

Zero Waste Implementation Plan for the County of Hawai'i

Recycle Hawai'i • Richard Anthony Associates
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County of Hawai'i
Department of Environmental Management
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I. Executive Summary

a. Introduction

Resource management in the County of Hawai'i¹ is in transition, with both positive momentum from plans to implement programs that benefit residents, the environment and economy, and a multitude of challenges to contend with as well. While the County is moving towards increased diversion of discarded materials, focusing on recycling and composting, 70% of what is currently generated continues to be landfilled, and it is this material that will provide resources, revenue and jobs required to support the island's sustainability. The State of Hawai'i's HI5 program, the planned conversion or expansion of the island's twenty-one transfer stations into resource recovery areas, and efforts by County staff, elected officials, local businesses and residents, are all collective assets to resource management on Hawai'i.

In 2003, Hawai'i targeted 50% diversion of discards to the landfill by 2008, and 80% by 2013. In December 2007, the County adopted Resolution 356-07: "A Resolution to Embrace and Adopt the Principles of Zero Waste as a Long-Term Goal for Hawai'i County."

Yet Hawai'i still allows open burning (albeit with restrictions) and pays to transport large volumes of discards long distances to be landfilled. One of the island's only two landfills, Hilo, is subject to closure in 2012. The County also pays to haul recyclables across the County and to ship them off island for recycling. Further, approximately 90% of its food is purchased from the mainland, while some 3,000 farmers on one million acres, or about two-thirds of the island's landmass of agriculturally zoned property, could support the island's economy and food supply.

About 10,000 acres or less of land would suffice to feed the entire County's population, according to estimates by the University of Hawaii College of Tropical Agriculture and Human

¹ Hereafter referred to interchangeably as "County," "the island" or "Hawai'i".

Resources. Further, the report, “The *Economic Impacts of Increasing Hawai‘i’s Food Self-Sufficiency*,” shows replacing only 10% of imported foods with those locally-produced and consumed would amount to approximately \$313 million in value. “Assuming a 30% farm share, \$94 million would be realized at the farm-gate, which would generate an economy-wide impact of an additional \$188 million in sales, \$47 million in earnings, \$6 million in state tax revenues, and more than 2,300 jobs².

The challenge for local agricultural industry is to compete with seemingly inexpensive imports, but consideration of the true costs of imported food and ornamentals should be assessed. For example, food and ornamental plants from mainland and off-island sources have led to the introduction of between 4,600-8,000 invasive species of flora and fauna, with 900 naturalized, and 86 considered serious pests of native ecosystems³. As prices for transportation increase in the future, the local agricultural industry may gain a competitive edge. The use of directly land applied organics and composts, mulches and fertilizers produced from urban discards could help farmers save money to compete more favorably as well, in addition to providing a healthier, more controllable and sustainable food supply.

After the last sugar plantation closed in 1995, an already developing shift in Hawai‘i’s employment from agriculture to hospitality and tourism intensified. Since this change, employment rates and the island’s economy has become progressively more volatile, subject to the ebb and flow of the economies of the continental United States, Europe, and Asia. Indeed, Hawai‘i’s tourism industry is currently suffering from the worldwide economic downturn. For example, the County experienced a visitor decline of 31.5 percent in September of 2008, and statewide, from January through September of 2008, visitors spent \$692.5 million, or 7.4 percent, less than the same nine-month period in 2007⁴. Economic forecasts predict increasing declines in the year to come and beyond⁵.

Resource management methods proposed in this report – reuse, recycling, composting, and special discards management, among others - represent increased job creation and economic growth in sectors more stable, and sustainable, than tourism. Further, on-island organic resource management possesses the potential to increase both employment opportunities and ensure a local, healthier food supply for Hawai‘i residents. Sustainable farming enhanced through the use of mulches and soil amendments, and created from Hawai‘i’s own organic discards, can also help advance agritourism, a new, dynamic, rapidly growing business on both the island and worldwide.

The forward-thinking management of discards generated from products produced on the island or imported from the mainland or other countries outlined in this report represent job creation and economic stimulation that would not be achieved through landfilling or incineration. Zero Waste involves mindfulness of the triple bottom line: Profit, people and the environment. A Zero Waste system encompasses economic growth and sustainability, a strengthening of community and social endowment, and enhancement of both local and global environmental quality. All are considered and included in the recommendations that follow.

² PinSung Leung and Mathew Loke, “The Economic Impacts of Increasing Hawai‘i’s Food Self-Sufficiency,” *Economic Issues*, Dec. 2008, EI-16, Cooperative Extension Service, University of Hawai‘i

³ Big Island Invasive Species Committee (BIISC), 23 E. Kawili St., Hilo, HI 96720

⁴ State of Hawai‘i Department of Business, Economic Development and Tourism

⁵ UHERO Hawai‘i Quarterly Forecast Update: “No Quick Recovery from Hawai‘i Recession,” November 21, 2008, Carl Bonham and Byron Gangnes, University of Hawai‘i Economic Research Organization, <http://uhero.prognoz.com/Default.aspx?src=forecast>

b. Scope of Work

The Hawai'i County Council recently rejected the implementation of a waste incineration plant due to its relatively high cost, among other concerns. While plans to revisit this option may surface through elected officials in the future, consultants Recycle Hawai'i and Richard Anthony Associates (RAA) were hired by the County to gather input from island residents and businesses and combine this stakeholder input with consultants' extensive knowledge of resource management policy and programs to assess the feasibility and viability of a Zero Waste strategy for the island.

The County's resolution "to Embrace and Adopt the Principles of Zero Waste as a Long-Term Goal for Hawai'i County" is a forward-thinking first step for the island, and prompted this report.

The goal of the consultant's proposed Zero Waste program is to transform the existing philosophy of "managing solid waste" into a "resource management" paradigm. Rather than collecting mixed materials for disposal in landfills or an incinerator, the resource management principles applied involve using discarded resources for economic sustainability, and separating materials for processing and returning them to the economic mainstream for industrial and agricultural uses. In addition to increased economic growth and job creation, Zero Waste programs have shown to reduce disposal costs and overhead for businesses, improve employee morale and loyalty to their employers, enhance community ties, and improve the local environment.

Within the scope of this contract, Recycle Hawai'i and RAA obtained public and private sector input through a series of meetings throughout the County. Approximately two hundred stakeholders from government, business and residential sectors attended the meetings, which proved to be informative and often inspired. Appendix A provides a list of meeting topics, locations, dates and times. A list of all attendees is included in Appendix B.

c. Overview of Hawai'i's Existing Resources and Management Policies

The Solid Waste Division operates and maintains, either by County personnel or by contracted services, all residential refuse collection and all refuse disposal facilities in the County of Hawai'i. This includes two landfills, twenty-one transfer stations and island-wide hauling operations in accordance with local, state and federal guidelines and regulations. The Solid Waste Division also maintains operational base yards in South Hilo, Waimea, and Kealahou (Kona). A workforce of seventy employees handles island-wide duties.

There is no public, island-wide program for curbside refuse collection, and an estimated 85 percent of residents haul their discards to one of the twenty-one transfer stations. These facilities are basically chutes for mixed discards and roll-off bins for recyclables. Six sites

(Kea'au, Kalapana, Hilo, Kaaunohu (Hawi), Ke'ei-Kailua and Waiohinu) have over ten acres and are located throughout the island. These larger sites have sufficient land to add more reuse, recycling, special discards handling and composting collection, processing and educational facilities and programs.

The funds for maintenance and operation for these drop-off sites (\$9.6 million in 2008) come from County property taxes. These facilities are not open for use by commercial generators, who either haul their own discards to the landfill (self-haul) or hire one of eight contract haulers who are regulated by the County. Hauling services for recycling and refuse are provided by Aloha Rubbish Company, Atlas Recycling, Eco-Trash, Leo's Rubbish, Pacific Waste, PFI Rubbish Service, Business Services Hawaii and Orchid Isle Rubbish & Recycle.

The 2008 landfill tipping fee was \$85 per ton, and the County Solid Waste Fund Budget is over \$30 million per year.

d. Summary of Recommendations

The key to economic growth through recycling, reuse and composting is recovery of discarded materials and adding value to them through facilitation and development of enterprises on the island. Currently, a multitude of discards are being collected for recycling, but most recyclables are shipped off island almost as quickly as new products are being shipped onto it. Further, most materials are shipped off island with no, or very little, added value. By importing consumables and exporting recyclable/reusable commodities, the island is paying more for resource consumption and management than the Continental United States, and losing the jobs, small businesses, tax revenues and other associated economic benefits offered through keeping production and resource management in Hawai'i.

The general recommendations outlined below represent the key components of redesigning the County's discard handling system to better manage resources.

Local ordinances are needed to require:

- Construction and demolition reuse and recycling plans
- Separation of designated organics, reusable and recyclables (including all haulers being required to provide recycling services as a condition of their County permit)
- Funding for training and social marketing programs
- Retailer and producer take-back of non-recyclable, non-reusable or non-compostable products and packaging
- Compostable organics out of landfill

Landfill and transfer stations should be redesigned into Resource Recovery (RR) Parks, including:

- “ReStores”⁶ on at least six sites for recovery and sale of reusables
- Mini-MRFs on at least six sites to accept and sort commingled recyclables
- Organic material and rock grinding areas
- Full signage and demonstration areas

Training and social marketing programs:

- Train the trainers
- Train the technicians and regulators
- Train people and businesses
- Facilitate research required to support sound resource management, including facilitation of public, private, and academic partnerships

Further, the following “new rules” were identified through stakeholder meetings and used to frame discussions on local and island-wide resource management issues:

1. Producer and Retailer Responsibility
2. Source Separation Ordinance
3. Get Organics Out of the Landfill
4. Construction & Demolition (C&D) Recycling
5. Planning, Zoning, Health and Incentives

Based upon stakeholder feedback and consultants’ research on the island’s infrastructure and available resources, programs and timeline are suggested with a budget of \$23,930,000 over the next five years to implement this plan (see Table 1 below).

Zero Waste is an ambitious but important endeavor. No single strategy will result in success, and each community must carve its own path, cognizant of and willing to work within its existing political environment, financial boundaries, and legislative systems. The next step down the path to Zero will be the development of an Integrated Resource Management Plan that will include detailed timetables and economic analyses required to implement this Zero Waste Plan. By utilizing various strategies identified in this document, developing supportive partnerships, and remaining dedicated to the long-term goal of Zero Waste, Hawai’i will become one of the most sustainable regions in the nation.

Table 1. Summary of Recommendations, including Timeline and Budget⁷

Year	Recommendations	Budget
ORGANICS		
Year 1	Modified zoning rules/County code	TBD
	Training program for County officials	\$25,000
	Source reduction program for reducing wasting of food	\$10,000
	Expanded utilization of food bank program	\$10,000
	Educational signs and home composting demonstration areas at all transfer stations and landfill	\$125,000
	Certified master composter program	\$30,000
	Training for transfer station attendants	\$150,000
Years 2-4	Training program for farmers	\$50,000
	Training guides in print and web form for farmers	\$10,000
	Training program for resort and larger generators of organics	\$75,000
	Drop-off bins for yard trimmings at all transfer stations/convenience centers	\$135,000
	Subsidized bins for residents	\$25,000
	Subsidized bins for small business	\$40,000
	Hauling costs for organics	\$500,000 ⁸
Years 2 - 5	Mobile chippers (2)	\$100,000
	Front-end Loader	\$100,000
	Tub-grinder	\$250,000
	Certified master composter program	\$120,000
Years 3-5	Tax credit program	TBD
	New technology grant fund establishment	\$750,000
	Facilitated Resource Management Zones (FaRMZ)	\$750,000
	Five-Year Total	\$3,255,000
REUSE		
Years 1-2	Source separation ordinance	In-Kind
	Hiring and training of staff and stakeholders	\$1,500,000
	Equipment, buildings, and contractors	\$3,500,000
Year 3	Public awareness	\$250,000
Years 4-5	Operations (staff training and management)	\$1,000,000
	Five-Year Total	\$6,250,000
RECYCLABLES		
Year 1	Source separation ordinance and permit requirements	\$25,000
Years 2 - 3	Processing center design and construction	\$6,500,000

⁷ Costs are “best guess” estimates based on consultants’ industry knowledge and should be reviewed in further detail by County representatives. While some costs represent new appropriations, many will simply displace existing funds that would have otherwise been spent on refuse/landfilling. A detailed economic analysis weighing new appropriations versus displaced costs is recommended.

⁸ Assumes \$100,000 per annum, but should be offset by reduction of refuse hauling costs.

	Infrastructure: \$3 million amortized over 20 years <ul style="list-style-type: none"> • Pole barn at six sites Equipment: \$3.5 million amortized over 6 years <ul style="list-style-type: none"> • Conveyors magnets, baler, scales, bins for reusable's, commingled recyclables, compostable organics, and rocks • Trucks for moving materials 	
Years 2 - 5	Training and public awareness	\$1,000,000
	Five-Year Total	\$7,525,000
SPECIAL DISCARDS		
Year 1	Pass ordinances and work with health department on reuse	\$50,000
Year 2	Construction of special discard centers	\$1,500,000
	Equipment	\$250,000
Years 3-5	Staff training	\$500,000
	Public awareness campaign	\$500,000
	Operating costs	\$300,000
	Five-Year Total	\$3,100,000
EDUCATION, OUTREACH AND PUBLIC AWARENESS		
Year 1	Hire recycling education and public awareness coordinators	
	Develop recycle art campaign	
	Develop E-scrap campaign (anything with a plug)	
	Develop EPR for difficult-to-recycle campaign	
	Explore legislative actions for takeback of hazardous products and packaging	
	Implement recycling/composting industry internship program	
	Implement communitywide social marketing plan	\$880,000
Year 2	Launch campaigns and intensified in-school programs	\$880,000
Years 3-5	Maintain existing campaigns/seek community feedback for modifications	\$680,000 annually ⁹
	Five-Year Total	\$3,800,000
	Five-Year Total for all Programs	\$23,930,000

⁹ Calculated at \$4 per capita (170,000 residents) per year with \$1 each for awareness, training, education and reinforcement, respectively.

II. Resource Generation Assessment/Current Value of Discards

a. Diversion/Revenue Potential

The County currently manages approximately 200,000 tons of discards annually. Figure 1 shows the composition of this material, broken down into twelve market categories¹⁰. Table 2 details an estimated value of these materials, based upon current market prices, if source separated and processed by reuse, recycling and composting/agriculture industries. This table does not include the cost of recovery of these materials, as that could vary widely depending on what approach is taken to such recovery. Conversely, assuming separation occurs at the point of generation and is done by generators, this “extraction” of raw materials is essentially free, with bins and equipment paid for by sales of materials after final processing and a diversion credit of \$85 per ton.

Key conclusions from consultants’ findings include:

- Over one third or more¹¹ of the County’s discards are organic materials that, when diverted from the landfill and composted, mulched, or directly land applied, can greatly improve the island’s soil for farming, facilitating the production of more locally grown food while mitigating erosion and runoff, minimizing the need to import expensive pesticides and fertilizers, and conserving irrigation water. These materials include food scraps, yard trimmings and soiled and low-grade papers.
- At nearly \$5.8 million (See Table 2), the potential for revenue from reuse items is one-third the total value of all discards, even though these materials comprise just five percent of what’s generated.
- A multitude of options to gain revenue from discarded materials exist, and include reuse and repair markets, direct sales of raw materials, and value-added products marketed on the island, within state, or overseas.

Entrepreneurs and farmers on the island can create economic growth and jobs provided that these materials are no longer transported to landfills. Several organizations in the County, such as Recycle Hawai’i and ARC of Hilo, along with their governmental and private sector partners, are already benefiting from markets for value-added products produced from discarded materials.

Comprehensive composting, recycling and reuse programs offer the Hilo region of the island an avenue for local economic growth as well as a least-cost and more environmentally-friendly alternative to landfilling, incineration or shipping marketable discarded materials from the east side of the island to the West Hawai’i landfill.

Representatives of both the agriculture sector on the Hilo side of the island and the tourist industry on the Kona side have informed consultants that their respective industries could

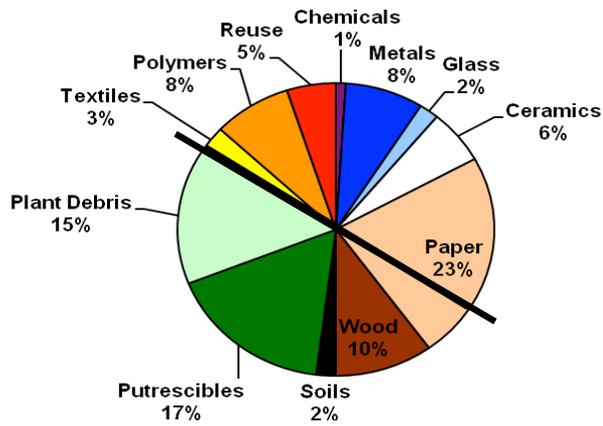
¹⁰ Market categories were developed by Dr. Dan Knapp of Urban Ore, Berkeley, California.

¹¹ Approximately 41% when combining CH2MHill’s composition estimates of 33.1% organics, 25% of 22.4% paper, and 10% of 22.2% C&D (31.1 + 5.6 + 2.2 = 40.9%)

benefit from mulch, compost and compost-amended soils created on the island from discarded organics. Figure 1 shows that more than one third of what is buried in landfills in the County can be used to produce and enhance soils for agriculture and landscapes for tourism. Table 2 shows nearly \$11 million in added revenue to Hawai'i if discards are source separated and captured for reuse, composting and recycling markets. This Table does not include the cost of recovery of these materials, as that could vary widely depending on what approach is taken to such recovery. New legislation to get residents and businesses to separate organics from reusables, special discards and recyclables will be required as overarching policies to drive the change, and sample/draft ordinances are included in the appendices of this plan.

Figure 1. County of Hawai'i Discards Sorted into the Twelve Market Categories

(Note: More than One Third of the Materials are Suitable for Composting)



Richard Anthony Associates, 2008

Table 2. Estimated Annual Lost Value of County of Hawai'i Discards Buried in Landfill¹²

Categories	%	Annual Tons	\$/ton	Annual Revenues Lost
1. Reuse	5	10,500	\$550	\$5,775,000
2. Textiles	3	6,300	\$50	\$315,000
3. Polymers	8	16,800	\$50	\$840,000
4. Metals	8	16,800	\$50	\$840,000
5. Glass	2	4,200	\$10	\$42,000
6. Paper	23	48,300	\$50	\$2,415,000
7. Putrescibles	17	35,700	\$7	\$249,900
8. Plant Debris	15	31,500	\$7	\$220,500
9. Wood	10	21,000	\$8	\$168,000
10. Soils	2	4,200	\$7	\$29,400
11. Ceramics	6	12,600	\$4	\$50,400
12. Chemicals	1	2,100	\$15	\$31,500
	100%	210,000 tons	Average value per ton: \$67	\$10,976,700

Waste Composition Study 9/08 CH2Mhill • Market estimates Richard Anthony Associates, 11/08

b. Job Creation

Materials recovery is an economic development tool as well as an environmental tool. Reuse, recycling, composting, and source reduction offer direct, and substantial, development opportunities for communities. Discarded materials are a resource that can increase local revenues, create jobs, lead to the formation of new business, and stimulate the overall local economic base. On a per-ton basis, sorting and processing recyclables alone sustain eleven times more jobs than landfilling or incineration. However, reuse of products and making new products out of the old offer the largest economic pay-offs in the recycling loop. New recycling-based manufacturers and reuse of high value products employ more people at higher wages than sorting recyclables does.

In order to compare jobs created through recycling with disposal, the Institute for Local Self Reliance (ILSR) developed job-to-ton ratios for specific material streams based on direct interviews with operating facilities.¹³ These factors are shown in Table 3 below.

¹² Values subject to market fluctuation, and as such have been estimated at a lower end of the scale. Prices are FOB Hawai'i and are before sorting (high grading at the processing center). High grading would result in values increasing by five to ten times.

¹³ ILSR, "Salvaging the Future: Waste-Based Production", www.ilsr.org

Table 3. Job Creation - Reuse and Recycling vs. Disposal

Categories	Jobs per 10,000 TPY
Product Reuse:	
Computer Reuse	296
Textile Reclamation	85
Misc. Durables Reuse	62
Wooden Pallet Repair	28
Recycling-Based Manufacturers:	
Paper Mills	17.5
Glass Product Manufacturers	26
Plastic Product Manufacturers	93
Processing Facilities:	
Conventional Material Recovery Facilities	11
Plastics Processing Facilities	30
Metal Reclaimers	6
C&D Processors	2.5
Composting	4
Landfill and Incineration	1
<i>TPY = Tons Per Year C&D = Construction & Demolition Figures are based on ILSR interviews with 114 facilities around the country.</i>	

Applying these job-to-ton ratios to Hawai'i's current volume and type of discards¹⁴ indicate that 547 direct jobs could potentially be created if 80% of the County's discarded materials were recovered and used to make new products, and close to 700 jobs created if 100% were captured (see Table 4 below). The potential could be higher depending on actual businesses recruited. For example, one company estimates that 110 jobs alone can be created in Hawaii County if 5,000 tons of recycled glass were used for product manufacturing.¹⁵ Further, another estimated 500 indirect jobs could be created as well.

¹⁴ Plant debris, putrescibles and soils combined as organics.

¹⁵ *Communication with Jay West, Peak Creations.*

Table 4. Job Potential in Hawai'i based upon at 100% Recovery Rate of 210,000 Annual Tons of Reusables/Recyclables

Categories	Potential Jobs
Reuse	65
Paper	148
Organics	6
Wood	13
Ceramics	3
Metals	59
Glass	25
Polymers	298
Textiles	53
Chemicals	N/a
Total	684

Note: Figures represent one possible scenario and are based on job-to-ton ratios shown in Table 3. Jobs for recovery of yard trimmings, putrescibles, and soils are based on the composting job-to-ton ratio. Ceramics are assumed recovered as an aggregate at a construction and demolition recovery facility. For polymers, half the recovered tonnage is assumed processed at a conventional material recovery facility but all polymers assumed to flow through a dedicated intermediate plastics processor. For paper, half the paper is assumed proposed at a conventional material recovery facility and the other half at a dedicated paper processing facility.

III. Overview of Stakeholders' Feedback

Consultants conducted a series of twelve stakeholder meetings throughout Hawai'i, at various venues in Kona, Hilo, Kohala Coast, Volcano, Waimea, Hawi and Pahoa. Appendix A provides a list of meeting topics, locations, dates and times. More than 300 island stakeholders attended the meetings and participated in detailed discussions addressing a broad range of resource management issues. A list of all meeting attendees who signed in is included in Appendix B. Participants represented a diverse cross section of the population, and included hourly and salaried workers, managers, psychologists, farmers, retirees, entrepreneurs, environmental scientists, community organizers, elected officials, government employees, students, teachers, and homemakers.

Meeting attendance averaged between 10-30 people, with the exception of the session held at the Mauna Lani Bay Hotel in conjunction with Zero Waste Conference 2008, which had approximately 100 participants. All participants were encouraged to speak after comprehensive presentations by County staff and consultants.

After analyzing stakeholder feedback from the first few meetings, consultants developed a set of initiatives to address attendees' concerns and Hawai'i's resource management challenges. These "new rules" were presented in the beginning of subsequent meetings and used to frame stakeholder discussions on local and island-wide resource management issues.

Following are the key "new rules" formulated through stakeholder input for the County to adopt to get to Zero Waste:

1. Producer and Retailer Responsibility
2. Source Separation Ordinance
3. Get Organics Out of the Landfill
4. Construction & Demolition (C&D) Recycling
5. Planning, Zoning, Health and Incentives

Most participants were well informed about the status of recycling and composting on the island. An overwhelming majority favored recycling and composting and expressed a desire for increased development of these programs based on the positive environmental and economic benefits. Further, stakeholders expressed that now is a critical time for the environment and economy to Hawai'i, its residents and businesses. Participants praised the County's proactive resource management measures over the past year, including the two-bin system for recycling and increased composting programs.

The County's efforts to release RFPs for yard trimmings, reuse and Fats, Oils, and Grease (FOGs) were universally supported. Participants were also proud of the fact that Hawai'i County has reached 90% recovery of beverage containers under the state's H15 program, the highest diversion rate in the state. This program has allowed the County to increase its recycling and composting rate from a previous 24 percent to 30 percent in the last year.

At the same time, participants expressed wanting more recycling. Most were familiar with cities and counties on the mainland reaching 60 percent diversion and higher. Participants wanted to know why Hawai'i County could not do the same. They related this anomaly to other issues associated with the environment and energy on the island, pointing out, for example, that energy from windmills and geothermal facilities were not used to their maximum capacities.

IV. Recommended Implementation Plans by Material/Management Category

1. Organics

Improving local soils through use of composts and mulches will support the island's sustainability and food security. The more food produced on the island, the better Hawai'i is insulated from the vagaries and fluctuations of national and international economies. As late as the 1950s, the island produced 90 percent of the food that was eaten on the island, as opposed to importing 90 percent as it does now.

1a. Overview of Existing Management Methods/Stakeholders' Feedback

County's Existing and Proposed Discarded Organics Management Efforts

Three County-operated facilities currently exist on the island for yard trimmings drop-off at the Hilo, Kealakehe and the Kea'au Transfer Stations. Free mulch is also available at the Hilo and Kealakehe locations, which are open to the public. Hilo is open daily from 7 a.m. to 5 p.m., Kealakehe from 7 a.m. to 4 p.m., and Kea'au from 6:30 a.m. to 6:30 p.m. Hilo and Kealakehe now accept untreated pallets (but no other lumber, nor sawdust). One privately owned compost facility, Organa Grow in Kawaihae, accepts yard trimmings for a fee and sells compost.

The County has contracted with EKO Compost to process yard trimmings into mulch. EKO operates at two locations: the Hilo Landfill in Hilo, East Hawai'i and the Kealakehe Transfer Station in Kailua-Kona, West Hawai'i.

The following materials are accepted at all locations:

- Palm fronds
- Tree and hedge cuttings
- Grass clippings
- Untreated and unpainted wood pallets
- Logs less than 18" in diameter & 5' in length
- Untreated pallets (Hilo and Kealakehe only)

The following materials are not accepted:

- Garbage bags and rubbish
- Lumber (including sawdust)
- Plastics
- Rocks and dirt
- Glass and metals
- Treated or painted pallets

Estimated yard trimmings currently diverted or recycled from the Kealakehe Transfer Station were 26,655 tons in fiscal year 2006-2007, and 26,609 tons in fiscal year 2007-2008. Combined tonnages of FOGs collected at Hilo and Kealakehe were 322 tons in fiscal year 2006-2007, and 246 tons in fiscal year 2007-2008.

Total organics estimated through the County's September 2008 "Waste Composition Study"¹⁶ found annual mixed transfer station organics totaled 26,265.8 tons¹⁷, while 33,830 tons¹⁸ of were delivered to the landfills in commercial vehicles, and 4,159.2 tons¹⁹ of organics were received at the landfill from self-haul sources.

Organics comprised over a third of discards (37.6%) at transfer stations, 31.5% of commercial

¹⁶ Prepared by CH2MHill in association with Sky Valley Associates

¹⁷ Food and Green Waste categories counted at 100%; R/C Organic counted at 80%, and Clean and Treated Lumber reduced to 20% to account for an estimated 80% of stream being treated, non-compostable.

¹⁸ Same formula as for transfer stations.

¹⁹ Same formula, but Food Waste was not a category.

loads, and 22.7% of self-haul.

Yard trimmings at County facilities are mulched, not composted, but RFP No. 2481 (“Requests for Proposals for Implementing and Organics Diversion Program at the West Hawai‘i Compost & Biodiesel Facility for the Department of Environmental Management, County of Hawai‘i”) was issued in November 2008 for vendors wishing to establish a composting/organic resource recovery facility at the West Hawai‘i Pu‘uanahulu Landfill. The RFP required the contractor to accept and process at a minimum, yard trimmings, untreated wood, biosolids, and FOGs, and allows the contractor to also accept and process food residuals and other compostable or processable organics.

In addition, also in November 2008, the County issued RFP No. 2479 for “Furnishing and Implementing Island-wide Greenwaste Collection Sites for the Department of Environmental Management, County of Hawai‘i.” The RFP sought vendors to establish yard trimming collection sites “at or in close proximity to the 20 designated transfer stations” throughout the island. Private sites were favored over those proposed on transfer stations. And while collection of yard trimmings is mandatory, the receiving of food residuals and other organics is also be allowed, but not required.

Education

In addition to establishing drop-off locations and creating mulch at the transfer stations from a portion of Hawai‘i’s yard trimmings, the County has funded numerous educational initiatives, including guides in print form and web-based, ongoing composting workshops conducted by Recycle Hawai‘i island-wide, and other projects promoting “backyard” or onsite composting. For example, Recycle Hawai‘i prepared the January 7, 2006 report, “Composting is Recycling, Too” which surveyed recipients of the Earth Machine (EM) backyard composting unit.

Programs such as “Composting is Recycling, Too” represent complementary, cost effective methods for diverting organics from the landfill. The economics of this approach was quantified in the report: “Of the 59 participants actively using their EMs, an average of 20 gallons of material diverted per month, the program demonstrates the following diversion rate: 240 gallons per composter per year @ 7.5 pounds per gallon = 1,800 pounds per composter. The projected life of an EM is 10 years, so an average of 18,000 pounds, or approximately 9 short tons will be diverted over the life of each composter. At a cost of \$45 each, the cost for the program is \$5.00 per ton.”

From the study: “Beginning Earth Day, April 22, 2005, Earth Machine composting bins were distributed to 12 West Hawaii schools, 9 North Hawai‘i schools, and 7 East Hawai‘i schools as part of a “Composting is Recycling, Too” program. Of the 30 schools utilizing Earth Machines as environmental science and horticulture/agriculture instructional tools, five schools asked for and received multiple Earth Machine (EM) units – from 2 – 12 per school. A total of 43 EMs were delivered to island schools, including a Kamehameha Schools/YMCA summer camp and Kona Krafts (ARC of Kona). Schools using EMs for composting recycle shredded office paper, cardboard, cafeteria kitchen scraps and campus grounds clippings and use the resulting compost material for a variety of on-campus beautification projects. Those schools using multiple units, such as Pa‘auilo School (9 active bins) produce compost on a rotational basis so that some bins are finishing the composting process while others are in various stages of composition. The EMs are made from recycled plastic beverage containers.”

Stakeholder Feedback

Considering the island's discards are fifty percent or more organics, an excellent opportunity exists for the commercial production of soil amendments and mulches for sale to farmers, homeowners, land management and landscaping firms, retail stores, hotels and resorts, and nurseries. One landscape company participating in the consultant's community workshops estimated the value of finished compost on the island at \$95 per ton (one ton of finished compost equals three cubic yards).

Most island soils are deficient in organic matter and macronutrients and could greatly benefit from soil amendments and mulches. There are a multitude of benefits associated with amending soil with compost and mulching, including healthier, more disease resistant crops and landscape plants, reduced water pollution from runoff and erosion, reduced irrigation requirements, minimized need for use of imported pesticides and fertilizers, and an increased ability for local farmers to grow a wide variety of food crops for on-island sale and consumption, which in turn will reduce introduction of invasive, non-native species. Further, high temperatures achieved during the composting process serve to destroy existing invasive species such as coqui frog eggs, red ants, and weed seeds.

Composting yard trimmings and food scraps to produce soil amendments and mulches for homes, farms and businesses was viewed as a critical element for the sustainability of the island. While participants applauded the County's efforts to grind yard trimmings and offer the mulch for free to businesses and residents, there were deep concerns about the spread of invasive species throughout the island. In particular, stakeholders feared the spread of red ants, coqui frog eggs, and seeds of unwanted plants to their properties.

Participants questioned the current logistics of mulching sites, which require long hauling distances and travel in traffic. As the price of gas rises, the cost effectiveness of this travel is diminished for users of the sites. Stakeholders also expressed concern that businesses, which wanted large amounts of materials loaded into their trucks, got more attention from site workers than individual residents desiring much smaller amounts of materials. Adequate staffing is needed to ensure that both businesses and residents receive prompt attention, given that 85% of residents self-haul their materials to such sites.

Composting business operators complained about zoning rules, which mistakenly interpret composting as a manufacturing process, rather than an agricultural process, and require facilities to be in industrially zoned areas. These businesses and other stakeholders felt that composting was an agricultural activity, and should be allowed on land zoned commercial or agriculture.

Finally, participants raised the issue of value added to yard trimmings. There was general consensus that processing yard trimmings and other organic discards into finished compost was a direct way to add value to this material on the island. All stakeholders in the meetings supported the County's proactive RFP for processing of yard trimmings at the area designed for this at the West Hawai'i Compost & Biodiesel Facility (WHCBF) on the Pu'u'anahulu Landfill. Some participants questioned why food discards were not included in the RFP to be issued, but it was clarified by County officials that this material was not restricted from the options that companies can propose in their response to the RFP. Many stakeholders were aware that

several mainland cities and counties were incorporating food discard recovery into existing yard trimming collection and composting programs.

1b. Recommendations

The suggestions that follow can help Hawai'i regain the independence and sustainability it once had just a few decades ago. While both small-scale and large-scale farming and ranching still exist in Hawai'i, the fact that 90% of the island's food is imported and thousands of agricultural jobs have been replaced by the hospitality and tourism sector, contributed to the decline of the County's self-sufficiency.

Yet agriculture still represents combined annual revenue of over \$500 million annually. Approximately 3,000 farmers on 5,500 farms work the land, and a small but vibrant local and organic growing industry does provide quality food to businesses and the public. Organic resource management, which influences economics, farming, food production, composting, soil health, invasive species control, island aesthetics, water and air pollution mitigation, and global issues such as climate change, must be expanded and enhanced to improve the island's overall health.

Phased in over time, these recommended policies and programs possess a multitude of benefits to the island, including economic stimulation, cost savings and job creation, healthier soil, air and water, mitigation of invasive species of flora and fauna, and better croplands and yields enabling Hawai'i to grow more of its own food. The more decentralized (or as one stakeholder offered, "localized") the approach, the better the efficiency in terms of economics and social and environmental benefit.

"Several recent books have documented a growing list of important ecological, social, and economic concerns that are driving the organic and local food movements. Best-selling books, particularly *Fast Food Nation* and *Omnivore's Dilemma*, have awakened mainstream society to the dramatic changes in the ways their foods have been produced, processed, distributed, and marketed over the past few decades. These books vividly portray a food system that has not only compromised food quality and safety but also has helped homogenize the landscape, widen the chasm between rich and poor, fueled an epidemic of obesity, and promoted American cultural imperialism around the world. These best-sellers sparked the interests of other investigative authors, resulting in books such as *The End of Food* and *America's Food* which covers virtually all aspects of today's food system. These books are filled with statistics and facts and are extensively referenced and they all tell the same basic story. The natural-organic-local food movement is about a demand for fundamental change in the American food system."²⁰

"Eating local contributes to the local economy. American farmers, on average, receive only about 20 cents of each dollar spent for food, the rest going for processing, transportation, packing, and other marketing costs. Farmers who sell food direct to local customers, however, receive the full retail value, a dollar for each food dollar spent. Of course, each dollar not spent at a local supermarket or eating establishment, detracts from the local economy. But, the local food economy still gains about three dollars for each dollar lost when food shoppers choose to buy from local farmers. In addition, farmers who produce for local markets receive a larger proportion of the total as a return for their labor, management, and entrepreneurship because

²⁰ "Local Foods; Local Economies," John E. Ikerd, Professor Emeritus of Agricultural Economics University of Missouri Columbia, College of Agriculture, Food and Natural Resources

they contribute a larger proportion to the production process. They also tend to spend locally, both for their personal and farming needs, which contribute still more to the local economy. Eating local is good for the local economy.”²¹

Further, the Governor of Hawai'i recognizes the importance of locally grown food. "...the Lingle-Aiona Administration is introducing a bill to promote agricultural activities by increasing loans for ranch or agricultural operations on Hawaiian home lands. Ensuring the security of Hawai'i's food supply is a continuing priority... Due to the fact that food safety and security are vital to good public health, this year's initiatives will protect our agricultural capacity and ensure our food safety by preserving agricultural land, encouraging agricultural activity, enhancing our ability to diagnose food-related disease outbreaks, protecting our drinking milk supply, and preventing the spread of invasive species.”²²

1.1. Policy

The County can benefit from banning organics from the landfill. Using these materials will spark growth in the agricultural sector, create jobs, promote entrepreneurialism, and reduce problems associated with organics buried in island landfills. A sample "Organics Out of the Landfill Resolution" is included as Appendix C. Once a resolution is passed and infrastructure is developed, an ordinance should follow that requires residents and businesses to keep organics separate from recyclables, refuse and special discards.

To help build infrastructure and improve the viability of Hawai'i's agriculture and local food production, composting on farms should be encouraged, subsidized and facilitated. While guidelines for composting are established in state administrative rules²³, an exemption exists for farmers provided the operation:

- Is accessory to the site's primary activity
- Accepts less than 3,000 tons per year
- Does not impact neighbors
- Uses most of the finished product on site

How the County's planning department views "accessory to the site's primary activity" is subject to interpretation, but the ability for a farmer to receive approximately 12 tons per day of yard trimmings without a permit opens some opportunity for improving soil for various crops. County planners informed consultants that a farmer meeting this exemption could receive tipping fees for accepting the material and "market small amounts of the end-product." Again, how "small amounts" is defined is open to a planner's interpretation, but does allow some of the material that isn't used directly on cropland to be sold for an additional revenue stream. A key to getting

²¹ "My Top Ten Reasons for Eating Local," John E. Ikerd, Professor Emeritus of Agricultural Economics, University of Missouri Columbia, College of Agriculture, Food and Natural Resources

²² "Protecting our Food Security, Fact Sheet," <http://hawaii.gov/gov/leg/2008-session/fact-sheets/text-documents/protecting-our-food-security/?searchterm=food>

²³ Section §11-58.1-41, Composting facilities Subchapter 4 - Solid Waste Reclamation Facilities, Chapter 58.1 Solid Waste Management Control, Title 11 of the Hawai'i Administrative Rules, Department of Health.

organics out of landfills may require an effort to revise state legislation to allow more flexibility than the current exemption provides, or the establishment of a new section of the County Code to allow farmers to accept and process materials for compost and to sell the products.

Planners informed consultants that composting wasn't addressed in the Hawai'i County Code, and if an operator wanted to establish this activity, they would not need a "use" permit provided the operation met the state permit exemption criteria discussed above. For operations larger than 3,000 tons annually, or those where composting was the principle use on the property, a state permit would be required as well as a use permit per discretion of the planning director. Although not specified, it would appear composting on a farm would fall under the code's definition of "Agricultural products processing, minor":

"Agricultural products processing, minor' means activities used for crop production, which are not regulated as major agricultural products processing and which involve a variety of operations on crops after harvest to prepare them for market, or further processing and packaging at a distance from the agricultural area. Included activities are cleaning, milling, pulping, drying, roasting, hulling, storing, packing, honey processing, poi-making, selling and other similar activities. Also included are the facilities or buildings related to such activities."²⁴

"Agricultural products processing, minor" is allowed in the following zones: FA (family agricultural); IA (intensive agricultural); and RA (residential and agricultural).

The lack of language specifically addressing composting in the code is a double-edged sword. Not specifying this use allows planners some leeway for interpretation and allowing the use based upon its applicability to state composting rules. But there is also the chance the potential impacts of the proposed composting activity will be misunderstood and the application denied or an excessive use permit be required. Planners who met with consultants agreed composting was an agricultural practice and should be allowed on farms as an ancillary, complementary activity. Yet this isn't defined in the code, and it should be if Hawai'i wishes to realize the myriad benefits of facilitating composting on agricultural lands.

To clarify zoning and local land use rules, composting should be addressed in the Hawai'i County Code. Zoning amendments are allowable per Division 4. Amendments., Section 25-2-40., When zoning code may be amended.:

"This chapter may be amended by changing the boundaries of districts or by changing any other provision in this chapter whenever the public necessity and convenience and the general welfare require such amendment, and when such amendment would be consistent with the goals, policies and standards of the general plan."²⁵

It would appear composting coincides with the spirit of such an amendment considering it meets the criteria of being a "public necessity and convenience and [promotes] the general welfare" of the island. Further, such an amendment can be initiated by a variety of stakeholders, including property owners:

"An amendment may be submitted by the council, the director, the owner of the property, or any

²⁴ Article 1. General Provisions., Section 25-1-5. Definitions., Hawai'i County Code.

²⁵ 1996, Ord. No. 96-160, sec. 2; ratified April 6, 1999. Hawai'i County Code

other person with the property owner's authorized consent."²⁶

This proposed amendment should be initiated by the director or council, and may require a programmatic environmental impact report (EIR) prior to it moving forward. A programmatic EIR will reveal that well-managed composting can be done without public nuisance or impact to the environment. In fact, composting is an asset to island soils and water and air quality.

Specifically, the amendment to the code should allow a business (such as a resort, farm or marina) to compost or mulch organic residues generated onsite. This should include a combination of materials generated from onsite operations plus as much bulking agent as is required (up to 3,000 tons per year). For example, a resort that generates 1,000 tons of food residuals annually would require approximately 2,000 tons of woodchips or similar bulking agent per year. Regulations would need to ensure that odor and vermin are properly controlled. County staffing should be funded to enforce such regulations and training should be provided for operators on how to comply with such regulations. Commercial businesses could offer to lease on-site composters (similar to garbage or cardboard compactor leases) and manage them for a fee for businesses that do not want to assume those responsibilities themselves.

This should be allowed on all properties zoned FA (family agricultural); IA (intensive agricultural); RA (residential and agricultural); V, (resort-hotel districts); CG, (general commercial districts); MCX, (industrial-commercial mixed use districts); ML, (limited industrial districts) and; MG, (general industrial districts).

These operations should be accessory to the site's primary activity, have no negative impact on neighbors, and be allowed to accept a tipping fee as well as sell the finished product. Operators should attend a training session prior to beginning this activity, and register their site so the County can track diversion and provide assistance as necessary. Training will be covered in more detail below.

Larger-scale operations in these same zones should be required to have a state composting permit, but not a use permit from the County.

Smaller-scale composting activities in these zones and all others that have less than 40 cubic yards of material onsite at any one time should be exempt from a use permit.

All composters, exempt or not, should attend training and register their activity with the County.

Facilitated Resource Management Zones (FaRMZ) should be established in IA (intensive agricultural); V, (resort-hotel districts); CG, (general commercial districts); MCX, (industrial-commercial mixed use districts); and; MG, (general industrial districts). Compost facilities sited in FaRMZ should receive low interest loans, permitting assistance, help with technology/equipment selection, and finished product development, utilization and marketing.

New hotels and resorts should be required to include an organics processing system into the facility's design. This system should be able to handle the resort's food residuals, yard trimmings, and other organics generated.

²⁶ (1996, Ord. No. 96-160, sec. 2; ratified April 6, 1999.) *Hawai'i County Code, Division 4. Amendments., Section 25-2-41. Who initiates amendment.*

All yard trimmings and other compostables processed at all facilities, including County transfer stations, should be composted for 15 consecutive days, insuring temperatures reach 131° F for the duration of this period. This will ensure any pathogens in the material are destroyed, as well as most invasive species.

1.2. Program Implementation

Source reduction strategies including public education and expanded food bank utilization should be the focus of primary organic resource management implementation efforts. Training County planners on composting should come next, followed by facilitating infrastructure through changing the County code. Once the code is changed, programs to encourage onsite composting by both businesses and residents should occur. This will include an outreach program, training, and subsidized compost bins and equipment as feasible.

1.2a. Training and Education

Planners, lawmakers enforcement personnel and any other County-hired or elected officials involved in promotion, rulemaking, and enforcement of organic resource management should be required to attend a training session that covers the principles and benefits of composting, problems associated with landfilling organics, facility siting and design, feedstocks, troubleshooting, and end-product development and use.

A master composter program should be established for training residents and small business owners on small-scale, onsite composting. This program has been working well throughout the mainland, and done professionally, is economical, effective, and vital. Once an initial program is established, certified master composters commit to annual service and lead workshops, staff composting booths, help establish and maintain demonstration exhibits, and become stewards of sound resource management.

Training sessions and guides in print and web formats should be developed to encourage and educate farmers on the benefits of sustainable agricultural practices including composting and amending soil with compost. Training should also include clear, concise interpretations of county and state rules addressing composting. A similar program should be developed for the hotel/resort sector and other large generators of organics.

Signage and demonstration sites should be developed for all transfer stations, convenience centers, and landfills. Master composters can help establish and staff these.

A composting hotline should be established for residents or businesses seeking assistance on composting issues. Master composters could commit to taking calls on a scheduled basis. This is an approach that is working well in other areas of the country.

A “how-to” guide should be developed for and distributed to businesses to learn how to reduce wasting food. To learn more about how cost and diversion effective this method can be (as well as good for people), please see Appendix D. Case Study: Metropolitan Portland, Oregon “Fork It Over!” Program/Oregon Food Bank.

The Food Basket, Inc.²⁷ is a clearinghouse for food and non-food items in Hilo. From its website: "All goods are delivered to the warehouses, one in East Hawaii and one in West Hawaii, where staff and volunteers weigh the incoming poundage and salvage usable products. Once items are salvaged, they are stocked for distribution via over 100 non-profit partner agencies.

Over a million pounds of food are distributed by this network of approved nonprofit agencies every year. Each month approximately 3,000 unduplicated individuals receive emergency food and/or hot meals. Requests for food range from 12,000 to 14,000 per month. Partner agencies distribute goods directly to the needy either by serving meals, providing food boxes, or providing snacks to adults and children in various programs. The largest segment of these agencies provides emergency food pantries to the hungry in their respective communities. Agencies also include those that serve hot meals, child and adult programs, programs that serve the chronically ill, homeless and abuse shelters and substance abuse recovery programs."

Transfer station attendants should be trained to guide residents and business owners to drop-off bins for compostables, as well as being able to answer questions about composting and the County's composting and resource management efforts.

1.2b. Infrastructure/Equipment

All transfer stations and convenience centers should have drop-off bins for yard trimmings, to be transported to transfer stations, landfills, or privately owned operations with processing capability. Trucks and roll-offs returning should strive to carry compost or some other commodity for distribution/sale to the public and local businesses to increase efficiencies of operations. Purchase of a front-end loader and mobile tub-grinder should be considered to supplement processing capability at transfer stations with adequate space for grinding.

One or more mobile chippers could be procured by the County and made available for a nominal fee for residents and businesses requiring onsite chipping. To reduce liability, the County may consider utilizing its own staff for this. The County may also consider funding purchase of mobile chippers by existing equipment rental yards, promoting their availability. A mobile chipper program would reduce transport emissions on the island, minimize the traffic and expense associated with hauling unground yard trimmings, scale down the amount of material that has to be processed at transfer stations and landfills, and prevent the spread of invasive species as well.

Ground material at transfer stations large enough to do composting can be aerated with a front-end loader. Using this machine, rather than a windrow turner, allows better space utilization as piles can be made larger or adjacent to slopes or wooded areas. Loaders also have lower capital and maintenance costs and are much more versatile, as they can be used for a multitude of functions at a facility.

²⁷ Contact information for The Food Basket, Inc.: 140-B Holomua Street, Hilo, Hawai'i 96720
Tel: 808-933-6020 • <http://www.thefoodbasketinc.com>

1.2c. Technology/Methods for providing Materials for Markets

The County has already taken a positive step in aggregating yard trimmings and grinding the material. Due to the persistence of invasive species on the island, composting to achieve pathogen reduction is recommended anywhere grinding is done. This doesn't imply the County or its contractors necessarily have to produce compost at all locations, but rather put any end-product (compost, mulch, component of topsoil blend, etc.) created from yard trimmings through a pasteurization phase to destroy pathogens and invasive species. Ground yard trimmings should be placed in windrows and turned a minimum of five times during a consecutive fifteen-day period where temperatures are maintained at 131°F or above. This cycle of time and temperature should suffice in destroying most invasive species. Processing protocols may need to be adjusted based on available acreage and volumes received at each location, as well as climatory/rainfall patterns, but turning to achieve pathogen reduction is easily achievable with proper management.

While food residuals should be targeted for source separation and cocomposting with yard trimmings, biosolids are better suited for anaerobic digestion, with the digestate put through a pathogen reduction process and used on only specific soils and ornamental crops (those not for human consumption) in dryer zones on the island.

Onsite composting at both homes and businesses, where space allows, should be encouraged. Food scraps as well as yard trimmings can be processed in small-scale onsite systems. As discussed above, land use rules should be modified to facilitate composting on agricultural lands, behind businesses, and at resorts where space and resources allow. Several pilot facilities should be developed to serve as models for onsite processing and use of the finished product. The County should consider establishing a grant fund program for technology development or facilitate farmers' solicitation of financial assistance from organizations such as SARE (Sustainable Agriculture Research and Education), supported by the Cooperative State Research, Education and Extension Service, U.S. Department of Agriculture.²⁸

1.2d. Funding and Incentives

A tax credit program should be established for businesses that generate substantial volumes of organics and invest in composting programs and equipment to process them onsite. Such businesses include, but are not limited to, hotels and resorts, food processors, and farms.

Tax credits and low interest loans (as well as permitting and end-product marketing assistance) should be given to organic resource management companies developed and sited in FaRMZ. If private initiatives are not pursued in response to these incentives, the County could issue an RFP for such services to be provided, and provide whatever level of assistance is required to make them economically viable.

A subsidy program for home composting units for residents and small-scale in-vessel composting units for businesses should be implemented as well.

²⁸ More information can be found on SARE at <http://www.sare.org/about/>

1.3. Budget and Five-year Timeline

Year	Recommendations	Budget	
<i>Organics</i>			
Year 1	Modified zoning rules/County code	TBD	
	Training program for County officials	\$25,000	
	Source reduction program for reducing wasting of food	\$10,000	
	Expanded utilization of food bank program	\$10,000	
	Educational signs and home composting demonstration areas at all transfer stations and landfill	\$125,000	
	Certified master composter program	\$30,000	
	Training for transfer station attendants	\$150,000	
	Years 2 - 4	Training program for farmers	\$50,000
		Training guides in print and web form for farmers	\$10,000
		Training program for resort and larger generators of organics	\$75,000
Drop-off bins for yard trimmings at all transfer stations/convenience centers		\$135,000	
Subsidized bins for residents		\$25,000	
Years 2 - 5	Subsidized bins for small business	\$40,000	
	Hauling costs for organics	\$500,000	
	Mobile chippers (2)	\$100,000	
	Front-end Loader	\$100,000	
	Tubgrinder	\$250,000	
	Certified master composter program	\$50,000	
	Years 3 - 5	Tax credit program	TBD
New technology grant fund establishment		\$750,000	
FaRMZ establishment (includes grant funds)		\$750,000	
Five-Year Total		\$3,255,000	

2. Reuse/Repair

2a. Overview of Existing Management Methods/Stakeholders' Feedback

Reusable materials, including textiles, ceramics (such as rocks, concrete, asphalt and bricks) and chemicals, make up more than 14 percent of the materials discarded at county landfills. Recovered and resold, this material is worth over \$6 million per year. In many cases, the material is lost for lack of a proper signage on disposal bins. At the demonstration drop and swap center in Kea'au, managers claim that turnover is so fast nothing stays on the shelves for more than a week. Materials that cannot be repaired can be dismantled for metal, plastic, textile, wood and glass markets. Currently at most transfer stations, if an item is not a designated recyclable, it is discarded down the chutes and subsequently buried in the landfill.

Stakeholders agreed the County could realize revenue and create jobs through fostering reuse businesses. Introducing the same successful program as is in operation at the Kea'au Transfer Station to as many other drop-off sites as possible was suggested, as was development of incentives for start-up of reuse businesses. Currently, the County is soliciting proposals for reuse operations at their transfer stations.

Another idea popular among stakeholders was to create value-added products in the County rather than shipping materials off island where the jobs, small businesses and tax revenues benefit another jurisdiction. One example discussed involved electronic scrap (E-scrap), currently collected on the island and shipped, primarily unsorted, to the U.S. Mainland for proper disposal. A stakeholder pointed out that if they were to hand dismantle high-grade metals and segregate working parts, about 30 new jobs would be created. The products of hand dismantling were viewed to be of much higher revenue value than bulk shipment of electronic scrap off of the island.

There are several ways to initiate hand dismantling of E-scrap:

- Provide investment to a company that is currently shipping bulk E-scrap off of the island.
- Encourage a joint venture with this company or companies that have established hand dismantling, designed their own equipment and seek joint ventures with non-profits and for-profits.²⁹

Further, the County has an advantage in applying for green infrastructure jobs from the new federal administration. Policies and programs to make materials available for industrial and agricultural reuse have been modified, and jurisdictions such as Hawai'i have the best chance of attracting federal grants.

In Austin, Texas, Goodwill Industries has developed a dismantling program, with the backing of Dell Computers (also based in Austin). There may be other non-profits or businesses interested in playing this role. The County could convene a meeting of interested parties to determine the level of interest and what help might be needed to move forward. The County could assist them to proceed on their own (perhaps with some initial funding support), or issue a solicitation for help to develop new services as needed.

Stakeholders pointed out that EKO Compost gets roll-offs of undamaged, reusable pallets at the Hilo and the Kealakehe Transfer Stations. These should be inventoried separately and resold. Wood pallets should be replaced by durable pallets whenever possible. In addition to reducing handling and processing by the County and its contractors, durable pallets can save vendors substantial costs when shipping the products.

²⁹ Two such companies are Computer Donation Management, Baltimore, Maryland, and E End USA, Frederick, Maryland.

2b. Recommendations

2.1. Policy

A source separation ordinance should require reusable, repairable and dismantable products and materials to be handled separately from other discards. This includes textiles, ceramics and chemicals. In urban areas of the island, portions of existing local warehouses for different products can serve as drop-off centers for inventory and distribution, and in more rural areas, shops can be set up at the larger transfer stations. These Warehouses are run by non-profits called social enterprises and could be subsidized by the County or federal government funds. Reusable, repairable and dismantable materials are delivered to them by generators and the County through ReStores.

The resale and proper takeback and disposal of toxic materials (primarily giving away or reselling half-used paint and other chemicals under the supervision of the County) should be supported by the State Health Department, as is currently done by the California Department of Toxics Substances Control.³⁰

A construction and demolition ordinance should require up-front deposits and planning requirements as well as tax credits to firms that deconstruct buildings and reuse materials. A substantial demand exists for used lumber, fixtures, frames, doors and molding as well other building materials in usable condition. A sample C&D ordinance is included as Appendix H.

2.2. Program Implementation

The reuse industry on the island should be surveyed. This will range from the high-end thrift stores, to the Goodwill, Arc of Hilo and Kee'au transfer station reuse project, KRRC. There are a few independent community-based organizations (CBOs) that see this as an opportunity for their clients. From sheltered workshops to social enterprises, these CBOs are available to take on repair and refurbishing as well as dismantling of discard items into recyclable commodities. Identifying these groups as reuse drop-off sites is a first step. These organizations can negotiate the proper method of disbursement of recovered materials and products.

What does get delivered to the existing drop-off centers and landfills will either be sold from ReStores at these locations or picked up in covered box trucks or bins and taken to an offsite ReStore. Providing available and convenient drop-off locations is key to the success of this program. Companies with sheltered workshops could bid for individual products such as appliances, electronic discards, and furniture repair or for collecting all the reusables received at a designated site.

Implementation should include: _____

³⁰ See <http://www.dtsc.ca.gov/TIB/index.cfm>

- Adopting a source separation ordinance and including as designated recyclables reusables, chemicals, textiles, and ceramics (including rocks, concrete, asphalt and bricks)
- Training programs for operators of ReStores and other relevant stakeholders on the new rules and operations
- A letter of understanding requested from each participating organization to ensure CBOs and other reuse operations understand and agree to these new rules
- Procurement of design contracts for ReStores to be built and operated on the designated County transfer stations and at two urban warehouse sites
- Development of a public awareness campaign for both island residents and tourists/visitors on how to properly discard reusables

2.2a. Training and Education

The following areas should have an educational focus:

- Vocational training programs in schools should be established for repair of furniture, kitchenware, toys and textiles. A growing new field is dismantling products to recover recyclable components.
- Transfer Station site attendants will require training to seamlessly guide resident and business self-haulers to reuse areas prior to tipping discards for landfilling. Training such as this will ensure transfer station workers are able to answer detailed questions about the County's resource management programs. These "ambassadors" of resource management are a crucial component of the overall program, which should be focused on education to change habits, rather than pushing residents to obey the law.

2.2b. Infrastructure/Equipment

All drop-off and transfer stations must be redesigned with a new flow pattern and signage that citizens and businesses (if allowed to use the facility) must follow.

To handle the items that are reusable, repairable and/or need to be dismantled into recyclable components, the following capital and equipment is needed:

- Enclosed 40-cubic yard bins at the transfer stations
- Small buildings at the processing centers
- Tools for dismantling
- Shared baling with mini-MRFs
- Computers
- Shared scales
- Box truck
- Effective signage and demonstration areas

2.2c. Technology/Methods for providing Materials for Markets

The key to the success of reuse programs is the education of the workers who operate these facilities, who need to understand materials markets as well as inventory and pricing. Once staff (both government, private for-profit and non-profit) has been trained in the rules and basics of how these systems work, they will need to develop programs for the public. The methods for providing materials to markets include retail sales, dismantling for recycling, and ensuring materials reach markets accessible to the public.

Hawai'i has already taken steps towards capturing the value of reusable items in the discard stream. County collection sites for reusables at the Kea'au, Laupahoehoe and Keauhou transfer stations currently exist on the island. Further, the County has recently issued an RFP for establishing additional sites at transfer stations.

2.2d. Funding and Incentives

- Workforce development funds should be allocated for training adult workers for repair and marketing of furniture, kitchenware, toys and textiles.
- Property and business tax reduction programs should be developed for stores that sell reused items.
- A tax credit program for reuse-based enterprises should be established for organizations that invest in equipment.

2.3. Budget and Five-Year Timeline

Year	Recommendations	Budget
<i>Reuse</i>		
Year 1	Source Separation Ordinance	In-kind
	Hiring and training staff/stakeholder meetings	\$1,500,000
Year 2	Order equipment, buildings, and contractors	\$3,500,000
Year 3	Public awareness campaign	\$250,000
Year 4	Operations	\$1,000,000
Five-Year Total		\$6,250,000

3. Recycling

3a. Overview of Existing Management Methods

Currently most of the residents and a substantial number of the commercial businesses haul their own discarded materials to County transfer stations, landfills or private facilities. However, recycling sites and businesses listed below are available to take recyclable or designated materials. Recommendations included in this report will increase the size and number of businesses of this nature, create jobs and provide the County with greater tax revenues.

HI5 Deposit Beverage Container Law

This state law was enacted in 2004, with redemption services started in January 2005. The HI5 Bottle Bill was passed to encourage recycling and to alleviate roadside litter by attaching a deposit of 5¢ on all beverage containers 8 ounces or less made from glass, #1 or #2 plastics, as well as aluminum and steel cans. Covered in the program are containers holding soft drinks, sodas, tea, coffee, water, juice, beer, and mixed wines and spirits, with milk and liquor (including wine) containers excluded.

Hawai'i offers HI5 takeback redemption services at the following facilities: Atlas Recycling, LLC (three sites, Hilo and Kona); Reynolds Recycling, Inc. (Hilo only); Goodwill Services (Hilo); The Arc of Hilo (10 sites at selected County transfer stations: Hilo, Kea'au, Waimea, Kealakehe, Puako, Hawi, Keauhou, Honokaa, Waiohinu and Pahoa). For the initial year of the program, the County reported a 79% rate of redemption. From 2006-2007, it reached approximately 82%, and the current rate of redemption for deposit beverage containers (2007-2008) is 90%. This has been a very successful recycling and anti-litter program throughout the state.

Mixed Recyclables

Mixed recyclables include cardboard and paper bags, newspapers, magazines, cards and file folders, white and color office papers, envelopes, junk mail, boxboard, #1, #2 and #5 plastics, tin cans and lids, and aluminum scrap.

Following are island collection facilities listed by material type:

Mixed Recyclables: Available at nineteen County-owned community transfer stations in Hilo, Kea'au, Pahoa, Honomu, Papaikou, Laupahoehoe, Honokaa, Waimea, Puako, Kealakehe, Keauhou, Kaauhuhu (Hawi), Ke'ei, Waiea, Milolii, Waiohinu, Volcano, Glenwood, and Kalapana (the County's other two transfer stations, Paauilo and Pahala, are excluded)

Rinsed (non-redeemable) Glass: Drop-off at all County-owned transfer stations except Paauilo and Pahala

Aluminum: Atlas Recycling, LLC, Business Services Hawai'i, Reynolds Recycling, Inc. and all County-owned transfer stations except Paauilo and Pahala.

Car Batteries: Checker Auto, Home Depot, Interstate Batteries, Pahoa Battery and Propane, Daleco, Napa Auto Parts-Waimea and Sears Automotive Center

Cardboard: Kona Recycles, Kealakehe Transfer Station, Hilo Transfer Station and Kea'au Recycling & Reuse Center – Kea'au Transfer Station

Yard Trimmings: Kealakehe Transfer Station, Hilo Transfer Station, Kea'au Recycling & Reuse Center, Kea'au Transfer Station and Organa Grow, Kawaihae, North Kohala

Metals - Nonferrous: Atlas Recycling, LLC, Reynolds Recycling, Inc. (Hilo), Kea'au Transfer Station, Big Island Scrap Metal at the Hilo Transfer Station and Kealakehe Transfer Station scrap metal yard

Metals - Other (including appliances): Hilo and Kealakehe (Kona) Scrap Metal Yards and Pahoa transfer station for drop-off only

Oil - Cooking: Hawaii Bio-Friendly and Orchid Island Rubbish & Recycle

Oil - Motor: Hilo and Kona Harley-Davidsons, Paauilo Village Service, Kar Tow Kohala, Kealakehe High, School, Building S., South Point U-Card and Waimea Auto Center

Plastic Bags: KTA, Wal-Mart, Safeway in Hilo and Kailua-Kona and Na'alehu Farmer's Market

Plastic - Polystyrene (Styrofoam) Packing Peanuts: Kailua Candy Co., Post Net-Hilo, Volcano Island Honey, Coastline, Honoka'a Live Art Gallery, and Honoka'a One-Stop Mail Shop, Pahoa

Printer Ink Jet/Toner Cartridges/Cell Phones: Business Services Hawai'i, Hilo, Computer Services, Hilo, Honomu Computer Resource Center, Kea'au Transfer Station, Laupahoehoe Public/School Library, Pa'auilo Elementary & Intermediate School, Teri's Custom Sewing, Honoka'a, Bond Memorial Public Library, Ocean View Community Center, Thelma Parker Memorial Public/School Library, and Sustainable Bliss

Tire Cutting/Disposal: Arizumi Tire Disposal, Sear's Automotive, Goodyear Auto Services Center, Lex Brodie's Tire & Service Center, and R & G Tire Center; Unitek Solvent Services

Electronics Recycling: Permanent drop-off sites for "anything with a plug" including Kaloko Business Center (below Costco) in Kailua-Kona and Bayside Computer Shop in Hilo.

Household Hazardous Waste Collections: Since 2004, collections have been held 4 times a year on the 1st Saturday of June and December at the Hilo Transfer Station and the 2nd Saturday of June and December at the Kealakehe (Kailua-Kona) Transfer Station.

Stakeholders' Feedback

Participants universally accepted the need for recycling. There were several basic issues raised

during discussions. Attendants at drop-off sites for unrecycled discards as well as recyclables frustrated participants. Residents expressed concern that attendants took no responsibility for recycling bins, signs, outreach or information, as their job description was solely focused on assisting residents with their disposal of discard materials down the chutes. For example, if recycling signs were down, attendants didn't put them back up, and no one was notified they needed re-hanging or replacement. While participants understood that the workers were simply following their job description, there was consensus among stakeholders that attendants' responsibilities needed to be expanded, and they required training for recycling assistance as well as duties related to helping residents use disposal bins. Urban Ore in Berkeley has demonstrated that there is a key opportunity at transfer stations to help residents unload reusables, recyclables and compostables in a way that keeps them separate and retains their value. If such service is not provided, residents may just do what is easiest for them, drop and break things of value, and pile them up together as rubbish.

Drop-off sites were praised for the recent expansion of materials collected using the two-bin system, and for incorporation of reusable item recovery. Many participants suggested that drop-off sites be redesigned so that reuse containers and recycling bins are at the front of the facility, not the rear or off to the side.

Participants also understood and appreciated the mechanism of "Pay-As-You-Throw" (PAYT) recycling, a system in which generators pay for the amount of discards they take for disposal, while recyclable materials are allowed to be dropped off for free. They liked the concept of paying for wasting, but not for recycling.

There was concern, however, that this approach may not be best-suited for the island. In particular, participants were afraid that confrontations between workers and residents and businesses would lead to discouraging people from recycling. Stakeholders argued that Hawai'i is unique in many ways, and the multitude of people who self-haul discards may not respond positively to a PAYT program, negatively impacting the friendly culture of the island.

Mandatory recycling for residents and businesses was favored, with implementation in a way that does not foster confrontation at drop-off sites. Issuing bonds to pay for required infrastructure and investment in education and public awareness programs were accepted as logical approaches for funding.

3b. Recommendations

3.1. Policy

The County should implement a phased-in, required source separation ordinance that requires generators and collectors to store and collect materials into clusters.

Market categories for discards generated from households, businesses and government offices include:

- Reusables (products and textiles)
- Recyclables (paper, glass, plastics, cans and containers)
- Compostables (organics)
- Special discards (ceramics, tires, chemicals and non-toxic mixed materials)

All refuse haulers should provide recycling services as a condition of the County permit they are required to have to transport on the island. A sample ordinance is included as Appendix F to implement this approach.

3.2. Program Implementation

Paper

“Paper” is a generic term for over 85 industrial grades. The most common are high-grade office paper, computer ledger, newsprint and cardboard. There are also mixed grades that are traded regularly on market exchanges. One mixed grade is referred to as “office pack,” and is generated from office buildings. This material is tipped at sorting stations where non-paper materials are removed and papers are graded, baled and shipped to markets. Mixed papers have the lowest values while higher quality papers with longer fibers obtain the highest prices.

Plastics

Thousands of tons of the plastic generated on the island are #2 HDPE (high-density polyethylene), commonly found in use as milk jugs, detergent bottles, and potting containers. This material, after flaked (shredded) and cleaned (with soap and water), can be a feedstock for a small manufacturing company producing a variety of products, such as sheeting for farm animal control, rotational molding for seats and bins, and vacuum forming for jiffy Johns and fencing. A facility with this production capacity would require five acres, employ twenty workers, and require approximately one million dollars in start-up capital. This company could be established as a joint venture firm with already-successful manufacturers on the U.S. Mainland. Chairs and tables, as well as a multitude of other products, could be produced for both island restaurants and offices and overseas markets.

The other major plastic in the discard stream is #1 PETE (polyethyleneterephthalate). This is a valuable industrial product used for making new PETE bottles for the soda industry. Clean, baled PETE is marketable to the U.S. Mainland as well as to Asia.

To enhance the value of materials recycled on the island, the County should transform six transfer stations to sort #1 PETE, #2 HDPE and #5 PP (polypropylene) from commingled recyclables and grade them to their highest possible value before being baled and shipped off island. An economic analysis of this option can be done in a subsequent phase of work.

Glass

Glass is a valuable material that does not have to be shipped off island. Small glass companies are making objects of art from recycled glass. Larger-scale uses include clean fill for construction projects, such as road base, sidewalks and building foundations. Processing equipment for these uses is available from Aloha Glass on Maui. This material can serve as a substitute for aggregate materials that have to be brought onto the island, and should be collected and stored for use by small businesses, private companies and government projects.

It is also possible to add value to recycled glass through manufacturing. Peak Creations, a company based on Hawai'i, can produce glass products through hot, warm and flame techniques. If 25,000 square feet of a resource recovery park were available, the company could implement glass manufacturing for on-island and export markets. Capital investment is estimated at \$750,000. To expand upon technology and markets it has successfully developed, Naef Recycling Company, based in Syracuse, New York, has expressed interest in establishing value-added glass manufacturing in Hawai'i. Ice Stone of Brooklyn, New York, is another company that manufactures high end table and counter tops from recycled glass. Nationally, glass manufacturing research is underway by a number of entrepreneurs.

While glass has a relatively low-end use value on the island, the County could benefit by attracting a company that makes higher-valued products for both on-island and export markets.

Metals

The key to extracting the maximum value from this material is careful high grading. Initially, ferrous and non-ferrous metals must be separated through a simple magnetized belt system. Trained workers are required to high-grade non-ferrous metals according to type (brass, aluminum and copper) as well as grading various alloys to get the highest value for shipping off of the island for resale.

High grading of metals is critical to successful hand-dismantling businesses that focus on computers and late model products. This process also allows for working parts to be separated for resale on the island or off island.

3.2a. Training and Education

Transfer Station attendants require proper training to guide residents and business self-haulers to recycling bins. Training in recycling will ensure transfer station workers are able to answer detailed questions about the County's resource management programs. Public employees and industry representatives should be trained to understand and use any new systems implemented.

Once a new ordinance and infrastructure is in place, a countywide education program informing the public of the new rules and how to use the new system will be necessary. This program should include all schools as well. Public buildings and parks should be the first to convert to the program to set an example for the public.

Recycling education can further be accomplished by an aggressive media campaign (using

ongoing newspaper ads and radio and local TV spots). Another avenue is to conduct public meetings on resource management for all communities that have transfer stations with recycling bins. Additionally, recycling display boards at each transfer station will demonstrate the need and ease of recycling, along with posting updates on rules and events. Other educational ventures, such as office recycling, can be accomplished by offering businesses the opportunity to set up their offices to capture recyclable and reusable materials.

3.2b. Infrastructure/Equipment

All recycling drop-off centers, transfer stations and landfills must be redesigned with a new flow pattern and signage that citizens and businesses can easily understand and follow.

Infrastructure should include:

- Bins for reusables, commingled recyclables, compostable organics and ceramics (e.g., rocks, concrete, asphalt, gravel, and bricks) for drop-off centers
- Trucks for moving materials (roll-off and box type)
- Conveyors, magnets, baler, scales and pole barns for processing sites
- Tools and signage

3.2c. Technology/Methods for providing Materials for Markets

In order to take advantage of the best markets and the proximity of Hawaii to India and China, a higher level of sorting will net more revenue. The County's existing system is highly subsidized and redundant. A higher level of separation will net more money from mills in Oregon as well. Controlling the separation of these resources will provide increase value and long-term sustainability. A feasibility analysis can be done in a subsequent phase of work.

All drop-off transfer stations should have bins (some enclosed to protect materials from the weather) to accept discards in clusters (reusables, commingled recyclables, organics, ceramics and non-toxic mixed materials) for delivery to one of the six processing centers at the larger transfer stations and landfills. Blue bins containing commingled recyclables will be delivered to a mini-MRF processing center. Each of the processing centers should be capable of sorting commingled papers into three grades (cardboard, newspaper and writing papers), two grades of metal (ferrous and non-ferrous) and at least four types of plastic (#2 HDPE, #1 PETE, #4 LDPE and # 5PP). Conveyor belts, roller drum magnets and balers will be required at each center, as well as pole barns for processing and storage, and roll-off trucks and bins for materials transport.

3.2d. Funding and Incentives

Funding for required infrastructure will come from existing solid waste funds and an increase in landfill tipping fees. As tipping fees increase and what's discarded in the landfill is reduced, revenue from sales of materials may support these projects as landfill management and environmental mitigation expenses decrease. A more detailed economic analysis is required to

compare the costs of implementing these programs versus the resultant decrease in landfill revenues during a transitional phase and beyond. A portion of an increased landfill tipping fee will cover enforcement, and illegal dumpers should be fined substantially. The price of disposal should cover the cost of properly handling materials without having to use a landfill. Once recyclable and compostables are diverted, producers of items in the remaining residuals should be required to cover disposal costs of their products or take them back.

3.3. Budget and Five-Year Timeline

<i>Recyclables</i>		
Year 1	Source separation ordinance and permit requirements	\$25,000
Years 2 - 3	Processing center design and construction Infrastructure: \$3 million amortized over 20 years <ul style="list-style-type: none"> • Pole barn at six sites Equipment: \$3.5 million amortized over 6 years <ul style="list-style-type: none"> • Conveyors magnets, baler, scales, bins for reusables, commingled recyclables, compostable organics, and rocks • Trucks for moving materials 	\$6,500,000
Years 2 - 5	Training and public awareness	\$1,000,000
Five-Year Total		\$7,525,000

4. Special Discards

4a. Overview of Existing Management Methods/Stakeholders' Feedback

Special discards include chemicals, ceramics, tires and non-recyclable materials that need to be redesigned because they are not recyclable or compostable (baby diapers and treated wood³¹, for example). Rocks and tires are basic ingredients for road base and surfaces and should be sorted for that use. Chemicals are not allowed in the landfill and should be handled with reusables. Non-recyclable materials like diapers and treated wood that is not reusable as lumber should be landfilled and a dialog should be initiated with industry about product redesign. A special box should be designated for these materials and signed ("destined for landfill") and until they are phased-out, buried in the landfill.

Currently seventy percent of the Hawai'i's discards are handled mixed and buried in the landfill. With the "four sort" system (reusable, recyclable, organic and special discards), special discards can ultimately be reduced to twenty percent or less of the County's current volume, and take-back programs can be implemented for the more toxic items. While the island's geography and demographics present challenges to such a high diversion rate, these aspects also represent opportunities, such as ample land for processing facility development and a native culture with

³¹ Most of the wood used in construction has been treated to withstand deterioration from salt water. As a result, it must be reused appropriately as lumber or landfilled in Hawai'i. For more details, see: <http://hawaii.gov/health/environmental/waste/sw/pdf/trtdwood.pdf>

strong roots in sustainability. A highly urbanized region with nearly four times the population of Hawai'i and wider ethnic diversity could be considered a more challenging case, but the City of San Francisco has achieved a 70 percent diversion rate and is actively developing programs and policies to move beyond.

Chemicals and toxic materials are currently collected at County landfills and some transfer stations. These should be incorporated into the ReStore program.

While stakeholders primarily had strong input on reuse, recycling, composting and education issues, special discards were addressed in community meetings, and participants expressed particular interest in the current S.A.F.E.³² Center program in Los Angeles, California. They particularly liked the idea of permanent drop-off sites complemented by mobile units that rotate through communities.

4b. Recommendations

4.1. Policy

- The source separation ordinance should include ceramics (rocks, gravel, concrete, asphalt, bricks, and broken clay pots) as a designated recyclable.
- Take-back ordinances should be passed for items that cannot be recycled or composted (initially, sharps and pharmaceuticals should go back to pharmacists, and fluorescent lights and mercury batteries back to retailers) See Appendix I. Sample Household Battery and Florescent Tube Ordinance and Appendix J. Sample Sharps Ordinance.
- Building and demolition projects should have a plan to reuse and recycle, supported by a refundable deposit.
- The State Health Department should work with the County to establish rules for post unused chemical resale.
- Electronic discards should be designated as reuse items and banned from landfills.
- An ordinance banning E-scrap (anything with a plug) should be phased-in over a two-year period.
- Retailers should be required to take back items that don't have a place for disposal on the island and send them back to the manufacturer.

A statewide commission should initiate a discussion about the handling of treated wood and incontinent products and evaluate redesign and take-back recommendations. The County could establish a model plan for other islands to follow by adopting voluntary local and mandatory statewide take-back programs with retailers, distributors and manufacturers. For example, on May of 2008, Minnesota signed into law HF 1812C/SF1475, which modifies the state's Waste Management Act to establish principles of product stewardship. The law requires the Minnesota Pollution Control Agency to provide recommendations for establishing a comprehensive product

³² Solvents, Automotive, Flammables, and Electronics

stewardship approach for reducing environmental and health risks posed by the use or disposal of certain products by January 15, 2009.

These include, at a minimum:

- (1) Criteria to evaluate products proposed for product stewardship solutions
- (2) A process for designating products for product stewardship solutions and the role the State would play in that process
- (3) Typical components of product stewardship plans
- (4) Options to facilitate the creation of industry-managed stewardship management organizations
- (5) Methods to identify and monitor progress towards stewardship performance goals
- (6) Strategies to implement the use of standards, certifications, and eco-labels to promote environmentally preferable products. (See Appendix J: Comparison Chart of State Electronic Recycling Laws and Appendix K. Draft Model Electronics Product Stewardship Legislation)

Landfilling is not the proper disposal method for chemicals and sharps. Initially, until industry redesigns or creates take-back programs of its own, diapers, treated wood and some composite items might be the only materials going to landfill. Producers should take responsibility for the products they manufacture, taking back what can't be recycled until what they produce is redesigned with recyclable (and non-toxic) materials. Examples of take-back ordinances enacted in the County of San Luis Obispo California are included in the appendices as Appendix I: Sample Household Battery and Florescent Tube Ordinance, and Appendix J: Sample Sharps Ordinance.

A construction and demolition (C&D) ordinance should be passed that includes a plan to recycle and reuse 50% of the materials generated initially, and higher levels as new markets develop for key components of this stream. While treated wood represents a challenge due to its toxicity and limited options for recycling or composting, it is a durable, long-lasting material that can be reused provided proper deconstruction efforts are made. A deposit should be required and returned when the project is over and this target has been met. A Sample C&D Ordinance is attached as Appendix H.

Deconstruction and recycling of C&D materials should be required for all building and take down permits. It's important to note that current laws that require C&D materials recycling do not distinguish between C&D materials recycling and recovery of used building materials from deconstruction.

A hybrid ordinance that provides additional incentives for deconstruction should be adopted. Deconstruction provides the highest valuable materials in the discard stream as materials can be reused as originally intended (a door removed from a building, for example, can be reused as a door in the construction of another building). Further, deconstruction is an invaluable training tool for workers and small businesses which leads to higher skill levels that can be

translated to all construction trades and higher income for an expanded tax base.

4.2. Program Implementation

4.2a. Training and Education

Under the proposed system, less than twenty percent of this material would ultimately require landfilling. Staff at transfer/processing stations will need to be trained in the proper management of special discards. This is already being done with hazardous and toxic discharges through the County's HHW (household hazardous waste) collection program as mentioned in Section 3a. above. Training in recycling will ensure transfer station workers are able to answer detailed questions about the County's resource management programs. Vocational training programs should also be established in schools for repair of electronic products.

4.2b. Infrastructure/Equipment

- Special discard centers at the landfills and transfer stations must be redesigned with a new flow pattern and signage that citizens and businesses (if allowed to use the facility) must follow.
- Special discards offer an opportunity to reduce costs and environmental impacts of household hazardous materials found in batteries, light bulbs, pool and photo chemicals, household cleaners, paints, medicines, and needles (the majority of these materials cannot be recycled and must be managed carefully to prevent threats to environmental and public health).
- Reusable items (paints and chemicals³³) should be transferred to the reuse section described above for sale or giveaway. Medicines could be taken back to pharmacies or donated to health care services that have pharmacists to oversee them (e.g., for children or underprivileged).³⁴
- A residual materials research center (see section on education below) should be assigned to research the potential end use or substitution for these products.

Three discard streams make up the C&D category: construction discards, demolition discards and deconstruction, and recovery of building materials for reuse. These materials can take up substantial amounts of space in a landfill, yet they are relatively easy to recycle and reuse if the proper infrastructure is established.

The existing six large transfer stations and two landfills on the island have ample space for easy tipping of rocks, clean wood and other reusable/recyclable commodities from construction and demolition work. Reusable building materials should be directed to ReStores.

The County already has the tub grinding equipment for processing wood discards and yard trimmings into mulch. Unusable, untreated lumber recovered from construction and demolition

³³ See UV Irvine's program at <http://www.ehs.uci.edu/apps/waste/chemrecycle/index.jsp>

³⁴ See <http://www.calpsc.org/products/pharma.html> for examples of what others are doing regarding EPR and pharmaceuticals.

can be processed through the tub grinders.

A mobile crushing machine should be purchased to process rocks, bricks, asphalt and cinder block materials into a uniform density for reuse. A new mobile machine would cost approximately \$350-\$500,000, but they are also available used.

Special attention should be given to E-scrap for two reasons. First, these items have high value parts and materials (such as alloys) in them. Second, these materials are toxic, cause environmental problems when placed in landfills, and should be banned from disposal. Products that cannot be sold at ReStores should be dismantled for recycling. Dismantling facilities should be developed on the larger transfer station sites or in urban warehouses.

Infrastructure requirements include:

- Two 25,000 square foot indoor facilities (one for each side of the County)
- Work stations and hand tools for disassembly
- Office equipment

Old tires and other industrial rubber compounds can be turned into valuable products in two ways. An intermediate step would be to attract a crumb rubber company that produces medium grade products used in road building and sub-surface grading. Rubberized asphalt concrete (RAC) made with recycled tires has been in use since the late 1970s.³⁵ A two-inch-thick rubberized asphalt concrete overlay can save as much as \$50,000 per lane mile when compared to four-inch-thick conventional asphalt overlay. It resists cracking and lasts often 50% longer than conventional materials. RAC reduces noise by as much as 85% and it provides better traction and visibility in wet weather.

Alternatively, the County could try to attract a high-grade crumb rubber producer that manufacturers virgin-substitute material for the Asian rubber compounding industry. End uses also could include molded products, mats, playground covers, speed bumps, and carpet pads. Recent improvements in crumb rubber production produce smaller particle sizes, which have wider applications in molded rubber and composite products.

The value of old tires can be increased through the County's development of a five to seven-acre site for private firms to operate a crumb rubber plant. The RFP should require the company to specify it uses commercially proven technology and has guaranteed end market. The technology can be scaled at several levels, with the end use market determining the ultimate scale. If the County required crumb rubber use in all asphalt, roadbeds and school athletic fields, a less sophisticated system and scale would be required. If the County wanted to target high-end markets, sending processed material back to tire or shoe sole manufacturers off island, then the scale would have to be increased. Facilities can be scaled from 400,000 lbs per month all the way up to 40 million pounds per year.

The smallest system will cost approximately one million dollars (not including cost of land). Since the island generates approximately four million pounds per year, a plant with a capacity of

³⁵ The data in this paragraph is from: <http://www.ciwmb.ca.gov/Tires/RAC/Default.htm>

400,000 pounds per month would suffice. 400,000 pounds of input tires will yield 300,000 pounds of product per month, or 3.6 million pounds per year. This material can be integrated into permanent, long-term markets for roadbeds, asphalts, and sports stadium use. A feasibility analysis should be done in a subsequent phase of work.

4.2c. Technology/Methods for providing Materials for Markets

The special discard stream should be handled no differently than the recycling and reuse streams. The key is separate bins for specific commodities. Rocks and clean lumber are easy to separate and store, while chemicals must be handled by hazmat-trained workers, and if possible, be made available for reuse. Until take-back laws are in place, universal discards must be handled differently than treated wood and diapers, which can be landfilled. Additionally:

- Hazmat facilities should be sited at all processing centers.
- Chemical and paints, as well as clean wood, should be resold at ReStores.
- Some specific toxics may always require special handling.
- Rocks and other ceramics should be kept separate and made available for use on local projects.

4.2d. Funding and Incentives

- Fees should be assessed at the retail level for discarded items requiring special handling for proper disposal.
- The cost of wasting should be covered through a PAYT system at landfills, transfer stations and drop-off facilities. Materials that are valuable enough (e.g., reusables and some recyclables) should continue to be accepted for free. Materials that require processing costs could be charged a fee to cover those costs, as long as that fee is substantially less than the fees charged for disposing of mixed wastes.
- A workforce development fund should be set aside for training in deconstruction and reusable electronics.
- Tax credits and reductions should be allocated for deconstruction companies, or demolition companies expanding into deconstruction.
- Procurement preferences should be initiated for used building materials and clean fill.
- Salvage rights should be offered to local non-profit and architectural salvage businesses to remove architectural elements prior to demolition. This could be done with no-cost contractual relationships (see "Public Policies that Support Architectural Salvage" in Appendix M. Strategies for Promoting Architectural Salvage and Deconstruction Practices).

- Demolition contractors should be encouraged to divert materials from the discard stream. Bids could include preference for architectural salvage and deconstruction and/or required resource management plans.

4.3. Budget and Five-Year Timeline

Year	Recommendations	Budget
<i>Specials Discards</i>		
Year 1	Pass ordinances and work with health department on reuse	\$50,000
Year 2	Special discard centers construction	\$1,500,000
	Equipment	\$250,000
Years 3-5	Staff training	\$500,000
	Public awareness campaign	\$500,000
	Operating costs	\$300,000
	Five-Year Total	\$3,100,000

5. Education, Outreach and Public Awareness

In general, recycling education can be enhanced through an aggressive media campaign utilizing ongoing newspaper ads and radio and local television spots. Public meetings on resource management should be conducted for all communities that have transfer stations with recycling bins. Display boards at each transfer station should be designed and constructed to demonstrate the need and ease of recycling and notify residents of rule changes and upcoming events. Business recycling can be promoted through employee training sessions and media campaigns as well.

5a. Overview of Existing Programs/Stakeholders' Feedback

In a typical year, Recycle Hawai'i does over fifteen community events, forty presentations to schools and various organizations, and about two dozen home composting workshops. Recycling and composting are promoted via print and radio advertising, PSAs, and special events such as Household Hazardous Waste/latex paint collections, Christmas Tree recycling, the DIY Used Motor Oil Program, E-Waste collection, and other community and government-driven events focusing on resource management.

While many stakeholders expressed praise for the County's education efforts, some felt they required expansion, especially in areas with lower population densities and transfer stations that were for disposal only. One stakeholder suggested the programs were too focused on non-native people, and more work should be done targeting recycling education for the endemic Hawaiian population.

An overwhelming majority of attendees agreed with the “new rules” (Producer and Retailer Responsibility, Source Separation Ordinance, Get Organics out of Landfill, Construction & Demolition (C&D) Recycling, and Planning, Zoning and Incentives) and felt they would be good for the island’s economy and environment.

Funding for overall education, outreach and public awareness could be strengthened. A survey done by the County at an island Wal-Mart found eight out of ten shoppers did not know the island had any recycling other than the state’s HI5 program.

5b. Recommendations

5.1. Policy

The County should work with other counties in the state to develop a minimum content standard (the requirement designated products or materials have at least a certain content of recycled material... for example, any new road built must contain 10% recycled glass and 10% recycled rubber) for a number of products including newspaper and hard plastics.

The County should explore with other counties in the state the implementation of a state landfill surcharge, as well as a tax on wasting.³⁶ A tax on wasting could be structured in many ways. The key is getting the state to provide enabling authority to local governments to enact fees or taxes on wasting. In California, AB939 expressly permitted fees on waste collection, transfer and disposal that were used to generate funds to implement any programs in their Source Reduction and Recycling Elements. In San Jose, CA, 58% of every dollar spent on commercial refuse hauling goes to the city in a combination of “AB939 fees” and “franchise fees.”³⁷ The funds collected in Hawai‘i should be used to finance government, private sector and community-based recycling and reuse programs and enterprises.

The County should explore with other counties in the state the implementation of FaRMZ (Facilitated Resource Management Zones, modeled after the state of California’s RMDZ, or Recycle Market Development Zones.³⁸) Companies locating in these zones would benefit from the surcharges described above, as well as low-interest loans and assistance with permitting and market development.

5.2. Program Implementation

5.2a. Infrastructure/Programs/Materials

Education for all grade levels in schools, both public and private, are absolutely required for Hawai‘i, since the potential use of PAYT and other incentive systems may clash with the political culture of the island and the present self-haul system. Fortunately, environmental educators have produced many excellent lesson plans for each grade, from kindergarten through college. In the earlier grades, using recycling examples for math, geography and writing are important as opposed to simply “teaching recycling.” Each class should have a recycling program. The entire

³⁶ For different ways of structuring “incentives” see <http://www.ciwmb.ca.gov/Publications/LocalAsst/31001008.doc>

³⁷ See <http://www.ciwmb.ca.gov/LgLibrary/Innovations/Incentives/SanJose.htm>

³⁸ See <http://www.ciwmb.ca.gov/RMDZ/>

school janitorial system has to be integrated into the program as well. Further, each school's contract for refuse hauling should include provisions for recycling collection. This could be accomplished through technical assistance programs provided by the County to the schools, which show them how they could save money by recycling more.

In later grades, internships in the industry should be available to junior and senior high school students, to allow them to identify jobs that will appeal to their professional interests after graduation. Academic work should also include essays, case studies, business analysis and environmental impact studies for students in higher grades.

The transformation from solid waste management to resource management on the island requires trained managers for public and private facilities. For this reason, each university, college and community college should offer either certificate or full degree programs in resource management. Facility operators could draw their managers from these programs.

Special attention has to be focused on the hard to recycle and hazardous materials in the current discard stream. The University of Hawaii at Hilo should establish a residuals research and development program to study these residuals, including their potential reuse, recycling and/or substitution with more environmentally friendly materials. This new discipline at the university should be integrated with the Product Stewardship Council recommended earlier for special discards management. A model for this new program is the Marine Debris Research endowed by the Algalita Foundation, based in Long Beach, California.

Public awareness refers to non-school based information dissemination to the public at large. A variety of techniques and programs are available.

First and foremost is public exposure. All government buildings (schools, athletic fields, offices, hospitals, airports, bus stations and libraries) must have recycling bins and clear directions for people using these facilities. For convenience, all drink dispenser machines should have recycling bins adjacent to them. A private hauler could provide this service. These programs would need to be factored into the cost of residential and/or commercial recycling programs. For commercial businesses, the County could just require that these services be provided. Then the free market would determine what price they would need to pay haulers to provide that service. For residential collections, the PAYT rates at the transfer stations and landfills would need to be structured to include the costs of these programs.

Libraries should feature recycling-themed programs at least once per year. Banks and other businesses that possess a substantial walk-in customer base should be asked to hold recycling art or essay contests and provide modest rewards for winning participants. Grocery stores should be asked to feature packages that are 100% recyclable. These stores should also be encouraged to resist products packaged in hybrid material containers that cannot be easily recycled. Additionally:

- Local teams should be encouraged to adopt recycling oriented logos and names for their teams.
- The County should develop and sponsor a "We Recycle" logo for businesses that promote recycling.
- Restaurants should be encouraged to use only recyclable, compostable or reusable

dishware.

- The Chamber of Commerce should hire a recycling coordinator for private sector recycling program development among member enterprises.

It is critical for the government to be a role model. Just as it is important for all public buildings to have convenient recycling and composting services, it is important for the County to lead by adopting a green purchasing program. This would include specifications for purchasing environmentally friendly products such as those that are easy to recycle or compost and made from recycled materials. For sample specifications and products, the County can refer to the Purchasing Institute at Washington State University. Environmentally preferable product programs also provide information on source reduction purchasing.

5.2b. Funding and Incentives

- Funding for public outreach and education should be covered by savings and avoided costs for in-house recycling programs. Once rate structures are structured correctly, the costs to recycle should be less than the costs to dispose of wastes as garbage. These are the “savings” and avoided costs that should be used for outreach and education first.
- All infrastructure projects must have funding for staff training and public awareness.
- Tipping fees at the landfills should cover the cost of a research facility at the landfill connected to the university to determine the proper disposal for discarded products and packages that cannot be recycled or composted.

5.2c. Budget and Five-Year Timeline

Year	Recommendations	Budget
<i>Education, Outreach and Public Awareness</i>		
Year 1	<p>Hire recycling education and public awareness coordinator to establish working relationships with school system, chamber of commerce and government agencies/ Identify key executives to work with for making recycling an everyday, multi-phase presence in the lives of Hawaii County residents and tourists.</p> <p>Design campaigns...</p> <ul style="list-style-type: none"> • Recycle art campaign/Coordination of business and public offices and schools for recycle art contests at these venues once per quarter: bank lobbies, grocery chains, government offices, libraries, schools, and museums • E-scrap campaign (anything with a plug) designated for reuse and/or recycling • EPR for difficult-to-recycle campaign/Coordinate meetings with citizens and retailers, distributors and manufacturers of these products and packages/Develop volunteer takeback programs for easy-to-handle materials (such as paint, batteries, and household chemicals (pool, photo, cleaning) • Explore legislative actions for takeback of hazardous products and packaging • Implement recycling and composting industry internship program for vocational and academic-oriented students/Placements during summer vacations, orientations during school year • Communitywide social marketing plan 	\$880,000
Year 2	Launch campaigns and intensified in-school programs	\$880,000
Years 3-5	Maintain existing campaigns/seek community feedback for modifications	\$680,000 annually ³⁹
Five-Year Total		\$3,800,000

6. Extended Producer Responsibility

³⁹ Calculated at \$4 per capita (170,000 residents) per year with \$1 each for awareness, training, education and reinforcement, respectively.

As noted before, in many cases, such as disposable diapers and treated wood, the analysis shows that there is no reuse, recycle or compost option. In such instances, these items should be addressed as producer responsibility issues. As Martin Bourque of the Berkeley Ecology Center explains, "If it can't be reused, repaired, rebuilt, refurbished, refinished, resold, recycled or composted, then it should be restricted, redesigned, or removed from production."

Wasting is a design decision. Wasting is not inevitable. Producers design products and packaging "upstream" from the local government refuse and recycling system. Producers and retailers have shifted the responsibility of managing the disposal of after-life products to local governments. For every ton of discards in the local refuse and recycling system, there are 71 tons produced "upstream" from mining, manufacturing and distribution of residuals. In a Zero Waste system, once they accept physical and/or financial responsibility for their products and packaging, producers and retailers will have an incentive to design waste out of the system. This is known as "Extended Producer Responsibility" (EPR) or "Product Stewardship."

EPR is one of the most powerful opportunities to move towards Zero Waste, particularly for products and packaging items that are toxic or currently difficult to reuse, recycle or compost. In advocating for EPR, the system should establish efficient repair and reuse programs to retain the form and functions of products, rather than taking back products and packaging to just be crushed or shredded for recycling. EPR systems should also ensure the redesign of products and packaging to eliminate waste and encourage durability and longer product life cycles.

Local governments have authority in the area of health and sanitation to make rules as to what can and cannot be placed into the refuse system. If a material has been designated by a state or federal agency to be a pollutant or banned from the landfill, local governments can require the seller of the material to be responsible for disposal of that product. In New York City, an ordinance was recently adopted that requires all retailers of electronic products to take back those products to be reused or recycled. The statutory basis for the New York City legislation was the state's Solid Waste Management Act, which requires local governments to provide solid waste and recycling services. Although Hawai'i's state solid waste statute⁴⁰ does not provide local governments with the exact same regulatory authority as in New York, Hawai'i will need to work with other counties to identify key elements of the state law that can be utilized or modified to help achieve Zero Waste goals.

The County should explore whether the Hawai'i state solid waste statute provides local governments with the authority to develop and adopt policies that keep certain materials out of the refuse collection system and/or landfills. Once County staff identifies and agrees on the options they are most interested in, further legal review will determine how the policy can be adopted locally, or whether additional legal authority from the state may be required. If state legislation is required, the County could use this opportunity to collaborate with other counties, identify the materials that are most difficult and costly to manage locally/regionally, and unite local governments behind a common goal of shifting disposal responsibility of certain materials back to the producer.

In the Pacific Northwest, local governments obtained a grant from the US EPA to form the Northwest Product Stewardship Council. In California, local government staff working in

⁴⁰ Hawai'i Revised Statutes Chapter 342G (HRS 342G)

household hazardous wastes, wastewater pollution prevention, and refuse and recycling programs joined together to replicate what had been done in the Northwest. The California Product Stewardship Council⁴¹ now has over 50 local governmental members and many more organizations of local governments supporting its efforts. Initial funding for the CPSC has come from a combination of local government membership dues, and grant funds for household hazardous wastes from the state.

Similar Product Stewardship Councils are being formed around the country. Vermont is the most recent state to have such a council, and other states are considering how to proceed now. Usually the first step has been to invite in leaders from other states where they have organized such councils to make presentations to local government and state staff about what they did, how they did it, and why. Those that have already moved forward are happy to share all their data, resources and insights to help other states to move forward as well.

Most of the product stewardship councils that are being formed have been based on the Northwest Product Stewardship Council model, where only local governments have joined as members. Everyone else with an interest in EPR is welcome to participate in discussions and events. The councils provide an important avenue for local governments to highlight to local, state and federal elected officials and regulators how costly current local government programs are that try to address this issue, and how ineffective they are. Once elected officials understand that the system is broken, they are more open to directing staff to figure out how best to address the issues for particular products and industries.

6. 1. EPR Recommendations

To move forward with EPR, the County of Hawai'i should:

- Be a strong advocate for Extended Producer Responsibility (EPR) legislation and programs locally, statewide and nationally. The County should work to form a Hawai'i Product Stewardship Council, composed only of representatives of local government to clearly address this "unfunded mandate."
- Confirm the legal authority to ban problem products and packaging or require businesses and institutions to take back designated products and packaging sold in Hawai'i that are toxic in their manufacture, use, or disposal, and/or are not currently recyclable in the area. The City of San Luis Obispo, California, did its own research and determined that they could pass and enforce takeback laws within their authority.

V. Appendices

⁴¹ See www.calpsc.com

Appendix A. Press Release/Meeting Notice

DEALING WITH OUR ISLAND'S RUBBISH – THE NEXT STEP COMMUNITY MEETINGS SET FOR SEPTEMBER

Hilo, Hawai'i – August 25, 2008 -The Big Island has a rubbish problem, which is fast becoming a crisis. The Hilo landfill will be completely full in the next 5 years, however it may be expanded horizontally and vertically to buy additional time. Before that happens, it is important that our communities come together and discuss solutions to this complex problem – a problem that impacts every resident as well as those who come here to visit.

A possible solution, one that was endorsed by a majority of the Hawai'i County Council in October 2007, is to develop a plan based on the concepts of Zero Waste. Though Zero Waste has many aspects, its primary goal is to find better uses for the materials that we usually take to the landfill - with the aim of reducing waste to as close to zero as possible. HI5 and mixed-bin recycling is clearly part of that effort, but so is keeping green waste and compostable items out of the landfill, creating more reuse opportunities for clothing, household goods, and building supplies, reducing packaging and transport costs by purchasing food from local farmers, and making it more convenient for island residents to properly dispose of hazardous and electronic waste.

During the month of September, residents will have many opportunities to learn about Zero Waste through a series of community forums. Zero Waste experts Richard Anthony Associates from San Diego will facilitate these forums. The goals are to provide information about Zero Waste, to bring stakeholders - such as recyclers, haulers, farmers, and associated businesses - together with interested citizens in order to share information and ideas, and ultimately, to develop a plan of action for Hawai'i County.

You can attend a public meeting at any of the following locations; some meetings have a particular emphasis, but all are welcome.

Kona – Meetings from 6:00-8:00pm

- September 8 and 10: The Mayor's Office Conference Room (behind the Big Island Grill)
- September 9: Liquor Commission Conference Room; 75-5722 Hanama Place, #1107
- September 8: Reuse & Recycling, Special Discards
- September 9: Education and Policy
- September 10: Organics

Waimea

September 11: Thelma Parker Library, 6:00-8:00pm
All key players and interested community members

Hawi

September 12: Old Kapa`au Courthouse/Senior Center (located next to the Kamehameha statue), 6:00-8:00pm
All key players and interested community members

Kohala Coast

Zero Waste Implementation Plan for the County of Hawai'i • Recycle Hawai'i • Richard Anthony Associates

September 13: Zero Waste Conference at Mauna Lani – Public Session, 9:00am-Noon
Any interested parties

Hilo

September 15: Mokupapapa Discovery Center, 308 Kamehameha Avenue, 5:00-7:00pm
Reuse & Recycling

Pahoa

September 17: The Inn at 13-3775 Kalapana Highway, 5:00-7:00pm
Organics

Volcano*

September 18: Organics, Reuse, Recycling, Education & Policy

Hilo - both meetings held at Naniloa Volcanoes Resort (Kilohana Room), 5:00-7:00pm

- September 18: Special Discards
- September 19: Education & Policy

In addition to the public meetings, a Zero Waste conference, sponsored by the U.S. Environmental Protection Agency and Hawaii Island Economic Development Board, is being held at the Mauna Lani Hotel and Bungalows from September 11-13. Along with Richard Anthony Associates, Zero Waste experts Professor Gunter Pauli, Paul Connett PhD, Neil Seldman PhD, and Richard Flammer will be presenting. Representatives from Hawai'i County will also be in attendance, offering the perspective of our local government. For more information about the conference, contact HIEDB at 935-2180 or visit: www.hiedb.org/zero-waste-conference-2008

Community meetings are brought to you by the County of Hawai'i, Councilman Bob Jacobson, and Recycle Hawai'i. For more information, call 969-2012 or go to Recycle Hawai'i's website at www.recyclehawaii.org.

-end-

* Meeting added after issuance of press release and was conducted at the request of Volcano area stakeholders, County of Hawai'i, and Councilman Bob Jacobson.

Appendix B. List of Stakeholder Participants

Last Name	First Name	Meeting Location	Phone	Email
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Appendix C. Comments on “Goals for the Integrated Solid Waste Management Plan”

Ted Vorfeld, County of Hawaii Solid Waste Advisory Committee (SWAC)
February 3, 2008

1. Zero Waste

My comment on this item was to suggest that a Hawaiian word be substituted for “Zero” and that word should reflect reducing rather than totally eliminating solid waste. Totally eliminating solid waste is deceptive since it cannot be done by any known system of waste reduction. We should avoid deceptive language in our goals.

I suggested one of the following words might be more appropriate:

ha’a.ha’a-meaning “minimum” (Also-low, lowly, humble, degraded, meek, unpretentious, modest, unassuming, unobtrusive, lowness, humility)

ho’o.iki-meaning “To make small” (Also-to lessen, diminish)

lihi-meaning “little bit” when used as an adjective (Also when used as an adjective-small quantity, particle, minutia, slight)

These words were selected from the Hawaiian Dictionary, Revised and Enlarged Edition, by Mary Kawena Pukui and Samuel H. Elbert, 1986 University of Hawaii Press.

2. Greenhouse Gas Emissions

I suggested that we eliminate this goal for reasons I explained during the polling of committee members on the Objective Hierarchy, item 2- A, wherein I gave this category a ‘10’ out of 100 for importance. My low rating was questioned by the moderator.

My reasoning is as follows:

Greenhouse gas emissions from municipal solid waste landfills (or any other solid waste disposal method for that matter) are a minor source of the “Global Warming Potential” as indicated in the 2006 USEPA “U.S. Greenhouse Gas Inventory Reports” of April, 2008. This report indicates that, in 2006, methane from landfills amounted to 22.6% of all methane gas emitted in the U.S. but methane comprised but 8% of total greenhouse gasses and landfill methane emissions comprised less than 2% of all greenhouse gases from all sources in the U.S.

One should note that the weights of the various greenhouse gas emissions listed in the EPA report are all corrected to “Global Warming Potential” (GWP) values which list gases in terms of 100 year equivalent CO2 global warming potential. Methane is listed at 21 times the CO2 potential (hence actual weight of methane gases are somewhat less than 5% of the weight listed for methane). GWP values were established by the Intergovernmental Panel on Climate Change (IPCC) and are currently the subject of controversy.

3. **Pay –As-You-Throw**

Although I did not so state during the meeting, I believe a PAYT system can be developed that is fair and incentivizes recycling **without** the need to lower property taxes. I also believe that unless a means to administer PAYT is put forward by the committee, a PAYT recommendation without such advice will only create confusion and likely rejection by the Council and the community. I will submit these thoughts in a later communication.

Appendix D. Sample Organics Out of the Landfill Resolution

Compostable Organics Out of Landfills by 2012

Draft Resolution of Support from the County Council, Island of Hawai'i

WHEREAS, landfilling biodegradable materials, such as food, paper, yard trimmings and agricultural products is greatly contributing to global warming.

WHEREAS, more than 100 tons of these biodegradable materials, including paper products, food scraps and yard trimmings, are landfilled in the County of Hawai'i every day. These materials amount to approximately half of the island's discarded resources, and when buried in a landfill, decompose without oxygen and generate methane, an efficient atmospheric heat-trapping gas and a major factor in climate change.

WHEREAS, methane is now understood to be 72 times more potent than CO₂ in causing climate changes over a 20-year period, the amount of time scientists have determined is left before the planet passes the "tipping point" on irreversible climate change. Landfills are the number one source of human-caused methane in the United States and emit the greenhouse gas equivalent of 20 percent of our country's coal-fired power plants every year.

WHEREAS, landfilling any material wastes valuable natural resources. Discarded organic materials contain vast stores of macro- and micro-nutrients needed by agricultural and natural ecosystems to replenish soils. When these materials are not returned to the soil, other nutrient sources must be found. In most cases, petroleum-based and energy-intensive fertilizers are imported and substituted for natural nutrient sources.

WHEREAS, commercial farming and shortsighted land use policies favoring energy-intensive pesticides, fertilizers and irrigation water have resulted in dramatic increases in greenhouse gases discharged into the atmosphere for more than fifty years. These practices have contributed to one-third of the increase in atmospheric CO₂, while causing erosion, sedimentation, water pollution and the progressive stripping of organic matter, beneficial microbes, carbon and other essential nutrients from our soils.

WHEREAS, healthy soils are capable of holding twice the carbon stocks of plants. Release of soilbound carbon through tilling and other shortsighted farming practices causes soils to *contribute to*, rather than protect against, global warming. These methods also compromise the ability of soil to grow food locally, nutritiously, and sustainably.

WHEREAS, land degradation is considered a fundamental and persistent problem by the United Nations Environment Programme.

WHEREAS, healthy soils restored with organic materials protect against flooding, erosion, and drought, promote biodiversity, filter pollutants, buffer soil acidity, and suppress plant diseases and pests while bolstering agricultural yields.

WHEREAS, Hawai'i currently imports 90% of its food and urgently requires the healthier soils that can be produced through diverting organic materials from the landfill and returning the nutrients and organic matter back to farmland to grow its own. This is a critical component of re-creating a more sustainable society on our island.

WHEREAS, Hawai'i Legislature enacted Act 8 (SSLH 2005), "which provided for the development of a sustainability plan to address the vital needs of Hawai'i through the year 2050." Diverting all organics from the landfill for land application, mulching, composting or digestion can help the Hawai'i achieve several key benchmarks in the plan, including Benchmark 4 – "Increase recycling, reuse and waste reduction strategies," Benchmark 5 – "Develop a more diverse and resilient economy," Benchmark 6 "Develop a sustainability ethic," and Benchmark 7 – "Increase production and consumption of local foods and products, particularly agricultural products."

WHEREAS, the quickest and cheapest way to immediately reduce our community's greenhouse gas emissions and improve the health of soils on the island is to get compostable organics out of landfills and back into our soils through composting and anaerobic digestion technologies.

THEREFORE, we agree to phase these materials out of our landfills by 2012, and to redirect these materials back to our soils as useful soil amendments. Staff would establish a plan on how to best accomplish this and how to work with local agencies to encourage the use of compostable organics to sustain the health of our soils.

Appendix E. Case Study: Metropolitan Portland, Oregon "Fork It Over!" Program/Oregon Food Bank

Case Study: Metropolitan Portland, Oregon "Fork It Over!" Program/Oregon Food Bank

The “Fork It Over!” food donation program was launched in 2004, but the Metro government has been working with the Oregon Food Bank since the mid 90s to divert food from the landfill and feed people in the Portland metropolitan area. A multitude of food rescue agencies will accept dropped off food or pick it up directly from its source of generation. Oregon Food Bank is the hub of a network of 919 hunger-relief agencies throughout the state of Oregon and Clark County, Washington.

An affiliate of America’s Second Harvest, the Oregon Food Bank “recovers food from farmers, manufacturers, wholesalers, retailers, individuals and government sources. It then distributes that food to 20 regional food banks across Oregon. Sixteen are independent charitable organizations. OFB directly operates the four regional food banks serving the Portland metro area, Tillamook and southeast Oregon. Those four centers distribute food weekly to 348 food pantries, soup kitchens, shelters and other programs helping low-income individuals in Clackamas, Clark, Multnomah, Washington, Tillamook, Malheur and Harney counties. OFB also works to eliminate the root causes of hunger through advocacy, nutrition education, learning gardens and public education.”

Collection from food rescue agencies is available on a regularly scheduled or call-in basis. Metro and its local governmental partners provide assistance to companies wanting to participate in the program. Support includes visits to businesses to assess what can be donated and help with program start-up, free instructional posters, and free window stickers that let customers know the business participates in the program. Following are some general categories of foods accepted:

- Unserved menu items
- Unserved buffet foods
- Produce
- Dairy items
- Deli items
- Catered foods
- Baked goods
- Meats and seafood

In fiscal year 2000-2001, local food banks and charitable organizations in the Metro region recovered approximately 10,614 tons of food. The Oregon Food Bank estimated that 2,122 tons, or approximately 20 percent of this food would have been landfilled if not donated.

Metro assisted food diversion and donation efforts with research and found storage and refrigeration space was a critical issue in both collection and distribution of recovered food. A grant program was developed for “assistance and support to enhance capacity to accommodate new and increased flow of perishable food items” and have been used to “primarily to build the transportation and storage capacity of food rescue agencies in the Metro region.” From 1999 to 2002, nearly \$580,000 in grants were disbursed and paid for:

- 4 walk-in coolers
- 18 reach-in refrigerators
- 19 reach-in freezers
- 10 outdoor shelter canopies
- 2 collection trucks
- 9 months driver salary and volunteer driver gasoline allowances

Agencies receiving these grants estimated additional food recovery as a result of the program at 5,181 tons, with avoided disposal costs \$647,650 and a dollar value to food banks from additional recovered food worth \$17,305,208.

A cost-benefit analysis showed a net benefit of the \$573,406 invested in grants at an estimated \$17 million or more, with an average return of \$31 in value for every dollar spent.

Metro also assisted in outreach programs targeting retail grocery stores, restaurants, hotels, institutional cafeterias, and wholesale produce warehouses. The *Restaurant and Food Service Guide to Food Donation*, “designed to educate restaurants and businesses about the benefits and ease of food donation,” was developed and published in

2001. More than 4,500 brochures were distributed through Metro, local governments, county restaurant inspectors, and food rescue agencies as well.

A brochure entitled *Food Donation Resource Guide*, and a web-based version on the Metro website as well have been developed and are updated to enable businesses to connect with food rescue agencies in their area. The web-based version features an online search tool that brings up the listings of organizations closest to them after they enter their address and the food items they want to donate. “Waste Reduction and Food Donation 101” presentations are given every six weeks with each new, incoming class at the Western Culinary Institute. The first presentation was compelling enough to prompt the school to set-up their own donation program.

Source: “A Review of Community Based Resource Recovery Projects and Potential Methods and Strategies for Development and Implementation of an Intensive Organic Residual Diversion and Composting Program for the City of Chula Vista,” Author and researcher Richard Flammer, Hidden Resources, under contract by the City of Chula Vista, California, May 15, 2008

Appendix F. Decentralized Composting Options/Case Studies/Sample Bin Subsidization Program

Home composting workshops, demonstration sites, and master composter programs typically reach a small

Zero Waste Implementation Plan for the County of Hawai'i • Recycle Hawai'i • Richard Anthony Associates

percentage of residents, but more intensive programs have shown great potential as a landfill diversion strategy for municipal governments in various parts of the world. As evidenced in the case studies section, the United Kingdom, in particular, is diverting impressive volumes of food residuals through backyard composting. The island of Kaua'i has quantified diversion rates from its home composting program, and in the United States and Canada, some pilot scale projects have shown that with proper planning and adequate technical and financial support, home and small business composting hold excellent promise for reducing the amount of organics being landfilled.

Unfortunately, most home composting programs in the U.S. are under funded and have become more of an accessory, "feel good" activity rather than being a viable component of an overall diversion strategy. Designed, implemented, and followed through properly, a home composting program can deliver good results and offer more benefits than any other method when weighing cost, greenhouse gas emissions, and overall environmental sustainability.

Two studies done in the U.K. by independent researcher Dr. A.D. Knipe, "Comparison of Greenhouse Gas Emissions from the Centralised and Household Treatments of Food Waste," and "Green Cone Food Waste Digester Microbiological Analyses of Soil Samples," found, respectively, anthropogenic greenhouse gas emissions from centralized collection and processing of food residuals to be 10 to 40 times greater than handling them in the backyard, and complete pathogen destruction in samples taken from both dormant and active Green Cones.

A program utilizing the Green Cone Food Waste Digester (Solarcone is the exclusive distributor of this unit in the U.S.) can yield excellent diversion, with a minimal effort by the user. Currently \$160 retail, which includes shipping, the Green Cone is offered at reduced rates for communities that buy in volume. Food scraps are placed in the digester and left to decompose. No turning, aeration, or further work is required, outside of removing a small amount of material about once a year. Unlike typical backyard composters, meat, fish, dairy, and bones are easily handled in the Green Cone. Designed for a household of four to five, the bottom part of the Green Cone is buried in the ground, allowing micro and macro-organisms to breakdown material underground, as the heat of the sun helps speed up the decomposition process. The Green Cone does not produce compost. During the process, nutrients are released directly into the soil. To deter digging pests, wire mesh can be added around the base of the bin before it's buried. This unit is manufactured from between 92 and 95 percent post-consumer plastic (a small percentage of non-recycled material is necessary for UV protection and the unit's longer life).

A pilot-scale study is recommended to gauge participation levels and diversion rates using Green Cones for food scraps and Compost Cages for yard trimmings. The Compost Cage is an inexpensive unit made from 100 percent post-consumer recycled plastic.

Discounted rates for the Green Cone are \$67-\$70 per unit delivered for 1,000 units or more and \$55-\$60 per unit delivered for 5,000-10,000 units, but the City can probably get 100 units for \$90/each, which is recommended for the initial pilot. Compost Cages are \$10/each. For ease of tracking data and offering assistance, 100 volunteer residences in the same community (EastLake, Otay Ranch, or equivalent) should be recruited. The program should run for one year and volunteers must commit to tracking volumes of food scraps diverted, and providing other information that will gauge the efficiency of the program.

In addition to a goal of the residents diverting all food residuals generated from their home, a target of each participant dropping one container size for refuse collection should be part of the program, or skipping weekly collection and trying to only put out non-recyclables/non-compostables every other week. The City's recycling and collection partner, Allied Waste Services, should agree to offer the option of biweekly service for participating households for the duration of the pilot, and discount rates accordingly. A Compost Cage for yard trimmings should be offered to those participants wishing to compost leaves, grass clippings, and plant prunings as well. Assistance should be available from an established informational webpage on the City of Chula Vista's website, a hotline (can use existing Resource Conservation office number with a dedicated extension), and Recycling Rangers making visits to homes for those that require this help. An online form should be created for participants to enter data, and see monthly results of the program. This may serve to inspire those involved by comparing their progress to other participants, as well as being able to see cost savings and avoidance of emissions through reduced transportation and landfilling.

Pilot program costs:

Overall program design	\$400 (20 hours of recycling ranger time x \$20/hour)
Purchase of 110 Green Cones	\$11,000
Purchase of 50 Compost Cages	\$500
120 kitchen collection pails	Free – Plastic licorice tubs or equivalent can be used
Design and printing of informational flyer	\$450 (in-house design of 10 hours at \$20/hour + printing of 500 pieces @ .50/piece)
Recruiting/distribution of informational flyer hours of	\$400 (5 minutes per home x 200 homes = approximately 20 recycling ranger time x \$20/hour) (Or can be done by master composters at no cost)
Design and development of web pages	\$600 (in-house design of 30 hours @ \$20/hour)
Program management	\$2,400 (5 hours per month of Conservation Coordinator time x \$40/hour)
Home visits/telephone support	\$2,000 (10 hours per month of recycling ranger time x \$20/hour) (Or can be done by master composters at no cost)
Data tracking/compilation	\$400 (20 hours of recycling ranger time x \$20/hour) (Or can be done by master composters at no cost)
\$45 for Green Cone at subsidized price (almost 75% off retail, and 50% of City's price)	- \$4,500
\$5 for Compost Cage at subsidized price (50% of City's price)	- \$250

Total program costs **\$13,400***

Diversion potential 26.5 tons per year (Targeted 80% participation rate = 80 homes diverting approximately 500 pounds of food scraps through course of pilot year with Green Cone = 20 tons, and 25 homes diverting 500 pounds of yard trimmings annually with Compost Cage = 6.25 tons)

**Note: Calculations are estimates and subject to variability in participation rates, utilization of master composters, and time and materials cost, among others. Numbers can be revised as necessary as planning stages progress. Savings in terms of "true costs" to Chula Vista and residents are not reflected here, and undoubtedly much higher.*

Phase 2 Implementation of Program for 1,000 Homes

Purchase of 1,000 Green Cones	\$70,000 (1,000 Green Cones @ \$70 each)
Purchase of 200 Compost Cages	\$2,000 (200 Compost Cages @ \$10 each)
1,000 kitchen collection pails	Free – Plastic licorice tubs or equivalent can be used
Recruiting/outreach \$20/hour)	\$2,000 (Approximately 100 hours of recycling ranger time x (Or can be done be master composters at no cost)
Program management	\$1,600 (40 hours Conservation Coordinator time x \$40/hour)
Home visits/telephone support	\$2,000 (100 hours of recycling ranger time x \$20/hour) (Or can be done be master composters at no cost)
Data tracking/compilation	\$1,200 (60 hours of recycling ranger time x \$20/hour) (Or can be done be master composters at no cost)
\$35 for composter (almost 75% off retail, and 50% of City's purchase price)	- \$35,000
\$5 for Compost Cage at subsidized price (50% of City's price)	- \$1,000
Total program costs	\$42,800*
Diversion potential	250 tons per year (Targeted 80% participation rate = 800 homes diverting approximately 500 pounds of food scraps annually with Green Cone = 200 tons and 200 homes diverting approximately 500 pounds of yard trimmings annually = 50 tons)
Annual cost for city per household per ton	\$17.12 (\$42,800 divided by 800 homes diverting 2.5 tons each + 200 homes (based on ten-year use of Green Cone diverting 2.5 tons = \$17.12)
Annual cost per resident per ton per year	\$1.40 (\$35 subsidized rate divided by 10 years divided by 2.5 tons) (based on ten year use of Green Cone)
Annual cost savings per resident per year	\$31.06 (\$2.88 x 12 x 10 - \$35 = \$310.60 divided by 10) (factoring in cost savings from reducing cart size from 96-gallon trash cart to 64-gallon trash cart, based on ten-year use of Green Cone)
Ten-year savings per resident	\$331.60
Annual cost savings per resident per year	\$41.14 (\$3.72 x 12 x 10 - \$35 = \$411.40 divided by 10) (minus savings from reducing cart size from 64-gallon trash cart to 32-gallon trash cart, based on ten-year use of Green Cone)
Ten-year savings per resident	\$411.40

**Note: Calculations are estimates and subject to variability in participation rates, utilization of master composters, and time and materials cost, among others. Numbers can be revised as necessary as planning stages progress. Savings in terms of “true costs” to Chula Vista and residents are not reflected here, and undoubtedly much higher.*

Case Studies

Borough of Brielle, New Jersey

The “Home Works™ Community Composting, A Complete Organic Waste Diversion Program,” was piloted from March 1st to October 31st, 1996 in Brielle, New Jersey.

The pilot was designed “to evaluate and measure the waste diversion potential of a low cost organic composting program to be implemented later on a countywide basis.” A neighborhood of 454 single and 56 multi-family dwellings (making up one garbage route) was selected, and 77% of the single-family households contacted agreed to participate. Nine businesses and an elementary school also joined. Earth Machine compost bins were distributed to residents, who were assisted with installation and operation by “compost doctors,” certified master composters who made house calls, gave workshops, and answered questions through a hotline number established. ICI (industrial/commercial/institutional) participants received free waste audits, and organics diversion, collection, and onsite composting advice (where this option was possible).

Before compost bins, collection buckets, and literature were distributed, residential waste audits were conducted to establish baseline data on characterization and tonnage of discards. Over 25 percent of the residential household discards were determined to be readily compostable. Final audits, which concluded the project in late October, showed a total waste reduction of 45 percent, with decreases in readily compostable organics in varying percentages including:

- 33 percent among single-family homes
- 26 percent in condos
- 81 percent of ICI organics

By conservative figures, more than 25 percent of the households in the pilot city continued composting, lowering the community’s disposal costs. The initial pilot cost \$250,000, but the county expected to recover this from avoided disposal costs in the future when program was implemented countywide. An unexpected outcome of the pilot at the time of its conclusion was the realization that once organics were removed from the trash, it could go weeks without being collected, greatly cutting down on transport costs and emissions.

Kaua’i, Hawaii

Beginning in 2001, the Kaua’i County Recycling Office has distributed more than 1,500 free Earth Machine composting bins. To receive a free bin, residents must watch view a 20-minute composting training video and agree to participate in an annual composting survey.

The 2006 survey showed each home composter diverts from the landfill, on average, 1,500 pounds of food scraps and yard trimmings annually. And over the course of 10 years, nearly 8 tons of diversion would occur. At \$45 per composting bin, the cost for the program has been calculated at \$5.78 per ton.

Isles of Scilly, U.K.

Located about 32 miles off the coast of Cornwall in the Atlantic Ocean, the Isles of Scilly has good reasons to manage resources. There are no landfills, no curbside collection, and off island transport of discard materials are expensive. Through outreach and bin distribution, 78% of its population is composting at home. On St. Martin’s Island, every year round or vacation home has a green cone, so no organics leave the property nor have to be collected, transported, or disposed of. The island of St. Mary’s, the chain’s most populous, has a commercial scale composting unit that residents can drop material off at, but most there compost at home as well. Home composting is viewed by residents as an important activity to preserve the natural beauty of where they live.

Seattle, Washington

Seattle Public Utilities estimated in the year 2000 that households that were home composting and grasscycling had an average annual diversion rate of 562 pounds of yard trimmings. Those who were composting food scraps diverted an estimated 290 pounds per year.

Backyard composting, including in-ground food digestion (with Green Cones), was one of the first programs introduced by Seattle's mayor to expand diversion towards a goal of 60 percent. Seattle set a target is to distribute food digesters to 20,000 households over an eight-year period 8 years, at a rate of about 2,500 per year. In the past 12 years, 11,000 Green Cones have been distributed to more than 8,000 households. The subsidy program allows residents to buy one Green Cone for \$25 or two for \$40 (limit two per household). Yard trimmings compost bins are sold for \$25 each, and limited to one per household. About 3,600 Green Cones, 5,000 backyard bins and 1,400 yard trimmings composters were sold in a single day during Seattle's home composting kick-off event.

Seattle Tilth, founded in 1978, is a non-profit organization credited with development of the master composter program. The group is "dedicated to cultivating a sustainable community, one garden at a time." Through teaching organic gardening methods, Seattle Tilth helps residents of the region understand the importance of and participate in environmental sustainability efforts. The organization has expanded its education and outreach efforts to include:

- Two demonstration gardens
- Children's garden summer programs and school programs
- A natural lawn & garden hotline sponsored by City of Seattle
- A master composter/soil builder program
- Workshops such as choosing the right home composting system and gardening for sustainability
- Annual events such as the Edible Plant Sale, Tomato Tasting and Harvest Fair
- Publications such as the Maritime Northwest Garden Guide

United Kingdom

According to Defra (Department for Environment, Food and Rural Affairs), home composters used in the U.K. are diverting an average of 145 kilogrammes (319 pounds) of organics annually. Home composting bins being given out under a national scheme are diverting an average of 220kg (485 pounds) per household each year, while existing units have been found to be diverting around 60kg (132 pounds) per household per year.

The total annual diversion from the program, run by WRAP (Waste and Resources Action Programme), is 170,000 tonnes (187,425 US tons) of organics.

More than 1.1 million home composting bins have been distributed to households, including up to 624,000 bins in the calendar year 2006 alone. In August 2006 WRAP announced its one-millionth sale.

WRAP has been working on developing a model that allows local authorities to calculate how home composting can count fully towards their respective landfill diversion targets. From WRAP's website: "Throughout 2007 we will be working with a total of 112 selected partners throughout England and Scotland and targeting a total of over 20 million households with a comprehensive marketing and PR campaign (under the Recycle Now brand in England and the Waste Aware Scotland brand in Scotland) to promote the benefits of home composting and to drive bin sales."

WRAP works with partners to promote the sale of subsidized bins, provides advice and support to home composters through a helpline, literature, and a team of Home Compost Advisors who make house calls, and tracks and compiles data required to quantify diversion achieved through home composting.

From 2002 to 2004, a pilot-scale trial in the county of West Sussex, U.K. used the Green Cone food digester for 2,400 residents, who bought the unit at a subsidized price. Participants are diverting a total of 350 tonnes (392 U.S. tons) of food organics from the landfill annually.

In 2007, a 250-volunteer, six-month pilot was done using Green Cones in the Borough of Charnwood, a local government district in England. Approximately 18% of the participants' total household discards were diverted from the landfill in the program.

Source: "A Review of Community Based Resource Recovery Projects and Potential Methods and Strategies for Development and Implementation of an Intensive Organic Residual Diversion and Composting Program for the City of Chula Vista," Author and researcher Richard Flammer, Hidden Resources, under contract by the City of Chula Vista, California, May 15, 2008

Appendix G. Summary of Resource Management Ordinance for County of Hawai'i

The Resource Management Ordinance provides a framework for permitting and franchising recyclers in the County of Hawai'i. It enables the County to differentiate between service providers who collect and process "clean recyclables" versus those who collect and process "dirty recyclables." "Clean recyclables" means source separated recyclables which are not commingled with more than 3 types of recyclables and contain no putrescible materials. "Dirty recyclables" means source separated recyclables but which nevertheless contain up to 10% of contaminating discards for commercial recycling services and no more than 30% of contaminating discards for C&D debris recycling services.

This ordinance will allow the County to permit existing recycling service providers for the "clean recyclables" services they provide. This ordinance will also set the stage for additional recycling services to be implemented that could sort a wider range of mixed materials at more elaborate material recovery facilities (MRFs) as infrastructure expands on the island.

The dirty recyclables permit system is also designed to require a non-exclusive franchise agreement to be adopted to implement that system. This will provide the County the ability to charge higher franchise fees than it may be comfortable charging as permit fees. As more discards migrate from being disposed as garbage to being recovered as recyclables, the County will realize a reasonable cash flow to support its administration of the system and recycling operations, particularly from more elaborate sorting operations.

Both the permits and franchise agreements are designed to ensure quality operations, reporting and enforcement addressing:

- A. Separation and storage of recyclables
- B. Collection schedules and prohibited disposal of materials collected as recyclables
- C. Records, reports, audits and inspections
- D. Rates, fees and charges (The authorized recycler shall be solely responsible for rates, fees and charges and/or payments required to be made by its customers)
- E. Insurance and indemnification

Appendix H. Draft Resource Management Ordinance for County of Hawai‘i

Ordinance of the County of Hawai‘i Pertaining to Resource Management and Recycling

The County of Hawai‘i finds and declares as follows:

WHEREAS, the County is empowered under the Hawai‘i Constitution to make and enforce, within its limits, all police and sanitary ordinances and regulations not in conflict with general laws; and

WHEREAS, State law provides that aspects of discarded resource disposal and handling of local concern, but are not limited to frequency of collection, means of collection and transportation, level of services, charges and fees, and nature, location and extent of providing these services, and whether the services are to be provided by means of nonexclusive, partially exclusive or wholly exclusive franchise, contract, license or otherwise which may be granted by local government under terms and conditions prescribed by the governing body of the local agency; and

WHEREAS, the County has considered factors which include but which were not limited to cost, quality of service and the need to comply with state recycling mandates, and after consideration of those and other factors, County desires to amend County Code to provide the framework for recycling services within the County of Hawai‘i as well as to provide County with information needed to monitor progress towards its recycling goals, to arrange to collect, transport and recycle or dispose of these materials in a safe manner which will minimize the adverse effects to the environment, and

WHEREAS, pursuant to State law that the public health, safety and well-being, including the minimization of adverse environmental impacts and the implementation of recycling policies and programs require that franchisees operate within the framework established by Ordinance of the County of Hawai‘i, and

WHEREAS, the County is obligated to protect the public health and safety of the residents of the County of Hawai‘i and arrangements made by resource management enterprises and recyclers for the collection of recycled materials generated by commercial or industrial properties or multifamily residential properties that utilize bin service for disposal of discarded materials within the County.

NOW, THEREFORE, the County of Hawai‘i does hereby ordain as follows:

SECTION 1. There is hereby enacted as Chapter _____ “Commercial Recycling” of the Hawai‘i Municipal Code the following:

1.1 Permitted Commercial Recycling

1.1.1 Definitions

The following words and phrases, whenever used in this Chapter, shall be construed as defined in this section:

A. "Authorized recycler" means persons, including corporate entities, holding a current recycling permit issued by the County.

B. "C&D debris" means lumber, drywall, metals, masonry (brick, concrete, etc.), carpet, plastic, pipe, rocks, dirt, paper, cardboard, or yard trimmings discarded from construction, remodeling or demolition projects.

C. "C&D debris recycling" means the recycling of C&D debris generated at commercial premises comprised of sites or premises that generate C&D debris.

D. "Clean recyclables" means recyclables separated at the point of generation from mixed discards which are not commingled with more than 3 types of recyclables (including by example, papers, plastics and metals) and which contain no putrescible materials and less than 5% of total weight in contaminating discards that are not recyclable.

E. "Clean recyclables service permits" means recycling permits issued to persons or entities that:

- (1) Do not charge commercial, residential or multi-family customers rates, fees or charges to collect that customer's dirty recyclables or clean recyclables, or
- (2) Purchase clean recyclables from those customers, or
- (3) Charge commercial customers rates, fees or charges to collect that customer's clean recyclables, in each instance as required by Section 1.1.4 D of this Ordinance.

F. "Commercial" has the meaning provided in County Code, and in addition, means comprised of sites or premises generating C&D debris.

G. "Commercial recycling" means the recycling of recyclables generated at commercial premises and buyback centers.

H. "Containers" when used with respect to discard or set out of recyclables for collection, has the meaning provided in County Code; when used with respect to a type of recyclable, means vessels to hold liquids and/or solids.

I. "Dirty recyclables" means recyclables separated at the point of generation from mixed discarded materials but which nevertheless contain up to 10% of total weight in contaminating discards that are not recyclable for commercial recycling services and no more than 30% of total weight in contaminating discards for C&D debris recycling services, including no more than 1% of total weight in putrescible material as part of the contaminating material.

J. "Discard," "discards," "discard materials," "discarded materials," or "discarded resources" mean all putrescible and nonputrescible solid, semisolid, and liquid materials, including garbage, trash, refuse, paper, rubbish, ashes, debris, industrial residuals, demolition and construction debris, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically-fixed sewage sludge which is not hazardous, manure, vegetable or animal solid and semisolid materials, and other discarded solid and semisolid materials. "Discard materials" does not include any of the following: (1) hazardous materials, (2) radioactive residuals, (3) medical discards.

K. "Director" means the County's Director of Environmental Management.

L. "Dirty recyclables service permits" means recycling permits issued to persons or entities that charge commercial customers rates, fees or charges to collect that customer's dirty recyclables, required by Section 1.1.3 of this Ordinance.

M. "Holiday" means days designated from time to time by the Director, including New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

N. "Incident," with respect to violations, means a single act prohibited by this Chapter or omission of an act required by this Chapter.

O. "Multi-family" references (1) any residential building comprised of greater than five units, unless a customer thereat requests collection in carts because of limited space for bins; and (2) any residential buildings comprised of less than five units if the customer requests collection services with bins, subject to approval by the Director.

P. "Multi-family recycling means the recycling of recyclables generated at multi-family premises.

Q. "Putrescible materials" include discarded materials that are capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisances because of odors, gases or other offensive conditions, and include materials such as food scraps, offal and dead animals.

R. "Recyclables" means materials that have been separated or kept separate from the discard stream for the purpose of recycling or reuse in order to return them to the economic mainstream.

S. "Recycling" means the collection and processing of any and all materials that are intended for reuse in their same form or in a different form outside of the premises from which such materials were generated.

T. "Recycling permit" means a clean recyclables service permit and dirty recyclables service permit.

U. "Residential recycling" means the recycling of recyclables generated at residential premises.

V. "Scavenging" means the unauthorized collection, removal of, or possession of recyclables intended for collection by the County or an authorized recycling agent.

W. "Violation" means breach of or failure to timely and fully comply with any provision of a recycling permit, this Chapter, or any other applicable law, ordinance or regulation of any public agency.

1.1.2 Authorized recyclers.

A. Permitted Commercial Recycling. Only any authorized recycler holding a current and valid recycling permit may perform commercial recycling.

1.1.3 Business Licenses, Recycling Franchises and Recycling Permits.

A. Business License. All authorized recyclers must maintain a current business license.

B. Recycling Franchise. Upon direction by the Director, each authorized recycler holding a dirty recyclables service permit must execute a legal, valid and binding franchise agreement with the County pursuant to which the County may require payment of a franchise fee in consideration for the grant thereof.

C. Permits. The Director is authorized to issue a recycling permit to an authorized recycler under the following terms, protocol and conditions:

(1) Term. The term of a recycling permit shall be for no more than one year and shall expire on June 30 of each year.

(2) Application. Applications for recycling permits shall be made to the Director on forms provided by the Director, no later than the deadline stated on the form. The application shall include the following information:

- (a) The name, business address of the applicant, and addresses where all of the applicant's vehicles will be stored;
- (b) Applicant business ownership information, responsible official and contact person;
- (c) County business license;
- (d) Identification of the type of recycling permit for which the applicant is applying: dirty recyclables service permit or clean recyclables permit;
- (e) Any other information requested by the Director.

(3) Conditions. Applications for recycling permits shall be issued subject to the following conditions:

(a) Upon request of the Director, the applicant shall make available to the Director a list of clients that the authorized recycler will service in the County, a map of the authorized recycler's service area, detailed information regarding recycling services offered to customers, a listing of customers currently receiving recycling services, and classification of recyclables to be collected by the applicant.

(b) All records and facilities shall be subject to examination upon request by the Director.

(4) Denial. After review of the permit application, the Director may deny the issuance of a recycling permit based on information disclosed in the permit application. Denial of a permit may be based on an incomplete application, failure to demonstrate qualifications or financial responsibility necessary to comply with the requirements of this Chapter, prior failure to supply required reports or other previous violations of any provisions of this Chapter. Upon denial, the Director shall provide the applicant written notification of the reasons therefore and shall include the effective date of such denial. Written notification of denial shall be delivered in person or certified first class mail to the applicant. An applicant may appeal the denial of a recycling permit in accordance with Section ___ of the County Code.

(5) Transfer or assignment; delegation. Authorized recyclers may not transfer or assign recycling permits or delegate obligations there under to another person. No authorized recycler shall sell, transfer, delegate, assign, hypothecate, relinquish or surrender its interest in a permit to any person or entity or allow another person or entity to use its permit in any act for which a permit is required without the prior written consent of the Director.

(6) Enforcement.

(a) **Initiation of action.** The Director may initiate an enforcement action based on his or her own observations of or complaints regarding a violation or violations. The Director may accept complaints from any source in writing, through personal visit or telephone call. Anonymous complaints alone shall not result in an enforcement action although the Director may initiate an enforcement action based on other independent information that the Director received as a result of any investigation prompted by an anonymous complaint. The Director may choose not to identify any complainant if his or her investigation reveals other evidence that is a sufficient basis for his or her decision that violations have occurred.

(b) **Notification.** The Director shall notify the authorized recycler by mail of alleged violations by describing the nature of the offense and, if a representative of the authorized recycler is available, the Director shall release further pertinent available details regarding the alleged violation.

(c) **Response.** The authorized recycler shall provide the Director with a written explanation of the pertinent events and circumstances relative to the alleged violation within ten County business days of the date of the Director's mailed notice to the authorized recycler. The Director may extend the time for the authorized recycler to provide an explanation upon a showing of reasonable cause. The Director shall consider this explanation in making his or her determination whether a violation has occurred.

(d) **Determination.** Prior to making his or her determination the Director shall investigate the violation and may contact any known complainant, witness and the authorized recycler. Within 15 days of a determination by the Director that a violation has not occurred, the Director shall notify the authorized recycler of such determination in writing. Within 30 days of a determination by the Director that a violation has occurred, the Director shall notify the authorized recycler of such determination in writing specifying the violation, the findings that support the violation; stating the amount of any civil penalty and deadline for payment thereof; and including information on the procedure for requesting a hearing to appeal the determination. Where the Director can demonstrate an attempt to properly deliver the notice, a refusal by the offender or offender's representative to receive the notice in person, or failure of offender to accept certified mail, shall not constitute a failure by the Director to fulfill the requirement for the delivery of notice.

(e) **Civil Penalties.** The Director may impose a civil penalty of up to \$1,500 per violation. An authorized recycler may be liable for more than one violation, involving different acts or omissions of noncompliance, even if the different violations are occurring at the same time, and for each incident with respect to a violation.

(f) **Suspension or revocation.** Any authorized recycler shall be required to comply with all the provisions of this Chapter and failure to observe any of those conditions shall result in a summary revocation of that authorized recycler's recycling permit by the County. An authorized recycler may appeal any revocation or suspension by the County to the County Council. Absent appeal, the revocation or suspension shall become final and conclusive immediately upon receipt of notification from the Director by the authorized recycler. Upon receipt of notification of revocation, the authorized recycler shall provide each of its customers written notification of termination of service within ten days of the date that denial, suspension or revocation of permit has become final and conclusive. The authorized recycler shall attach to the notice to its customers a listing of all other authorized recyclers in the County.

(g) **Recycling Permit Fees; Franchise.** Each authorized recycler shall pay an annual recycling permit fee in a sum set forth by resolution of the County Council. The failure of an authorized recycler to submit said permit fee on or before the date on which it is due shall constitute just cause for revocation of a recycling permit. Each authorized recycler that is a franchisee as a

condition of its dirty recyclables service permit shall pay any franchise fee set forth by ordinance and resolution of the County Council in accordance therewith and with the authorized recycler's franchise agreement with the County.

1.1.4 Recyclables Handling

A. Separation and Storage of Recyclables.

- (1) **Combustible materials.** Combustible materials must be stored in compliance with the requirements of the County fire chief.
- (2) **Separate or compartmentalized containers and segregation of materials.** Single containers for collection of clean recyclables shall be provided for no more than three types of recyclables (for example, papers, plastics, and metals), or have separate sections or compartments provided for no more than three types of recyclables in each section or compartment. All recyclables shall be segregated from any other discarded material in designated recycling containers visibly marked with the word "Recycle" or any other such word, words, or wording that reasonably conveys the intent that the container is being used for the specific purpose of holding recyclables. At direction of the County, authorized recyclers shall sort recyclables or characterize or analyze those recyclables by weight in a manner satisfactory to County in order to establish to satisfaction of County that they are clean recyclables, dirty recyclables, or merely refuse. The Director shall resolve disputes over whether material should be classified as clean recyclables, dirty recyclables or refuse. The Director's decision may be appealed to the Mayor, explaining the basis of the appeal, within 10 days of such decision and the payment of a \$50 appeal fee. The burden of proof shall be on the authorized recycler challenging the Director's decision. The Mayor or his or her designee shall hear said dispute and render a written decision, which shall be final.
- (3) **Container ownership.** Recyclables shall be stored in containers owned by the generator of the recyclables, the authorized recycler, or the County, in containers provided as part of a recycling program.
- (4) **Storage location.** Recyclables shall be placed for collection in storage areas other than those required for refuse containers, designated by the generator of the recyclables, as space on the generator's premises permits. Storage of recyclables may not interfere with regular refuse collection and separate recyclables containers must be maintained on the premises generating the recyclables. Any recyclables placed for collection in the public right-of-way shall become the property of the County and shall be collected by the County or its contractor or agent.

B. Collection, Disposal Prohibition.

- (1) **Schedule.** Authorized recyclers shall collect recyclables either on a regular schedule or an on-call basis. If an on-call method is used, the authorized recycler shall collect the material within three working days following the request of the generator.
- (2) **Collection vehicles.** Collection vehicles shall comply with specifications issued by the Director.
- (3) **Disposal prohibited.** The authorized recycler shall not transport any collected recyclables to any facility for disposal by landfilling, burning, incineration or mixed material composting, other than disposal of residue remaining after sorting, grading, cleaning, shredding, grinding, densifying, or otherwise preparing, treating or converting recyclables for end use markets, unless authorized in writing in advance by the Director. The authorized recycler must transport and market the recyclables it collects by delivery to a recyclables processor or broker or to an

end use market. Placement of recyclables that have been separated and set out for recycling in any container for any length of time considered excessive by the Director constitutes a violation of this requirement.

(4) **Processing records.** Authorized recyclers will authorize and direct facilities that process recyclables delivered by authorized recyclers to submit records and evidence of the amount and type of those recyclables, the date of delivery thereof and other data or reports reasonably requested by the County, directly to the County, at such time a facility routinely prepares those reports or upon request of the Director.

C. Records and reports.

(1) **Records.** Authorized recyclers shall retain all records necessary for preparing reports in accordance with the following subsection (2) for a period of two years and provide the Director with copies of or access to any relevant recycling information as the Director may need for the program within ten working days of Director's written request, or, if the Director makes an inspection as provided below, during the inspection. Authorized recyclers shall make records related to their recycling collection services in the County available during the County's business hours for inspection by the Director and/or his or her staff within one week of Director's written notice.

(2) Reporting.

(a) **Dates.** Authorized recyclers shall submit a quarterly report to the County, on or before each January 31, April 30, July 31 and October 30 for the respective preceding quarters comprised of January, February and March; April, May and June; July, August and September; and October, November and December. When those days fall on a Saturday, Sunday or holiday, the report is due on the next County business day.

(b) **Content.** The authorized recycler shall submit reports describing in the preceding paragraph in a form provided by the Director, including hard copy, facsimile or electronic transmission. Reports shall include the type and cumulative total weight and/or volume of recyclables collected, locations where taken during the preceding quarter, and other information required by the County to prepare and support reports that the County is required to make to the State of Hawai'i or granting authorities. Upon direction of Director, the authorized recycler shall not report materials that are routinely recycled without entering the discarded material stream, such as certain manufacturing and industrial residuals, as may be excluded under reporting requirements of the State or granting authorities. If the Director finds reports to be inadequate, inaccurate or incomplete, he or she may direct the authorized recycler to remedy or correct the inadequacy, inaccuracy or incompleteness by a specified date no less than seven days after the Director requested the corrected information.

(c) **Audit or inspection.** Upon request of the Director, the authorized recycler described in the next paragraph must allow inspection, or otherwise arrange with its subcontractors or other recycling services providers for, the audit or inspection of records, operations, facilities, or other matters as may be necessary to ensure compliance with this Chapter.

(d) **Violations.** Should an authorized recycler fail to timely and fully submit, correct or complete a required report, or correct information as requested by the Director, then the Director may send notice of that failure stating that the authorized recycler must send in the report as requested by the Director within five County business days of the date of the delinquent notice; and require payment of \$50 service charge, due and payable when the report is submitted. Should an authorized recycler fail to timely comply with the provisions of that notice, the Director may send the authorized recycler Notice of Violation.

D. Rates, Fees and Charges. The authorized recycler shall be solely responsible for rates, fees and charges to and/or payments required to be made by its customers. The County shall have no liability to authorized recycler or responsibility therefor. Authorized recyclers (other than those required to secure donate-or-purchase recyclables service permits) must impose rates, fees and charges or other payments for recycling clean recyclables that are less than, but not equal to or greater than, rates, fees and charges or other payments for recycling dirty recyclables.

E. Insurance and Indemnification

(1) **Insurance.** Each authorized recycler shall furnish the County a policy or certificate of comprehensive automobile liability insurance insuring the authorized recycler against bodily injury, property damage and automobile liability in the sum of \$1,000,000 combined single limits. These limits shall be subject to annual review by the County for the purpose of reasonably adjusting to current insurance conditions and requirements. The insurance shall provide that the coverage is primary and that any insurance maintained by the County shall be excess insurance, shall be procured from an insurer authorized to do business in the State of Hawai'i, shall name the County and its officers, employees and agents as additional insureds and shall not be cancelled or modified without first giving to the County 30 days' prior written notice. The County may waive this requirement for these authorized recyclers if it determines that the liability insurance that the authorized recycler provides under a franchise agreement with the County is adequate to secure payment of these franchise fees as well as those paid under the franchise agreement.

(2) **Indemnity.** Each authorized recycler shall indemnify, defend and hold harmless the County and its officers, employees and agents against any and all claims, demands, losses, costs, expenses, obligations, liabilities, damages, recoveries and deficiencies, including interest, penalties, and reasonable attorneys fees, that the County shall incur or suffer, which arise, result from or relate to the collection, transportation or disposal (including sale) of recyclables by that person.

1.1.5 Scavenging Prohibited.

Scavenging is prohibited in the County. No person, other than an authorized recycler shall remove recyclables that have been segregated from refuse and placed at the designated collection location for the purposes of recycling. Unless otherwise authorized by the County in writing, recyclables may not be removed from such location by anyone other than an authorized recycler.

1.1.6 Right to Sell or Donate Recyclables.

Nothing in this Chapter shall limit the right of any person to donate or sell his or her own recyclables.

SECTION 2. If any provision, clause, sentence or paragraph of this Ordinance or the application thereof to any person or circumstance shall be held invalid, such invalidity shall not affect the other provisions of this Ordinance, which can be given effect without the invalid provisions or application, and to this end, the provisions of this Ordinance are declared to be severable.

SECTION 3. The County Corporation Counsel is hereby directed to make any typographical or grammatical changes to this Ordinance that do not alter or modify the substance of this Ordinance.

SECTION 4. The County Clerk shall certify to the passage and adoption of this Ordinance and shall cause the same to be published once in a newspaper of general circulation, published and circulated in the County of Hawai'i, or if there is none, she shall cause it to be posted in at least three public places in the County of Hawai'i.

PASSED, APPROVED AND ADOPTED this _____ day of _____, 2009. _

Appendix I. County of San Diego Resource Management Ordinance

San Diego County Code of Regulatory Ordinances, Title 6, Health and Sanitation, Division 8., Sewage and Refuse Disposal, Chapter 5., Management of Solid Waste*

*~~Note~~--Repealed and reenacted by Ord. No. 3410 (N.S.), effective 10-2-69; repealed and reenacted by Ord. No. 5018 (N.S.), effective 12-29-77; repealed and reenacted by Ord. No. 5363 (N.S.), effective 3-1-79; repealed and reenacted by Ord. No. 6875 (N.S.), effective 1-3-85; repealed and reenacted by Ord. No. 7920 (N.S.), effective 7-11-91.

ARTICLE I. GENERAL PROVISIONS AND DEFINITIONS

SEC. 68.501. GENERAL.

The purpose of this chapter is to provide for the management of Solid Waste; the storage, collection, transportation, and recovery of marketable and recyclable materials; the disposal of solid waste in San Diego County; and the orderly regulation of the business of collecting, transporting, and/or disposing of solid waste kept, accumulated or produced within the unincorporated area of the County.

(a) Declaration of Policy. Solid waste must be regulated to the extent necessary to protect the health, safety, and welfare of the public, to conserve disposal capacity, to meet state laws and to ensure cost effective public service. To this end, the Board of Supervisors finds that to give practical effect to this policy, a system of non-exclusive management agreements to regulate the collection of waste, and a comprehensive system for the storage, collection, removal, transport, recovery of marketable and recyclable materials, and disposal of solid waste in the unincorporated areas of the County is essential.

(b) Definitions. For the purpose of this Chapter, the following words and phrases shall have the meaning given herein unless their use in the text of the Chapter clearly demonstrates a different meaning.

(1) "Aluminum" means recoverable aluminum materials such as used beverage containers, siding, and other manufactured items.

(2) "Authorized Enforcement Official" means the Director of the Department of Public Works, the Director of the Department of Planning and Land Use or the Director of the Department of Environmental Health and the designees of those Directors, in accordance with department responsibilities outlined in this Section.

(3) "Biohazardous Waste" means waste such as pathological cultures and stocks of infectious agents, discarded live and attenuated vaccines, culture dishes, recognizable fluid blood elements and regulated body fluids, sharps, and body parts. Biohazardous waste includes any other waste defined as such, in Chapter 6.1 of the California Health and Safety Code.

(4) "Board" means the Board of Supervisors of the County of San Diego.

(5) "Bulky waste" includes large items of solid waste such as appliances, furniture, large auto parts, trees, branches, stumps and other oversize wastes whose large size precludes or complicates their handling by normal collection, processing, or disposal methods.

(6) "Buy-back Center" means a facility which pays a fee for the delivery and transfer of ownership to the facility of source separated materials, for the purpose of recycling or composting.

(7) "Cardboard" means post-consumer waste paper grade corrugated cardboard (#11), kraft (brown) paper bags or solid fiber boxes which have served their packaging purpose and are discarded and can later be reclaimed for collection and recovery for recycling.

(8) "Collection" means to take physical possession of solid waste materials or recyclables at residential, commercial, industrial, or governmental sites, and transport it to a facility for processing, composting, transfer, disposal or burning.

(9) "Collection Vehicle or Equipment" means any vehicle or equipment used in the collection of residential, commercial, industrial, or governmental solid waste or recyclables.

(10) "Collector" means any person who holds a valid, unrevoked, and unexpired County nonexclusive Solid Waste Management Agreement to operate on public property an enterprise for the collection and subsequent transportation or disposal of Solid Waste within the County. A Collector operates routes or provides regular service and is directly or indirectly reimbursed for the collection and disposal of solid waste from residential, commercial, or industrial premises in the unincorporated area of San Diego County.

(11) "Commercial Solid Waste" means solid waste originating from stores, offices, and other commercial sources but does not include construction and demolition waste (14) or industrial solid waste (28).

(12) "Commercial Service" means collection of all types of solid wastes generated by stores, offices, and other commercial sources.

(13) "Compostable Material" means any organic material that when accumulated can become active compost as defined in Section 17852(a)(1). of CIWMB Title 14 Div 7 Chapter 3.1 Section 17852.

(a) "Active Compost" means compost feedstock that is in the process of being rapidly decomposed and is unstable. Active compost is generating temperatures of at least 50 degrees Celsius (122 degrees Fahrenheit) during decomposition; or is releasing carbon dioxide at a rate of at least 15 milligrams per gram of compost per day, or the equivalent of oxygen uptake.

(b) For Residences, compostable material consists of any vegetative material that can be processed for decomposition to provide soil amendments, including ruminant manures.

(14) "Construction and Demolition Waste" means the nonhazardous waste building materials, packaging and rubble resulting from construction, remodeling, repair and demolition operations on pavements, houses, commercial buildings and other structures.

(15) "County" means the County of San Diego.

(16) "Curbside Collection" means the collection of recyclables or solid waste from the residential waste stream from curb or alleyway.

(17) "Designated Recyclables" means those materials designated as such by the Authorized Enforcement Official or by this chapter.

(18) "Disposal" means the management of solid waste through landfill disposal or transformation at a permitted solid waste facility.

(19) "Food Waste" means all institutional, wholesale, retail, and residential food wastes.

(20) "Garbage" means all kitchen and table waste, and animal or vegetable waste that attends or results from the storage, preparation, cooking, or handling of foodstuffs.

(21) "Glass bottles and jars" means food and beverage glass containers including container glass covered by the deposit law, and excluding household and kitchen containers such as drinking glasses, cups, and cooking and serving dishes.

(22) "Hazardous Waste" means all substances defined as hazardous waste, acutely hazardous waste, or extremely hazardous waste by the State of California in Health and Safety Code Sections 25110.02, 25115, and 25117 or in the future amendments to or modifications of such statutes or identified and listed as hazardous waste by the U.S. Environmental Protection Agency, pursuant to the Federal Resource Conservation and Recovery Act (42 USC Sec. 6901 et seq.), all future amendments thereto, and all rules and regulations promulgated.

(23) "Hospitality Facilities" means establishments serving food and beverages including all restaurants, taverns, and hotels and motels with restaurants and/or taverns on the premises.

(24) "Hospitality Recyclables" means aluminum, corrugated cardboard, glass jars and bottles, plastic beverage bottles, tin and bi-metal cans, and white goods generated by hospitality facilities.

(25) "Highway" shall mean any street, road, alley, highway, or thoroughfare.

(26) "Industrial Recyclables" means loads consisting of 90% or more of one of the following materials: asphalt, concrete, dirt, land clearing brush, sand, and rock.

(27) "Industrial Service" means collection of all types of solid wastes which result from construction and demolition activity, industrial processes and manufacturing operations, excluding hazardous wastes.

(28) "Industrial Solid Waste" means solid waste originating from mechanized manufacturing facilities, factories, refineries, publicly operated treatment works, and/or solid wastes placed in commercial collection bins.

(29) "Inert" means materials such as concrete, soil, asphalt, ceramics, earthen cooking ware, automotive safety glass, and mirrors.

(30) "Municipal Solid Waste Landfill" or "MSW Landfill" means any landfill that is subject to Title 27 Division 2 Solid Waste of the California Code of Regulations.

(31) "Litter" means any post-consumer waste which is not deposited in (1) an authorized solid waste disposal site, (2) appropriate and serviced storage container(s), or (3) other areas designated for disposal of solid waste.

(32) "Manure" means accumulated animal excrement. This includes but is not limited to feces and/or urine, any animal bedding material, spilled feed, or soil that is mixed with feces and/or urine.

(33) "Medical Waste" means any solid waste which is generated or has been used in the diagnosis, treatment or immunization of human beings or animals, or research pertaining thereto, and shall include but not be limited to biohazardous and medical waste or other solid waste as defined by Chapter 12 of the County Code of Regulatory Ordinances or state and federal law.

() "Mixed paper" means mail, magazines, phone books, cereal boxes, catalogs, copy paper, clean food boxes, paper bags, etc. It does not include paper towels, tissues, plasticized and waxed paper, or dirty food boxes, such as pizza boxes.

(34) "Multi-Family" means any premises, four units or more, that is serviced in a manner similar to commercial and industrial property (bin or debris box), but used for residential purposes (not including hotels or motels) irrespective of whether residence therein is transient, temporary or permanent.

(35) "Newspaper" means publications or packing materials made of newsprint; also known as old newspaper or "ONP".

(36) "Non-exclusive management agreements." Non-exclusive management agreements are between the County of San Diego and solid waste and recycling collectors operating in the unincorporated area of San Diego County for the collection, and subsequent transfer, transportation, recycling, processing and disposal of commercial, industrial, and residential solid waste. Agreements in the unincorporated area are non-exclusive, which means several collectors can compete for customers in the unincorporated area.

(37) "Nuisance" means anything which is injurious to human health, or is indecent or offensive to the senses, and interferes with the comfortable enjoyment of life or property, and affects at the same time an entire community or neighborhood, or any number of persons, although the extent of annoyance or damage inflicted upon the individual may be unequal, and which occurs as a result of the storage, removal, transport, processing, or disposal of solid waste and/or recyclables.

(38) "Occupant" includes and means every owner, tenant, or person having the care or control of any premise(s).

(39) "Office Buildings" means any office and/or combination of offices enclosed in a single or connected building with 20,000 square feet or more of office space used for commercial, governmental, or educational purposes.

(40) "Office Paper" means waste paper grades of office generated paper. Examples include computer and ledger papers and other papers that are commonly accepted by office paper recycling services.

(41) "Office Recyclables" means office paper, corrugated cardboard, newspaper, and aluminum.

(42) "Operator" means the Landowner or other person who through a lease, franchise agreement or other arrangement with the landowner becomes legally responsible to the State for solid waste facility or disposal site requirements including, but not limited to, the following: obtaining a solid waste facility permit;

(a) complying with all applicable federal, state and local requirements;

(b) the physical operation of the facility or site; and

(c) closing and maintaining the site during postclosure maintenance period.

(43) "Permit Areas" means those areas designated by the County on the map entitled "County of San Diego Solid Waste Subregional Collection Areas". The map is on file in the office of the Clerk of the Board of Supervisors and in the office of the Authorized Enforcement Official. Permit areas may be adjusted from time to time by the Authorized Enforcement Official.

(44) "Permittee" shall mean a person or corporation who holds a valid, unrevoked, and unexpired Non-Exclusive Solid Waste Management Agreement issued pursuant to this Chapter.

(45) "Person" means any individual, firm, association, organization, partnership, corporation, business trust, joint venture, the United States, State of California, political subdivision, government agency, municipality, public corporation, or any other entity whatsoever.

(46) "Plastic Beverage Bottles" means plastic containers composed of "natural" high density polyethylene (HDPE #2) and polyethylene terephthalate (PET or PETE #1) resin types with narrow necks, or mouth openings smaller than the diameter of the container bodies, used for containing milk, juice, soft drinks, or water intended for human consumption; to be distinguished from non-food bottles such as those for containing motor oil, detergent, or other household products.

(47) "Premises" means a tract or parcel of land with or without habitable buildings or appurtenant structures.

(48) "Pollution" means the condition caused by the presence in or on a body of water, soil, or air of any solid waste or substance derived therefrom in such quantity, of such nature and duration, or under such condition that the quality, appearance, or usefulness of the water, soil, land, or air is significantly degraded or adversely altered.

(49) "Processing" means the reduction, separation, recovery, or conversion, of solid waste.

(50) "Putrescible Wastes" means wastes that are capable of being decomposed by microorganisms with sufficient rapidity as to cause a nuisance because of odors, gases or other offensive conditions. Material in this category includes but is not limited to kitchen waste, dead animals, food from containers, etc.

(51) "Radioactive Waste" means any waste which exceeds regulatory levels of activity as defined in Chapter 7 of the California Health and Safety Code.

(52) "Recycle" or "recycling" means the process of collecting, sorting, cleansing, treating, and reconfiguring materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. Recycling does not include transformation.

(53) "Refuse" means any mixture of putrescible and nonputrescible solid and semi-solid wastes, including but not limited to garbage, trash, residential refuse, industrial and commercial solid waste, vegetable or animal solid and semi-solid wastes, and other solid waste destined for disposal sites.

(54) "Refuse Collection Vehicle" means any vehicle used for the collection and/or transport of solid waste. Vehicles shall be durable, easily cleanable and designed for safe handling, and constructed to prevent loss of wastes from the vehicle during collection or transport. If such equipment is used to collect or transport garbage, other wet or liquid producing wastes, or wastes composed of fine particles, such equipment shall in all cases be non-absorbent and leak resistant.

(55) "Regional Collection Area" shall be defined as a geographic area(s) where conditions exist or might exist that threaten to cause damage to the public health, safety, general welfare or environment.

(56) "Removal" means the act of taking solid wastes or recoverable material from the place of generation either by an approved collector, agent for the collector or by a person in control of the premises.

(57) "Removal Frequency" means frequency of removal of solid wastes or recoverable materials from the place of generation.

(58) "Residential Recyclables" means aluminum, glass bottles and jars, newspaper, plastic beverage bottles, tin and bi-metal cans, white goods, and yard waste from residential generators and any other materials so designated by the Authorized Enforcement Official.

(59) "Residential Service" means collection of all types of domestic solid waste or recyclables generated in residential dwellings.

(60) "Residential Solid Waste" means solid waste generated in single-family or multi-family dwellings.

(61) "Rubbish" means non-putrescible solid wastes.

(62) "Rural Container Station" means a solid waste facility provided in the sparsely populated areas, primarily the interior zone area of the County, and which is restricted to the deposit of normal residential refuse.

(63) "Segregated From Other Waste Material" means any of the following: the placement of recyclables in separate containers; the binding of recyclable material separately from waste material; the physical separation of recyclables from other waste material.

(64) "Single-family" means a structure containing a dwelling unit that is serviced with solid waste and recycling removal.

(65) "Solid Waste" means all putrescible and non-putrescible solid, semi-solid and liquid wastes, including, but not limited to, refuse, trash, garbage, rubbish, paper, ashes, industrial wastes, construction and demolition waste, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes and dewatered, treated, or chemically fixed sewage sludge, which provided that sludge is not hazardous waste.

Solid waste does not include any of the following waste:

- (a) hazardous waste
- (b) radioactive waste
- (c) medical waste

(66) "Solid Waste Facility" includes a solid waste transfer or processing facility, a construction, demolition and inert debris processing/disposal facility, a compostable materials handling facility, a transformation facility, an incinerator or a disposal facility.

(67) "Solid Waste Management" means a planned program for effectively controlling the generation, storage, collection, transportation, processing and reuse, conversion or disposal of solid waste in a safe, sanitary, aesthetically acceptable, environmentally sound and economical manner. It includes all administrative, financial, environmental, legal and planning functions as well as the operational aspects of solid waste handling, disposal, litter control and resource recovery systems necessary to achieve established objectives.

(68) "Storage" means the interim containment of solid waste, materials and recyclables in an approved manner.

(69) "Tin and bi-metal cans" means any food or beverage containers that are composed of steel with a tin coating or steel and aluminum.

(70) "Transfer or Processing Station" means those facilities that receive, handle, separate, convert or otherwise process materials in solid waste; and/or transfer solid waste directly from one container to another for transport; and/or store solid waste.

(71) "Vector" means a carrier, usually insects or rodents, that are capable of transmitting a disease.

(72) "White Goods" means kitchen or other large appliances.

(73) "Wood Wastes" means lumber and wood products but excludes painted wood, wood treated with chemicals, and pressure treated wood.

(74) "Yard Wastes" means leaves, grass, weeds and wood materials from trees and shrubs.

(Amended by Ord. No. 7551 (N.S.), effective 11-22-88; amended by Ord. No. 7608 (N.S.), operative 7-21-89; amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8191 (N.S.), effective 2-4-93; amended by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9269 (N.S.), effective 12-15-00; amended by Ord. No. 9495 (N.S.), effective 9-13-02; amended by Ord. No. 9666 (N.S.), effective 8-14-04)

Cross reference(s)--Definitions, § 12.101 et seq.

SEC. 68.502. SOLID WASTE DECLARED PUBLIC NUISANCE.

It shall be unlawful and is a public nuisance for any person to place, deposit or bury, or to employ anyone on their behalf, to place, deposit or bury, any "solid waste" as defined in Section 68.501(65) upon the right of way of any street or highway, or any park or campgrounds, or upon any public or private property, unless the property is a solid waste facility regulated under the California Public Resources Code. It shall also be unlawful and a public nuisance for any owner or occupier of private property who knows that solid waste has been unlawfully placed, deposited or buried on property owned or occupied by him, to allow the solid waste to remain on the property.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02; amended by Ord. No. 9666 (N.S.), effective 8-14-04)

Cross reference(s)--Uniform public nuisance abatement procedure, § 16.201 et seq.

SEC. 68.503. UNLAWFUL TO PLACE DANGEROUS MATERIALS IN WASTE OR GARBAGE RECEPTACLES.

The Department of Environmental Health shall have the authority and responsibility for enforcing this section.

No person shall place or deposit in any receptacle for collection pursuant to this article any waste classified as hazardous, biohazardous, radioactive, or any narcotics or controlled substances, operable hypodermic needles, poisons, liquid or dry caustics or acids, flammable or explosive materials, insecticides, or similar substances dangerous to collection and disposal personnel.

(Amended by Ord. No. 7551 (N.S.), effective 11-22-88; amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.504. HAZARDOUS AND MEDICAL WASTES.

The Department of Environmental Health shall have the authority and responsibility for enforcing this section.

No person shall transport or collect hazardous wastes without compliance with applicable state law.

No person shall deposit, dump, spill, or otherwise allow to be placed on a solid waste facility not designated as a hazardous waste disposal facility, any waste classified as hazardous or infectious by State and Federal law or County Ordinance.

(Amended by Ord. No. 7551 (N.S.), effective 11-22-88; amended by Ord. No. 7608 (N.S.), operative 7-21-89; amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.505. TRANSPORTATION OF REFUSE.

The Department of Public Works shall have the authority and responsibility for enforcing this section.

No person shall convey or transport refuse upon or along any public highway in the County unless such refuse is contained and covered so as to prevent it from leaking, dropping, falling, blowing, or scattering from the vehicle in which it is being conveyed or transported; provided, however, a refuse truck engaged in the collection of solid waste may be uncovered while in the process of acquiring its load where said stops are separated by less than one mile.

When traveling between pick-up stops and a disposal area, all loads of solid waste must be completely covered. All vehicles and equipment used in the transport of any form of solid waste shall be kept clean, and no person shall drain the liquid from any such vehicle upon any road or highway or upon any other land in such a manner as to create an unsanitary condition. Persons hauling solid waste on the public highways shall completely empty the solid wastes from their vehicles and/or containers at the disposal sites in order to prevent the scattering of residue on the return trip.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.506. SCAVENGING.

The Department of Public Works shall have the authority and responsibility for enforcing this section.

Where separate collection or a salvaging operation is initiated in any of the unincorporated areas of the County to further the recovery of reusable or recyclable items, the following shall apply:

(1) It shall be unlawful for any person other than those authorized to remove from any curb, alley, street, designated pick-up location, or any storage area or container, or any Solid Waste Facility any separated salvageable commodity.

(2) It shall be unlawful for any person to disturb or tamper with any receptacle containing salvageable material, or the contents thereof, or to remove any such receptacle from the location where the same was placed by the owner thereof, or to remove the contents of any such receptacle unless authorized by the owner of said receptacle.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.507. SALVAGING.

The Department of Public Works shall have the authority and responsibility for enforcing this section.

Where a salvaging operation is authorized in any of the unincorporated areas of the County the following shall apply:

(a) All storage containers shall be identified with the name and telephone number of the owner or the responsible agency or person.

(b) Storage containers for salvage shall be equipped with lids when appropriate.

(c) All containers shall be of sufficient size so as to contain all the material deposited.

(d) Containers shall not be allowed to overflow. Removal of the contents in a container shall be done as frequently as necessary to avoid the creation of a public nuisance.

(e) Containers which do not comply with the requirements of this section shall be condemned for use as salvage containers. The Director shall mark containers found to be in non-compliance. Continued use of non-complying containers shall constitute a public nuisance.

(f) The placement or retention of a storage container that encroaches on public right-of-way requires a permit. Title 7, Division 1, Chapter 6, of the County Code covers this requirement.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

ARTICLE III. SOLID WASTE AND DESIGNATED RECYCLABLES STORAGE AND REMOVAL.

The Department of Public Works shall have the authority and responsibility for enforcing Article III, Solid Waste and Designated Recyclables Storage and Removal, which consists of Sections 68.520 through 68.521.5. (Added by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.520. [RESERVED.]

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8866 (N.S.), effective 1-6-98; repealed by Ord. No. 9269 (N.S.), effective 12-15-00)

SEC. 68.521. STORAGE.

Where the collector furnishes storage containers, the collector is responsible for maintaining the container in good condition, ordinary wear and tear excepted, unless the containers are furnished under other terms, conditions, or agreements. The collector shall plan with the property owner, operator, and/or occupant as to placement of storage containers to minimize traffic, nuisance, litter, and other problems.

(a) Identification of Containers. Containers of one cubic yard or more owned by the collector shall be identified with the collector's name and telephone number.

(b) Containers. Property owners and tenants shall deposit all garbage and putrescible matter or mixed garbage and rubbish in containers designed for the express purpose of waste storage and disposal. The containers shall conform to the requirements established in Title 14, of the California Administrative Code; including:

(1) Containers shall be designed for safe handling. They shall be non-absorbent, watertight, vector-resistant, durable, easily cleanable, and provided with tight-fitting lids or covers which can be readily removed.

(2) Single use plastic and paper bags or container liners shall be constructed of such thickness and bursting strength to resist punctures and tears, and shall be manufactured expressly for the storage of waste.

(3) Waste containers used for manure from stables or corrals shall be kept tightly covered at all times and shall be sealed to prevent access by flies and other vectors.

(4) Waste containers which are used for mechanized collection, including stationary compactors, and are used for putrescibles or similar waste matter shall be equipped with close-fitting lids and be kept clean, leak-proof and rodent proof.

(c) Containers for designated recyclables shall be provided by collectors to each of their customers, for collection of designated recyclables, in accordance with the implementation schedule designated in this chapter.

(1) Containers provided to Single-Family and Multi-Family residences, Commercial and Industrial entities shall effectively segregate the designated recyclables for pick-up.
(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.521.5. STORAGE.

The owner, operator, and/or occupant of any premise, business establishment, industry, or other property, vacant or occupied, shall be responsible for the safe and sanitary storage of all refuse, and designated recyclables, accumulated on the property. Designated recyclables shall be stored separately from refuse.
(Added by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.522. [RESERVED.]

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 8866 (N.S.), effective 1-6-98; repealed by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.523. CLEARING OF SOLID WASTE NUISANCES FROM PRIVATE PROPERTY BY COUNTY.

(a) Notice to Remove. The Director or his authorized agent is hereby authorized and empowered to notify the owner or the agent of any open or vacant private property that a nuisance condition which is dangerous to public health, safety or welfare has been created and to properly dispose of solid waste located on such owner's property. Such notice shall be by Registered Mail, addressed to said owner or agent at his or her last known address.

(b) Action Upon Non-Compliance. Upon the failure, neglect or refusal of any owner or agent so notified, to properly dispose of solid waste dangerous to the public health, safety or welfare within thirty (30) days after receipt of written notice provided for in sub-section (a) above, or within thirty (30) days after the date of such notice in the event the same is returned to the County, because of its inability to make delivery thereof, provided the same was properly addressed to the last known address of such owner, or agent, the Director of the Department of Environmental Health is hereby authorized and empowered to order the disposal or pay for the disposing of such solid waste constituting the nuisance.

(c) Assessment for Costs-Lien Payment. The cost of abating a nuisance within the meaning of this division shall be a special assessment against the land of which such abatement was done. The procedure established for the abatement of abandoned excavations by Section 50244 through 50256, both inclusive, of the Government Code, is hereby incorporated herein as though fully set forth at this point and, pursuant to Government Code Section 25845, is hereby adopted as the procedure for making the cost of the abatement of such nuisances a special assessment against the land involved; provided, that for the purposes of said Section 50244 through 52056 the Director is the "superintendent", the Board is the "legislative body", and the County is the "local agency"; and further provided, that at the hearing on the superintendent's report the property owner may raise, and the board shall consider, as a complete or partial defense to the imposition of the assessment, questions as to the necessity of the abatement and the manner in which it was accomplished.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

State law reference(s)--Abatement of abandoned excavations, Gov. Code, §§ 50244--50256; adoption, Gov. Code, § 25845.

ARTICLE IV. COLLECTOR AGREEMENTS

The Department of Public Works shall have the authority and responsibility for enforcing Article IV, Collector Agreements, which consists of Sections 68.530 through 68.539.6.

(Added by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.530. AGREEMENT REQUIRED FOR THE COLLECTION OF SOLID WASTES.

Except as specifically exempted in section 68.531, it is unlawful for any person to engage in the business of collection of solid waste kept, accumulated or produced in the unincorporated County unless a Solid Waste Management Agreement has been entered into and is in full force and effect pursuant to the provisions of this Chapter. The total number of collectors shall be limited to twenty-nine (29). Upon a finding of public health, safety, well being, or benefit the Board of Supervisors may increase or decrease such maximum number of collectors.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.531. EXEMPTIONS.

(a) Municipal corporations and other governmental agencies engaged in the collection and/or transportation of solid waste in the unincorporated area shall be exempt from this agreement and decal requirements of this chapter.

(b) Persons removing solid waste from their homes or solid waste produced in the course of their own business shall be exempt from agreement and decal requirements of this chapter, as follows:

(1) The person who owns, leases, rents or has legal access to a residence and removes and/or transports solid waste from the residence to an approved solid waste disposal facility.

(2) The person who owns, leases, rents or has legal access to a business and removes and/or transports solid waste generated by the business to an approved solid waste disposal facility; providing however, the removal and transport shall comply with the following:

(a) The person removing and/or transporting the solid waste shall be a bona fide employee of the business.

(b) The vehicle used shall be owned or leased by the business.

(c) Solid waste storage shall be limited to the private property owned or controlled by the business.

(d) Removal shall be only from the property owned or controlled by the business.

(3) A group of residential owners, not to exceed 10 units, whose residences lie within a single boundary served internally only by private access shall be exempt from agreement and decal requirements of this Chapter.

(4) Containers delivered for recycling under the California Beverage Container Recycling and Litter Reduction Act, California Public Resources Code, Sec. 14500, et seq.

(5) All recyclable materials.

(6) Green material removed from a premises by a gardening, landscaping, or tree trimming contractor as an incidental part of a total service offered by that contractor rather than as a hauling service.

(7) Loads containing 90% or more construction and demolition waste or debris.

(8) Hazardous waste, medical waste and designated waste regardless of its source.

(9) By-products of sewage treatment, including sludge, sludge ash, ash, grit, and screenings.

(10) Residue or non-processible waste from a solid waste management facility, including material recovery, composting, and transformation facilities.

(11) Animal waste and remains for use as tallow.

(c) Persons removing solid waste collected in the course of community clean-up campaigns shall not be required to obtain an agreement or a decal for their vehicles.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97;

amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.532. NON-EXCLUSIVE AGREEMENTS.

All rights to collect waste in the County granted to persons pursuant to this chapter shall be non-exclusive.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97;

amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.533. COUNTY RESERVES RIGHT TO DENY GRANT OF AGREEMENT.

The form of Solid Waste Management Agreement shall be approved by the Board of Supervisors. The Director, Department of Public Works, shall have the authority to negotiate and execute any Agreement upon finding that such Agreement meets the requirements of this Chapter. Any applicant who has been denied an Agreement may appeal such decision to the Board of Supervisors as provided in Section 68.550 of this Chapter. Upon review of the appellant's documentation, and recommendation of the Director, Department of Public Works, the Board of Supervisors may enter into an Agreement, refuse to enter into an Agreement or enter into such an Agreement subject to specific conditions. No provision of this Chapter may be deemed or construed as to require the County to enter into an Agreement when in the opinion of the Board of Supervisors such is not in the public interest.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97;

amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9075 (N.S.), effective 9-10-99; amended

by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.534. [RESERVED.]

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; repealed by Ord. No. 9269 (N.S.), effective 12-15-00)

SEC. 68.535. SERVICE AREA.

Solid Waste Management Agreements shall specify the collection area(s) to be served and the type(s) of service (residential, commercial/industrial roll-off, or commercial/industrial bins) authorized to be provided by the collector.

Applicants shall request authorization to serve a specific area(s) and shall specify the type(s) of service to be provided in each area.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.536. AGREEMENT TERM.

Each agreement will be issued for an initial term of 10 years. A one year extension shall be applied to the non-exclusive Agreement each year upon approval of the Director, Department of Public Works, which approval shall not be unreasonably withheld.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.537. SOLID WASTE MANAGEMENT AGREEMENT FEE.

Each collector granted an Agreement pursuant to this Chapter shall pay a fee to the County during the term of such Agreements which shall be assessed from the date on which the Agreement becomes effective or the effective date identified in the resolution setting the agreement fee, whichever is later. The Agreement fee shall be in the amounts and in the manner set forth in a resolution adopted by the Board of Supervisors and may be modified by the Board of Supervisors at any time during the term of the Agreement. Funds collected pursuant to this section shall be spent for solid waste services and activities only in the unincorporated area of the County, and may not be used for County wide services or activities.

The payment to the County by the collector pursuant to this Chapter shall be in addition to any license fee or business tax prescribed the County for the same period.

Fees in the interim period before divestiture of the Solid Waste System shall be assessed in the same manner as assessed under the permit system existing on April 1, 1997. Such permit fees paid for the period July 1, 1997 through June 30, 1998 shall be credited against any Solid Waste Management Agreement Fees which become payable during the same period.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.538. RATE REGULATION.

Pursuant to Public Resources Code Section 40059, the Board of Supervisors shall have the power to review and regulate fees, rates and charges of any collector, upon a finding that such collector is charging unreasonable or excessive rates.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.539. [RESERVED.]

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; repealed by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.539.1. TRANSFER OF AGREEMENTS.

Agreements are transferable upon review and approval of the Director, Department of Public Works, which approval shall not be unreasonably withheld. Any change in ownership of any collector exceeding 10 percent of the stockholder ownership, assets, or partnership interest shall be reported to the Director within 30 days of the change.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.539.2. APPLICATION FOR COLLECTOR.

Collector applicants shall file a completed application form with the Director, Department of Public Works, for the consideration of an Agreement. The application shall be submitted on forms provided by the Director, Department of Public Works. All applications for a Solid Waste Management Agreement shall be reviewed by the Director, Department of Public Works, and by other appropriate County agencies, as the Director, Department of Public Works, may deem necessary. Collector applicants shall be subject to background investigation conducted by the Sheriff's department or other appropriate agency.

All collector applications must include:

(a) Name and address of the applicant.

(b) If the applicant is a firm, association, organization, partnership, joint venture, privately held corporation, business trust, or company, the names and addresses of owners and the officers and their percentages of ownership. Publicly held corporations shall supply proof of corporate entity and names of local officers.

(c) A description of all trucks and equipment, including license plate numbers and vehicle identification numbers, that the applicant owns or has under applicant's control for the collection or transportation of solid waste which will be used to provide service in the Agreement area. This will include the age and mechanical conditions of said trucks, and a statement as to whether said trucks meet the equipment standards of this Chapter.

(d) Facts demonstrating that the applicant owns or has access to suitable facilities for keeping equipment clean and in good repair, and that he/she owns or has access to reasonable office and billing facilities. The applicant's storage yard and maintenance facilities are to be located in an appropriate land use zone classification, and are to be reasonably located to service the permit area.

(e) A statement of the applicant's experience and capability in the collection and/or transportation of solid waste.

(f) Proof of insurance and affirmation of indemnification.

(g) Such further information as the Director, Department of Public Works, may reasonably require to evaluate and process an application.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9075 (N.S.), effective 9-10-99; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.539.3. ADDITIONAL TERMS AND CONDITIONS.

In approving any Agreement the Board of Supervisors may prescribe such other and additional terms, conditions, rules, regulations, restrictions and limitations, as in the judgment of the Board of Supervisors are in the public interest.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.539.4. INDEMNIFICATION OF COUNTY.

Collectors shall indemnify and hold the County harmless from and against any and all loss, damages, liability, claims, suits, costs and expenses, fines, charges or penalties whatsoever, including reasonable attorney's fees, regardless of the merit or outcome of any such claim or suit, arising from or in any manner related to the services provided or business conducted under this Chapter or under any Agreement granted pursuant to this Chapter.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.539.5. CIVIL PENALTIES.

In addition to imposition of criminal penalties under Section 11.116 of the County Code, the County reserves the right to sue for recovery of fees due the County under its Agreement requirements, and for any other damages resulting from the violation of this Chapter or any other provision of law.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

SEC. 68.539.6. CONSTITUTIONALITY.

If any section, subsection, sentence, clause or phrase of this Article is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this Article. The Board of Supervisors hereby declares that it would have adopted the Article and each section, subsection, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

ARTICLE V. GENERAL SOLID WASTE MANAGEMENT AGREEMENT CONDITIONS*

*Note--Article V, **TRANSPORTER PERMITS**, including §§ 68.540, 68.541, 68.542 and 68.543, repealed by Ord. No. 9269 (N.S.), effective 12-15-00; subsequent Articles VI - X renumbered as V - IX.

SEC. 68.550. GENERAL CONDITIONS.

The Department of Public Works shall have the authority and responsibility for enforcing this section. "Director" in this section means the Director, Department of Public Works or Director's designee.

(a) **Vehicle Inspection.** All trucks and other equipment used in the collection and transportation of solid waste shall be inspected as often as the Director deems necessary and at such time and place as shall be designated by the Director. The Director shall schedule an inspection for each truck operated by a collector and issue a durable decal upon completion of said inspection. Such decal shall be securely affixed and maintained by the collector or permittee on each vehicle so as to be clearly visible. The Director may revoke the decal of any truck that fails to meet the requirements of this Chapter, and such truck shall not be used for the collection or transportation of solid waste until its decal has been reinstated by the Director.

(b) **Insurance.** Every collector shall maintain and keep in force the insurance coverage and limits, as established by Agreement, statute or resolution of the Board of Supervisors. Copies of the insurance policies or certificates evidencing such policies shall be filed with the Director prior to the approval of any Agreement to transport or collect solid waste. All policies shall contain provisions naming County of San Diego as an additional insured and require that 30 days notice be given to the Director prior to the cancellation, modification, or reduction of the limits of the policy by the insured.

(c) Denial, Suspension, or Revocation of Agreement. An Agreement may be denied, suspended, or revoked by the Director either when the applicant does not meet or the collector violates any provisions of this Chapter, State or Federal law, or any rule or regulation promulgated by the Board of Supervisors or the Director. Written notice of denial, suspension, or revocation of the agreement shall be by registered mail to the last recorded address of the place of business or residence of the collector. The collector shall cease operations within ten (10) days after receipt of said notice unless the Agreement has been reinstated by the Director or the collector has requested a hearing before the Board of Supervisors.

The request for hearing concerning denial, suspension, or revocation of an Agreement or denial of the transfer of such Agreement shall be made in writing to the Clerk of the Board of Supervisors within ten (10) calendar days after receipt of notice of suspension, revocation, or denial. The hearing will be held not later than 14 days following the receipt of the written request. In the event that such a hearing is requested, a collector may continue collecting and/or transporting solid waste until the Board of Supervisors has rendered its decision. Written notice of time, date, and place of the hearing shall be given by the Clerk of the Board of Supervisors to the applicant or collector and to the Director. The Board of Supervisors shall render its decision within fifteen (15) days after the close of the hearing, and its decision shall be final.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.551. SOLID WASTE PLANNING FEES.

All solid waste handlers shall remit \$0.02 per ton of solid waste handled. This fee pays the costs of preparing, adopting, and implementing a countywide integrated waste management plan and fulfilling the state mandated countywide reporting requirements including but not limited to countywide disposal reporting. The authority to levy the fee is contained in Public Resources Code Section 41901, which says the fee will be levied pursuant to Government Code Section 66016.

(a) Exclusion: The fee shall not be assessed to solid waste handlers if it can be demonstrated to the satisfaction of the Local Enforcement Agency (LEA) that the waste was recycled and/or diverted from the solid waste stream. Additionally, this fee will not be assessed to solid waste handlers for each ton of waste for which it can be demonstrated to the satisfaction of the LEA that the fee was collected at a disposal site within the County of San Diego.

(Added by Ord. No. 9445 (N.S.), effective 4-12-02, operative 7-1-01)

ARTICLE VI. STANDARDS

The Department of Public Works shall have the authority and responsibility for enforcing Article VI, Standards, which consists of Sections 68.560 through 68.564.

(Added by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.560. EQUIPMENT STANDARDS.

All Refuse Collection Vehicles used in the transportation or collection of solid waste shall comply with the requirements of Title 14, Chapter 3, Article 5, Section 17341 through 17345 of the California Code of Regulations. Said Refuse Collection Vehicles shall carry a shovel, broom, and fire extinguisher. Each vehicle shall be maintained in a clean condition and neatly painted. The name and address or phone number of the collector or permittee shall be painted in letters at least three (3) inches high on each side and across the back of each vehicle. Refuse Collection Vehicles shall also:

(a) Be equipped with audible automatic back-up or other acceptable warning devices, as prescribed by Section 27000 of the California Vehicle Code.

(b) Be equipped with a mechanical cover or tarp which is adequate to cover and contain refuse within the vehicle, and to prevent blowing refuse.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

State law reference(s)--Requirements, Administrative Code, §§ 17341--17345; warning devices, Vehicle Code, § 27000.

SEC. 68.561. MODIFICATION OF EQUIPMENT STANDARDS.

When any of the conditions listed below apply, the holder of a Collector Agreement may request approval for modification of the equipment standards in Section 68.560 or for the equipment used for the storage and removal of recyclable material collected during curbside pick-up programs. Following review of the justification for the request, and upon determining that the public good may be better served, the Director, Department of Public Works, may approve modifications that he may deem appropriate to the specific circumstances set forth.

Conditions:

- (a) Routes or areas which are extremely difficult to serve with a standard Refuse Collection Vehicle.
- (b) Unusual topography.
- (c) Difficult road/driveway access problems.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.562. STANDARDS FOR COLLECTOR.

Collectors providing service shall comply with the following:

- (a) Every collector shall designate the type of service to be provided (residential, commercial/industrial roll-offs, or commercial/industrial bins) and the area(s) within which each service type will be provided.
 - (b) Every collector operating a residential collection route shall provide not less than one (1) regular weekly collection to all customers. Commercial/Industrial service shall be provided on an as needed basis to be agreed upon with the customer.
 - (c) Every holder of a Solid Waste Management Agreement shall provide the designated service within the permit area to any customer who requests the collector's services and agrees to pay the collector's rates.
 - (d) At the time of opening an account and biannually thereafter, all collectors shall notify their customers concerning the regulations governing the disposal of designated recyclables, solid waste, hazardous and toxic wastes. A copy of the notification form or any change thereto shall be filed with the Director, Department of Public Works.
 - (e) Any collector of solid waste may refuse service to any customer for failure to pay a just bill or for any substantial refusal to comply with the requirements of County Code after giving the customer an opportunity to comply. Service may be refused to any customer where topography, geographical isolation and/or inadequate access constitute an unreasonable hardship upon the collector, as determined by the Director, Department of Public Works.
 - (f) Collectors are required to provide collection of designated recyclables in the unincorporated areas of San Diego County.
 - (g) The collector must submit quarterly reports to the Director, Department of Public Works, on or before May 1, August 1, November 1, and February 1 for the first through fourth quarters, respectively of each year, identifying the weight in tons of all designated recyclables and all disposable solid waste collected. The reports must identify the weight in tons of each type of recyclable. Collector must also provide "export reports," as defined in California Code of Regulations Sections 18800 through 18813, on the above quarterly reporting schedule.
- (Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.562.1. [RESERVED.]

(Added by Ord. No. 8790 (N.S.), effective 4-29-97; amended by Ord. No. 8866 (N.S.), effective 1-6-98; repealed by Ord. No. 9269 (N.S.), effective 12-15-00)

SEC. 68.563. STANDARDS FOR CUSTOMERS.

Property owners or any person being provided with residential, commercial, or industrial collection service (solid waste, recycling and/or green waste) in the unincorporated areas of the County shall comply with the following regulations:

- (a) All reusable containers for collection service shall be of an adequate size and in sufficient numbers to contain without overflowing all the refuse that a household or other establishment generates within the designated removal period and shall be equipped with tight-fitting lids or closures.
 - (b) When plastic or paper bags are used as containers for collection service, they shall be tied or sealed when set out for collection.
 - (c) Property owners and/or persons receiving residential, commercial, or industrial collection service shall not place containers in a manner that impedes access to neighboring driveways, mailboxes, or easements.
 - (d) No person shall place, deposit or permit to remain any solid waste or containers for solid waste on streets, curbs, or sidewalks before 6:00 p.m. of the day prior to the regular day for collection by the franchised collector, or after 12:00 p.m. on the day following collection day.
 - (e) Violation of this ordinance shall be charged as an infraction, except that a person convicted of two or more violations in a one year period may, at the discretion of the prosecutor, be charged with a misdemeanor.
- (Added by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02; amended by Ord. No. 9666 (N.S.), effective 8-14-04)

SEC. 68.564. USE OF CONTAINERS.

No person shall tamper with, modify, remove from, or deposit solid wastes into any container without the permission of the container owner.

(Added by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

ARTICLE VII. PROHIBITION OF COLLECTION OF RECYCLABLES WITH MIXED WASTE FOR ALL WASTE GENERATED IN UNINCORPORATED SAN DIEGO COUNTY

SEC. 68.570. DESIGNATED RECYCLABLE MATERIALS.

The Department of Public Works shall have the authority and responsibility for enforcing Article VII, Prohibition of Collection of Recyclables with Mixed Waste for All Waste Generated in Unincorporated San Diego County, which consists of Section 68.570.

Mandatory recycling shall be in effect for all waste generated in unincorporated San Diego County. Designated recyclables shall be stored separately from refuse.

The following recyclable material designations apply to all collectors of solid waste generated in unincorporated San Diego County.

No collector shall deliver for disposal designated recyclables mixed with non-recyclable material.

RESIDENTIAL RECYCLABLE MATERIALS

(a) Aluminum, glass bottles and jars, mixed paper, cardboard, newspaper, plastic beverage bottles, tin and bi-metal cans, white goods (appliances), and yard wastes.

COMMERCIAL RECYCLABLES

(a) Office buildings of more than 20,000 square feet used for commercial, governmental, or educational purposes: corrugated cardboard and office paper.

(b) From hospitality facilities, which includes all restaurants and taverns, and hotels and motels with eating and drinking establishments: aluminum, corrugated cardboard, glass jars and bottles, plastic beverage bottles, tin and bi-metal can, and white goods.

INDUSTRIAL RECYCLABLES MATERIALS

Industrial loads consisting of 90% or more of any one of the following materials: asphalt, concrete, dirt, land clearing brush, sand, or rock.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8060 (N.S.), effective 5-28-92; amended by Ord. No. 8089 (N.S.), § 1, effective 7-16-92; Section 1 of Ord. No. 8089 (N.S.) repealed by Ord. No. 8100 (N.S.), effective 7-1-92; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

ARTICLE VIII. ENFORCEMENT

SEC. 68.580. ENFORCEMENT PROVISIONS.

The Authorized Enforcement Official is responsible for enforcing the provisions of this Chapter.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.581. CITATION AUTHORITY.

The Authorized Enforcement Official shall have responsibility for the enforcement of all provisions of this Chapter which have been designated to said Authorized Enforcement Official per departmental responsibilities stated in Section 68.501. Pursuant to Penal Code Section 836.5, the above specified agents or deputies may issue a citation without a warrant when they have reasonable cause to believe that the person has committed an infraction or misdemeanor in their presence which is a violation of this Chapter. Violations of these regulations will be prosecuted in the same manner as other violations of the County Code; however, nothing in the regulations shall prevent the authorized agents or deputies from efforts to obtain voluntary compliance by way of warning, notice of violation or educational means.

No agent or deputy may exercise the power to issue citations authorized above unless such agent or deputy shall have first completed a course of training which meets the minimum standards prescribed by the Commission on Peace Officer Standards and Training as established in Section 832(a) of the Penal Code.

Any agent or deputy authorized by the Authorized Enforcement Official under this Section shall have citation authority only for violations of regulations as set forth above in Section 68.580 of this Chapter and shall have the powers and duties granted by this Section only when performing expressly assigned duties. At all other times said agents or deputies should have no enforcement power or authority.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

State law reference(s)--Standards established, Penal Code, § 832(a); arrests, citations, Penal Code, § 836.5.

SEC. 68.581.5. [RESERVED.]

(Added by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; repealed by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.582. RIGHT OF ENTRY.

The Authorized Enforcement Official may enter upon privately owned land in adherence with established procedures, to investigate reports or complaints related to violations of, and to enforce the provisions of this Chapter.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; amended by Ord. No. 8866 (N.S.), effective 1-6-98; amended by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.582.5. [RESERVED.]

(Added by Ord. No. 8553 (N.S.), effective 8-10-95, operative 8-10-95; repealed by Ord. No. 9495 (N.S.), effective 9-13-02)

SEC. 68.583. PROOF OF RESPONSIBILITY FOR VIOLATION.

In any prosecution alleging a violation of this Chapter, proof by the people of the State of California of a violation by particular identifiable material described in the complaint, together with proof upon which an inference may be drawn of ownership, at the time of the violation, by the defendant named in the complaint, may constitute prima facie evidence of responsibility for the violation by the named defendant.

Citations may be delivered in person to the violator by the agent or deputy, or they may be mailed to the person so charged by Registered Mail, if the violator cannot be readily found.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

ARTICLE IX. SEPARABILITY

SEC. 68.590. SEPARABILITY.

If any section, subsection, sentence, clause, phrase, or portion of this Chapter is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion will be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

(Amended by Ord. No. 7920 (N.S.), effective 7-11-91; amended by Ord. No. 8866 (N.S.), effective 1-6-98)

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Appendix J. Sample C&D Ordinance

ORDINANCE NO. _____ (NEW SERIES)

AN ORDINANCE ADDING SECTIONS 68.508 THROUGH 68.518 TO THE COUNTY CODE OF REGULATORY ORDINANCES RELATING TO DIVERSION OF CONSTRUCTION AND DEMOLITION MATERIALS FROM LANDFILL DISPOSAL

The Board of Supervisors of the County of San Diego ordains as follows:

Section 1. The Board of Supervisors finds and determines that Public Resources Code sections 41780 et seq., also known as the Integrated Waste Management Act, requires each local jurisdiction in the State to divert at least 50% of solid waste from landfills. Every city and county in California may face fines up to \$10,000 a day for not meeting the State law requirement. Reusing and recycling construction and demolition debris is essential to reducing landfill solid waste disposal. Construction and demolition debris waste reduction and recycling programs have been proven to reduce the amount of solid waste deposited in landfills. Except in unusual circumstances it is feasible to divert 70 percent or more of all construction and demolition debris from construction and demolition projects.

Section 2. Title 6, Division 8, of the San Diego County Code of Regulatory Ordinances is amended to add Article II, as follows:

SEC. 68.508. PURPOSE

The purpose of this article is to establish the Construction and Demolition Materials Diversion Program in the unincorporated area of the County. This program is intended to increase diversion of construction and demolition materials from landfills, conserve landfill capacity, extend the useful life of local landfills and avoid potential consequences to the County if it fails to comply with State waste diversion requirements.

SEC. 68.509. DEFINITIONS

For the purposes of this Article, the following definitions shall apply:

(a) "Applicant" means a person who applies to the County of San Diego for a permit for an applicable project.

(b) "Applicable project" means a construction or demolition project subject to a threshold in section 68.510(a).

(c) "Chipping and grinding operation" means an operation or facility that does not produce compost or that mechanically reduces the size of or otherwise engages in the handling of compostable material.

(d) "Construction" means the act of building, making, erecting, remodeling, repairing, renovating, or improving a "structure," as that term is defined in the California Building Code and includes any project for which the County requires a building permit.

(e) "Construction and demolition debris" means nonhazardous waste building material, inert material, soil, packaging, green material and rubble resulting from construction or demolition.

(f) "Conversion rate" means the rate in the standardized Conversion Rate Table approved by the County pursuant to this article for use in estimating the volume or weight of materials identified in a Debris Management Plan (DMP).

(g) "Debris Management Plan (DMP)" means a plan for diverting construction or demolition debris required by this article.

(h) "DMP compliance official" means a person responsible for implementing this article.

(i) "DMP permittee" means a person who is required to divert construction or demolition waste under this article and who has an approved DMP.

(j) "Demolition" means the act of removing, razing or tearing down a structure or any portion of a structure.

(k) "Director" means the director of the County Department of Public Works.

(l) "Divert" means to reuse or recycle construction or demolition debris.

(m) "Diversion requirement" means the requirement in this article to divert a percentage of construction and demolition debris generated by an applicable project.

(n) "Green Material" means any materials related to land development such as yard trimmings, trees, brush and construction and demolition wood waste. Green material does not include food material, bio-solids, mixed solid waste material processes from co-mingled collection, wood containing lead-based paint or wood preservatives, mixed construction or mixed demolition debris.

(o) "Green material processing operations" means a facility or center that processes green material through composting, chipping or grinding operations.

(p) "Inert debris" has the same definition as the term is defined in California Code of Regulations Title 14, section 17381(k) and means materials such as concrete, soil, asphalt, ceramics and masonry.

(q) "Permitted construction and demolition and inert recycling center" or "CDI center" means a facility or center for which the Local Enforcement Agency has issued an oversight permit to allow the facility or center to receive or process construction, demolition or inert debris.

(r) "Project" means any construction or demolition, which requires a building or demolition permit, or any similar permit.

(s) "Recycling" means the process of collecting, sorting, cleansing, treating and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.

(t) "Reuse" means further or repeated use of construction and demolition debris.

(u) "Salvage" means the controlled removal of construction and demolition debris from a permitted building or demolition site for the purpose of recycling, reuse, or storage for later recycling or reuse.

SEC. 68.510. THRESHOLD FOR APPLICABLE PROJECTS

(a) During the first 12 months after the effective date of this article, an applicable project shall be one in which the total square footage of demolition and/or construction is equal to or greater than 40,000 square feet. In measuring the square footage of a project each floor of a building shall be counted, not just the building's footprint. Projects shall also include paved areas, walkways, driveways, parking areas, decks, patios or any other landscape areas that are demolished, constructed, excavated and/or graded. For the purpose of determining whether a project meets the foregoing thresholds, all phases of a project and all related demolition, construction, excavation or grading occurring on the same or other parcels, as determined by a DMP compliance official, shall be deemed a single project.

(b) All construction and/or demolition projects conducted by the County shall be subject to the thresholds established by this article. The project lead or its contractor shall submit a DMP to the DMP compliance official prior to beginning any activities.

(c) All applicable projects shall comply with this article.

SEC. 68.511 SUBMISSION OF DEBRIS MANAGEMENT PLAN

(a) An applicant for a project subject to a threshold in section 68.510 shall submit a completed County Debris Management Plan (DMP) with an application for a building permit and/or demolition permit to the Department of Public Works. The DMP shall provide the following information:

- (1) The type of project;
- (2) The total square footage of the project;
- (3) The estimated volume or weight of project construction and demolition debris, by material type that the project will generate;
- (4) The maximum volume or weight of construction and demolition debris that can feasibly be diverted via reuse or recycling;
- (5) The estimated volume or weight of construction and demolition debris that will be disposed of in a landfill; and

(6) The name and address of any person and/ or recycling facility the applicant proposes to use to collect, process or receive construction and/ demolition debris the project will generate.

(b) The County shall prepare a list of recyclers who accept construction and demolition materials in the unincorporated and incorporated areas of the County. The County shall make the list available to any person upon request.

(c) The County shall prepare conversion rates tables that shall be used by an applicant to calculate the volume and weight of construction and demolition debris.

SEC. 68.512. PERFORMANCE GUARANTEE

(a) The applicant for any applicable project shall submit a performance guarantee to the Department of Public Works as a condition of a building or demolition permit.

(b) A performance guarantee may be in the form of any combination of the following: cash deposit, irrevocable letter of credit or other recognized form of security the County determines is acceptable.

(c) Cash deposits for a performance guarantee shall be deposited in an interest bearing account and returned with interest, to the Debris Management Plan permittee upon the County's determination of full compliance, or prorated based on the degree of compliance. Any forfeited performance guarantee, including interest on a cash deposit will be used first to recover the County's administrative costs related to processing the DMP. Remaining funds shall be used only for programs to develop or improve the infrastructure for construction and demolition debris.

(d) The amount of a performance guarantee required shall be determined by the following schedule:

Performance Guarantee Values

Building Segment	Guarantee per Sq. Ft.	Maximum Sq. Ft. Subject to Guarantee
Residential	\$0.20	125,000 detached 100,000 attached
Non-residential	\$0.20	40,000 commercial 75,000 industrial

SEC. 68.513 DEBRIS MANAGEMENT PLAN

(a) During the first 12 months after the effective date of this article an applicable project shall recycle 90 percent of inert construction and demolition debris and 50 percent of all other construction and demolition debris. After this article has been in effect for 12 months an applicable project shall recycle 90 percent of inert debris and 70 percent or all other construction and demolition debris.

(b) Notwithstanding any other provision of this code, no building permit shall be issued for any applicable project unless a DMP compliance official has approved the Debris Management Plan (DMP). Approval shall not be required, however, when emergency demolition is required to protect public health or safety. A DMP compliance official shall approve a DMP if he determines that all of the following conditions have been met:

- (1) The DMP provides all of the information required by section 68.511(a) and
- (2) The DMP complies with subsection (a) above.

SEC. 68.514. INFEASIBILITY EXEMPTION

(a) If it is infeasible for an applicant for an applicable project to comply with all of the requirements of section 68.513(a) the applicant may apply for an exemption. For the purposes of this section "infeasible" means that there is no recycling, salvage, or construction demolition inert processing (CDI) center or onsite reuse options for all or part of the construction or demolition debris a project will generate within a 50 mile radius of the project area, any location from which the applicant regularly operates its business, or stores its construction or demolition equipment. The applicant shall apply for the exemption on a form provided by the County at that same time as the applicant submits the DMP required by section 68.511(a).

(b) If a DMP compliance official grants the applicant's request for an exemption, the official shall determine what percentage of construction and demolition debris the applicant is required to recycle. In reaching his determination, the official may consult with any State or local official and the applicant. The official shall issue his determination in writing and serve it under section 11.112 of this code.

(c) Within 15 days from the date the official serves the notice, the applicant shall submit a revised DMP or file an appeal under section 68.517.

SEC. 68.515. COMPLIANCE WITH DEBRIS MANAGEMENT PLAN

(a) For each construction or demolition site for which the DMP permit is issued, the DMP permittee shall maintain a daily log for all construction or demolition debris that leaves the site along with the corresponding receipts from any CDI center, recycling center, vendor, green materials operation or disposal or transfer station facility which accepted debris from the DMP permittee. The log and receipts shall contain the weight of the debris the facility accepted and whether the material was disposed in a landfill or recycled. The log shall be made available to any County inspector or DMP compliance official responsible to insure compliance with this article. The permittee's failure to have the log or the information required by this subsection available for inspection constitutes grounds for suspension of the DMP permit.

(b) After construction or demolition begins, a DMP permittee shall submit evidence to the DMP compliance officer demonstrating that the permittee is complying with the approved DMP. At the end of every quarter thereafter until 180 days after the County issues a certificate of occupancy or for a project with multiple phases, the last certificate of occupancy for the project, the DMP permittee shall submit proof of compliance with the DMP. The permittee shall submit quarterly reports according to the following schedule:

Timeframe	Due Date
January to March	April 15
April to June	July 15
July to September	October 15
October to December	January 15

The first report shall be submitted upon first quarterly due date following the project start date. Example: Project starts February 15th, first quarterly report due April 15th.

(c) Proof of compliance required to satisfy the permittee's obligation under subsection (a) above shall be the following:

- (1) Receipts from each CDI center, recycling center, vendor, green materials operation and disposal or transfer station facility which accepted construction or demolition debris from the DMP permittee, that contain the weight of the debris the facility accepted and whether the material was disposed in a landfill or recycled.
- (2) If a receipt from a recycling center or other facility in paragraph (1) does not contain a statement of the weight of the debris, the DMP permittee shall provide a print out or other verifiable statement of the weight of the debris, produced by a weighing device with a current registration certificate from the County Sealer.
- (3) If it is impracticable to weigh the construction or demolition debris the DMP permittee shall measure the debris and submit a statement of the volume along with the calculation of the weight of the debris using the County's conversion rate table as referenced in section 68.511(c)
- (4) If the material was reused onsite or collected by a third party for salvage, the DMP permittee shall provide a receipt or other proof of diversion including photos or any additional information relevant to determining compliance with the DMP.
- (5) A statement from an authorized representative of the DMP permittee signed under penalty of perjury verifying that the information submitted to the County in compliance with subparagraphs (1)-(4) above is accurate.

(d) If a DMP compliance official determines the DMP permittee has complied with the DMP, the compliance official shall direct that the permittee's performance guarantee be released within 30 days of final DMP submittal. If the compliance officer determines the DMP permittee has not complied with the DMP, the compliance officer shall calculate the percent of the permittee's failure to comply and issue a forfeiture notice to the DMP permittee based upon a sliding scale. The compliance officer shall serve the permittee pursuant to section 11.112 of this code with a statement of compliance or a notice of forfeiture. The permittee shall have 15 days from the date a notice of forfeiture is served to file an appeal of the forfeiture under section 68.517.

SEC 68.516. COUNTY'S RIGHT TO MONITOR, INSPECT AND ENFORCE

(a) As an additional condition of approval of a DMP under section 68.513, the DMP permittee shall consent to allow the County the right to inspect any construction or demolition

site during normal business hours without notice. The DMP permittee shall have the required log available for inspection by the County inspector during normal business hours at each construction or demolition site as required to maintain under section 68.515(a).

(b) If a permittee or any of the permittee's agents or employees refuse to allow a County inspector to inspect the site or the permittee's log the County shall have the right to obtain an inspection warrant under Code of Civil Procedure sections 1822.50 et seq. and suspend the building permit. The County shall also have the right to suspend the permit if the permittee fails to maintain or have available a log required by this article, if the permittee violates any other provision of this article or if the permittee commits any other act which would be grounds for suspension of a building permit or demolition permit.

(c) If the County decides to suspend the permit under this section, the County shall issue a notice of suspension and serve the permittee under section 11.112 of this code. The suspension shall be effective 15 days from the date the County serves the notice of suspension unless the permittee appeals the notice of suspension under section 68.517, which stays the effective date of the suspension until the appeal is decided. If the County determines that any construction or demolition site is unsafe or that the permittee has knowingly failed to comply with section 68.515 the County may suspend the permit immediately and advise the permittee in the notice of suspension that the permit is suspended immediately and state the reasons for the immediate suspension. A notice of immediate suspension is also appealable under section 68.517, but an appeal does not stay the immediate suspension of the permit.

(d) It shall be unlawful for any permittee to continue to operate under a DMP in violation of subsection (c) above. A permittee who violates this section shall be guilty of a misdemeanor for each day the permittee operates in violation of subsection (c) above and upon conviction shall be fined in an amount not to exceed \$500 or by imprisonment in the County Jail or both fine and imprisonment.

(e) In addition to prosecuting a permittee who violates subsection (c) above the County may seek injunction relief in any court of competent jurisdiction and civil penalties of up to \$1000 a day for each day a permittee violates subsection (c).

(f) It shall also be unlawful for an applicant or a DMP permittee to knowingly provide false information to the County under this article. An applicant or permittee who knowingly provides false information under this article shall be guilty of a misdemeanor and upon conviction shall be fined in an amount not to exceed \$500 or by imprisonment in the County Jail or both fine and imprisonment.

SEC. 68.517. APPEALS

The following appeals may be made to the director: (1) a denial of an infeasibility exemption under section 68.514, (2) forfeiture of performance guarantee under section 68.515 or (3) a suspension of the DMP permit under section 68.516. No other appeal shall be allowed under this article. A notice of appeal shall be in writing and filed with or mailed to the director within 15 days from the date the County served any appealable notice. The postmark on any mailed notice of appeal shall be deemed to be the date appellant filed a notice of appeal by mail. The director shall appoint an independent hearing officer to hear the appeal under procedures established by the director. The decision of the hearing officer shall be final.

SEC. 68.518. SEPARABILITY

If any section, subsection, subdivision, paragraph, sentence, clause or phrase of this Article, or any part thereof is for any reason held to be unconstitutional or invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this Article or any part thereof. The Board of Supervisors hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase of this Article irrespective of the fact that one or more sections, subsections, subdivisions, paragraphs, sentences, clauses or phrases be declared unconstitutional or invalid or effective. To this end the provisions of this Chapter are declared to be severable.

Section 3. This ordinance shall take effect and be in force thirty days after its passage, and before the expiration of fifteen days after its passage, a summary hereof shall be published once with the names of the members of the Board voting for and against it in the _____, a newspaper of general circulation published in the County of San Diego.

Appendix K: Sample Household Battery and Florescent Tube Ordinance

San Luis Obispo County Integrated Waste Management Authority ORDINANCE NO. 2008-1

AN ORDINANCE ESTABLISHING A HOUSEHOLD BATTERIES AND FLUORESCENT TUBES MANAGEMENT PROGRAM

The Board of Directors of the San Luis Obispo County Integrated Waste Management Authority ordains as follows:

Section 1. General Provisions

The San Luis Obispo County Integrated Waste Management Authority (IWMA) finds and declares all of the following:

(a) The purpose of this Ordinance is to have the IWMA, a joint powers agency established pursuant to Government Code Section 6500 and empowered by its member jurisdictions to exercise the members' common powers to achieve the mandates imposed by the Integrated Waste Management Act of 1989 (AB 939) on a regional basis, enact a comprehensive and innovative system for the proper and legal management of used household batteries and fluorescent tubes in San Luis Obispo County.

(b) The purpose of this Ordinance is to enact a law that establishes a program that is convenient for consumers and the public to return and ensure the safe and environmentally sound disposal of used household batteries and fluorescent tubes, and to provide a "no-cost" system for consumers for the return of used batteries and fluorescent tubes.

(c) The purpose of this Ordinance is to assure that the costs associated with the handling and disposal of used household batteries and fluorescent tubes are the responsibility of the producers and retailers of household batteries and fluorescent tubes, and not local governments or their service providers, state government, or taxpayers.

(d) The purpose of this Ordinance is to reduce the likelihood of the illegal disposal of hazardous materials, and it is the intent of this Ordinance to ensure that all costs associated with the proper management of used household batteries and fluorescent tubes are internalized by the producers and consumers of household batteries and fluorescent tubes at or before the point of purchase, and not at the point of discard.

(e) The purpose of this Ordinance is to assure that manufacturers and retailers of household batteries and fluorescent tubes, while working to achieve the goals and objectives of this Ordinance, should have the flexibility to partner with each other and with those private and nonprofit business enterprises that currently provide collection and processing services to develop and promote a safe and effective used household batteries and fluorescent tubes recycling system.

(f) The purpose of this Ordinance is to provide for the safe and convenient collection, reuse, and recycling of 100 percent of the used household batteries and fluorescent tubes discarded in the

IWMA Region at no cost to the consumer.

(g) The purpose of this Ordinance is to recognize that there are significant environmental and human health impacts associated with household products that contain toxic ingredients, including mercury, lead, cadmium and other toxic chemicals, that when disposed of improperly, can contaminate the IWMA Region's environment.

Section 2. Definitions

For the purposes of this Ordinance, the following terms have the following meanings, unless the context clearly requires otherwise:

(a) "Household Batteries" means batteries used primarily for household and personal uses, including nickel-cadmium, alkaline, carbon-zinc, Li Ion, NiMH and other batteries generated as non-RCRA waste similar in size to those typically generated as household waste. "Household Batteries" does not include lead-acid batteries such as motor vehicle batteries.

(b) "Consumer" means a purchaser or owner of household batteries and fluorescent tubes. "Consumer" also includes a business, corporation, limited partnership, nonprofit organization, or governmental entity, but does not include an entity involved in a wholesale transaction between a distributor and retailer.

(c) "IWMA Region" means the geographic area that includes the unincorporated area of San Luis Obispo County, California and the seven incorporated cities within San Luis Obispo County.

(d) "Retailer" means any entity, including but not limited to, a person or business, of whatever form of organization, which sells to the general public household batteries, fluorescent tubes, or both, in the IWMA Region to a consumer, including a manufacturer of household batteries and fluorescent tubes who sells household batteries and fluorescent tubes directly to a consumer.

(e) "Distributor" means a person who sells household batteries and fluorescent tubes to a retailer.

(f) "Fluorescent tubes" (also referred to as "universal waste lamp") means the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste lamps include, but are not limited to, fluorescent tubes, compact fluorescent lamps (cfl), high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

Section 3. Household batteries and fluorescent tubes management

(a) Every retailer of household batteries, fluorescent tubes, or both, sold in this IWMA Region shall establish within the retail outlet a system for the acceptance and collection of used household batteries, fluorescent tubes, or both, for recycling or proper disposal. A retailer who sells household batteries is required to accept, collect and dispose of household batteries. A retailer who sells fluorescent tubes is required to accept, collect and dispose of fluorescent tubes. A retailer who sells household batteries and fluorescent tubes is required to accept, collect and dispose of household batteries and fluorescent tubes.

(b) A system established by a retailer for the acceptance and collection of used household batteries, fluorescent tubes, or both, during the retailer's normal hours of operation, for recycling or proper disposal shall, at a minimum, include all of the following elements:

(1) A convenient location within the retail establishment for the "take-back" from the consumer of used household batteries, fluorescent tubes or both at no cost to that consumer.

(2) Appropriate signage, prominently displayed within 5 feet of any entrance to the retail establishment and easily visible to the consumer, indicating that the retail establishment accepts and collects used household batteries, fluorescent tubes, or both, from consumers. In the alternative, the retail establishment may place the recycling receptacle within 5 feet of any entrance to the retail establishment with appropriate signage indicating its location for consumer disposal of batteries and/or fluorescent tubes.

(3) An appropriate receptacle or receptacles for the collection of used household batteries, fluorescent tubes, or both, within the retail establishment.

(c) A retailer who is required to accept used household batteries shall at a minimum provide the following take-back services:

(1) The take-back from the consumer of used household batteries that the retailer sold or previously sold to the consumer, at no cost to that consumer. In that event, the retailer may require proof of purchase of the prior sales. The retailer shall only be required to accept household batteries in an amount not to exceed the amount previously sold to the consumer.

(2) The take-back of used household batteries from a consumer purchasing batteries from the retailer, at no cost to the consumer. In that event, the retailer shall only be required to accept household batteries in an amount not to exceed the amount being purchased.

(3) The take-back from the consumer of used household batteries that the retailer did not sell or previously sell to the consumer, at no cost to that consumer. The retailer shall only be required to accept household batteries in an amount not to exceed 15 batteries per week per consumer from any consumer who resides in the IWMA Region.

(d) A retailer who is required to accept fluorescent tubes shall, at a minimum, provide the following take-back services.

(1) The take-back from the consumer of used fluorescent tubes that the retailer sold or previously sold to the consumer, at no cost to that consumer. The retailer may require proof of purchase. The retailer shall only be required to accept fluorescent tubes in an amount not to exceed the amount previously sold to the consumer.

(2) The take-back of used fluorescent tubes from a consumer who is purchasing new fluorescent tubes from that retailer, at no cost to that consumer. The retailer shall only be required to accept fluorescent tubes in an amount not to exceed the amount being purchased.

(3) The take-back from the consumer of used fluorescent tubes that the retailer did not sell or previously sell to the consumer, at no cost to that consumer. The retailer shall only be required to accept fluorescent tubes in an amount not to exceed 8 fluorescent tubes per week per consumer from any consumer who resides in the IWMA Region.

Section 4. Enforcement

(a) The IWMA may enforce the provisions of this Ordinance through a civil action for civil penalties in the amounts established herein, and any other civil remedy, including prohibitory and mandatory injunctive relief, filed in the Superior Court for the County of San Luis Obispo to compel and enforce the provisions herein against any retailer within San Luis Obispo County who sells batteries, fluorescent tubes, or both, in violation of this Ordinance. In addition to any relief available to IWMA to enforce this Ordinance, the IWMA shall also be entitled to recover its reasonable attorneys' fees and costs incurred in enforcing this Ordinance.

(b) For any violation of this Ordinance, the IWMA may sue to recover civil penalties in the amount of \$1,000.00 per day for every day on which a violation exists. For purposes of calculating the civil penalties to be established hereunder, each day on which the retailer fails to comply with the requirements of this Ordinance, after having received a written notice of violation issued by the IWMA, shall constitute a separate offense.

(c) In addition to the civil relief available to the IWMA set forth above, any violation of this Ordinance shall also constitute a misdemeanor punishable under the laws of the State of California. The District Attorney, the County Counsel, or any City Attorney shall be authorized to enforce the provisions of this Ordinance within their respective jurisdictions. In the event of such criminal enforcement, the following criminal penalties apply to violations of this Ordinance:

(1) Violation as Misdemeanor. Violations of the provisions of this Ordinance or failure to comply with any of its requirements shall constitute a misdemeanor.

(2) The San Luis Obispo County Sheriff's Department and/or any other police department or law enforcement agencies located within the IWMA's jurisdiction may issue a Notice to Appear Citation for any misdemeanor pursuant to California Penal Code Section 853.6 for any violation of this Ordinance.

(3) Penalty for Misdemeanor. Any retailer found to be in violation of any provision of this Ordinance, or who fails to comply with any of its requirements, shall upon conviction thereof be punished by imprisonment in the county jail for not more than six months, or be fined not more than one thousand dollars (\$1,000.00), or by both. Each day such violation continues shall be considered a separate offense.

(d) To the extent that the County of San Luis Obispo, the incorporated cities, and the districts within said County have adopted code enforcement ordinances applicable to their jurisdictions, this Ordinance shall be enforceable by said governmental entities under said ordinances as land-use or code-enforcement violations consistent with said ordinances.

Section 5. CEQA Findings

The Board of Directors of the IWMA finds that this Ordinance is exempt from the California Environmental Quality Act pursuant to CEQA Guidelines § 15061(b)(3) because "it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." In addition, the Ordinance is subject to a Class 1 categorical exemption pursuant to CEQA Guidelines § 15301 in that the activities mandated by the ordinance will occur at existing retail establishments and, therefore, consist "of the operation, repair, maintenance, permitting, leasing, licensing or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.... The key consideration is whether the project involves negligible or no expansion of an existing use." The IWMA Manager is directed to prepare and file an appropriate notice of exemption.

Section 6. Severance Clause

If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional, ineffective or in any manner in conflict with the laws of the United States, or the State of California, such decision shall not affect the validity of the remaining portions of this Ordinance. The Governing Board of the IWMA hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsection, sentence, clause or phrase be declared unconstitutional, ineffective, or in any manner in conflict with the laws of the United States or the State of California.

Section 7. Effect of Headings in Ordinance

Title, division, part, chapter, article, and section headings contained herein do not in any manner affect the scope, meaning, or intent of the provisions of this Ordinance.

This Ordinance was introduced and the title thereof read at the regular meeting of the IWMA Board of Directors on _____ and further reading was waived by a majority vote of those Directors present.

This Ordinance shall take effect and be in full force on and after thirty (30) days from the date of its passage, and before the expiration of fifteen (15) days from the date of its passage it shall be published once with the names of the members of the Board of Directors voting for and against the same, said publication to be made in a newspaper of general circulation published in the County of San Luis Obispo.

On a motion by Director _____, seconded by Director _____, the foregoing Ordinance was passed and adopted by the Board of Directors of the San Luis Obispo County Integrated Waste Authority, this (insert date), by the following vote:

AYES:

NOES:

ABSENT:

Jerry Lenthall, President of the San Luis Obispo County
Integrated Waste Management Authority

ATTEST:

Carolyn Goodrich, IWMA Board Secretary

ORDINANCE CODE PROVISION APPROVED
AS TO FORM AND CODIFICATION:

RAYMOND A. BIERING
IWMA Counsel

Date: _____

Appendix L: Sample Sharps Ordinance

San Luis Obispo County Integrated Waste Management Authority ORDINANCE NO. 2008-2

AN ORDINANCE ESTABLISHING A SHARPS (HYPODERMIC NEEDLES) WASTE MANAGEMENT PROGRAM

The Board of Directors of the San Luis Obispo County Integrated Waste Management Authority ordains as follows:

Section 1. General Provisions

The San Luis Obispo County Integrated Waste Management Authority (IWMA) finds and declares all of the following:

(a) The purpose of this Ordinance is to have the IWMA, a joint powers agency established pursuant to Government Code Section 6500 and empowered by its member jurisdictions to exercise the members' common powers to achieve the mandates imposed by the Integrated Waste Management Act of 1989 (AB 939) on a regional basis, enact a comprehensive and innovative system for the proper and legal management of home-generated sharps waste (hypodermic needles waste) in San Luis Obispo County in accordance with Section 118286 of the Health and Safety Code.

(b) The purpose of this Ordinance is to enact a law that establishes a program that is convenient for consumers and the public to return and ensure the safe and environmentally sound disposal of home-generated sharps waste, and to provide a "no-cost" system for consumers for the return of home-generated sharps waste.

(c) The purpose of this Ordinance is to assure that the costs associated with the handling and disposal of home-generated sharps waste are the responsibility of the producers and retailers of home-generated sharps waste, and not local governments or their service providers, state or local government, or taxpayers.

(d) The purpose of this Ordinance is to reduce the likelihood of the illegal disposal of home-generated sharps waste, and it is the intent of this Ordinance to ensure that all costs associated with the proper management of home-generated sharps waste are internalized by the producers and consumers of home-generated sharps waste at or before the point of purchase, and not at the point of discard.

(e) The purpose of this Ordinance is to assure that manufacturers and retailers of sharps, while working to achieve the goals and objectives of this Ordinance, should have the flexibility to partner with each other, and with those private and nonprofit business enterprises that currently provide collection and processing services, to develop and promote a safe and effective home-generated sharps waste management system.

(f) The purpose of this Ordinance is to provide for the safe and convenient collection and disposal of 100 percent of the home-generated sharps waste discarded in the IWMA Region at no cost to the consumer and to comply with the requirements pursuant to State Health and Safety Code prohibiting the disposal of home generated sharps waste in landfills as of September 1, 2008.

Section 2. Definitions

For the purposes of this Ordinance, the following terms have the following meanings, unless the context clearly requires otherwise:

- (a) "Consumer" means an individual who has purchased sharps for personal use.
- (b) "Home-generated sharps waste" means hypodermic needles, pen needles, intravenous needles, lancets, and other devices that are used to penetrate the skin for the delivery of medications derived from a household, including a multifamily residence or household.
- (c) "IWMA Region" means the geographic area that includes the unincorporated area of San Luis Obispo County, California and the seven incorporated cities within San Luis Obispo County.
- (d) "Retailer" means any entity, including but not limited to, a person or business, of whatever form of organization, which sells to the general public sharps in the IWMA Region to a consumer, including a manufacturer of sharps who sells sharps directly to a consumer.
- (e) "Distributor" means a person who sells sharps to a retailer.
- (f) "Sharps" means hypodermic needles, pen needles, intravenous needles, lancets, and other devices that are used to penetrate the skin for the delivery of medications.

Section 3. Sharps management

(a) By September 1, 2008, every retailer of sharps sold in this IWMA Region shall establish within the retail outlet a system for the acceptance and collection of home-generated sharps waste for proper disposal.

(b) Each system established by a retailer for the acceptance and collection of home-generated sharps waste during the retailer's normal hours of operation, for proper disposal shall, at a minimum, include all of the following elements:

- (1) A convenient location within the retail establishment for the "take-back" from the consumer of home-generated sharps waste at no cost to that consumer.
- (2) Appropriate signage, prominently displayed within 5 feet of any entrance to the retail establishment and easily visible to the consumer, indicating that the retail establishment accepts and collects home-generated sharps waste from consumers.
- (3) An appropriate receptacle or receptacles for the collection of home-generated sharps waste within the retail establishment.

(c) A retailer who is required to accept home-generated sharps waste shall at a minimum provide the following take-back services:

- (1) The take-back from the consumer of home-generated sharps waste that the retailer sold or previously sold to the consumer, at no cost to that consumer. In that event, the retailer may require proof of purchase of the prior sales. The retailer shall only be required to accept home-generated sharps waste in an amount not to exceed the amount previously sold to the consumer.
- (2) The take-back of home-generated sharps waste from a consumer purchasing sharps from the retailer, at no cost to the consumer. In that event, the retailer shall only be required to accept home-generated sharps waste in an amount not to exceed the amount being purchased.
- (3) The take-back from the consumer of home-generated sharps waste that the retailer did not sell or previously sell to the consumer, at no cost to that consumer. The retailer shall only be required to accept home-generated sharps waste in an amount not to exceed a 2 quart size

sharps containers per week per consumer from any consumer who resides in the IWMA Region.

Section 4. Enforcement

(a) The IWMA may enforce the provisions of this Ordinance through a civil action for civil penalties in the amounts established herein, and any other civil remedy, including prohibitory and mandatory injunctive relief, filed in the Superior Court for the County of San Luis Obispo to compel and enforce the provisions herein against any retailer within San Luis Obispo County who sells sharps in violation of this Ordinance. In addition to any relief available to IWMA to enforce this Ordinance, the IWMA shall also be entitled to recover its reasonable attorneys' fees and costs incurred in enforcing this Ordinance.

(b) For any violation of this Ordinance, the IWMA may sue to recover civil penalties in the amount of \$1,000.00 per day for every day on which a violation exists. For purposes of calculating the civil penalties to be established hereunder, each day on which the retailer fails to comply with the requirements of this Ordinance, after having received a written notice of violation issued by the IWMA, shall constitute a separate offense.

(c) In addition to the civil relief available to the IWMA set forth above, any violation of this Ordinance shall also constitute a misdemeanor punishable under the laws of the State of California. The District Attorney, the County Counsel, or any City Attorney shall be authorized to enforce the provisions of this Ordinance within their respective jurisdictions. In the event of such criminal enforcement, the following criminal penalties apply to violations of this Ordinance:

(1) Violation as Misdemeanor. Violations of the provisions of this Ordinance or failure to comply with any of its requirements shall constitute a misdemeanor.

(2) The San Luis Obispo County Sheriff's Department and/or any other police department or law enforcement agencies located within the IWMA's jurisdiction may issue a Notice to Appear Citation for any misdemeanor pursuant to California Penal Code Section 853.6 for any violation of this Ordinance.

(3) Penalty for Misdemeanor. Any retailer found to be in violation of any provision of this Ordinance, or who fails to comply with any of its requirements, shall upon conviction thereof be punished by imprisonment in the county jail for not more than six months, or be fined not more than one thousand dollars (\$1,000.00), or by both. Each day such violation continues shall be considered a separate offense.

(d) To the extent that the County of San Luis Obispo, the incorporated cities, and the districts within said County have adopted code enforcement ordinances applicable to their jurisdictions, this Ordinance shall be enforceable by said governmental entities under said ordinances as land-use or code-enforcement violations consistent with said ordinances.

Section 5. CEQA Findings

The Board of Directors of the IWMA finds that this Ordinance is exempt from the California Environmental Quality Act pursuant to CEQA Guidelines § 15061(b)(3) because "it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." In addition, the Ordinance is subject to a Class 1 categorical exemption pursuant to CEQA Guidelines § 15301 in that the activities mandated by the ordinance will occur at existing retail establishments and, therefore, consist "of the operation, repair, maintenance, permitting, leasing, licensing or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.... The key consideration is whether the project involves negligible or no expansion of an existing use." The IWMA Manager is directed to prepare and file an appropriate notice of exemption.

Section 6. Severance Clause

If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be unconstitutional, ineffective or in any manner in conflict with the laws of the United States, or the State of California, such decision shall not affect the validity of the remaining portions of this Ordinance. The Governing Board of the IWMA hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause and phrase thereof, irrespective of the fact that any one or more sections, subsection, sentence, clause or phrase be declared unconstitutional, ineffective, or in any manner in conflict with the laws of the United States or the State of California.

Section 7. Effect of Headings in Ordinance.

Title, division, part, chapter, article, and section headings contained herein do not in any manner affect the scope, meaning, or intent of the provisions of this Ordinance.

This Ordinance was introduced and the title thereof read at the regular meeting of the IWMA Board of Directors on March 12, 2008 and further reading was waived by a majority vote of those Directors present.

This Ordinance shall take effect and be in full force on and after thirty (30) days from the date of its passage, and before the expiration of fifteen (15) days from the date of its passage it shall be published once with the names of the members of the Board of Directors voting for and against the same, said publication to be made in a newspaper of general circulation published in the County of San Luis Obispo.

On a motion by Director _____, seconded by Director _____, the foregoing Ordinance was passed and adopted by the Board of Directors of the San Luis Obispo County Integrated Waste Authority, this (insert date), by the following vote:

AYES:

NOES:

ABSENT:

Jerry Lenthall, President of the San Luis Obispo County
Integrated Waste Management Authority

ATTEST:

Carolyn Goodrich, IWMA Board Secretary

ORDINANCE CODE PROVISION APPROVED
AS TO FORM AND CODIFICATION:

RAYMOND A. BIERING
IWMA Counsel

Date: _____

Appendix M: Comparison Chart of State Electronic Recycling Laws

U.S. State Electronic Recycling Legislation – (As of March 2008)

	California	Maine	Maryland	Washington	Minnesota	Texas	Oregon	Connecticut	North Carolina	New Jersey
Funding Mechanism	Advance Recycling Fee (ARF) ranging from \$8 to \$10	Shared Responsibility	Flat Annual Fee of \$10,000 paid by manufacturers	Producer Responsibility	Producer Responsibility	Producer Responsibility	Producer Responsibility	Producer Responsibility	Producer Responsibility	Producer Responsibility
Year Passed	2003; amendments 2004	2004	2005; expanded 2007	2006	2007	2007	2007	2007	2007	2008
Scope of Products	TVs and computer monitors. Bill filed in 2007 to add CPUs.	TVs and computer monitors.	Desktop computers, monitors, laptops. TVs added 2007.	Desktop computers, monitors, laptops, TVs.	Desktop computers, monitors, laptops, TVs, fax machines, VCRs, DVD players, keyboards, printers.	Desktop computers, monitors, laptops.	Desktop computers, monitors, laptops, TVs.	Desktop computers, monitors, laptops, TVs.	Desktop computers, monitors, laptops, keyboards and mice.	Desktop computers, monitors, laptops, TVs.
Whose products are included?	Consumers and businesses.	Households	Not specified	Households, small governments, small businesses and charities.	Consumers	Consumers	Households, small businesses, small non-profits and any resident dropping off 7 or fewer items at once.	Any resident dropping off 7 or fewer items at once.	'The public'	Consumers
Who pays for collection, transportation and recycling?	Consumers pay ARF at point of retail purchase. Fee goes into state fund used to reimburse recyclers and collectors. Retailers keep 3% of fee to offset costs.	Producers responsible from consolidation point through recycling. Local government responsible for collection and transportation to consolidation points. Can charge end-of-life fees.	Producers pay flat annual fee of \$10,000. Fee drops to \$500 if producers set up take-back programs. Counties and municipalities can receive grants to implement local recycling plans.	Producers pay for collection, transportation and recycling.	Producers pay for collection, transportation and recycling.	Producers pay for collection, transportation and recycling of computers bearing their brand.	Producers pay for collection, transportation and recycling.	Municipalities & regional authorities provide for collection & arrange for transportation to recyclers. Recyclers invoice manufacturers for 'reasonable cost' of transporting and recycling covered devices.	Municipal & county governments, non-profits and retailers provide collection. Manufacturers pay for transportation and recycling of covered devices.	Producers pay for collection, transportation and recycling. TV manufacturers' obligations are based on market share, by weight; computer manufacturers' obligations are based on return share.
Disposal Ban?	Was already in place.	Yes	No	No	Was already in place.	No	Yes	Yes	No	Yes

The Council of State Governments/Eastern Regional Conference

Appendix N. Draft Model Electronics Product Stewardship Legislation

The Council of State Governments/Eastern Regional Conference · The Northeast Recycling Council, Inc. Model Electronic Recycling Legislation Revised May 2007

Zero Waste Implementation Plan for the County of Hawai'i • Recycle Hawai'i • Richard Anthony Associates

Model Electronic Recycling Legislation An Act Providing for the Recovery and Recycling of Used Electronic Devices

Purpose: The purpose of the Act is to establish a comprehensive recycling system that ensures the safe and environmentally sound management of electronic devices and components and that encourages the design of electronic devices and components that are less toxic and more recyclable; and promotes the development of a statewide infrastructure for collection and recycling of end-of-life electronics.

Section 1: Definitions

For the purposes of this Act, the following terms have the following meanings:

(a) "Agency" means the [State Environmental Agency]

(b) "Cathode ray tube" or "CRT" means a vacuum tube or picture tube used to convert an electronic signal into a visual image.

(c) "Computer" means an electronic, magnetic, optical, electrochemical, or other highspeed data processing device performing logical, arithmetic, or storage function, and may include both a computer central processing unit and a monitor, but such term does not include an automated typewriter or typesetter, a portable handheld calculator, a portable digital assistant, or other similar device.

(d) "Consumer" means an individual who purchases a covered electronic device in a transaction that is a retail sale.

(e) "Covered Electronic Device" (CED) for the purposes of this Act means desktop/personal computers, computer monitors, portable computers, CRT-based televisions, and non-CRT-based televisions sold to consumers. "Covered electronic device" does not include any of the following:

i. A covered electronic device that is a part of a motor vehicle or any component part of a motor vehicle assembled by, or for, a vehicle manufacturer or franchised dealer, including replacement parts for use in a motor vehicle.

ii. A covered electronic device that is functionally or physically a part of a larger piece of equipment designed and intended for use in an industrial, commercial, or medical setting, including diagnostic, monitoring, or control equipment.

iii. A covered electronic device that is contained within a clothes washer, clothes dryer, refrigerator, refrigerator and freezer, microwave oven, conventional oven or range, dishwasher, room air conditioner, dehumidifier, or air purifier.

iv. Telephones of any type unless they contain a video display area greater than 4" measured diagonally.

(f) "Covered electronic recycler" is one that is approved by the Agency for compensation.

(g) "Manufacturer" means any person who, either as of the effective date of this legislation or thereafter, and irrespective of the selling technique used, including by means of remote sale: 1) manufactures covered electronic devices under its own brand for sale in this State; 2) manufactures covered electronic devices for sale in this State without affixing a brand; 3) resells in this State covered electronic devices produced by other suppliers under its own brand or label; or 4) imports or exports covered electronic devices into the United States for sale in this State. However, if a company from whom an importer purchases the merchandise has a U.S. presence and/or assets, that company shall be deemed to be the manufacturer; or, 5) manufactures covered electronic devices, supplies them to any person or persons

within a distribution network that includes wholesalers or retailers in this State, and benefits from the sale in this State of those covered electronic devices through that distribution network.

(h) "Manufacturer's brands" means a manufacturer's name, brand name, or brand label, and all manufacturer's names, brand names, and brand labels for which the manufacturer has legal responsibility, including those names, brand names, and brand labels of companies that have been acquired by the manufacturer.

(i) "Monitor" means a separate video display component of a computer, whether sold separately or together with a computer central processing unit/computer box, and includes a cathode ray tube, liquid crystal display, gas plasma, digital light processing, or other image projection technology, greater than four inches when measured diagonally, and its case, interior wires and circuitry, cable to the central processing unit, and power cord.

(j) "Obligation" means the quantity of covered electronic devices, by weight, identified for an individual manufacturer, as defined by the Agency under Section 8 of this Act.

(k) "Person" means an individual, trust firm, joint stock company, business concern, and corporation, including, but not limited to, a government agency, partnership, limited liability company, or association.

(l) "Portable computer" means a computer and video display greater than four inches in size that can be carried as one unit by an individual (e.g., a laptop computer).

(m) "Purchase" means the taking, by sale, of title in exchange for consideration.

(n) "Recycling" means any process by which covered electronic devices that would otherwise become solid waste or hazardous waste are collected, separated, and processed to be returned to use in the form of raw materials or products, in accordance with environmental standards established by the Agency.

(o) "Registrant" means a manufacturer of covered electronic devices that is in full compliance with the requirements of this Act.

(p) "Retail sales" includes sales of products through sales outlets, via the Internet, mail order, or other means, whether or not the seller has a physical presence in this State.

(q) "Retailer" means a person who owns or operates a business that sells new covered electronic devices in this State by any means to a consumer.

(r) "Sell" or "sale" means any transfer for consideration of title, including, but not limited to, transactions conducted through sales outlets, catalogs, or the Internet, or any other, similar electronic means, and excluding leases.

(s) "State recycling rate" means the ratio of the weight of total overall returns of CEDs in the State to the weight of total overall sales of CEDs in the State during the previous calendar year.

(t) "Television" means a stand-alone display system containing a CRT or any other type of display primarily intended to receive video programming via broadcast, having a viewable area greater than four inches when measured diagonally, able to adhere to standard consumer video formats such as PAL, SECAM, NTSC, and HDTV and having the capability of selecting different broadcast channels and support sound capability.

(u) "Video Display" means an output surface having a viewable area greater than four inches when measured diagonally that displays moving graphical images or a visual representation of image

sequences or pictures, showing a number of quickly changing images on a screen in fast succession to create the illusion of motion, including, if applicable, a device that is an integral part of the display (and cannot be easily removed from the display by the consumer) that produces the moving image on the screen. Displays typically use a cathode ray tube (CRT), liquid crystal display (LCD), gas plasma, digital light processing, or other image projection technology.

Section 2: Scope of Products

The scope of products is the same as "Covered Electronic Devices". [The scope of products may be modified by _____].

Section 3: Sales Prohibition

(1) A manufacturer not in compliance with all financial and other requirements of this Act is prohibited from offering a covered electronic device for sale in this State.

(2) It shall be unlawful for any entity to offer for sale in this State a new covered electronic device from a manufacturer that is not in full compliance with the requirements of this Act. The Agency shall maintain a list of all manufacturers in compliance the requirements of this Act and post the list on an Internet website. Sellers of products in or into the State shall consult the list prior to selling covered electronic devices in this State. A seller shall be considered to have complied with this responsibility if, on the date that the product was ordered from the manufacturer or its agent, the manufacturer was listed as being in compliance on the aforementioned website.

Section 4: Labeling Requirement

On and after the effective date of this Act, a manufacturer or retailer may not sell or offer for sale a covered electronic product in the State unless it is labeled with the manufacturer's brand, and the label is permanently affixed and readily visible.

Section 5: Reporting and Registration

(1) Manufacturers of covered electronic devices shall report to the Agency by January 30 of each year the total weight of CEDs sold in the State the previous calendar year. In lieu of providing the total weight of CEDs sold in the State the previous calendar year, a manufacturer may request that the Agency calculate the total weight of CEDs sold in the State by using prorated national sales data based on State population.

(2) Each manufacturer of covered electronic devices shall register with the Agency by January 30 of each year and pay a registration fee of \$5,000.

Section 6: Manufacturer Responsibility

(1) Manufacturers of CEDs sold in the state must submit an additional fee based on sales in the State to the Agency. The fee shall be calculated using the following formula: the State recycling rate multiplied by the weight of sales of the manufacturer's covered electronic devices sold in the State during the previous calendar year, multiplied by no more than \$0.50 per pound.

(2) In lieu of payment of the fee set forth in paragraph 1 above, a manufacturer or a group of manufacturers may submit a plan to collect, transport, and recycle CEDs.

(3) An individual manufacturer submitting a plan in lieu of payment of the fee set forth in paragraph 1 above must collect, transport, and recycle a quantity of CEDs equal to the weight of sales of the manufacturer's covered electronic devices in the State during the previous calendar year multiplied by

the State recycling rate.

(4) A group of manufacturers jointly submitting a plan in lieu of payment of the fee set forth in paragraph 1 above must collect, transport, and recycle the sum of the obligations of each participating manufacturer.

(5) The plan shall be filed with a manufacturer's annual registration, and shall include at a minimum:

i. Methods that will be used to collect the CEDs including the name and locations of all collection and consolidation points.

ii. An estimate of the amount of CEDs that will be collected annually.

iii. The processes and methods that will be used to recycle recovered CEDs including a description of the disassembly, physical recovery operation (e.g., crushing, shredding, grinding, glass-to-glass recycling) and /or other operations that will be used. Include the name and location of all facilities to be utilized.

iv. Documentation of audits of each processor used in the plan and compliance with processing standards established under Section 11 of this Act.

v. A description of the accounting and reporting systems that will be employed to track progress toward fulfilling the plan's obligations.

vi. Means that will be utilized to publicize the collection opportunities.

vii. The intention of the registrant to fulfill its obligations through operation of its own program, either individually or in partnership with other manufacturers.

viii. The total weight of CEDs collected, transported and recycled the previous year.

(6) Before the fee set forth in paragraph 1 above may be waived, the plan must be reviewed and approved by the Agency. Upon approval of the plan by the Agency, the manufacturer payment of the annual fees based upon sales will be waived. The Agency may reject the plan in part or in whole and may impose additional requirements as a condition of approval.

(7) If a manufacturer fails to comply with all the conditions and terms of an approved plan, it will be required to submit the following:

i. A payment to the Agency to cover the cost of collecting, transporting, and recycling the unmet portion of its obligation. The payment shall be equal to the following formula: the quantity of the outstanding portion, in pounds, multiplied by no more than \$0.50, and

ii. A penalty in the form of a payment equal to the cost of collecting, transporting and recycling 10% of the manufacturer's total obligation.

(8) Manufacturers that collect, transport, and recycle CEDs in excess of their obligation may sell "credits" to another registrant or apply that excess to the following year's recycling obligation.

Section 7: Retailer Responsibility

(1) A retailer must clearly post and provide information provided by the Agency that describes where and how to recycle the covered electronic device and opportunities and locations for the collection or return of the device, through the use of a toll-free telephone number and website, information included in the packaging, or information provided accompanying the sale of the covered electronic device. This

information shall be provided in clear written form in English and any other languages deemed to be primary languages by the State Department of Education.

(2) A retailer shall only sell products from registrants. Retailers shall consult the list described in Section 3 prior to selling covered electronic devices in this State. A retailer shall be considered to have complied with this responsibility if on the date that the product was ordered from the manufacturer or its agent, the manufacturer was listed as being in compliance on the aforementioned website.

Section 8: Agency Responsibility [States may wish to designate a third-party organization to assume some or all of the responsibilities contained in this section]

(1) By February 15 of each year, the Agency shall establish the State recycling rate, by calculating the ratio of the weight of total overall returns of CEDs in the State to the weight of total overall sales of CEDs in the State during the previous calendar year.

(2) By March 1 of each year, the Agency shall provide each registrant with its responsibility for fees from sales or for collection, recycling, and transportation in pounds for that year.

(3) The Agency shall receive fees as described in Section 6 from manufacturers for the sale of covered electronic devices.

(4) The Agency must organize, administer, and ensure that at least one electronics collection opportunity is available at least five (5) days a week in each county throughout the State and in such a manner as to be convenient, to the maximum extent feasible, to all consumers in the County.

(5) The Agency shall ensure that collection sites do not place limits on the number of covered electronic devices permitted for drop-off by consumers.

(6) The Agency shall encourage the use of existing collection and consolidation infrastructures for handling CEDs to the extent that this infrastructure is accessible on a regular and ongoing basis to at least 85% of the population of the State, is cost effective, and meets the environmentally sound management requirements of Section 11.

(7) The Agency shall maintain a list of registrants and post the list on an Internet website that is updated at least once a month.

(8) The Agency shall organize and coordinate public education and outreach.

(9) The Agency shall use the revenues received from registrants for the sole purpose of fulfilling its responsibilities under this Act. In the event that expenses from administration, education, collection, transportation, and recycling activities exceed receipts, the Agency may borrow up to ten percent of the projected annual State revenues from fees submitted under this Act from outside sources. Borrowed funds must be repaid within two years.

(10) The Agency shall prepare a plan every three years that:

i. Establishes per-capita collection and recycling goals, and.

ii. Identifies any necessary State actions to expand collection opportunities to achieve the per-capita collection and recycling goals. That plan shall be posted on the Agency website and sent to the Legislature.

(11) The Agency shall annually report:

- i. A list of all parties that the Agency has designated as approved to receive payments for collection, transportation, or recycling, the amount of payments it has made to those parties, and the purpose of those payments.
- ii. The total weight of CEDs collected in the State the previous calendar year.
- iii. The total weight of CEDs sold in the State the previous calendar year.
- iv. Progress toward achieving the overall annual total recovery and recycling goals described in the plan described in Section 8, above.
- v. A complete listing of all collection sites operating in the State in the prior calendar year, the parties that operated them, and the amount of material by weight collected at each site.
- vi. An evaluation of the effectiveness of the education and outreach program
- vii. An evaluation of the existing collection and processing infrastructure.

(12) The Agency shall annually post the report on its website.

(13) The program implemented to effect the provisions of this Act and its associated regulations shall be fully audited by an independent, certified public accountant at the end of each calendar year and said audit report submitted to the Legislature.

(14) The Agency shall maintain a website and toll-free number complete with up-to-date listings of where consumers can bring covered electronic devices for recycling under this Act.

(15) The Agency shall not be held financially liable or responsible for any violation of federal, state, or local law by any entity to whom the Agency makes payment pursuant to Section 10.

(16) No more frequently than annually and no less frequently than biennially, the Agency shall review, at a public hearing, the CED recycling and registration fee(s). Recommended changes to the covered electronic device recycling rate and registration fee(s) shall be included in the annual report.

Section 9: Fees for the Collection or Recycling of Covered Electronic Devices

No fees or costs may be charged to consumers for the collection, transportation, or recycling of covered electronic devices.

Section 10: Reimbursement for Collection, Transportation, and Recycling

(1) The Agency shall engage in competitive bidding for the collection, transportation, and recycling of covered electronic devices.

(2) The Agency shall make covered electronic device payments for the collection, transportation, and recycling of covered electronic devices to an authorized or approved entity upon receipt of a completed and verified invoice submitted to the Agency in the form and manner determined by the Agency.

a. In order to receive payment, proof will be required:

i. That the covered electronic device was collected from a consumer who is a resident of the State or is otherwise located in the State, or who provides evidence that the device was purchased in the State after the effective date of this Act.

ii. That the collection, transportation, and recycling of the CED was conducted in accordance with all local, state, and federal laws, including the requirements created by this Act, and its associated regulations.

b. No fees or costs were charged to the consumer.

Section 11: Environmentally Sound Management Requirements

(1) Covered electronic devices collected through any program in [State], whether by manufacturers, retailers, for-profit or not-for profit corporations, units of government, or organized by the Agency, must be recycled in a manner that is in compliance with all applicable federal, state, and local laws, regulations, and ordinances, and must not be exported for disposal in a manner that poses a significant risk to the public health or the environment.

(2) The Agency shall establish performance requirements in order for collectors, transporters, and recyclers to be eligible to receive funds from the Agency. All entities shall, at a minimum, demonstrate compliance with the United States Environmental Protection Agency's (EPA) Plug-In to eCycling Guidelines for Materials Management as issued and available on the EPA's website in addition to any other requirements mandated by state or federal law.

(3) The Agency shall maintain a website that shall include a list of entities and organizations that it has determined have met these performance standards.

Section 12: Disposal Ban

Two years after enactment of this law, it shall be illegal for any person to place in municipal solid waste a covered electronic device or any of the components or subassemblies thereof in any solid waste disposal facility.

Section 13: Enforcement

(1) The State including its Attorney General and the Agency shall be authorized to initiate independent action to enforce any provision of this law, including failure by the manufacturer to remit the fee to the Agency. Any funds awarded by the court shall be used first to offset enforcement expenses. Money in excess of the enforcement expenses shall be deposited with the Agency.

(2) An offense shall be considered:

(i) The sale of a new covered electronic device by any person that is not in full compliance with the provisions of this Act.

(ii) Application for compensation for the collection, transportation and recycling of covered electronic devices not collected within the state, or region as provided in Section 16.

(iii) Use of a qualified collection program to recycle covered electronic devices not discarded within the state, or region as provided in Section 15.

(iv) The knowing failure to report or accurately report any data required to be reported to the Agency by this Act.

(v) Non-payment of fees.

Section 14: Regulatory Authority

The Agency may adopt rules and regulations as shall be necessary for the purpose of administering this Act.

Section 15: Multi-State Implementation

The Agency is authorized to participate in the establishment and implementation of a regional, multi-state organization or compact to assist in carrying out the requirements of this Act.

Section 16: Relation to Federal Law

This Act is intended to govern all aspects of the collection and recycling of covered electronic devices as those terms are defined herein. Upon the implementation of an acceptable national program to collect and/or recycle covered electronic devices, the provisions of this Act shall sunset within the timeframe determined by federal law.

Section 17: Effective Date

Unless otherwise specified, this Act shall take effect on January 1, 2007.

Section 18: Severability Clause

The provisions of this Act shall be severable, and if any part of this Act is declared to be invalid or void by a court of competent jurisdiction, the remaining portion shall not be affected, but shall remain in full force and effect and shall be construed to be the entire Act.

Appendix O. Strategies for Promoting Architectural Salvage and Deconstruction Practices

Architectural salvage and deconstruction are proven sustainable practices that support locally based businesses, offer job-development opportunities, and can be implemented in a cost-effective manner. This Appendix highlights effective policies and practices used in other areas of the country.

Deconstruction is the planned and systematic disassembly of buildings with the purpose of harvesting and processing materials for reuse. Architectural salvage refers to the process of recovering materials from old buildings without impacting the structural integrity of the building.

Public Policies that Support Architectural Salvage

King County, Washington

In 2004, King County, WA set up a memo of agreement offering the non-profit organization, RE Sources, the opportunity to remove materials from government buildings prior to renovation or demolition. The arrangement was so successful that King County renewed the agreement in 2005 for an additional two years (June 2005 – June 2007), and amended it to allow RE Sources to do minor deconstruction on work sites. This may take the form of prying off wooden trim, unscrewing doorknobs, removing cabinets, and similar activities. As of June 2006, RE Sources diverted 43,488 pounds (almost 22 tons) of materials. (A link to the memo of agreement can be found at www.unbuild-rebuild.org/policyoptions.html).

Baltimore, Maryland

Baltimore's Biotechnology Park Development Project requires the removal of more than 1,000 houses, many of which are unoccupied. Second Chance, Inc., a non-profit organization, negotiated architectural salvage rights on the buildings prior to their demolition; and was written into a programmatic agreement among several entities including the City of Baltimore, Baltimore Commission for Historical and Architectural Preservation and the Maryland Historical Trust. Second Chance has been given access to buildings that are not in imminent danger, as long as the organization does not delay demolition start-up. In Phase One, according to Second Chance Executive Director Mark Foster, workers conducted a salvage of 20 row houses and recovered an estimated \$15,000 to \$20,000 in retail value of materials including mantels, marble steps, staircases, cornices, claw foot tubs, and doors.

Below is the contract language granting Second Chance, Inc. the building salvage rights for Salvage and Reuse of Historic Building Components:

- a. In order to maximize opportunities for salvage and reuse of historic building components (e.g. cornices, stairs, balustrades, mantles, windows, etc.) during implementation of the Biotech Park Initiative, the City/EBDI shall provide written notification to Second Chance Inc., a 501(c)(3) salvage corporation located in Baltimore, of any properties which the Trust has approved for demolition at least thirty (30) days prior to the date of demolition.
- b. The City/EBDI shall also provide Second Chance Inc., with full access to these properties so that

salvage of historic building components can be carried out.

- c. Failure of Second Chance Inc., to carry out salvage efforts in a timely manner shall not prohibit or delay demolition beyond the thirty (30) day time limitation.
- d. The City/EBDI shall not notify Second Chance Inc. of, or provide opportunities for salvage in buildings identified as imminent threats to public health and safety as described below in Stipulation 12.
- e. The City/EBDI or its developer shall reuse, to the maximum extent feasible, historic building components salvaged from the Biotech Park Initiative Area of Potential Effect and available from Second Chance Inc.

Model C&D Municipal Ordinance

California

The California Integrated Waste Management Board developed a 16-page model C&D diversion ordinance for interested jurisdictions to review, revise, and adopt to address their specific needs related to their local infrastructure and waste stream. More than 100 municipalities have passed some form of the ordinance (www.unbuild-rebuild.org/policyoptions.html). The following is a deconstruction provision from the model ordinance:

"Deconstruction/Recovery Interval for Covered Demolition Projects" - *Optional* (use in conjunction with covered demolition projects language B or F): Every Covered demolition project shall be made available for deconstruction, salvage, and recovery prior to demolition. It shall be the responsibility of the applicant to recover the maximum feasible amount of designated recyclable and reusable materials prior to demolition.

In order to provide sufficient time for deconstruction, salvage, and recovery, no demolition may take place until a period of (insert number of working days) working days has elapsed from the date of issuance of the demolition permit. Recovered and salvaged designated recyclable and reusable material from every project shall qualify to be counted in meeting diversion requirements of Section .03 (Diversion Requirement). Recovered or salvaged designated recyclables and reusable materials may be given away or sold on the premises, or may be removed to reuse facilities for storage or sale.

Resource Management Plans

Massachusetts, New England

Consigli Construction, Inc. has set a goal of recovering 50 percent of its construction and demolition discards. Consigli established a system for achieving this 50% diversion by:

- Developing discard management plans for each project
- Conducting orientation and training programs for employees and subcontractors
- Monitoring wasting activities via monthly meetings of the "environmental protection committee"

The discard management plans require specific project recovery goals, communication plans for general contractor employees and subcontractors, and an outline of projected waste and handling methods.

Consigli is a leader in the New England construction industry with annual revenues of more than \$125 million. Case studies of several Consigli projects are highlighted on the Massachusetts DEP web site (www.mass.gov/dep/recycle/priorities/dswmpu01.htm#c&d) and the data show impressive cost savings ranging from \$21,638 to \$259,043. Brick, concrete, wood, metal, asphalt roofing, ceiling tiles, cardboard, wood, wallboard, and slate are among the materials recovered, reused and recycled.

Builders' Guide to Reuse and Recycling: A Directory for Construction and Demolition Materials in the Metropolitan Washington Region

(Prepared by ILSR for the Washington, DC Council of Governments, 2006)
Available at: www.BuildersRecyclingGuide.com

Building Savings for Waste Reduction of Construction and Demolition Debris from Buildings

(Prepared by ILSR for the US EPA, Washington, DC, 2000)
Available at: <http://www.ilsr.org/recycling/buildingdebris.pdf>