceptual design featuring integrated rubbish collection/transfer and diversion services.

Objective 1.2: As transfer stations are scheduled for conversion to NRCs, produce engineering designs reflective of corresponding conceptual designs, site characteristics, and community preferences.

Objective 1.3: Upgrade existing transfer stations designated for conversion to Class 1 or Class 2 NRCs within five years of approval of this plan.

Objective 1.4: Upgrade existing transfer stations designated for conversion to Class 3 or Class 4 NRCs within ten years of approval of this plan.

Objective 1.5: Design and construct all new transfer stations as NRCs.

Objective 1.6: By June 30, 2004, create sustainable partnerships to leverage County funding for NRC operations.

**Goal 2: Sustain and support the aggressive diversion program outlined in the County's updated integrated solid waste management plan.**

Objective 2.1: Increase the number, diversity, and convenience of diversion opportunities available to the County's customers by converting all existing transfer stations to NRCs.

Objective 2.2: Design all NRCs for one stop dropoff of rubbish and household recyclables.

Objective 2.3: Before the first NRC opens, design and implement an aggressive public education campaign to familiarize customers with new diversion opportunities, facilities, and requirements; repeat for each NRC.

**Goal 3: Promote and nurture the community development potential of NRCs, as well as community ownership of NRCs.**

Objective 3.1: During the planning phase for each NRC, involve service area customers in the design process in a meaningful way.

Objective 3.2: Incorporate economic development, educational, and volunteer opportunities into the program offerings at all Class 1 and Class 2 NRCs.

**Goal 4: Improve and maintain capital and operating efficiencies throughout the system of NRCs.**

Objective 4.1: By July 1, 2005, design and implement a cost accounting model to track unit costs and revenues by material for each NRC.

Objective 4.2: Design and operate NRCs for minimal handling and transport of materials.

Objective 4.3: Leverage County resources through public-private partnerships for operation of NRCs.

## V. THE KEA‘AU MODEL

### 5.1 The Model At A Glance

This chapter describes the neighborhood recycling center model that evolved from the KRRC experience. The model now encompasses four classes of neighborhood recycling centers (NRCs), which are described briefly in Table 5.1. The model is described in more detail in the remainder of the chapter.

During development of this model, residents repeatedly said they want NRCs to be fun places that they can take pride and ownership in. Residents envision NRCs as pleasant, attractive places in which they can socialize, hunt for discarded treasures, and contribute to the economic development of their communities.

<b>Site Plan and Infrastructure</b>	<b>Class</b>			
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Land area (minimum acreage recommended)	35	25	15	3
Safe ingress/egress	X	X	X	X
Paved internal roadways with speed bumps as needed	X	X	X	X
Paved parking lots at public activity areas	X	X	X	
One stop convenience to off-load household rubbish and recyclables	X	X	X	X
Grade separation between offloading areas and bins/trailers to allow customers to throw materials down	X	X	X	X
Separation of heavy truck and residential vehicle traffic	X	X	X	X
Separation of vehicular and pedestrian traffic	X	X	X	X
Landscaped, visually appealing environment	X	X	X	X
Paved surfaces under rolloff containers, and in areas used for collecting and processing greenwaste	X	X	X	X
Covered rubbish/household recyclables dropoff areas, to protect users and sensitive materials from sun and rain	X	X	X	X
Scale house and vehicle scales	X			
Greenwaste dropoff zone	X	X	X	
Scrap metals dropoff zone	X			
Disaster debris zone	X	X		
Enterprise zone			X	
Reuse center	X	X		
Education center	X	X		
Cottage industry incubation center	X	X		
Deposit container redemption center	X	X		
Restrooms for staff/customers	X	X		
Handwashing station	X	X	X	
Electric service	X	X	X	
Area lighting	X	X	X	

<b>Table 5.1 NRC Features By Class</b>				
Security fencing and gates	X	X	X	X
<b>Customer Base and Staffing</b>				
Residential self-haulers	X	X	X	X
All businesses, including commercial haulers	X			
Small business self-haulers		X		
Contractors and other businesses with reusable C & D materials	X	X		
Anyone discarding eligible disaster debris	X	X		
County employees	X	X	X	X
Contracted operators/vendors	X	X	X	
Contracted security guards			X	
Entrepreneurs	X	X	X	
<b>Materials Accepted</b>				
Household recyclables	X	X	X	X
Deposit beverage containers (for redemption)	X	X		
Greenwaste	X	X	X	
Scrap metals	X	X	X	
Scrap vehicles	X	X		
Recyclables destined for cottage industry incubation centers and enterprise zones	X	X	X	
Reusable household and office furnishings	X	X		
Reusable construction and demolition (C & D) materials	X	X		
Eligible disaster debris	X	X		
Mixed rubbish	X	X	X	X
<b>Services</b>				
Reuse	X	X		
Recycling	X	X	X	X
Composting	X			
Disposal	X	X	X	X
Residue transfer	X			
Deposit container redemption	X	X		
Public education	X	X		
Job training	X	X		
Cottage industry incubation	X	X		
Disaster debris storage and processing	X	X		

## 5.2 Classification of Existing Transfer Stations

The methodology for assigning transfer stations to NRC classes utilizes the data from Table 3.6 and a set of somewhat subjective guidelines. Table 5.2 presents the results of the more objective component of the methodology. Those results, as modified by application of the guidelines, yield the proposed NRC classifications shown in Figure 5.1.

The guidelines used in addition to the data shown in Table 5.2 are:

1. Each side of the island (East Hawai'i, West Hawai'i) should have a Class 1 NRC.
2. Each quadrant of the island (north, east, south, west) should have at least one Class 2 NRC.
3. Class 1 and Class 2 NRCs should be located primarily in densely populated and/or high growth areas. Heavily used facilities, as indicated by tonnage received, should get preference for upgrade to Class 1 or Class 2 NRC.
4. Communities with numerous small businesses should be served by Class 1 or Class 2 NRCs.
5. Given a choice between providing Class 1 or Class 2 NRC service to an area by constructing a new facility or upgrading an existing transfer station, the new facility option should receive preference.

Table 5.2: Transfer Station Rankings By Selected Criteria From Table 3.6

Station	Parcel Size Ranking <sup>1</sup>	Score <sup>2</sup>	Criterion Weight <sup>3</sup>	Weighted Score <sup>4</sup>	2020 District Population Per Chute Ranking <sup>5</sup>	Score <sup>7</sup>	Criterion Weight	Weighted Score	2020 District Population Ranking <sup>6</sup>	Score <sup>7</sup>	Criterion Weight	Weighted Score	% District Population Increase Ranking <sup>8</sup>	Score <sup>7</sup>	Criterion Weight	Weighted Score	Number of Lots in District Rank <sup>15</sup>	Score <sup>7</sup>	Criterion Weight	Weighted Score	Station Average Annual Tonnage Per Chute Rank <sup>9</sup>	Score <sup>2</sup>	Criterion Weight	Weighted Score	District Average Annual Tonnage Per Chute Rank <sup>10</sup>	Score <sup>7</sup>	Criterion Weight	Weighted Score	FY 2003 Tonnage Rank <sup>11</sup>	Score <sup>2</sup>	Criterion Weight	Weighted Score	% Tonnage Increase/Decrease Over 4 Years Ranking <sup>12</sup>	Score <sup>2</sup>	Criterion Weight	Weighted Score	Total Weighted Score <sup>13</sup>	Total Weighted Score Ranking <sup>14</sup>	
Ka'aunahu (Kohala/Hawi)	5	17	1	17	2	8	2	16	6	4	2	8	1	9	2	18	8	2	2	4	1	21	3	63	1	9	3	27	7	15	3	45	2	20	3	60	258.00	1	
Kealakehe (Kailua-Kona)	3	19	1	19	3	7	2	14	3	7	2	14	5	5	2	10	4	6	2	12	6	16	3	48	3	7	3	21	2	20	3	60	5	17	3	51	249.00	2	
Hilo	1	21	1	21	1	9	2	18	2	8	2	16	9	1	2	2	2	8	2	16	4	18	3	54	2	8	3	24	1	21	3	63	15	7	3	21	235.00	3	
Keauhou	9	13	1	13	3	7	2	14	3	7	2	14	5	5	2	10	4	6	2	12	8	14	3	42	3	7	3	21	5	17	3	51	3	19	3	57	234.00	4	
Kea'au	4	18	1	18	4	6	2	12	1	9	2	18	3	7	2	14	1	9	2	18	3	19	3	57	6	4	3	12	3	19	3	57	18	4	3	12	218.00	5	
Waimea	20	2	1	2	5	5	2	10	4	6	2	12	2	8	2	16	5	5	2	10	7	15	3	45	4	6	3	18	4	18	3	54	7	15	3	45	212.00	6	
Pahoa	10	12	1	12	4	6	2	12	1	9	2	18	3	7	2	14	1	9	2	18	12	10	3	30	6	4	3	12	6	16	3	48	14	8	3	24	188.00	7	
Papaikou	19	3	1	3	1	9	2	18	2	8	2	16	9	1	2	2	2	8	2	16	5	17	3	51	2	8	3	24	9	13	3	39	16	6	3	18	187.00	8	
Glenwood	13	9	1	9	4	6	2	12	1	9	2	18	3	7	2	14	1	9	2	18	11	11	3	33	6	4	3	12	11	11	3	33	12	10	3	30	179.00	9	
Waiohina	2	20	1	20	7	3	2	6	7	3	2	6	6	4	2	8	3	7	2	14	9	13	3	39	7	3	3	9	10	12	3	36	10	12	3	36	174.00	10	
Kalapana	6	16	1	16	4	6	2	12	1	9	2	18	3	7	2	14	1	9	2	18	20	2	3	6	6	4	3	12	20	2	3	6	1	21	3	63	165.00	11	
Honoka'a	18	4	1	4	6	4	2	8	8	2	2	4	7	3	2	6	7	3	2	6	2	20	3	60	5	5	3	15	8	14	3	42	17	5	3	15	160.00	12	
Volcano	12	10	1	10	4	6	2	12	1	9	2	18	3	7	2	14	1	9	2	18	15	7	3	21	6	4	3	12	16	6	3	18	11	11	3	33	156.00	13	
Waiea	11	11	1	11	8	2	2	4	5	5	2	10	4	6	2	12	6	4	2	8	13	9	3	27	8	2	3	6	12	10	3	30	8	14	3	42	150.00	14	
Puako	8	14	1	14	5	5	2	10	4	6	2	12	2	8	2	16	5	5	2	10	10	12	3	36	4	6	3	18	13	9	3	27	20	2	3	6	149.00	15	
Ke'ei	7	15	1	15	8	2	2	4	5	5	2	10	4	6	2	12	6	4	2	8	14	8	3	24	8	2	3	6	14	8	3	24	9	13	3	39	142.00	16	
Honouliuli	16	6	1	6	1	9	2	18	2	8	2	16	9	1	2	2	2	8	2	16	16	6	3	18	2	8	3	24	15	7	3	21	19	3	3	9	130.00	17	
Pa'auilo	15	7	1	7	6	4	2	8	8	2	2	4	7	3	2	6	7	3	2	6	17	5	3	15	5	5	3	15	17	5	3	15	4	18	3	54	130.00	18	
Pahala	17	5	1	5	7	3	2	6	7	3	2	6	6	4	2	8	3	7	2	14	18	4	3	12	7	3	3	9	18	4	3	12	13	9	3	27	99.00	19	
Laupahoehoe	14	8	1	8	9	1	2	2	9	1	2	2	8	2	2	4	9	1	2	2	19	3	3	9	9	1	3	3	19	3	3	9	6	16	3	48	87.00	20	
Miloli'i	21	1	1	1	8	2	2	4	5	5	2	10	4	6	2	12	6	4	2	8	21	1	3	3	3	8	2	3	6	21	1	3	3	21	1	3	3	50.00	21
Kahuku (Ocean View)	22	0	1	0	10	0	2	0	10	0	2	0	10	0	2	0	10	0	2	0	22	0	3	0	10	0	3	0	22	0	3	0	22	0	3	0	0.00	22	

<sup>1</sup>The smaller the number, the larger the parcel size and the higher the ranking.

<sup>2</sup>Based on the criterion ranking and number of transfer stations. The number 1 ranked station scored 21 points, the number 2 ranked station 20 points, and so forth.

<sup>3</sup>A measure of the criterion's importance relative to other criteria. Parcel size criterion weighted 1; population criteria weighted 2; tonnage criteria weighted 3.

<sup>4</sup>A station's score multiplied by the criterion weight.

<sup>5</sup>The smaller the number, the greater the district population served by each chute and the higher the ranking.

<sup>6</sup>The smaller the number, the greater the district population in 2020 and the higher the ranking.

<sup>7</sup>Based on the criterion ranking and number of districts. The number 1 ranked station(s) scored 9 points, the number 2 ranked station(s) 8 points, and so forth.

<sup>8</sup>The smaller the number, the greater the population increase and the higher the ranking.

<sup>9</sup>The smaller the number, the greater the average annual tonnage per chute and the higher the ranking.

<sup>10</sup>The smaller the number, the greater the district average annual tonnage and the higher the ranking.

<sup>11</sup>The smaller the number, the greater the FY 2003 tonnage and the higher the ranking.

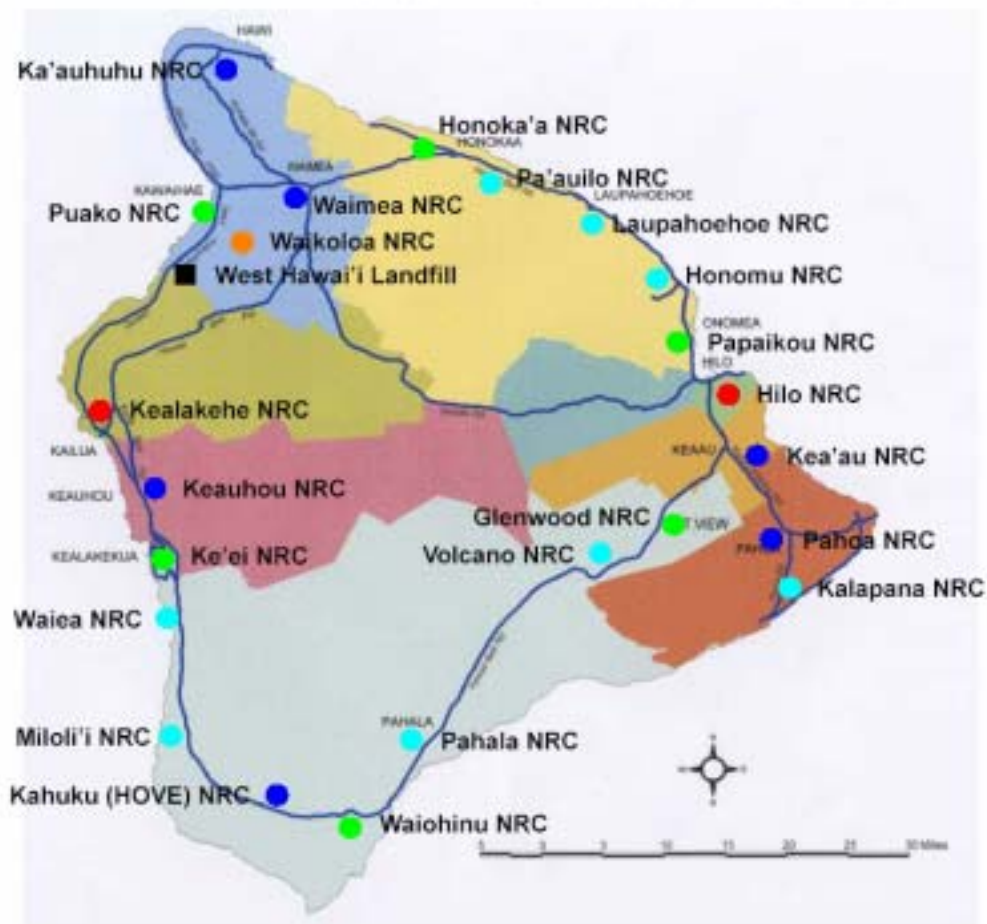
<sup>12</sup>The smaller the number, the greater the percentage increase over 4 years and the higher the ranking.

<sup>13</sup>The sum of weighted scores for all criteria for the transfer station.

<sup>14</sup>The smaller the number, the greater the total weighted score and the higher the ranking.

<sup>15</sup>The smaller the number, the greater the number of lots and the higher the ranking.

Figure 5.1  
**COUNTY OF HAWAI'I**  
 PROPOSED NEIGHBORHOOD RECYCLING CENTERS



- Class 1 Neighborhood Recycling Center (NRC)
- Class 2 Neighborhood Recycling Center (NRC)
- Class 3 Neighborhood Recycling Center (NRC)
- Class 4 Neighborhood Recycling Center (NRC)
- Future Neighborhood Recycling Center (NRC)
- Active Landfill

### 5.3 Sites and Infrastructure - General

5.3.1 Land parcels. Minimum recommended parcel sizes for NRCs are shown in Table 5.1. Recommended sizes allow for infrastructure, activities, separation of incompatible activities, traffic queues, and landscaping/buffering.

5.3.2 Site entrances. NRC entrances are located and designed for safe ingress/egress. Traffic entering and leaving NRCs flows smoothly. Turns into and out of the facilities can be made safely, even at peak traffic times. Measures employed to ensure safe ingress/egress include:

- Adequate queue space for departing traffic.
- In heavy traffic areas, traffic signals or service/frontage roads to/from signalized intersections or other safe points of ingress/egress.
- Adequate sight distance in both directions from points of ingress/egress.

Near the entrance to every NRC, on both highway approaches, signs are placed alerting motorists to the NRC location. A large sign just inside the entrance displays the facility name and purpose, and indicates directions to the various centers and zones within the NRC.

5.3.3 Traffic infrastructure. Internal roadways and paved areas are designed to facilitate safe and smooth traffic flow, eliminate congestion, and provide parking areas for customers participating in on-site activities.

- All internal roadways, service drives, aprons, and parking lots are asphalt paved.
- All rolloff containers are placed on concrete pads.
- Traffic signs and speed bumps in strategic locations control traffic movement and speed.
- Roadways are designed and constructed with a minimum of sharp turns, intersections, and steep ramps (greater than eight percent slope).
- Queue lanes at dropoff zones and at the NRC exit are clearly marked, and do not extend across intersections.

5.3.4 Traffic patterns. Internal traffic patterns are designed to ensure safety of persons and property, as well as customer convenience and free and efficient traffic flow. Traffic patterns permit customers to complete their business at the NRC during one loop through the facility. NRC traffic patterns feature:

- For customers, a single road from the NRC entrance to the rubbish and recyclables dropoff zone and then to the NRC exit.
- Between the site entrance and the rubbish and recyclables dropoff zone, drives leading off the main internal road to dropoff zones for greenwaste and scrap metals, and to the community enterprise center. This places the rubbish and recyclables zone last on the loop through the NRC.
- One way flow of traffic on the main customer road through areas of intense activity.

- Service roads for transfer and rolloff trucks and other heavy vehicles, which divert industrial traffic from areas of heaviest customer activity.
- 5.3.5 Weigh stations. Class 1 NRCs are equipped with vehicle scales and a scale house. This facilitates weighing and documenting loads hauled by the County's vendors.
- 5.3.6 Landscaping. Landscaping serves to beautify NRCs and promote public perception of NRCs as neighborhood facilities as opposed to rubbish dumps. Landscaping at NRCs:
- Consists primarily of native plants.
  - Features a variety of compatible plants.
  - Is maintenance free to the greatest extent possible.
  - Facilitates air flow and natural lighting on site.
- 5.3.7 Access. All NRC facilities, services, and programs satisfy the requirements of the Americans with Disabilities Act.
- 5.3.8 Utilities. Class 1, 2, and 3 NRCs have water and electric service. In remote areas without public utility service, catchment water and solar power supply facility needs. Wastewater disposal is on site, except where public wastewater systems are available. Other sections in this chapter contain more details on utilities.
- 5.3.9 Security. Chain link fences and gates are installed to prevent after-hours vehicular access to Class 1, 2, and 3 NRCs. These NRCs have attendants or security guards who open and secure gates. To reduce costs, fencing does not extend around entire sites, but sensitive areas within the NRCs, such as the neighborhood enterprise centers, are fenced and gated or otherwise secured.
- 5.3.10 Disaster mitigation. Solid waste management facilities are critically needed following disasters. Damage prevention is essential to ensuring that NRCs and their equipment will be functional when needed. Inoperative NRCs or equipment may result in inability to move disaster debris, requiring establishment and operation of temporary sites elsewhere for debris storage and processing. Specific disaster mitigation measures are included elsewhere in this chapter.

Critical pre-disaster steps to be taken by the County include:

- Safeguarding as-built drawings of all NRCs.
- Ensuring that insurance coverage is adequate.
- Producing and periodically updating complete photographic records of all NRC facilities and equipment.
- Maintaining complete financial records for every NRC, including design and construction costs, equipment purchase costs, and costs of major repairs.
- Maintaining accurate records of materials flowing through each Class 1 and Class 2 NRC, to serve as a baseline in the event disaster debris must be handled.

## 5.4 Community Enterprise Center

### 5.4.1 NRC classes: 1, 2

5.4.2 General description. The community enterprise center distinguishes the Kea‘au model from more traditional models of transfer stations and public convenience centers. Its foundation is a public-private partnership between the County and one or more entities performing job training, education, technical assistance, resource development, and community service functions within the context of the NRC system.

The community enterprise center honors three community practices or traditions. One, the widespread practice of scavenging at the local dump, is now prohibited by state regulation. Today’s (also prohibited) practice of setting reusable items beside a rubbish chute rather than throwing them into the chute, is the last vestige of the old practice. The second practice is that of using resources where they are created, for the benefit of the local community. While most discarded items were not created in the community in which they are discarded, reusable items may be considered locally generated resources at the time of discard. The community enterprise center houses a number of organizations and programs which generate community benefits from reusable items. Third, the community enterprise center encourages the local tradition of using items until no useful life remains.

A community enterprise center has three components: 1) reuse center, 2) education center, and 3) cottage industry incubation center. Each of these is discussed in detail in the remaining subsections under Section 5.4.

5.4.2.1 Reuse center. The purpose of the reuse center is to divert reusable items from County disposal facilities, for the benefit of individual residents and the community as a whole. The reuse center provides a safe alternative to scavenging, once a common, accepted practice on the island, but prohibited today. The NRC reuse center concept grew out of the informal local custom of leaving reusable items beside a rubbish chute, to be claimed by other customers.

5.4.2.2 Education center. A NRC education center is primarily a community focal point for promoting, expanding, and improving community knowledge and practices with regard to integrated solid waste management, including recycling, local manufacture of value-added products from locally recycled materials, reuse, and waste minimization.

5.4.2.3 Cottage industry incubation center. The purpose of a cottage industry incubation center is to encourage and facilitate creation of small entrepreneurial enterprises utilizing locally recycled materials to produce value-added products for both on- and off-island markets.

### 5.4.3 Customers.

5.4.3.1 Reuse center. Any resident or business may donate acceptable items to the reuse center. Recipients of reusable items from the reuse center vary according to programs operated by the community enterprise center vendor.

5.4.3.2 Education center. All island residents are encouraged to participate in programs offered at the education center.

5.4.3.3 Cottage industry incubation center. Any resident interested in starting or strengthening a cottage industry utilizing locally recycled materials may participate in the programs of this center, and may apply for short-term use of workshop space.

5.4.4 Staff. The community enterprise center is operated by a contracted vendor whose primary mission includes recycling and/or reuse, recycling/reuse education, job training, affordable housing services, or related activities. To ensure coordination and consistency of programs and activities within a community enterprise center, the vendor must be willing and able to undertake all responsibilities related to the center. The vendor must also be willing and able to take on responsibilities in other areas of the NRC, as noted in Sections 5.7.4, 5.8.4, and 5.9.4. The vendor is responsible for determining the number and types of personnel needed to complete contractual requirements.

5.4.5 Buildings and infrastructure. The three components of a community enterprise center share one building, which is designed to permit separation of programs and activities. The facility features secure, enclosed space for each of the three components, an administrative office for the vendor, a shared loading dock, restrooms with composting toilets, solar power wherever feasible, and fenced outside storage space. Community enterprise center buildings vary in size from one NRC to another, according to community population and number of potential business donors and construction activity in the vicinity.

5.4.5.1 Reuse center. The interior of the reuse space is partitioned to accommodate the programmatic needs of the vendor. For example, a vendor might require separation of C & D materials, arts and crafts, and household goods sections. The reuse center has a materials receiving/storage/preparation area not accessible to customers. In addition to indoor display space, the reuse center requires an outdoor storage/display area for weather-resistant bulky items.

5.4.5.2 Education center. This center is located in that part of the building most remote from traffic, noise, and dust-generating activities. It contains one meeting/workshop room and a secure storage room for equipment and

supplies. Although not luxurious, the education center provides a comfortable, functional environment for activities.

5.4.5.3 Cottage industry incubation center. This part of the building contains a display area for information on cottage industry opportunities using locally recycled materials, a place for viewing related video tapes and reading related books, and up to six small, secure workshop spaces for use by beginning entrepreneurs. Workshop spaces vary in size, but all are large enough to accommodate small-scale production and storage of a small amount of inventory.

5.4.6 Equipment. Community enterprise center operations at each Class 1 and Class 2 NRC require:

- One small forklift.
- One industrial type low profile floor scale for measuring diversion.
- One combination TV/VCR.
- Bins for collection of recyclables destined for value-added processes.
- One large sign identifying the community enterprise center.
- Signs identifying the three components of the community enterprise center.
- Other equipment deemed necessary by the vendor.

5.4.7 Materials.

5.4.7.1 Reuse center. A reuse center accepts new and serviceable used items as defined in Sections 1.1.17 and 1.1.18. Items requiring minor repair or refurbishing are acceptable. The center does not accept hazardous waste as defined in Section 11-58.1-03, Hawai'i Revised Statutes, or items clearly beyond repair or refurbishing. Any appliances or office equipment accepted must be in working order and must not present safety hazards to persons, property, or the environment when used as intended by the manufacturer.

5.4.7.2 Cottage industry incubation center. Certain recyclable materials needed by local value-added cottage industries either are not collected in the County's two stream recycling system, or are difficult to separate from the two streams in usable condition. These materials are collected in bins at the cottage industry incubation center, as demand for them emerges. Examples of such materials are:

- Specific types of non-deposit glass beverage containers, such as wine bottles.
- Unusual glass containers.
- Plate glass and mirrors.
- Textiles.

The community enterprise center vendor is responsible for promoting the special recyclable materials program to NRC customers. Entrepreneurs at the cottage industry incubation center also have access to materials donated to the reuse center.

#### 5.4.8 Markets.

5.4.8.1 Reuse center. The community enterprise center vendor has priority for all C & D materials, which are used in vendor's programs. Any C & D materials not needed by the vendor are donated to nonprofit organizations or sold to the public to generate revenue. All other materials are offered first to nonprofit organizations and then sold to the public.

5.4.8.2 Cottage industry incubation center. Entrepreneurs receiving assistance from the incubation center have priority for all materials collected at the center. Remaining materials are sold to the public to generate revenue, or are recycled elsewhere on the NRC site.

#### 5.4.9 Operations policies, standards, and practices.

##### 5.4.9.1 Community enterprise center.

- All users of the center are treated as valued customers, with respect and courtesy.
- The minimum contract term for community enterprise center vendors is five years, to provide adequate equipment amortization and program development time.
- The guiding principle is that recyclable and reusable materials donated to the center must be used creatively for the economic, social, and environmental benefit of local residents, local community-based organizations, and communities as a whole.

5.4.9.2 Reuse center. Every NRC reuse center is part of a Big Island reuse network similar to the Aloha Shares Network (ASN) operated statewide by Maui Recycling Group. ASN is a reuse program with both electronic and physical components. It is modeled after L. A. SHARES, a very successful reuse program serving Los Angeles County.

ASN maintains an electronic database of nonprofit organizations that voluntarily register, along with the organizations' wish lists. Wish lists typically contain office furniture and equipment, but may contain other items. ASN's database also includes donors of materials that can be used by nonprofit organizations. As materials are donated, ASN matches them with nonprofit recipients, who are responsible for picking up the items from donors. Nonprofit recipients are required to notify ASN when transactions are complete, and send thank you letters to donors,

along with tax deduction receipts. Nonprofits get the things they need at no cost. Donors save on hauling and disposal costs, receive tax deductions, and generate goodwill in the community.

ASN has one partner organization, Nanakuli Housing Corporation (NHC), operating a physical warehouse on Oahu. C & D materials are channeled to that warehouse, where they are used in NHC's low income housing rehabilitation program, donated to other nonprofits, or sold to generate revenue. Donors include building contractors, building supply businesses, demolition contractors, and individuals.

Unfortunately, Maui Recycling Group has not found sufficient resources to promote ASN on the Big Island. KRRC uncovered local demand for this type of service, as a number of contractors asked about donating building materials to the KRRC reuse center. To address local needs and demand, the NRC reuse centers now comprise a physical network operated by community enterprise center vendors. Vendors cooperatively operate an electronic exchange program similar to ASN's. The program is tailored to the needs, missions, and capabilities of participating vendors, donors, and recipients.

The Big Island network focuses on building strong relationships with corporate donors. L. A. SHARES has done this quite successfully, and has realized a wealth of both material and monetary donations as a result.

Other reuse policies, standards, and practices:

- Reusable materials donated to a reuse center are used to the greatest extent possible to benefit communities surrounding the NRC.
- Customers and nonprofit organizations who purchase or receive reusable materials must agree not to resell the items at flea markets, thrift shops, etc.
- Community enterprise center vendors do not pick up reusables from donors or deliver reusables to recipients.
- Community enterprise center vendors are encouraged to share materials and cooperatively market them through an electronic database similar to ASN's.
- Corporate donors are the foundation of the reuse program. Recruiting donors and ensuring they have positive experiences is a priority of community enterprise center vendors.
- Regular materials exchange days are an important part of a reuse center's activities. For example, first Saturday of every month is computer exchange day; second Saturday is paint exchange day, etc.

#### 5.4.9.3 Education center.

- NRC vendors have first priority for use of the education center for workshops, trainings, and other functions of the NRC.
- The education center is available to the public on a space available, reservation basis for any workshop, meeting, or similar activity related to the mission and function of the NRC. Reservations are made through the community enterprise center vendor.

5.4.9.4 Cottage industry incubation center.

- Workshop spaces are donated to beginning entrepreneurs for a maximum period of one year. Entrepreneurs are expected to find other homes for their businesses during that time.
- Entrepreneurs must submit realistic business plans and operations plans in order to be considered for workshop space.
- A cottage industry may not use potentially hazardous materials or processes in its workshop space, except in strict compliance with all applicable laws and regulations. Activities must not present safety hazards to persons, property, or the environment. A cottage industry may not generate hazardous waste as defined in Section 11-58.1-03, Hawai'i Revised Statutes. Entrepreneurs using workshop spaces are responsible for proper disposal of all waste materials at their own expense.

5.4.10 Linkages with community needs.

5.4.10.1 Job creation and income generation. Hawai'i County's unemployment rate for November 2003 was 5.6%. The state's unemployment rate for the same period was 4.2%. The community enterprise center will address the need for more jobs directly, by creating jobs at the center and possibly through job training programs operated by vendors.

5.4.10.2 Skills training. NRCs provide opportunities for skill training in:

- Public interaction.
- Materials handling and processing.
- Construction trades.
- Warehousing.
- Forklift operation.
- Landscaping.
- Sales.
- Repair of reusable items.
- Cottage industry startup and operation.

5.4.10.3 Educational opportunities for students. Students, with appropriate supervision, may be involved in skills training mentioned in the preceding section, in creation and operation of cottage industries, and in volunteer activities. NRCs provide many opportunities for students to

apply academic knowledge in a real world, but sheltered, environment. Community enterprise center vendors are encouraged to incorporate educational opportunities for students in their programs.

5.4.10.4 Volunteer opportunities. Volunteer help is always welcome at NRCs. Volunteers assist with landscaping, helping customers unload recyclables and reusables, operation of the community enterprise center, and other light duties. Community enterprise center vendors are responsible for establishing and maintaining active volunteer programs.

5.4.10.5 Community facilities development/repair. Some community enterprise center vendors elect to channel reusable materials and human resources into community assistance programs, such as construction or repair of community facilities. This generates good will in the community and encourages residents to recycle and reuse by providing visible examples of recycling and reuse in action.

5.4.10.6 Low income housing. Materials reuse and job training programs may also be built around the need for improvement/replacement of substandard housing. Vendors may see housing rehabilitation as a job training opportunity, or reserve certain C & D materials for donation to qualified low income persons performing home repairs.

5.4.11 Disaster mitigation. For personal safety, protection of property, and prevention of rubbish dispersal, the following measures are employed as necessary:

- If a NRC is threatened by a high wind event, light items in outdoor storage are moved indoors or tied down securely.
- If a NRC is threatened by flood, tsunami, or lava flow, portable equipment is moved to a safe location.
- At the discretion of on-site supervisors, events and activities may be cancelled.

## **5.5 Deposit Container Redemption Center**

5.5.1 NRC classes: Standard in Classes 1 and 2; allowed in Class 3 enterprise zones

5.5.2 General description. Deposit container redemption centers are located at Class 1 and Class 2 NRCs for the convenience of customers. Redemption centers at NRCs are intended to supplement privately operated redemption centers or to service remote areas not served by private redemption centers. To encourage redemption services in more remote areas, privately operated redemption centers are permitted in Class 3 NRC enterprise zones on a space available basis.

The state's deposit container law will become effective on January 1, 2005, and amendments to the law are expected before then. As a result, this plan is

incomplete with respect to redemption centers, and may have to be modified to address legislative changes expected in the 2004 legislative session.

- 5.5.3 Customers. Any person may redeem eligible deposit beverage containers at a NRC deposit container redemption center.
- 5.5.4 Staff. A NRC redemption center is staffed and operated by a private vendor, under contract with the County.
- 5.5.5 Buildings and infrastructure. The redemption center is sited to be easily accessible and to minimize traffic impacts on other NRC activities. It provides space for intake, processing, storage, and shipment of deposit beverage containers in accordance with state law. At Class 1 and Class 2 NRCs, a building is provided by the County. At Class 3 NRCs, the redemption center vendor is responsible for providing suitable shelter for the operation.
- 5.5.6 Equipment. Redemption center vendors are responsible for providing, operating, and maintaining all equipment required by their operations plans.
- 5.5.7 Materials. At the deposit container redemption center, customers redeem deposit beverage containers as defined in Section 342G-101, Hawai‘i Revised Statutes. No other materials are accepted at the deposit container redemption center.
- 5.5.8 Markets. Redeemed beverage containers are sent to markets selected by the deposit container redemption center vendors.
- 5.5.9 Operations policies, standards, and practices. Detailed operations policies, standards, and practices to be determined after final legislative changes to Chapter 342G, H.R.S.
- 5.5.10 Linkages with community needs. The Hawai‘i beverage container deposit law addresses the problem of illegal dumping and contributes to more resource efficient solid waste management. NRC deposit container redemption centers play a vital role by providing convenient redemption centers, especially in rural areas.
- 5.5.11 Disaster mitigation. Vendors are responsible for taking positive measures to protect buildings and equipment from impending disasters. Such measures may include moving or tying down equipment and light items to prevent airborne hazards, and securing buildings.

## **5.6 Enterprise Zone**

- 5.6.1 NRC class: 3

- 5.6.2 General description. The enterprise zone is an area of about five acres reserved for local businesses (not necessarily startups) producing value-added products made from, or providing services related to, recyclable/reusable materials collected at the NRC. The purpose of the enterprise zone is to stimulate creation of local markets for recycled/reused products and jobs to supply those markets. The enterprise zone also increases the number of recycling opportunities available to NRC customers, in terms of locations and types of materials. Businesses may lease space in an enterprise zone, on a space available basis, after approval by the County of applications, realistic business plans, and operations plans. Examples of business activities suitable for enterprise zones include:
- Deposit beverage container redemption.
  - Manufacture of items from recycled glass.
  - Scrap vehicle towing and recycling.
  - U-pick-it auto parts.
  - White goods repair and sale.
  - Furniture refinishing.
  - Manufacture of products from used tires.
  - Vermicomposting.
- 5.6.3 Customers. Any resident or business may purchase products produced by an enterprise zone business.
- 5.6.4 Staff. Each enterprise zone business is responsible for satisfying its own staffing needs.
- 5.6.5 Buildings and infrastructure. Each enterprise zone business is responsible for furnishing and maintaining its own shelter.
- 5.6.6 Equipment. Each enterprise zone business is responsible for furnishing and maintaining its own equipment.
- 5.6.7 Materials. A business operating in a NRC enterprise zone must use, predominantly, one or more of the acceptable materials listed in Table 5.1.
- 5.6.8 Markets. Each enterprise zone business determines appropriate markets for its products.
- 5.6.9 Operations policies, standards, and practices.
- Businesses may lease space on an as available basis, through a public procurement process determined by the County.
  - Terms of leases may vary, but will be sufficient to enable amortization of capital costs.
  - Business operations must be conducted in accordance with all applicable laws and regulations, and must be permitted as required by cognizant agencies.

- Businesses are responsible for installing and maintaining any site improvements required. Upon termination of leases, all such improvements become the property of the County.
- Operations must be kept clean and orderly, as appropriate for the type of business.
- Enterprise zone businesses may not duplicate or compete with services provided by contracted vendors at the same NRC.

5.6.10 Linkages with community needs. NRC enterprise zones address the community need for job creation (see Section 5.4.10.1). Depending upon the types of business tenants, enterprise zones may also address illegal dumping and resource conservation issues.

5.6.11 Disaster mitigation. Vendors are responsible for taking positive measures to protect buildings and equipment from impending disasters. Such measures may include moving or tying down equipment and light items to prevent airborne hazards, and securing buildings.

## **5.7 Mixed Rubbish and Household Recyclables Dropoff Zone**

5.7.1 NRC classes: 1, 2, 3, 4

5.7.2 General description. The rubbish and household recyclables dropoff zone provides one-stop convenience for dropoff of both types of material. This is the primary destination for most NRC customers.

5.7.3 Customers. Rubbish and recyclables zones at all NRCs are open to all residents using automobiles, pickup trucks, vans, or small trailers to self-haul materials. Small businesses self-hauling materials in automobiles, pickup trucks, vans, or small trailers may use Class 2 NRCs. All businesses, including commercial haulers, may use Class 1 NRCs. If the County elects at some time in the future to provide residential refuse collection service, County refuse collection crews will use all NRCs for rubbish transfer.

5.7.4 Staff. Former County transfer station attendants and truck drivers continue to perform their former duties relative to rubbish collection and transfer at all NRCs.

At Class 1 and Class 2 NRCs, community enterprise center vendors monitor the rubbish and recyclables zones, under contract with the County. See the discussion in Section 5.4 for details. Vendors are responsible for determining the number of attendants required at each NRC.

At Class 3 NRCs, private security guards monitor activities and enforce regulations at the rubbish and recyclables stations, under contract with the County. As required by the contract, guards receive periodic training in the

purpose and functions of NRCs, customer relations, principles of integrated solid waste management, and County expectations. The presence of uniformed security guards at NRCs may discourage some customers from using NRCs and thus contribute to illegal dumping. The County is encouraged to discuss with security vendors more customer-friendly alternatives (e.g., custom aloha shirts) to typical security uniforms.

- 5.7.5 Buildings and infrastructure. As this plan was being produced, two parties were working on conceptual plans for NRCs or parts thereof. For purposes of showing how a NRC rubbish and household recyclables zone might function, a concept is included in this plan. After comparing it with the other conceptual plans, the County may choose to accept or reject it.

Each NRC mixed rubbish and household recyclables dropoff zone consists of one or more identical drop stations, each with one rubbish chute and transfer trailer, plus two adjacent rolloff containers for household recyclables. One additional rolloff container is placed at each drop station at Class 3 NRCs for collection of scrap metals. This arrangement is made possible by parking the transfer trailer perpendicular to the retaining wall at grade separation. A metal chute affixed to the retaining wall directs rubbish into the transfer trailer. Rolloff containers are also situated with the longest dimension perpendicular to the retaining wall, with a sturdy pier between containers, giving customers access to the full length of each container. The pier is equipped with railings to prevent falls. Metal chutes over the rolloff containers prevent materials from blowing away.

Hydraulic controls for the rubbish compactor are located on the customer level, adjacent to the rubbish chute. Controls are secured to prevent tampering. This location gives the operator a clear view of the compactor action, as well as control over customer actions during compaction.

Two parking stalls are clearly marked in front of each rubbish chute. Two or more additional parking stalls are marked in front of the recycling containers. At least one of the parking stalls in front of recycling containers is reserved for customers who are recycling only.

Customer traffic and service vehicles utilize grade separated access roads and apron areas. This allows customers to throw materials down into transfer trailers and rolloff containers. Grade separation is maintained by a concrete retaining wall, as at former transfer stations. A chain link fence runs along the top of the retaining wall to prevent customers from falling.

Queue lanes leading to the rubbish and recycling stations provide sufficient storage for periods of peak traffic (minus the Christmas and New Year holiday peaks).

Many recyclable materials are sensitive to rain, dust, ultraviolet degradation, and other climate-related hazards. Affected materials may be reduced in value or rendered non-recyclable. Customers, too, are affected. At KRRC, recycling activity diminishes during periods of rain. To shelter both sensitive materials and customers, canopies cover rubbish and household recyclables drop stations.

Vertical clearance between the pads on which transfer trailers and rolloff containers sit and the underside of the canopy is sufficient for parking transfer trailers and loading/unloading rolloff containers. Vertical clearance between the pavement at customer level and the underside of the canopy is sufficient for automobiles, pickup trucks, vans, and refuse compactor trucks (in case the County elects at some time in the future to implement residential refuse collection service).

Pad areas for transfer trailers and rolloff containers are well drained to ensure continuous operations during periods of heavy rain.

At Class 1, 2, and 3 NRCs, a water spigot is located near each set of recycling rolloff containers for customers who need to rinse their hands after discarding recyclables. Spigots are designed without hose bibs to prevent other uses of the water.

- 5.7.6 Equipment. Rolloff containers used to collect and transport recyclable materials are standardized as to size (40 cubic yards), configuration, color, and logos throughout the NRC system. Rolloff containers are supplied by private recycling vendors. County transfer vehicles and signs are also identifiable by the standard NRC color scheme and logo. These measures assist in providing consistent experiences for customers at every NRC in the system. Each drop station at a NRC rubbish and household recyclables zone is equipped with:
- One transfer trailer to receive rubbish.
  - Two 40 cubic yard rolloff containers to receive household recyclables.
  - One 40 cubic yard rolloff container to receive scrap metals (Class 2 and Class 3 only).
  - One sign at the rubbish chute listing materials that may not be placed in the transfer trailer.
  - One large sign in front of each recycling container listing and illustrating acceptable and unacceptable materials and practices.
- 5.7.7 Materials. This zone is designed and operated to receive mixed rubbish (defined in Section 1.1.12) and household recyclables (defined in Section 1.1.7). The County uses a two-stream recycling system (defined in Section 1.1.22) for household recyclables. One stream goes into each of the two rolloff containers. Recyclables are hauled from the NRCs, processed, and recycled by private recycling vendors under contract with the County.

Rubbish from East Hawai‘i NRCs is hauled to the Hilo NRC, where conspicuous recyclables are removed. Residue is then transported to the West Hawai‘i landfill. Rubbish from West Hawai‘i NRCs is hauled directly to the West Hawai‘i landfill.

5.7.8 Markets. The final destination for rubbish is West Hawai‘i landfill. Recyclable materials are shipped to recycling markets selected by the County's private recycling vendors.

5.7.9 Operations policies, standards, and practices.

- All NRC users are treated as valued customers, with respect and courtesy.
- At least one attendant monitors dropoff activities at all times to guard against dumping of disallowed materials, report policy infractions, and provide educational services.
- Attendants are not security guards or law enforcement officers. They may inform, request, discuss, and coax only. Details of serious violations or disputes must be reported to supervisors.
- Attendants at Class 2 NRC rubbish and recyclables zones are required to collect tip fee coupons from business customers. Coupons are cancelled with a stamp immediately upon receipt. See Chapter VI for more information about coupons.
- Commercial haulers and other business customers may use Class 1 NRCs and landfills. They pay tip fees at the scale houses.
- Small business customers may also deliver rubbish and recyclables to Class 2 NRCs. They pay tip fees to attendants, using coupons purchased in advance from the County Department of Finance. Coupon values correspond to tonnage-based tip fees paid at solid waste facilities equipped with vehicle scales.
- Children must remain inside vehicles at all times.
- As recycling increases, the amount of rubbish may decrease. The County monitors rubbish quantities and adjusts hauling frequencies as necessary. At some point, converting from the current fixed schedule hauling system to an as needed hauling system may be advantageous.
- Contract prices constitute the County's sole compensation to recycling vendors. The County does not pay diversion credits for materials collected at NRCs.
- Whenever a full rolloff container is pulled for servicing, it must be immediately replaced with an empty container. Vendors are required to have and maintain an adequate number of spare rolloff containers to ensure that customers always have access to the same number of containers.
- Hazardous materials, used tires, automotive type batteries, dead animals, and items greater than four feet in length may not be placed in transfer trailers.
- Reusable items may not be placed beside rubbish chutes. They may be taken to the reuse center at Class 1 and Class 2 NRCs, or placed in transfer trailers at Class 3 and Class 4 NRCs.

5.7.10 Linkages with community needs. See the discussion in Section 5.4.

5.7.11 Disaster mitigation. For personal safety, protection of property, and prevention of rubbish dispersal, the following measures are employed as necessary:

- Areas around transfer trailers and rolloff containers are designed and maintained to promote rapid drainage.
- In advance of foreseeable high wind events, transfer trailers and rolloff containers are immobilized with steel cables and anchors to prevent tipping or rolling.
- Permanently installed generators power rubbish compactors in the event of power failure.
- Sturdy nets cover rolloff containers to prevent blowing of contents in high wind events.
- Trailers and rolloff containers are moved to safe locations if pads on which they sit are threatened with flooding or tsunami.
- If a NRC is threatened by lava flow, equipment is moved to safe locations.
- NRCs are closed to public use at the discretion of County officials.

## **5.8 Greenwaste Dropoff Zone**

5.8.1 NRC classes: 1, 2, 3

5.8.2 General description. The greenwaste dropoff zone is an area of about five acres located as remotely as possible from other activities on site to minimize noise, dust, particulate, and projectile hazards.

5.8.3 Customers. All residents using automobiles, pickup trucks, vans, or small trailers to self-haul greenwaste may deliver greenwaste to designated NRCs. Small businesses using automobiles, pickup trucks, vans, or small trailers may deliver greenwaste to Class 1 and Class 2 NRCs. Tip fee policies regarding greenwaste delivered to NRCs by small businesses are specified in the Hawai'i County Code.

5.8.4 Staff. Each greenwaste zone requires at least one attendant on duty during NRC operating hours. Greenwaste zone attendants are employees of the County's community enterprise center vendors. At Class 3 NRCs, where there are no community enterprise centers, vendors from Class 1 or Class 2 NRCs are contracted to monitor greenwaste zones. To ensure that the County's organics diversion vendor receives and processes material that meets expectations, attendants receive regular and comprehensive training and supervision from community enterprise center vendors, County staff, organics diversion vendors, and outside trainers. The community enterprise center vendor and the organics diversion vendor for each NRC meet regularly to review activities and resolve problems.

Equipment operators who handle and process greenwaste are employees of the County's organics diversion vendor. The number and work schedules of equipment operators at any given site are established by the vendor.

- 5.8.5 Buildings and infrastructure. To prevent damage to equipment from rocks and soil, areas used for greenwaste collection, storage, and processing are asphalt paved. The greenwaste zone is equipped with a small shelter for the attendant's use. On-site water supply is available at the greenwaste zone for dust control and fire suppression.
- 5.8.6 Equipment. The greenwaste zone at each NRC is equipped with:
- Any and all equipment determined by the organics diversion vendor to be necessary to meet contractual obligations. All such equipment is furnished, operated, and maintained by the organics diversion vendor. Equipment typically includes a grinder, rubber-tired loader, and trucks.
  - At the entrance to the greenwaste zone, one large sign listing and illustrating acceptable and unacceptable materials. The sign exhibits the standard NRC color scheme and logo.
- 5.8.7 Materials. Only greenwaste as defined in Section 1.1.5 is permitted in the greenwaste zone. The attendant is responsible for monitoring incoming loads, preventing contamination of the greenwaste stockpile, and manually removing minor contaminants from the stockpile.
- 5.8.8 Markets. At remote NRCs designated by the County, mulch is donated to the public. Wherever economically feasible, greenwaste is ground at the NRC and mulch is hauled to the organics diversion vendor's compost facility for conversion to value-added products. Specific markets for finished products are arranged by the vendor.
- 5.8.9 Operations policies, standards, and practices.
- All NRC users are treated as valued customers, with respect and courtesy.
  - The minimum contract term for organics diversion vendors servicing NRCs is ten years, to provide adequate equipment amortization time.
  - At least one attendant monitors dropoff activities at all times to guard against dumping of disallowed materials, report policy infractions, and provide educational services.
  - Attendants are not security guards or law enforcement officers. They may inform, request, discuss, and coax only. Details of serious violations or disputes must be reported to supervisors.
  - Attendants at Class 2 NRC greenwaste zones are required to collect tip fee coupons from business customers. Coupons are cancelled with a stamp immediately upon receipt. See Chapter VI for more information about coupons.

- Organics diversion vendors are responsible for establishing and enforcing safety zones around all operating grinders, due to the potential for projectiles. The size and configuration of a safety zone depends upon the type grinder in use and its configuration. A safety zone may extend as far as 100 yards from a grinder.
- When possible, grinding operations are set up so prevailing winds blow dust and particulates away from equipment operators and areas used by customers.
- Organics diversion vendors are required to employ dust control measures during grinding operations.
- Organics diversion vendors are required to prepare, maintain, and implement as necessary plans for preventing and responding to fires and vectors.
- Equipment operators and greenwaste zone attendants are required to have and use safety gear, such as hard hats, eye protection, steel toe shoes, and dust masks.
- Customers must empty plastic bags containing greenwaste and either reuse the bags or dispose of them at the rubbish and recycling station.
- Children must remain in vehicles at all times.
- Depending upon bid prices from vendors, the County elects to have greenwaste ground and left on site as mulch for customer pickup, or hauled by organics diversion vendors to their composting sites for conversion to value-added products. The standard for determining mulch versus value-added products relates to disposal costs. If hauling and production of value-added products cost less than hauling and disposal of rubbish from a given NRC, the County requires production of value-added products. If hauling and production of value-added products cost more than hauling and disposal of rubbish from a given NRC, the County requires production of mulch to be left on site.
- Contract prices constitute the County's sole compensation to organics diversion vendors. The County does not pay diversion credits for materials collected at NRCs.

5.8.10 Linkages with community needs. On this soil-starved island, local production of mulch, compost, and related products supplies a local need, while creating local jobs and displacing imported products with their associated fuel costs and solid waste.

5.8.11 Disaster mitigation. For personal safety, protection of property, and prevention of rubbish dispersal, the following measures are employed as necessary:

- In advance of high wind events, any equipment on site is tied down or moved to a safe location.
- If a NRC is threatened by flooding, tsunami, or lava flow, any equipment on site is moved to safe locations.
- NRCs are closed to public use at the discretion of County officials.

## 5.9 Scrap Metals Dropoff Zone

5.9.1 NRC classes: 1, 2

5.9.2 General description. This zone provides customer dropoff convenience for scrap vehicles and other scrap metal items. A scrap metals rolloff container is provided at Class 3 NRC rubbish and recyclables zones in lieu of scrap metals zones. In addition, scrap vehicles may be collected by private businesses in Class 3 NRC enterprise zones. Scrap metals dropoff zones are located as remotely as possible from other activities to minimize noise and dust hazards.

5.9.3 Customers. All residents and small businesses using automobiles, pickup trucks, vans, or small trailers to self-haul scrap metals or scrap vehicles may deliver scrap metals and scrap vehicles to designated NRCs. Commercial tow truck operators also may deliver scrap vehicles to designated NRCs.

5.9.4 Staff. Each scrap metals zone requires at least one attendant on duty during NRC operating hours. Scrap metals zone attendants are employees of the County's community enterprise center vendors. To ensure that the County's scrap metals vendors receive and process materials that meet expectations, attendants receive regular and comprehensive training and supervision from County staff, scrap metals vendors, and outside trainers. The community enterprise center vendors and scrap metals vendors meet regularly to review activities and resolve problems.

Equipment operators who handle and process scrap metals are employees of the County's scrap metals vendors. The number and work schedules of equipment operators at any given site are established by their employers.

5.9.5 Buildings and infrastructure. To prevent damage to equipment from rocks and soil, and to prevent contamination of recyclable materials with mud, scrap metals zones are paved. Every scrap metals zone is equipped with a small shelter for the attendants' use. On-site water supply is available at the scrap metals zone for dust control and fire suppression.

5.9.6 Equipment. The scrap metals zone at each NRC is equipped with:

- Any and all equipment determined by the scrap metals vendor to be necessary to meet contractual obligations. All such equipment is furnished, operated, and maintained by the scrap metals vendor.
- At the entrance to the scrap metals station, one large sign listing and illustrating acceptable and unacceptable materials. The sign exhibits the standard NRC color scheme and logo.

5.9.7 Materials. Only scrap metals and scrap vehicles as defined in Sections 1.1.19 and 1.1.20 are permitted in the scrap metals zone. Attendants are responsible for monitoring incoming loads and preventing contamination of stockpiles.

5.9.8 Markets. Scrap metals are shipped to recycling markets selected by the County's scrap metals vendors.

5.9.9 Operations policies, standards, and practices.

- All NRC users are treated as valued customers, with respect and courtesy.
- The minimum contract term for scrap metals vendors servicing NRCs is ten years, to provide adequate equipment amortization time.
- At least one attendant monitors dropoff activities at all times to guard against dumping of disallowed materials, report policy infractions, and provide educational services.
- Attendants are not security guards or law enforcement officers. They may inform, request, discuss, and coax only. Details of serious violations or disputes must be reported to supervisors.
- Attendants at Class 2 NRC scrap metals zones are required to collect tip fee coupons from business customers. Coupons are cancelled with a stamp immediately upon receipt. See Chapter VI for more information about coupons.
- Scrap metals vendors are responsible for establishing and enforcing appropriate safety zones around all operating crushers.
- Vendors are required to employ dust control measures during operations.
- Equipment operators and scrap metals zone attendants are required to have and use safety gear, such as hard hats, eye protection, steel toe shoes, and dust masks.
- Children must remain in vehicles at all times.
- Contract prices constitute the County's sole compensation to scrap metals vendors. The County does not pay diversion credits for materials collected at NRCs.

5.9.10 Linkages with community needs. Illegal dumping is a problem on the Big Island. Abandoned vehicles are especially problematic. The convenience of additional authorized dropoff sites for scrap metals and scrap vehicles encourages residents to properly dispose of metal items. This has the added benefit of increasing the County's recycling rate, while adding and sustaining local recycling jobs.

5.9.11 Disaster mitigation. For personal safety, protection of property, and prevention of metal dispersal, the following measures are employed as necessary:

- Anchors and sturdy nets cover stockpiles to prevent blowing of light scrap metal objects during high wind events.
- Equipment is moved to safe locations if a NRC is threatened by flooding, tsunami, or lava flow.
- NRCs are closed to public use at the discretion of County officials.

## **5.10 Disaster Debris Dropoff Zone**

5.10.1 NRC classes: 1, 2

5.10.2 General description. This zone provides a convenient place for storage and processing of debris generated by disaster events. Following declared disasters, the disaster debris zone facilitates separation of eligible debris from ineligible debris, which goes to other zones within the NRC. Between disasters, this zone is used for any overflow materials from other zones, and for special events.

5.10.3 Customers. Residential and business self-haulers and commercial haulers may deliver eligible disaster debris to designated NRCs.

5.10.4 Staff. The County, in cooperation with state and federal disaster management officials, is responsible for staffing disaster debris zones during post disaster operations. The County uses in-house staff or contractors as necessary. At a minimum, one attendant will be stationed at the gate house during hours of operation. Additional attendants and inspectors will be needed to monitor and inspect dumping and loading activities in stockpile areas.

5.10.5 Buildings and infrastructure. Every disaster debris zone is equipped with a small shelter for the attendants' use. On-site water supply is available at the disaster debris zone for dust control and fire suppression.

5.10.6 Equipment. The disaster debris zone at each NRC is equipped with:

- Any and all equipment determined necessary by the County to meet demand. Equipment may be furnished by the County from regular inventory, leased by the County, or furnished by outside contractors.
- One shelter at the entrance to serve as a gate house.
- One elevated viewing platform to enable attendants and inspectors to view contents of incoming and outgoing loads.
- At the entrance to the disaster debris zone, one large sign listing acceptable and unacceptable materials. The sign exhibits the standard NRC color scheme and logo.

5.10.7 Materials. Only eligible disaster debris is accepted at disaster debris zones. Eligible disaster debris means, generally, recyclable or reusable debris directly attributable to a declared disaster, the storage, processing, and transport of which is eligible for cost reimbursement from state or federal disaster management agencies. Eligible disaster debris may also include incidental amounts of non-recyclable and non-reusable debris mixed with recyclable and reusable debris, and non-recyclable and non-reusable debris requiring processing before transport to a disposal facility.

Eligible disaster debris normally is limited to debris from the public domain, as opposed to debris from private property. For the most current definitions of

eligible disaster debris, refer to County, State Civil Defense, and Federal Emergency Management Agency regulations.

Disaster debris zone attendants are responsible for monitoring incoming loads and preventing mixing or contamination of stockpiles.

5.10.8 Markets. Much disaster debris can be reused or recycled. This applies to greenwaste, concrete and asphalt rubble, untreated lumber and wood objects, metal roofing and other metal objects, and other materials. The County, or its contractors, will be responsible for locating markets for processed debris.

5.10.9 Operations policies, standards, and practices.

- All NRC users are treated as valued customers, with respect and courtesy.
- Attendants and inspectors monitor dropoff activities at all times to guard against dumping of disallowed materials, report policy infractions, and provide educational services.
- Attendants are not security guards or law enforcement officers. They may inform, request, discuss, and coax only. Details of serious violations or disputes must be reported to supervisors.
- Attendants at Class 2 NRC disaster debris zones are required to collect tip fee coupons from business customers. Coupons are cancelled with a stamp immediately upon receipt. See Chapter VI for more information about coupons.
- The County and its vendors are responsible for establishing and enforcing appropriate safety zones around all operating equipment for the protection of customers.
- Vendors are required to employ dust and noise control measures during operations.
- Equipment operators and disaster debris zone attendants are required to have and use safety gear, such as hard hats, eye protection, steel toe shoes, and dust masks.
- Children must remain in vehicles at all times.
- Contract prices constitute the County's sole compensation to vendors. The County does not pay diversion credits for materials collected at NRCs.

5.10.10 Linkages with community needs. Disaster debris places extraordinary strains on a community's solid waste management system. Advance preparation is key to handling the extra load. Disaster debris dropoff zones will enable the County to respond quickly and efficiently to any future disasters.

5.10.11 Disaster mitigation. For protection of persons and property, the following measures are employed as necessary:

- Anchors and sturdy nets cover any existing stockpiles of light objects during high wind events.
- Equipment is moved to safe locations if a NRC is threatened by flooding, tsunami, or lava flow.

- NRCs are closed to public use at the discretion of County officials.

## 5.11 Future of the Model

- 5.11.1 Additions. The model described in this chapter is ambitious and challenging. More features could have been added, but were not in recognition of the County's limited resources and other urgent solid waste issues. When the model as described has been fully implemented island-wide, or if special purpose resources become available, the following additions to the NRC program are recommended:
- More frequent household hazardous waste collection events, and eventually continuous collection capacity at the NRCs.
  - Collection of additional plastics resins.
  - Waste reduction technology at Class 1 NRCs.
  - Collection of used tires.
  - Advance disposal fees on all materials.

## VI. ACTION PLAN FOR SUSTAINING & REPLICATING THE MODEL

### 6.1 Introduction

- 6.1.1 Purpose. The purpose of this chapter is to identify specific tasks to be accomplished in order to convert the current system of transfer stations to a system of neighborhood recycling centers.
- 6.1.2 Structure of chapter. Implementation of this plan will occur in phases. The *planning phase* consists of tasks that need to occur before any others. *Pre-development phase* tasks are those which must occur before each transfer station is enhanced. *Design phase* tasks are required during the design process for each transfer station enhancement. Tasks involved in construction of improvements at individual transfer stations occur during the *construction phase*. The construction phase also includes some tasks preliminary to operations. *Operations phase* tasks are recurring tasks required during the life of each NRC. In summary, the planning phase lays the groundwork for enhancement of all facilities, while the other phases are repeated for enhancement of individual facilities.

### 6.2 Planning Phase

- 6.2.1 Task: Review and approve this plan. The plan is to be reviewed and approved by the Environmental Management Commission and the Mayor. County Council members will receive informational copies of the approved plan.

Responsible agencies: Department of Environmental Management and Mayor's Office

Complete by: April 30, 2004

- 6.2.2 Task: Identify disparities in parcel sizes vs. NRC standards; then determine course of action for each facility. Table 6.1 shows acreage disparities between current sites and minimum NRC acreage. In some cases, sites indicated as being too small currently may be sufficient, depending upon site dimensions and configuration. An engineering analysis will assist in making determinations. Options open to the County include:
- Buy or lease additional land.
  - Move to new sites.
  - Squeeze NRC facilities onto existing sites.
  - Postpone implementation of some standard NRC features.
  - Eliminate or reduce some standard NRC features.
  - Downgrade some NRCs to lower classes.

Responsible agencies: Department of Environmental Management and Mayor's Office

Complete by: June 30, 2004

<b>Table 6.1: Parcel Size Disparities</b>			
<b>Transfer Station</b>	<b>Current Size (Acres)</b>	<b>NRC Standard (Acres)</b>	<b>Additional Acreage Needed</b>
Glenwood	1.97	15	13.03
Hilo	72.70	35	0.00
Honoka'a	0.73	15	14.27
Honumu	0.84	3	2.16
Ka'auhuhu (Kohala/Hawi)	17.28	25	7.72
Kahuku (Ocean View Estates)	0.00	25	25.00
Kalapana	13.20	3	0.00
Kea'au	19.54	25	5.46
Kealakehe (Kailua-Kona)	30.32	35	4.68
Keauhou	5.47	25	19.53
Ke'ei	11.60	15	3.40
Laupahoehoe	1.02	3	1.98
Miloli'i	0.17	3	2.83
Pa'auilo	0.85	3	2.15
Pahala	0.75	3	2.25
Pahoa	3.77	25	21.23
Papaikou	0.57	15	14.43
Puako	8.90	15	6.10
Volcano	2.19	3	0.81
Waiea	2.28	3	0.72
Waimea	0.31	25	24.69
Waiohinu	31.65	15	0.00
<b>Total Additional Acreage Needed</b>			<b>172.44</b>

- 6.2.3 Task: *Determine priority order of transfer station enhancements.* Table 6.2 displays enhancement priorities based on annual tonnage received and NRC class designations, with some adjustment for geographical balance. These priorities may be affirmed or changed. Once final priorities have been established, determine the fiscal year in which each transfer station will be enhanced, consistent with Objectives 1.3 and 1.4 in Chapter 4.

Responsible agency: Department of Environmental Management

Complete by: June 30, 2004

<b>Table 6.2: Transfer Station Enhancement Priorities</b>
---

<b>Transfer Station</b>	<b>Priority</b>	<b>County Fiscal Year</b>
Hilo	1	
Kealakehe (Kailua-Kona)	2	
Kea'au	3	
Waimea	4	
Kahuku (Ocean View Estates)	5	
Keauhou	6	
Ka'auhuhu (Kohala/Hawi)	7	
Pahoa	8	
Honoka'a	9	
Papaikou	10	
Glenwood	11	
Puako	12	
Ke'ei	13	
Waiohinu	14	
Waiea	15	
Honomu	16	
Volcano	17	
Pa'auilo	18	
Pahala	19	
Laupahoehoe	20	
Kalapana	21	
Miloli'i	22	

- 6.2.4 Task: *Based on land requirements and transfer station enhancement priorities, develop a timeline for completing enhancements. Some enhancements may span several years, depending on need for additional land, capital improvements budget priorities, and other factors. Mapping out the timeline over the next ten years is essential to making the process flow as smoothly as possible.*

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: September 30, 2004

- 6.2.5 Task: *Create a logo and color scheme for the NRCs. A logo can be created through a community contest or by a professional. If through a community contest, the winning entry should be professionally finished, with permission from the creator. The color scheme is designed to harmonize with the logo.*

Responsible agency: Department of Environmental Management

Resource agency: Recycle Hawaii

Complete by: December 31, 2004

- 6.2.6 Task: *Create and implement a cost data model for tracking actual costs at individual facilities.* To facilitate analysis of the cost effectiveness of the new system, and to evaluate operations alternatives, the County needs a detailed cost model. The model must be able to track, for each NRC, actual costs of budget line items, quantities of materials hauled monthly, total and per mile hauling costs per material, and any revenues realized from sale of diverted materials.

Responsible agencies: Department of Environmental Management and Department of Finance

Resource agency: RCAC

Complete by: Opening of the first NRC

- 6.2.7 Task: *Establish a tip fee coupon program by ordinance and print coupons.* Small business customers using NRCs will have to pay tip fees, just as they are required to do at landfills. The most effective means of payment is by pre-paid coupons purchased from the Department of Finance. Coupons can be printed in “denominations” matching haul vehicles; e.g., automobile, small pickup, full size pickup, minivan, full size van. Average volume for each denomination can be converted to tonnage to calculate the selling price for each coupon. Tip fees paid by coupon must approximate tip fees paid by weight for similar loads. Important note: coupons are the equivalent of money, and must be treated as such, with proper controls on their printing, handling, and storage. This task will involve amendment of the Hawai‘i County Code. Class 1 NRCs will have vehicle scales, so this task applies only to Class 2 NRCs.

Responsible agencies: Department of Environmental Management, Department of Finance, and County Council

Resource agencies: RCAC and County of Kauai Department of Finance

Complete by: Opening of the first Class 2 NRC.

- 6.2.8 Potential sources of funding. How to pay for development and operation of NRCs is a critical topic. It can be discussed only in generalities in this plan due to the many uncertainties yet to be dealt with. The County has funded continuation of KRRC in its temporary form through June 30, 2004. The next step is to include continuation funding in the Department of Environmental Management operating budget for fiscal year 2004 – 2005. The remaining issue is funding for conversion of Kea‘au and other transfer stations to NRCs, followed by operation of NRCs. Consideration of funding options must be continuous, beginning in the planning phase, both to plan for funding when it is needed and to take advantage of

opportunities that may present themselves. Table 6.3 lists potential sources of funding and their applicability.

<b>Table 6.3: Potential Sources of Revenue</b>	
<b>Funding Source</b>	<b>Applicability to NRCs</b>
County capital improvements budget	Capital costs
Community development block grants	Capital costs
State capital improvements budget	Capital costs
Disaster mitigation grants	Capital costs - disaster debris zones
Glass container ADF	Glass recycling
County general fund	Operations
County tip fees	Operations
Enterprise zone leases	Operations
Donations to eligible community enterprise center vendors	Operations - community enterprise centers
Job training grants	Operations - community enterprise centers
Sales of reusable items	Operations - community enterprise centers
Deposit container handling fees	Operations - redemption centers

### 6.3 Pre-development Phase

6.3.1 Task: *Include transfer station enhancements and NRC operations in annual capital improvements and operating budgets.* Budgeting for the conversion of transfer stations to NRCs must be done for each individual facility. The following factors will cause costs to vary from one facility to another:

- Upgrade of existing facility vs. construction of new facility.
- Class of NRC being created.
- Land requirements.
- Location of facility.
- Haul distances for various materials.
- Ability of vendors to leverage County resources.

Some items may need to be included in budgets several years in advance of design and construction of a NRC. Refer to the timeline created in Task 6.2.4 to ensure items are budgeted in a timely manner. Typical budget items for a NRC are listed in Table 6.4. Note that not every item will apply to every NRC.

Responsible agency: Department of Environmental Management

Complete by: Deadlines established for annual budget cycles

<b>Table 6.4: Budget Template for Conversion of Transfer Stations</b>
---

<b>Phase</b>	<b>Cost Item</b>	<b>Quantity</b>	<b>Estimated Cost</b>	<b>Potential Funding Source</b>
Planning	Purchase/ lease additional land			
Pre-development	Tip fee coupons			
	Cost data model			
Design	Preliminary engineering report			
	Engineering design			
	Permits			
Construction	Construction contract			
	Public education			
	Training for County and vendor employees			
Operations	Community enterprise center vendor			
	Deposit container redemption center vendor			
	Organics diversion vendor			
	Scrap metals vendor			
	Household recyclables vendor			
	County attendants			
	County truck drivers			
	Electricity			
	Water			
	Public education			
	County equipment maintenance, fuel, etc.			
	Transfer trailer leases			

6.3.2 Task: Procure additional land if needed. The first step in enhancing any transfer station with insufficient acreage will be procurement of additional land. Purchase or lease of private property, use of state land, and land swaps with county and

state agencies are possible mechanisms. Allow for a significantly longer planning phase for sites requiring expansion.

Responsible agencies: Department of Environmental Management and County Council

Complete by: Beginning of design phase

- 6.3.3 Task: *Create partnerships.* Individuals, schools, nonprofit organizations, and businesses in communities surrounding a transfer station will have roles in NRC development and operation, particularly with respect to Class 1 and Class 2 NRCs. Reaffirming existing partnerships and creating new ones before the design process begins will facilitate community acceptance and ownership of the NRC.

Responsible agency: Department of Environmental Management

Complete by: Beginning of design phase

## 6.4 Design Phase

- 6.4.1 Task: *Assess design needs for the next facility to be enhanced.* County staff will need to assess design requirements for each transfer station in order to select qualified consultants. Table 6.5 is a checklist to assist with the assessment.

Responsible agency: Department of Environmental Management

Complete by: One month into the design phase

<b>Table 6.5: Design Checklist</b>	
✓	<b>Potential Design Considerations</b>
	Enhancement of existing transfer station vs. new facility
	Topography and other natural conditions associated with a new site
	Improvements to ingress/egress from the public highway
	Improvements to internal roads and drainage facilities
	Installation of public utilities vs. on-site utilities
	Possible phasing of construction to minimize service disruptions
	Buildings and infrastructure requirements for this class of NRC
	Condition of existing infrastructure
	Need to re-orient or relocate existing infrastructure
	For a Class 1 or Class 2 NRC, how to integrate the disaster debris zone with other activities between disasters

- 6.4.2 Task: *Procure design services consultants.* The County will contract design consultants experienced in design of solid waste facilities, utilizing prescribed

public procurement procedures. In addition to facilities design, consultants may assist with identifying and applying for required permits and approvals.

Responsible agencies: Department of Environmental Management and Department of Finance

Resource agency: RCAC

Complete by: Six months following completion of design needs assessment

- 6.4.3 Task: *Complete a preliminary engineering report, operations plan, and engineering design.*

Responsible agency: Department of Environmental Management

Complete by: Six months after contract execution

- 6.4.4 Task: *Upgrade or obtain permit(s) and approvals.* Depending upon the class of NRC, scope of construction activity, and whether the project involves a new or existing facility, NRC establishment may involve:

- New or upgraded solid waste management permit (contact Department of Health, Solid and Hazardous Waste Branch).
- NPDES permit (contact Department of Health, Clean Water Branch).
- Zoning permits (contact County Planning Department).
- Environmental assessment (contact Department of Health, Office of Environmental Quality Control).

Responsible agencies: Department of Environmental Management; possibly also Department of Health and Planning Department

Complete by: Undetermined; depends on number and types of permits required

## **6.5 Construction Phase**

- 6.5.1 Task: *Procure construction contractor.* The County will procure an experienced contractor to upgrade an existing transfer station or develop a new NRC.

Responsible agency: Department of Environmental Management

Complete by: Six months after completion of design

- 6.5.2 Task: *Design and implement a pre-grand opening public education program.* The purpose of the pre-grand opening program is to make residents aware of the future NRC and prepare them to participate in its programs and services. Elements of the program include:

- Advertising through flyers distributed at the transfer station, the County web site, the Recycle Hawaii web site, and radio spots.
- Workshops for residents and businesses to familiarize customers with the layout of the new facility, future program and service offerings, and proper methods of recycling and reuse.

Responsible agency: Department of Environmental Management

Resource agency: Recycle Hawaii

Complete by: Grand opening of the new NRC

6.5.3 Task: *For a Class 1 or Class 2 NRC, procure a vendor for the community enterprise center and execute a contract. Key information to provide to and elicit from potential vendors during the procurement process:*

- A detailed and precise description of the work the vendor is expected to perform, along with any benchmarks and performance standards.
- Site plan of the NRC.
- Description of all activities that will be occurring on site, and how the vendor fits into the overall picture.
- Description of buildings, equipment, and services to be furnished by the County.
- Vendor's experience operating recycling and/or reuse programs.
- Programs the vendor proposes to create around recyclable and reusable materials.
- Anticipated markets for products and services.
- A general operations plan.
- Types of equipment to be used, and any unusual power requirements.
- Proposed community outreach activities.
- Affirmative statement of vendor's ability and willingness to perform all duties described in Chapter V.
- Vendor's assessment of training needs to enable performance of duties.
- Vendor's ability to leverage County resources.
- Vendor's requirements (monetary, capital, equipment amortization period, mobilization time).
- Preliminary budget for the contract period, broken down by year.

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: Three months before the scheduled grand opening.

6.5.4 Task: *For a Class 1, 2, or 3 NRC, procure an organics diversion vendor to process and possibly haul greenwaste, and execute a contract. Initially, this task may be accomplished through negotiations with potential vendors being*

conducted at the time of completion of this plan. Key information to provide to and elicit from potential vendors during the procurement process:

- A detailed and precise description of the work the vendor is expected to perform, along with any benchmarks and performance standards.
- Site plan of the NRC.
- Description of all activities that will be occurring on site, and how the vendor fits into the overall picture.
- Description of buildings, equipment, and services to be furnished by the County.
- Vendor's experience operating greenwaste processing and composting programs.
- Value-added products the vendor proposes to create from greenwaste or other organic materials, and markets for those products.
- A general operations plan.
- Types of equipment to be used, and any unusual power requirements.
- Proposed community outreach activities.
- Affirmative statement of vendor's ability and willingness to perform all duties described in Chapter V.
- Vendor's assessment of training needs to enable performance of duties.
- Vendor's ability to leverage County resources.
- Vendor's requirements (monetary, capital, equipment amortization period, mobilization time).
- Preliminary budget for the contract period, broken down by year.

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: Three months before the scheduled grand opening.

6.5.5 Task: *Procure a scrap metals vendor to operate the scrap metals zone at a Class 1 or Class 2 NRC, or to haul and recycle scrap metals from a Class 3 NRC, and execute a contract.* Key information to provide to and elicit from potential vendors during the procurement process:

- A detailed and precise description of the work the vendor is expected to perform, along with any benchmarks and performance standards.
- Site plan of the NRC.
- Description of all activities that will be occurring on site, and how the vendor fits into the overall picture.
- Description of buildings, equipment, and services to be furnished by the County.
- Vendor's experience operating scrap metals or scrap vehicles programs.
- Anticipated markets for scrap metals.
- A general operations plan, including specific measures to be implemented to prevent environmental degradation from fluids and other hazardous materials.

- Proposed community outreach activities.
- Types of equipment to be used, and any unusual power requirements.
- Affirmative statement of vendor's ability and willingness to perform all duties described in Chapter V.
- Vendor's assessment of training needs to enable performance of duties.
- Vendor's ability to leverage County resources.
- Vendor's requirements (monetary, capital, equipment amortization period, mobilization time).
- Preliminary budget for the contract period, broken down by year.

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: Three months before the scheduled grand opening

6.5.6 Task: *Procure a vendor to haul, process, and recycle household recyclables, and execute a contract.* Key information to provide to and elicit from potential vendors during the procurement process:

- A detailed and precise description of the work the vendor is expected to perform, along with any benchmarks and performance standards.
- Site plan of the NRC.
- Description of all activities that will be occurring on site, and how the vendor fits into the overall picture.
- Description of buildings, equipment, and services to be furnished by the County.
- Vendor's experience operating recycling and/or reuse programs.
- Value-added products the vendor proposes to create on-island from recyclables, and markets for those products.
- Markets for recyclables not used for on-island production of value-added products.
- A general operations plan, including plan for substituting empty containers for full containers.
- Proposed community outreach activities.
- Affirmative statement of vendor's ability and willingness to perform all duties described in Chapter V.
- Vendor's assessment of training needs to enable performance of duties.
- Vendor's ability to leverage County resources.
- Vendor's requirements (monetary, capital, equipment amortization period, mobilization time).
- Preliminary budget for the contract period, broken down by year.

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: Three months before the scheduled grand opening

6.5.7 Task: *For a Class 1 or Class 2 NRC, procure a vendor to operate the deposit container redemption center, and execute a contract.* Key information to provide to and elicit from potential vendors during the procurement process:

- A detailed and precise description of the work the vendor is expected to perform, along with any benchmarks and performance standards.
- Site plan of the NRC.
- Description of all activities that will be occurring on site, and how the vendor fits into the overall picture.
- Description of buildings, equipment, and services to be furnished by the County.
- Vendor's experience operating recycling and/or reuse programs.
- Value-added products the vendor proposes to create on-island from recyclables, and markets for those products.
- Markets for recyclables not used for on-island production of value-added products.
- A general operations plan, including plan for canceling redeemed containers.
- Types of equipment to be used, and any unusual power requirements.
- Proposed community outreach activities.
- Affirmative statement of vendor's ability and willingness to perform all duties described in Chapter V.
- Vendor's assessment of training needs to enable performance of duties.
- Vendor's ability to leverage County resources.
- Vendor's requirements (monetary, capital, equipment amortization period, mobilization time).
- Preliminary budget for the contract period, broken down by year.

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: Three months before the scheduled grand opening

6.5.8 Task: *Procure business tenants for enterprise zones, and execute leases.* Key information to provide to and elicit from potential tenants during the procurement process:

- Site plan of the NRC.
- Description of all activities that will be occurring on site, and how the tenant fits into the overall picture.
- Description of any buildings, equipment, and services to be furnished by the County.
- Business experience operating recycling and/or reuse programs.

- Value-added products the vendor proposes to create on-island from recyclables, and markets for those products.
- Markets for recyclables not used for on-island production of value-added products.
- A business plan.
- A general operations plan.
- Proposed community outreach activities.
- Affirmative statement of vendor’s ability and willingness to meet all requirements described in Chapter V.

Responsible agency: Department of Environmental Management

Resource agency: RCAC

Complete by: Three months before the scheduled grand opening

6.5.9 Task: *Design and conduct training programs for county employees, vendor employees and trainees, and security guards.* Trainers may be County staff, outside trainers, and/or vendor employees. The training program will cover topics such as:

- Principles of integrated solid waste management.
- Basics of recycling and reuse.
- Handling and management of specific types of materials, with emphasis on prevention of contamination.
- Markets for specific materials, and materials standards required by the markets.
- Safety.
- Facility layout, infrastructure, and equipment.
- Operations plan.
- Customer service.

Responsible agency: Department of Environmental Management

Resource agencies: Recycle Hawaii and RCAC

Complete by: Scheduled grand opening

## **6.6 Operations Phase**

6.6.1 Task: *Conduct operations.* Upon completion of construction of a NRC, vendors are fully mobilized and prepared to greet customers.

Responsible agencies. Department of Environmental Management and vendors

Complete by: Ongoing

## 6.6.2 Public Education Program

6.6.2.1 Task: *Conduct a grand opening event.* This event features a traditional blessing ceremony, site tours, and various educational activities (workshops, games, handouts, etc.). Its purpose is to familiarize customers with the new facility and generate enthusiasm for new diversion facilities and services.

Responsible agency: Department of Environmental Management

Resource agency: Recycle Hawaii

Complete by: Scheduled grand opening date

6.6.2.2 Task: *Implement immediate post-opening public education program.* This phase of the public education program is intended to maintain the excitement and enthusiasm generated by the pre-grand opening education program and the grand opening, increase public participation, and address priority issues such as contamination.

Responsible agency: Department of Environmental Management

Resource agency: Recycle Hawaii

Complete by: Six months after the grand opening

6.6.2.3 Task: *Implement ongoing public education program.* The purpose of this phase is to maintain public awareness and continue increasing participation. In the event a new household recyclables vendor is selected, and the new vendor changes the two-stream sort, the public will be informed of the change and any behavioral changes required.

Responsible agency: Department of Environmental Management

Resource agency: Recycle Hawaii

Complete by: Ongoing

# **APPENDIX A**

## **Summary of Responses to KRRC User Survey**

### Appendix A: KRRC User Survey Summary

	# Surveyed	2. Why did you choose this transfer station today?					3. Where do you normally take your recyclable items?				4. What do you normally do with unwanted items that are still usable?					5. Where do you normally take your rubbish?		
		Closest to home	On the way to work or shopping	Takes recyclable & reusable items now	Other		Keaau transfer station	Other transfer station	Railroad Ave. recycling center	Other	Dump with rubbish	Yard sale	Donate to thrift shop/charity	Give to friends/relatives	Other	Keaau transfer station	Other transfer station	Other
<b>Overall</b>	<b>354</b>	<b>130</b>	<b>93</b>	<b>70</b>	<b>32</b>	<b>260</b>	<b>14</b>	<b>22</b>	<b>10</b>	<b>13</b>	<b>21</b>	<b>112</b>	<b>37</b>	<b>79</b>	<b>234</b>	<b>68</b>	<b>6</b>	
Ainaloa	15	5	10	1	-	14	1	1	-	2	6	7	2	5	15	2	-	
Eden Roc	1	-	-	-	1	1	-	-	-	-	-	-	-	-	1	0	-	
Fern Acres	1	-	-	-	-	1	-	-	-	-	-	1	-	1	1	0	-	
Hawaiian Acres	11	3	-	6	3	9	-	2	1	-	-	2	1	6	9	2	-	
Hawaiian Beaches	6	2	3	2	-	6	-	-	-	-	1	-	2	1	5	2	-	
Hawaiian Paradise Park	102	66	28	14	4	92	2	2	2	4	5	36	11	28	88	9	1	
Hawaiian Shores	5	2	2	1	-	5	-	-	-	-	-	1	1	-	5	0	-	
Hilo	16	-	5	4	7	8	-	9	1	-	-	9	3	2	5	8	4	
Kalani Honua	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-	1	-	
Kalapana	2	1	-	-	-	2	-	-	-	-	-	1	-	-	-	1	-	
Kapoho	3	-	2	1	-	2	1	-	-	-	-	1	-	1	2	1	-	
Keaau	38	26	9	4	1	34	-	1	-	1	1	14	2	10	34	3	-	
Kurtistown	12	7	3	2	1	11	-	-	-	-	-	5	3	2	11	0	1	
Leilani Estates	5	-	3	3	-	4	-	-	1	-	-	2	1	2	3	1	-	
Lower Puna	2	1	-	-	1	2	-	-	1	-	-	-	-	-	2	0	-	
Makuu	1	-	1	-	-	1	-	-	-	-	-	1	-	-	1	0	-	
Mountain View	11	3	4	4	2	10	1	1	1	1	2	6	1	1	8	5	-	
Nanawale	3	1	1	2	-	3	-	-	-	-	1	2	-	-	3	0	-	
Ninoole	1	-	-	1	1	1	-	-	-	-	-	1	1	-	-	1	-	
Orchidland Estates	19	12	2	3	2	18	-	2	-	2	1	6	4	6	18	1	-	
Pahoa	34	1	16	14	6	24	6	2	2	2	3	9	3	11	18	22	-	
Papaikou	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	
Puna Palisades	1	-	-	1	-	1	-	-	-	-	-	1	-	1	-	1	-	
Tangerine Acres	1	-	-	1	-	1	-	-	1	-	-	1	-	1	-	1	-	
Tiki Gardens	4	-	1	1	-	2	1	-	-	-	-	1	-	1	2	1	-	
Volcano	4	-	-	2	1	4	-	2	-	1	-	3	1	-	-	4	-	
Waa Waa	3	0	2	1	0	3	0	0	0	0	1	1	1	0	3	0	-	
Waimea	1	0	1	1	0	0	1	0	0	0	0	1	0	0	0	1	-	
No Community Given	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

**2. Why did you choose to use this transfer station today?  
(Details of "Other")**

<b><u>Community</u></b>	<b><u>Answer</u></b>	<b><u>#</u></b>
Eden Roc	More stuff - glasswares, etc.	1
Hawaiian Acres	Clean, organized	1
Hawaiian Acres	Convenient	1
Hawaiian Acres	Take everything	1
Hawaiian Paradise Park	Always go to this one	2
Hawaiian Paradise Park	Lots of goodies to be had (Reuse center)	1
Hawaiian Paradise Park	Town	1
Hilo	Hilo site is icky!	1
Hilo	Plastics	2
Hilo	Recycles plastic	3
Hilo	School	1
Kalani Honua	Plastics	1
Keaau	Plastics	1
Kurtistown	Convenient	1
Lower Puna	Away	1
Mountain View	Because it has the best recycling facilities	1
Mountain View	Reuse center	1
Ninoole	Plastics	1
Orchidland Estates	Always go to this one	1
Orchidland Estates	Most convenient	1
Pahoa	Directed	1
Pahoa	Greenwaste	1
Pahoa	Pahoa	1
Pahoa	Paper	1
Pahoa	Reuse center	2
Papaikou	"Cruising"; Came to check out what kind of goodies were in	1
Volcano	Most items	1
<b>Total</b>		<b>32</b>

**3. Where do you normally take your recyclable items?  
(Details of \_\_\_\_\_ Transfer Station)**

<b><u>Community</u></b>	<b><u>Transfer Station</u></b>	<b><u>#</u></b>
Ainaloa	Hilo	1
Hawaiian Paradise Park	Hilo	1
Hawaiian Paradise Park	Pahoa	1
Kapoho	Pahoa	1
Mountain View	Pahoa	1
Pahoa	Hilo	1
Pahoa	Pahoa	5
Papaikou	Papaikou	1
Tiki Gardens	Pahoa	1
Waimea	Waimea	1
<b>Total</b>		<b>14</b>

**3. Where do you normally take your recyclable items?  
(Details of "Other")**

<b><u>Community</u></b>	<b><u>Other</u></b>	<b><u>#</u></b>
Hawaiian Acres	First time	1
Hawaiian Paradise Park	First time	1
Hawaiian Paradise Park	Pahoa	1
Hilo	Environmental recycling	1
Leilani Estates	First time	1
Lower Puna	Pahoa	1
Mountain View	Cooperative center	1
Pahoa	Hilo	1
Pahoa	Pahoa	1
Tangerine Acres	Pahoa	1
<b>Total</b>		<b>10</b>

**4. What do you normally do with unwanted items that are still usable?  
(Details of "Other")**

<b>Other</b>	<b>#</b>
Reuse center	64
Storage	8
Leave on side	2
School	1
Nothing	1
Leave outside of dumpster	1
Leave next to trash	1
Builds	1
<b>Total 79</b>	

<b>Community</b>	<b>Other</b>	<b>#</b>
Ainaloa	Reuse center	5
Fern Acres	Reuse center	1
Hawaiian Acres	Leave on side	1
Hawaiian Acres	Reuse center	5
Hawaiian Beaches	Reuse center	1
Hawaiian Paradise Park	Reuse center	25
Hawaiian Paradise Park	Storage	3
Hilo	Reuse center	2
Kapoho	Reuse center	1
Keaau	Leave next to trash	1
Keaau	Leave on side	1
Keaau	Nothing	1
Keaau	Reuse center	5
Keaau	School	1
Keaau	Storage	1
Kurtistown	Reuse center	2
Leilani Estates	Reuse center	2
Mountain View	Reuse center	1
Orchidland Estates	Reuse center	5
Orchidland Estates	Storage	1
Pahoa	Builds	1
Pahoa	Reuse center	7
Pahoa	Storage	3
Puna Palisades	Leave outside of dumpster	1
Tangerine Acres	Reuse center	1
Tiki Gardens	Reuse center	1
<b>Total 79</b>		

**5. Where do you normally take your rubbish?  
 (Details of "\_\_\_\_\_transfer station")**

<b><u>Transfer Station</u></b>	<b><u>#</u></b>
Hilo	12
Honomu	1
Kalapana	2
Kapoho	1
Mountain View	2
Pahoa	41
Papaikou	2
Volcano	5
Waimea	2
<b>Total</b>	<b>68</b>

<b><u>Other</u></b>	<b><u>#</u></b>
Pickup service	5
First time	1
<b>Total</b>	<b>6</b>

**6. What materials are you dropping off today?**

Aluminum cans	77
Cardboard	104
Glass containers	172
Greenwaste	172
Magazines	18
Newspaper	77
Paper, mixed office	18
Paper, white ledger	12
Plastics #1	102
Plastics #2	103
Reusable items	32
Scrap Metal	64

<b><u>Other</u></b>	
Flat glass	1

## 7. What features of this recycling and reuse center do you like best?

Convenient	49
Easy to use	20
Reuse center	13
Everything	19
Close	10
Great idea	12
Organized	9
Takes plastic	9
Ability to recycle	9
Nice people	7
Layout	6
Clean	6
It's here	5
Location	5
Diversity	4
Educational/Informational	4
Love it	6
Finally have one	3
Setup	3
Signage	3
Accessible	2
Activities	2
Greenwaste	2
Nice	2
Paper	2
Scrap metal	2
Separate bins	2
The fact that it's here	2
Well maintained	2
Well organized	2
Workshops	2
1st time	1
All bins are central, making it easy to use	1
All-in-one feature	1
Ambiance	1
An addition to our community	1
Awareness because of necessity of having to pass recyclables	1
Bathroom	1
Been waiting for this for years	1
Better & better!	1
Bottles	1
Cardboard	1
Curbside required - N. Cal.	1
Décor	1
Different bins	1
Does its job	1
Doing really good	1
Drive up & dump feature	1
Easy parking	1
Easy to recycle	1

## 7. What features of this recycling and reuse center do you like best?

Educational	1
Educational feature	1
Energy put into project	1
Excellent	1
Free black & white movies from reuse center	1
Free stuff available	1
Garbage is so small	1
Good start, better than what we had before	1
Good system	1
Great model	1
Great! Very courteous, helpful	1
Helpful stuff	1
Improving lives in the community	1
Increases quality of life	1
It exists	1
It needs to continue to be free	1
It takes almost everything	1
It works	1
It's neat	1
It's user-friendly	1
Keep it open	1
Labeled	1
Like circular layout	1
Like that they're doing it!	1
Like the opportunity	1
Like this one the best	1
Like this place	1
Little store	1
Miracle that it happened	1
More complete recycling than any other place on island	1
More plastics	1
More source-separate specific in Japan	1
Neat & tidy	1
Next to trash	1
Nice atmosphere	1
Nice, really organized	1
Nothing in Volcano	1
Ok	1
On island prior to recyclables, 1st time	1
On the way to work	1
One-stop	1
Open to public	1
Opportunity	1
Otherwise fantastic	1
People have to help	1
Picked up at reuse center	1
Plenty goodies when they have goodies	1
Pretty Cool!	1
Pretty squared away	1
Purpose	1

## 7. What features of this recycling and reuse center do you like best?

Quick & simple	1
Raises conscienceness by driving by	1
Range of materials	1
Really great!	1
Really like the fact that they put this in	1
Really raised awareness in the community	1
Recycle more things	1
Reusables	1
Reuse center artists that get supplies from here	1
Saves on the big dump	1
Scenic	1
Security, personnel very nice	1
Self-directed	1
So impressed, words cannot describe	1
Source separation	1
Spacious	1
Staff!	1
Such a variety	1
Surprised they're doing so much	1
Take so much!	1
That everything is recyclable here - diversity	1
That it's here	1
That it's possible	1
That so many items are accepted	1
That they have	1
That they recycle	1
That they're recycling	1
The fact that they've done what they've done	1
The variety of items	1
The whole place	1
Timely switchover	1
Tin cans addition	1
Too new to know	1
Usefulness	1
User friendly	1
Versatility in separating items	1
Very nice	1
Very useful	1
Volunteer	1
Well planned	1
Well separated	1
Well staffed	1
Well-organized	1
Well-rounded	1
Whole center	1
Whole set up	1
Wonderful	1
Blank	68

## 8. What features of this recycling and reuse center do you not like?

Cats	5
Hours	3
Speed bumps	3
All plastic not recycled	1
Big dips	1
Bins are high	1
Bins full on Sunday, esp. glass & metal	1
Cardboard left out in rain	1
Closer to Fern Acres	1
Confusing signage	1
Coqui frogs	1
Crowded	1
Discouraging when you try to dump glass and container is already full	1
Dislike bathroom	1
Dislike possible closure talk	1
Doesn't like having to color-separate	1
Drive through	1
Every visit, arrangement has changed	1
Flies, cats, frogs	1
Frequency bins & change over	1
Frequency changeover	1
Gravel road	1
Greenwaste, scrap metal, cardboard	1
Hard to unload greenwaste into bin	1
Harder to just dump trash	1
I don't want to say anything negative	1
It takes an effort to recycle	1
It takes longer	1
Larger containers	1
Lime marking, bad for work	1
Logistic	1
Lower to dump in the greenwaste and metal	1
Makeshift structures	1
More coverage/shelter for recycling areas	1
More people	1
More plastic recycling	1
More turnaround time	1
No paint cans	1
No paved road	1
No plastic bags	1
Not big enough	1
Not paved	1
Paper is confusing - Heavily source-separated	1
Paper section is very confusing	1
Placement of recyclables before rubbish dropoff	1
Potholes	1
Regular garbage can	1
Reuse	1
Reuse store	1

**8. What features of this recycling and reuse center do you not like?**

Road	1
Roadway is rough	1
Rubbish by the water outside	1
Rubbish out side of bins	1
Rubbish over by fence	1
Separating	1
Separating newspaper	1
Separation distinction of different paper categories	1
Set up gets clogged up	1
Small	1
So far so good	1
Sometimes bins are full! Have to dump at bins.	1
Sorting a job	1
Sorting bottles by color requirement	1
Sorting of paper	1
Steps are needed	1
Stopping twice	1
The road is a sloppy mess	1
Too much traffic	1
Traffic pattern	1
Trash dumped out front	1
Trash left after hours	1
User parking	1
Waste of time	1
Water drain	1
When it rains, many potholes	1
Wish they had one in Hilo	1
Wish this convenience ws located everywhere	1
Blank	225

**9. What would you change or add in a permanent recycling and reuse facility here?**

Pave road
Plastic bags
Longer hours of operation
Used motor oil collection
More plastic recycling
More educational efforts
Traffic pattern inconvenient
As is
Bags
Bigger bins
Styrofoam recycling
Content
Hazardous household waste
Pile of rubbish outside
Recycle more things
Sheltered area
Should be more recycling
"Doing everything"
"Turning into" the facility
#5 plastics
A publication for informational purposes
Acceptable vs non-acceptable
Add egg cartons
Add oil collection
Add old clothes
Add the paperboard
Add tires
All for the limited hours
All glass instead of color-separated
All transfer sites should have a recycling center
Aluminum busy
Aluminum can rebate
Always have a container available
Appreciates that there's someplace to bring in old items
As extensive as you're going to get aside from being on the mainland
Asphalt road
Assistance
Avoid people throwing away rubbish
Batteries
Better parking (spaces)
Better way of marking lines
Bigger containers
Bigger greenwaste bin - 2/3 of time because it's full or gone
Bigger layout
Bigger re-use area
Bins are high for short people
Bins more accessible
Branchy trees fall down at entrance
By the car bins
C & B companies donate for tax credit
Can't imagine what they do with cardboard
Car batteries
Cardboard flattened

**9. What would you change or add in a permanent recycling and reuse facility here?**

Cat food cans
Chutes
Circulation
Clothes to reuse center
Coffee bar & pastries
Cold water dispenser, drinking water dispenser
Compactor bins for at least cardboard, plastics, greenwaste
Concerned about soggy cardboard
Construction materials
Containers are needed for the home
Containers for glass recycling, hole should be bigger (inconvenient to do one at a time)
Cooking oil - Household waste
County - after hour dumper
Covered area
Different plastics
Direct people
Driving - layout, recycling should be separate
Drop greenwaste bin by 6 feet
Dumping in remote area is inexcusable
Dumpster out front when the gate is closed
Earlier than 6:30am
Easy to understand
Enclosed space
Encourage people to recycle more
Enlarge reuse center
Entrance, road improvements
Examples
Excellent
Existing workers - permanent workers
Force to separate
Garbage up front (upset)
Glad you're doing this
Glass capacity - more
Good as it is
Got so much more than the other recycling sites
Great job
Great really
Greenwaste on site recycling
Half-ass job for full price
Having a water spigot to wash off
Hope it keeps up!
Hope they do something with these items
Hope they keep it going & sustainable
Hours
Household items
I hope it works. Very important that we do this.
I like it just the way it is. Simpler the better
I think it's wonderful!
Impatient drivers
Indoor facility
Integrated all into one center
It works! Lovliest volunteers
Keep it open

**9. What would you change or add in a permanent recycling and reuse facility here?**

Keep same layout
Limited in space
Long overdue
Longer term - wider sampling of 9 month program is not long enough of a time frame. Recommend 2 year time frame w/ support from press for ads/awareness (public education)
Looks fine
Make more professional looking
Make sure it's permanent
Mark containers
More area for reusable stuff
More convenient
More easier access to bin
More frequency of emptying containers
More frequency of storage facilities should be available to stock items
More glass bins
More glass/aluminum bins because they are full
More grades of plastic
More info on what is reusable in reuse center
More lenient separation
More recycle places at the transfer centers
More recycling at different transfer stations
More Scott's
More shelter/overhangs
More space
More spacious areas, esp. w/ traffic
More support/containers for greenwaste. Everytime he comes the greenwaste bin is full & he has to throw away.
More volunteers
Much more convenient for dumping
Need plastic in Hilo
Neighborhood pick up
Nicer bathroom
Nothing
On site greenwaste
On-site greenwaste - but wary of coqui's
Open earlier
Option to go rubbish directly
Organized
Other plastic grades
Other plastics
Other plastics & paperboards
Packing system setups are more convenient
Paint cans
Paper boards
Paperboard
Paperboard recycling
Pave around the containers
People need to follow through
Permanent as is
Pickup mulch available here
Place to put plastic rubbish bags
Placement of cardboard closer to containers
Plant recycling

**9. What would you change or add in a permanent recycling and reuse facility here?**

Plastic bin should be more convenient to place accessibility
Plastic sheeting- banana farms
Plastics
Plastics grade
Posterboard recycling
Rain on cardboard
Really nice
Rebates for aluminum
Recyclable features at all transfer stations
Recycling opportunitites for plastic & styrofoam
Refreshment stand
Reuse center
Safer drive through
Safety/access to look at
Separate recycling area
Signage
Signage - more/bigger/outside/2-sides
Signage/arrows
Signange - road front
Similar facilities all over island based on graduated tax base
Snack bar
So how happy with how it is now
Sometimes dumpster gets messy
Sometimes it's more trouble than it's worth
Space is a concern
Speed bumps
State flags
Tires
To make it more user friendly
Too detailed
Trash first
Unhappy that it is only on a trial basis
Used motor oil more than 5 gallons. Businesses willing to buy for service having to take it elsewhere
Very satisfied
Water spigot
Well organized
White goods
Wish a center was at all stations
Workers are very informative
Works for me
Blank