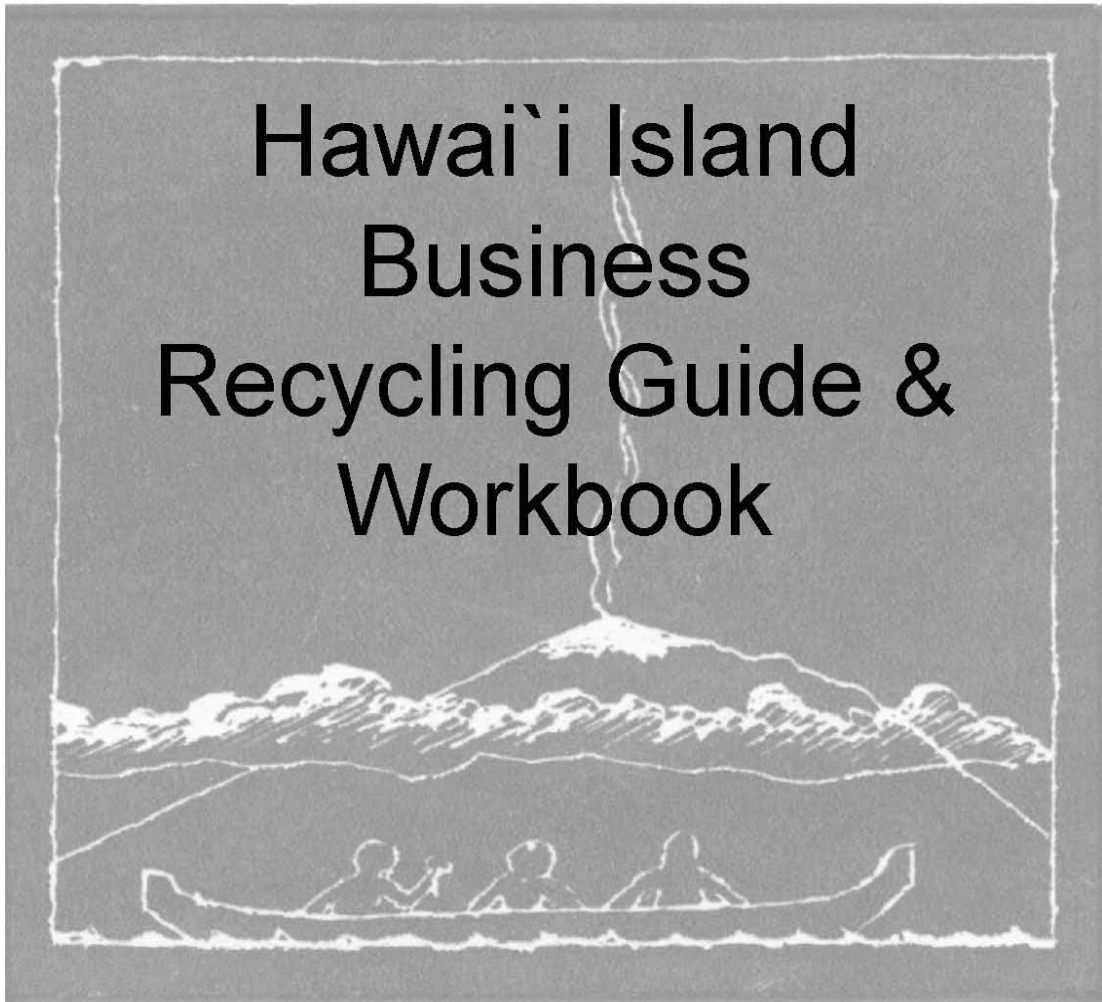


Hawai`i Island Business Recycling Guide & Workbook



Prepared by Recycle Hawai`i
for the Environmental Protection Agency,
the County of Hawai`i, and
the Hawai`i Island Economic Development Board



*First Edition
September 2005*

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Why Recycle?

Recycling can help businesses save money. Office paper, cardboard, plastics and other waste recycling helps to develop an environmentally responsible image and convert disposables into valuable commodities.



What's in it for Your Business?

Businesses pay for refuse pick-up, hauling and tipping fees at either of the two landfills serving the island. Island tipping fees are slated to increase from \$6 to \$10 per year through 2008.¹ The quantity and content of your commercial waste coupled with the rising cost of fuel and staff time will impact your operating budget. An environmentally sound recycling and reuse program can reduce the amount of rubbish needed to be hauled and result in real savings.

Use this guide and workbook to help you to explore ways to start up and run the most economical recycling program for your business. Doing so will motivate your staff to manage resources wisely and help them show their concern for preserving our fragile island environment for future generations.



Tip: See Appendix A: County Rubbish Tipping Fees and Saving \$\$\$ on Green Waste Hauling.

¹ County of Hawai'i Code, Chapter 20, Article 4 – Solid Waste Fees, Section 20-49.

Establish the Right Recycling Program for Your Business

Goal 1: Determine the scope of your efforts

Is Your Business Small, Medium or Large? Most businesses in Hawai'i are small with from 1 – 10 employees. The waste management needs of your particular type of business and how a recycling program will be managed will depend on its size. For purposes of this workbook, medium-sized businesses are those with 11 – 50 employees, and large companies 51 or more employees.

Conduct an Employee Survey. Assess your staffs' interest in environmental issues. Your workers will be on the front line of recycling. How much support do you have from top management and staff? The best way to find out their willingness to support and follow-through with company-wide recycling efforts is to conduct a company-wide survey. For small businesses, this step can be conducted a staff meeting.

For medium to large-sized businesses a survey questionnaire will help identify attitudes and key recycling team leaders and players.

Larger organizations will find it useful to conduct departmental surveys and develop an intra-departmental recycling task force. To save on paper, administer the questionnaire via e-mail or the company website (See **Appendix B** for sample survey questions).

Perform a Waste Audit. How many recyclables are generated in your company? An effective recycling program must be based on information gathered by conducting a *waste audit* – a systematic assessment of your company's operations and disposal practices. By examining what goes into your waste stream, you will define what can be reduced, reused and recycled. The size of your company will determine how many employees to assign this project.

Choose employees who are motivated and committed to finding the facts by conducting the waste audit. Educate and coach the auditing team. Provide forms and/or checklists and clarify the goals and procedures (See Appendices for sample Worksheets and other tools). Worksheet forms can be developed to suit your type of business, listing all products used in your operations by category such as office paper, newspaper, cardboard, glass, metal, plastic, food waste and green waste.

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Find out and make note of the methods and cost of current operations. Who collects solid waste and moves it through your facility to the dumpsters—a janitorial service or employees? What type of system and equipment is currently used to haul waste from your dumpsters? How many dumpsters are being used? Where are they? How often are dumpsters picked up—regularly (full or not)? Or, is the hauler called when the dumpster is nearly full? How much do you pay for each pick-up? (See **Appendix C – Worksheet 3 – Waste Audit – General Information**)

Determine a time schedule for checking contents of all waste receptacles in use. A random schedule over a one- to two-week period including varying work shifts will help to gauge what and how much on average is being thrown away. Walk-through sorts conducted just prior to scheduled janitorial or hauler service pick-ups will provide a good sampling of the company's waste stream. All areas of your business should be visited.

Determine what rubbish is being removed. At each walk-through, determine waste composition by emptying trashcans and central dumpster(s) by separating the items found. Sort and list the contents by type and weight. Use the worksheets found at the back of this workbook or develop worksheets appropriate for your line of business. Employees should wear protective puncture-resistant gloves and protective goggles when sorting through rubbish cans.

Determine which of the materials can be recycled. (See **Appendix D – Worksheet 2 - Solid Waste Quantity & Composition Sort Sheet.**²)

Estimate the volume to weight per recyclable. (See **Appendix E – Volume to Weight Conversion Table**)

After the waste audit, compare your estimates with your company's purchasing records. How much paper for copying and computer use is ordered each month? How many cardboard boxes come in? How many cases of beverages in redeemable and non-redeemable containers come in? Estimate how many of these and other recyclables identified in the waste audit leave with your customers, and the quantity going into the waste stream.

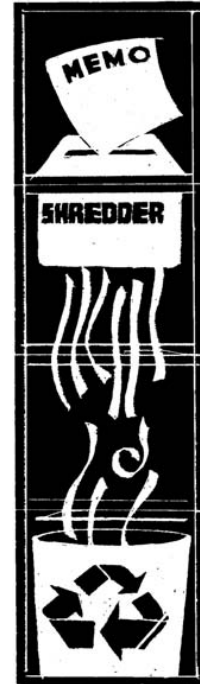
Consider if there are seasonal or operational fluctuations that increase and/or decrease waste generation of specific materials (e.g., high & low season; rainy season). If so, conduct supplemental waste audits during these peak and valley times to provide additional data.

²Source: *Business Guide to Waste Prevention Recycling and Buying Recycled-Content Products*. City and County of Honolulu Department of Environmental Services Refuse Division, November 1998.

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An automotive repair shop would recycle used motor oil but may not have much office paper. A restaurant may have a lot of glass to recycle and a mortgage company will have more paper and toner cartridges to recycle. Your waste audit will identify and quantify relative waste composition for each type of recyclable.

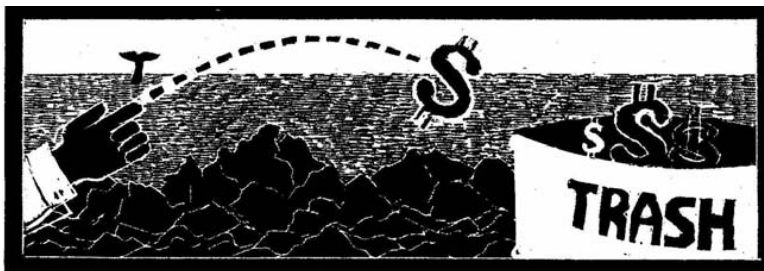
Remember to maintain confidentiality. The audit should also identify which areas of the business require shredding of confidential documents. One contact is noted below:
<http://www.shredexcrd.com/contact.htm>
329-9066 (Big Island)



Goal 2: Budgeting for Recycling and Waste Management

Cutting Costs. As businesses pay for their own disposal costs and if recycling efforts are already in place in your business, re-evaluate and assess current costs and procedures (See **Appendix F – Worksheet 3 – Solid Waste Composition and Management**).

If no recycling efforts are in place, the results of your waste audit could indicate that from 60 - 80 percent of your commercial waste is recyclable. By removing these resources from waste headed for the landfill, you could reduce the overall number of pick-ups and save on landfill hauling and tipping fees. For small businesses that do not use private hauling services, tipping fees, fuel costs and use of employees' time can be reduced or avoided by reducing landfill-bound loads of solid waste.



Tip: See p.13, **Resources – Waste Haulers/Recycling Companies**

Find out if your refuse hauler accepts any of the recyclable items found in your waste stream audit. For opportunities to recycle certain items, you may have to make arrangements with other hauler/recyclers.

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For small businesses, an employee may be selected who will be responsible for loading and hauling recyclables to drop-off points, or collaborate to form a cooperative from among nearby small businesses within your building or neighborhood to share loading and hauling operations or contracted hauling service costs. Resell unwanted but usable materials, supplies and equipment to recoup hauling expenses. Consider tax-deductible donations (e.g. working computer equipment, copiers, furniture, redeemable drink containers, etc.) to benefit non-profit charitable organizations? Use standard measures of profitability – payback period, return on investment, net value, capital and operating costs.

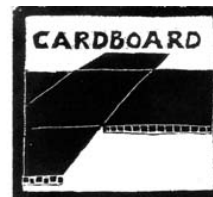
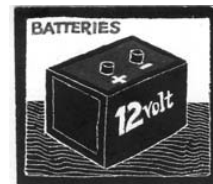


Goal 3: Select a Hauler/Recycler

Does the hauler/recycler provide services for the types of commodities your company wants to recycle? Ask about pricing, pick-up schedules, and possible rebates. Is the hauler willing to accept segregated loads of recyclables without additional charges?

What can be recycled locally? To remove and haul separated materials to a recycling facility for processing and/or shipping, see p. 13, **Resources** – Waste Haulers/ Recycling Companies. On Hawai'i Island, opportunities exist to recycle the following materials:

- Auto/Deep Cycle Batteries
- Cell Phones
- Corrugated Cardboard
- E-Waste (computers and other electronic equipment)
- Ferrous—Steel
- Freon
- Glass
- Grease/Cooking Oil
- Green Waste
- Inkjet/Toner Cartridges
- Magazines
- Newspaper
- Office Paper



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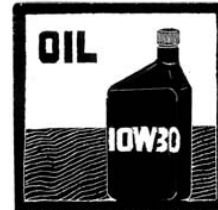
- Plastic (#1 PET & #2 HDPE)
- Non-ferrous Metal—Aluminum/Copper/Brass
- Telephone Books
- Used Motor Oil
- White Goods (stoves, refrigerators, etc.)
- Wooden Pallets



County and State Restrictions. Businesses are prohibited from dumping commercially generated solid waste at residential transfer stations. See County Code regarding “Refuse” at <http://www.hawaii-county.com/countycode/chapter20.pdf>.

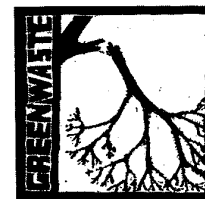
The following items are banned from the island’s landfills or have specified processing restrictions:

- Used Motor Oil (*recyclable*)
- Auto/Deep Cycle Batteries (*recyclable*)
- Whole Tires (*recyclable*)
- Mercury Thermometers
- Oil-based Paints and Stains
- Medical Waste
- Refrigerators, air conditioners and any equipment containing Freon or Ammonia. (*recyclable—must be serviced for proper resource capture*)
- Propane Tanks (*must be properly serviced*)
- Vehicles and Vehicular Scrap containing Oil, (i.e. engine blocks, etc.) (*recyclable*)
- Segregated loads of Scrap Metal (*recyclable*)



Check the County of Hawai`i website: http://www.co.hawaii.hi.us/directory/dir_envmng.htm or visit www.recyclehawaii.org for updates on:

- Recycling/Hauling services offered
- Tipping fees for commercial rubbish and green waste
- Materials not accepted in the landfills
- Materials requiring special waste processing



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- For information on recycling green waste, HI 5 redemptions, scrap metal and abandoned vehicles, recycling cardboard, newspapers etc... up to 8 choices, call the County of Hawai'i's "Solid Waste/Recycling Hot Line" at 961-5044.

Goal 4: Establish a Waste Reduction/Minimization and Recycling Program

Analyze the results of the waste audit, (**See Appendix G -Worksheet 4 - Waste Reduction Assessment**). What components constitute the largest percentage of the waste stream? Which of these can be eliminated or reduced? Preventing recyclable materials from entering the waste stream costs less than managing them.

Consider reduction and reuse options for the most common materials found in the waste stream. Set a goal for those items. Start with modest goals – expand on them later.

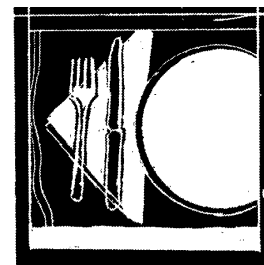
Example: Reduce office paper usage by 20% by volume and/or weight. Some reduction strategies include:

- Copy both sides of each sheet
- Print on both sides of each sheet
- Omit fax cover sheets (use stick-on notes instead – saves paper on sending & receiving)
- Use email exclusively for memos. Screen messages for duplication. Don't print.
- Set up a central filing system
- Edit documents on the computer before printing and single space paragraphs
- Asked to be removed from mailing lists
- Reuse file folders by reversing them
- Route memos (instead of copies for everyone)
- Store documents on computer disks (no hard copies)
- Use shredded paper for packaging material



Some reuse strategies include:

- Make note/message pads from non-confidential files.
- Buy reusable cups, towels, napkins
- Buy rechargeable batteries



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- Buy equipment with extended warranties and repair instead of replace
- Relocate, replant trees and shrubs
- Mulch and compost green waste and use on landscaping

For disposables that cannot be reused or reduced, decide what can be recycled. Call recycling businesses in your area.

Remember to target materials with reliable recycling opportunities. Determine where collections of recyclables will be located (e.g., desktop, a designated space in each office, a centralized location, outside near trash dumpster).



Discuss with your hauler/recycler the types of recycling receptacles would be best for the materials you will be collecting. Explain your plan and goals to all employees in the company – what is being separated? What becomes of the recycled materials, (e.g. paper fibers made into new paper products, glass used in landscaping, fill, and road building projects, aluminum/scrap metal reprocessed for metal products, etc.)?

Solicit employees' input for improving the plans. Set up regular internal pickups. Employees want access. Make sure your disposal containers are easy to find and regularly cleared of debris.

There is also the constant threat of contamination, (give examples of contamination, e.g. glass in your paper bin, food waste in the plastics receptacle, etc). Prevention is the key. Have designated monitors regularly check for contamination. Provide training to people who are mis-sorting recyclables.

Using the waste audit results as a baseline, document success – track effectiveness, and conduct periodic samplings. Commit to accurate waste accounting.

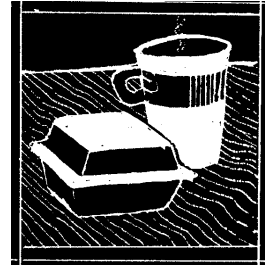
Appoint a Recycling Coordinator. Who is going to manage recycling within your business? Choose someone who is enthusiastic about recycling.

The recycling coordinator should be organized, patient and a good communicator – able to provide frequent, consistent, and positive program information to employees via in-house communications (e-mail, newsletter, flyers, etc.)

The recycling coordinator should ensure that the collection area(s) are free of contaminating items (i.e. food waste in the glass collection bin, cardboard mixed with scrap metal, etc.) and manage overflowing bins.

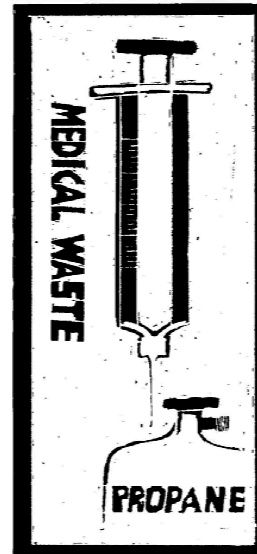
Goal 5: Establish a purchase policy

- Phase out individual packaging – buy in bulk
- Reduce and reuse packaging
- Negotiate with suppliers
- Buy washable, reusable plates, cups and utensils
- Buy recycled paper and plastic
- Encourage using reusable and recyclable items throughout the business.



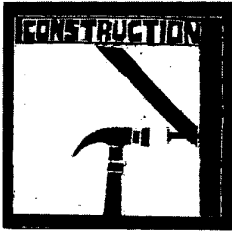
Goal 6: Establish a hazardous waste policy

- Purchase less hazardous cleaning materials
- Purchase only what is needed for the job and use it all
- Check all containers for leaks
- Keep hazardous waste in clearly labeled original containers
- Avoid mixing products
- Properly dispose of hazardous materials with a local contractor



Goal 7: Establish a construction and demolition (C&D) policy

Create a plan. Decide exactly what is to be recycled. When setting up operations, make recycling convenient. Consider a LEEDs certification program (see below)³.

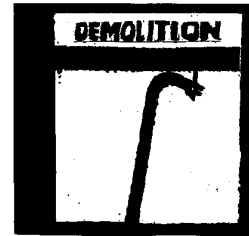


Design signage. Clearly mark where recyclables will be collected/stored.

Make training mandatory. Inform all staff of recycling efforts.

Check rubbish bins periodically for miss-sorted items. Decide who will be responsible for removing recyclables. Audit disposal and recycling receipts.

If your business is involved with design, building and/or demolition, or is undergoing extensive renovations to your facility, look into LEEDs (Leadership in Energy and Environmental Design). The LEED Green Building Rating System[®] is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED and continue to contribute to its evolution. LEED standards are currently available or under development for:



- New commercial construction and major renovation projects (LEED-NC)
- Existing building operations (LEED-EB)
- Commercial interiors projects (LEED-CI)
- Core and shell projects (LEED-CS)
- Homes (LEED-H)
- Neighborhood Development (LEED-ND)

Big Island building projects that have undergone LEEDs Green Building Rating programs are the Natural Energy Laboratory (NELHA) in Kailua-Kona and the Mauna Kea Astronomy Education Center in Hilo.

³See—<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222&> (U.S. Green Building Council – for LEED certification programs)

Goal 8: Keeping the Program Going - Motivate Your Employees

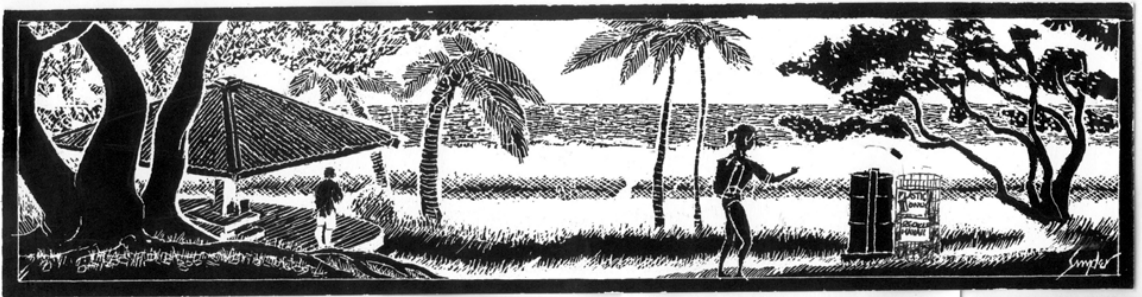
Educate Your Staff. Educate your staff on the benefits of recycling and what and where to recycle on site. This is especially important if you have high turnover. New employees need to know where to recycle too.

Make it easy! Study after study indicates more people will recycle if it is easy and convenient. Set up easy access bins all around your business. Avoid elaborate schemes. Make it easy and convenient. Trash cans with labels such as “Recycle cans here” in strategically placed areas is an easy start.

Motivate with contests. Set up realistic contests with prizes, for instance, the department with the most paper recycled per month receives a free pizza party or win usable free recycled items such as recycled-cotton t-shirts, pencils made from recycled money, or coffee mug made from recycled plastic.

Offer donation items. Offer bargain sales on reusable items. Sell to employees first and then to the public. Such sales have been described as being wildly popular. This is a great way to motivate your staff and recoup recycling costs.

Spread the word. Employees want to know their efforts are making a difference. Let your staff know their efforts are making a positive impact to their local environment. Report tonnage recycled in a company e-mail newsletter.



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Resources
Local Recycling Sources

	West Hawai'i	East Hawai'i	Oahu
Waste Haulers			
Business Services Hawai'i	327-1429	959-1436	
Hawai'i Bio-Waste Systems, Inc.			841-1240
Hawaiian Roll-Off Service, Inc.	329-8225		
Pacific Waste Inc.	326-4911	934-8846	
PFI Rubbish Service, Inc.	329-3440		
Recycling Companies			
Atlas Recycling	329-6868	935-9328	
Business Services Hawai'i	327-1429	959-1436	
County HI 5 Redemption Sites		961-8527	
Special Services in Hawai'i			
<i>Batteries, Automotive/Deep Cycle</i>			
Daleco	329-4605		
Interstate Batteries		934-7256	
<i>Cellphones</i>			
Recycle Hawai'i		969-2012	
<i>Computers</i>			
County E-waste Collection Events		961-8942	
<i>Confidential Document Shredding</i>			
Shredex	329-9066		
<i>Fire Extinguishers</i>			
Fire Protection Services	325-7891		
Hilo Fire Extinguishers		966-7356	
<i>Freon</i>			
Big Island Refrigerant Service	325-0400		
Big Island Scrap Metal		935-9328	

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	West Hawai'i	East Hawai'i	Oahu
Glass			
Atlas Recycling	329-6868	935-9328	
Business Services Hawai'i	327-1429	959-1436	
Green Waste			
EKO Composting			572-8844
Hazardous Waste/Medical			
Hawai'i Bio-Waste Systems, Inc.			841-1240
Hazardous Waste/Non-Medical			
Enviro Services, Inc.			839-7222
Inkjet/Toner Cartridges			
Send back to manufacturer with enclosed ARS tag.			
Recycle Hawai'i		969-2012	
Metals, Aluminum			
ARC of Hilo – HI5 Redemptions Only		961-8942	
Atlas Recycling	329-6868	935-9328	
Business Services Hawai'i	327-1429	959-1436	
Orchid Island Rubbish & Recycle		959-0475	
WASTESTREAM (cans only)	889-5203		
Metals, Ferrous/Non-Ferrous			
Island Recycling	329-6868	935-9328	
Paper, Corrugated Cardboard			
Atlas Recycling	329-6868	935-9328	
Business Services Hawai'i	327-1429	959-1436	
Used Cooking Oil/Grease			
Hawai'i Bio-Friendly	775-7717		
Orchid Island Rubbish & Recycle		959-0475	
Paper, Junk Mail (to remove your name from any lists)			
Mail Preference Service, Direct Marketing Association, PO Box 643, Carmel, NY 10512. Or visit: www.dmaconsumers.org/customerassistance.html			
ADVO, Inc., PO Box 249, Windsor, CT 06095. Or call: 1-888-241-6760			

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	West Hawai`i	East Hawai`i	Oahu
<i>Used Motor Oil</i>			
Hawai`i Petroleum	329-1862	935-6641	
Unitek Solvent Services		935-8180	682-8284
<i>Tires</i>			
Leo's Rubbish Service		935-5850	
Unitek Solvent Services		935-8180	682-8284

FreeCycling in Hawai`i

The concept of FreeCycling is simple. You have something you no longer need and you wish to "recycle" it rather than throw it into the garbage. You can post items to give away, or make a request for wanted items, but the bottom line is that it has to be FREE!

Freecycling as a group is open to all those individuals, businesses or groups who want to recycle the items that are no longer useful to them. Visit them at:

<http://groups.yahoo.com/group/FreecyclingBigIsland/>

Business Industry Associations

Keep Hawai`i Beautiful - 934-9833

Links to Off-Island Resources

Battery Solutions Incorporated
7266 Kensington Rd.
Brighton, MI, 48116
<http://www.batteryrecycling.com/business.html>

U.S. Green Building Council
1015 18th Street, NW, Suite 508
Washington, DC 20036
<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=222&>

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Business That Deal in Recycled Content Materials

	West Hawaii	East Hawaii	Other
Composters			
Farm & Garden	323-3017		329-4775
Organa Grow	822-7931		
Hawaiian Earth Products Ltd.			866-682-5895
Pacific Agriculture			808-682-5113
Composters.com			877-204-7336
Glass Products			
Hawaiian Cracked Glass		959-0361	
Aloha Glass Recycling			808-871-8544
Office/Miscellaneous Supplies			
Kona Coast Office Supply	329-9411		
Hopaco Office Outlet		961-0451	
Plastic Products			
Aloha Plastic Recycling Inc			808-877-0822
Fibrex Group			800-346-4458
Building Materials			
Castleblock		800-672-7872	
Most companies carry some recycle products. Check with a local distributor.			
Promotional Materials			
Amazing Recycled Products			800-241-2174

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Local Government

COUNTY OF HAWAII
Department of Environmental Management
Solid Waste/Recycling/Waste Water
 25 Aupuni Street Room 210
 Hilo, HI 96720
 Tel: 961-8083 · Fax: 961-8086

STATE OF HAWAII
Department of Health
Administrative Offices

<u>County</u>	<u>Mailing Address</u>	<u>St. Address</u>	<u>Phone Number</u>
<u>Island of Hawaii</u>	State of Hawaii Department of Health District Health Office P.O. Box 916 Hilo, HI 96720	State Office Building 75 Aupuni St. Hilo	Karleen Yoshioka District Health Officer Phone (808) 974-6006 Fax (808) 974-6000
	State of Hawaii Department of Health District Health Office 3040 Umi St. Lihue, HI 96766	District Health Office 3040 Umi St. Lihue	John Hunt Acting District Health Officer Phone (808) 241-3614 Fax (808) 241-3480
<u>Islands of Maui, Molokai and Lanai</u>	State of Hawaii Department of Health District Health Office 54 High St. Wailuku, HI 96793	State Building 54 High St. Wailuku	Lorin Pang, M.D. District Health Officer Phone (808) 984-8200 Fax (808) 984-8222
<u>Island of Oahu</u>	State of Hawaii Department of Health P.O. Box 3378 Honolulu, HI 96801	1250 Punchbowl St. Honolulu	Chiyome Fukino, M.D. Director of Health Phone (808) 586-4400 Fax (808) 586-4444

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	State of Hawaii	Kalaupapa	Michael McCarten, M.D.
<u>On the Island of Molokai</u>	Department of Health		Administrator
	Kalaupapa Settlement		Phone (808) 567-6320
	P.O. Box		Fax (808) 567-6613
	Kalaupapa, HI 96742		

Glossary

Construction and Demolition (C&D) – Refers to a solid waste stream resulting from the construction, repair, demolition, or razing of buildings, roads and other structures. The term also includes debris from the clearing of land for construction. Includes, but not limited to: concrete, brick, asphalt, gypsum, wood waste, roofing and roofing paper, glass, ferrous and nonferrous metals, soil trees, and shrubs. Does **not** include hazardous waste materials.

Commingled – Collecting two or more traditional recyclables in the same collection container, such as plastics, paper, aluminum and tin cans or some similar variation. Used in “two-stream” sorts where paper and glass are in two separate waste streams to encourage greater participation in recycling efforts.

Composter – A container often shaped like a box or barrel, used to collect organic materials used to form compost.

Contamination – In recycling, when non-recyclables or the wrong type of commodity is thrown into a collection container, e.g., glass in a paper bin, rubbish in scrap metal bins, logs and construction and demolition debris in a green waste bin, food waste in the plastics container, etc.

Deep Cycle Batteries – Used where discharging and charging occurs frequently. Provides up to twice the life of conventional batteries. Will not off-gas in normal operation, eliminating fumes, odor & corrosion.

Disposal – The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste onto any land or water so that such solid waste, or any constituent thereof, may enter the environment, be emitted into the air, or discharged into any water, including ground waters.

E-Waste – Electronic waste, typically computers and its components, but can also include television sets and other electronic equipment.

Ferrous – Metals containing iron. (Responds to the pull of a magnet.)

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Freon – A trademark for any of a number of chemical compounds containing fluorine, and often chlorine or bromine. Use: as solvents, as aerosol propellants, in refrigeration. Must be properly processed for resource recovery.

Green Waste – Organic cuttings such as grass, leaves and branches.

Hazardous Waste – A byproduct of manufacturing processes that is toxic and presents a potential threat to people and the environment.

Incineration – The treatment of solid waste by burning in a furnace designed for the purpose wherein solid waste is essentially reduced to ash, carbon dioxide, and water vapor.

Inert – Fill material means earth, soil, rocks, rock-like material such as cured asphalt, brick, and clean concrete less than eight inches in diameter, except as specified by a licensed soils engineer with no exposed steel reinforcing rod. The fill material shall not contain vegetation or organic material, or other solid waste.

Municipal Solid Waste – Garbage generated by residential, commercial, light industrial and institutional sectors of every community.

Non-Ferrous – Metals lacking iron such as aluminum or copper. (Does not respond to the pull of a magnet.)

Open Dump – A disposal site that is operating in nonconformance with applicable standards, relevant permit conditions, rules, or this chapter.

Permit – Written authorization from the director to construct, modify, and operate any solid waste management system or any component of any solid waste management system. A permit authorizes the grantee to construct, modify, and operate any solid waste management system in a manner or amount, not forbidden by this chapter, or by rules adopted pursuant to this chapter but requiring review by the department.

Petroleum – Any petroleum, including crude oil or any fraction thereof that is liquid at standard temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Petroleum-Contaminated Soil – Soil that has been contaminated by a release of petroleum to a degree that exceeds levels determined to be acceptable by the director.

Pollution – Solid waste pollution.

Recycling – The collection, separation, recovery, and sale or reuse of secondary resources that would otherwise be disposed of as municipal solid waste, and is an integral part of a manufacturing process aimed at producing a marketable product made of post-consumer material.

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Sanitary Landfill – A land site on which engineering principles are utilized to bury deposits of solid waste without creating a nuisance or hazard to public health or safety.

Secondary Resources – Post-consumer material collected and processed for feedstock in a manufacturing process.

Solid Waste – Garbage, refuse, and other discarded materials, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural operations, sludge from waste treatment plants and water supply treatment plants, and residues from air pollution control facilities and community activities, but does not include solid or dissolved materials in domestic sewage or other substances in water sources such as silt, dissolved or suspended solids in industrial waste water effluents, dissolved materials in irrigation return flows, or other common water pollutants, or source, special nuclear, or by-product material as defined by the federal Atomic Energy Act of 1954, as amended (68 Stat. 923).

Solid Waste Management System – A system for the storage, processing, treatment, transfer, or disposal of solid waste.

Variance – Special written authorization from the director to do an act that deviates from applicable standards or from the requirements of rules adopted under this chapter.

Waste – Sewage, industrial and agricultural matter, and all other liquid, gaseous, or solid substance, including radioactive substance, whether treated or not, which may pollute or tend to pollute the atmosphere, lands or waters of this State.

Waste Audit – An audit to determine what kinds of items are being thrown away to serve as a benchmark for planning and utilizing waste management and/or recycling options.

Waste Composition – The relative proportional breakdown of the numerous items found in solid waste by the material the items are made from and expressed in percentages by weight.

References

City and County of Honolulu Department of Public Works, Division of Refuse, 1995. *Business Guide to Waste Prevention Recycling and Buying Recycled-Content Products*. Honolulu.

Fairmont Hotels & Resort, 2001. *The Green Partnership Guide: A Practical Guide to Greening Your Hotel*. Canada: Friesens. (First printed in 1999.)

State of Hawai`i, Department of Business, Economic Development, and Tourism's Clean Hawai`i Center. *A Contractor's Waste Management Guide: Best Management Practices and Tools for Job Site Recycling and Waste Education in Hawai`i*. Hawai`i: O'Brien & Company.

Keep America Beautiful, Inc., 2001. *Guide to Waste in the Workplace: A Small Business' Guide for Auditing Commercial Waste, Identifying Recyclables, Minimizing Waste and Managing Disposal Costs*. (First printed in 1991.)



APPENDICES

APPENDIX A

COUNTY OF HAWAI'I RUBBISH DISPOSAL TIPPING FEES

Section 20-49. Fee schedule.

(a) Charge rates shall be established as follows:

(1) Landfill disposal.

(A) Rate by weight: Dollars per ton prorated accordingly.

Year beginning on July 1 of each calendar year.				
2003	2004	2005	2006	2007
\$45	\$55	\$65	\$75	\$85

(B) When and if it is impossible or impractical due to power outage, disaster-related issues or other to determine an accurate weight, rates by vehicle size and volume shall be used:

TYPE I: Light trucks or other vehicles with a gross vehicle weight of less than 10,000 pounds with no more than 3 cubic yards of refuse charged as dollars per truck.

Year beginning on July 1 of each calendar year.				
2003	2004	2005	2006	2007
\$27	\$33	\$39	\$45	\$51

SAVING \$\$\$ ON GREEN WASTE HAULING

Commercial green waste tipping fees are 25 percent of general rubbish tipping fees listed above and are slated to rise to 65 percent if dropped off at proposed organics diversion facilities. On-site composting of grass clippings and other organic materials not only saves hauling fuel and employee's time but also provides valuable compost to improve your landscape. Using 2006 fees for example, if you haul:

A sixty-mile round-trip mileage to a green waste drop site divided by vehicle's miles per gallon (mpg), e.g., 14 mpg = 4.3 gallons fuel used per trip X Cost per gallon of fuel, e.g. \$3.50/gallon X 4.3 gallons = \$15.05 fuel per trip.

Add to that your employee's wages for a minimum of 2 hours, e.g. \$12/hr x 2 = \$24.00 + \$15.05 + \$11.25 tip fee for one light load (less than 3 cubic yards) = at least **\$50.30** per load of green waste. Heavier truckloads, using the 2006 tip fee, will result in a more than **\$60** per trip/load for green waste disposal.

On site composting bins allow you to avoid or cut drive time, fuel and tipping fees while providing your property with a valuable greening soil additive.

APPENDIX B

SAMPLE EMPLOYEE SURVEY QUESTIONS

1. How important is protection the environment to you?
Very Important Important Somewhat Important Not Important No Opinion
2. How interested are you in learning more about how you can help protect our environment?
Very Interested Somewhat Interested Not Interested No Opinion
3. Would you support the introduction of more environmentally friendly practices (recycling, energy conservation, etc.) within your operations?
Strongly Support Support Somewhat Support Do Not Support No Opinion
4. Do you feel that an initiative by your business to ensure your operations are more environmentally responsible would be worthwhile?
Very Worthwhile Worthwhile Somewhat Worthwhile Not Worthwhile No Opinion
5. Would the success of establishing an environmental program at your hotel make you more proud of your work there?
More Proud Neutral Less Proud No Opinion
6. Do you feel that the majority of employees at your hotel would welcome changes in operational practices to convert to more environmentally responsible practices?
Strongly Welcome Somewhat Welcome Reluctantly Welcome Not Welcome No Opinion
7. What do you believe are the top 5 environmental concerns among employees?
Recycling Water/Oceans Air Quality Energy Waste Disposal
Other: _____

APPENDIX C

WORKSHEET 1 - WASTE AUDIT GENERAL INFORMATION

GENERAL INFORMATION

NAME OF BUSINESS _____ DATE _____

MAILING ADDRESS _____ ZIP _____

KEY CONTACT PERSON/TITLE _____ PHONE _____

SOURCE OF REFERRAL _____

PROPERTY MANAGEMENT COMPANY _____

DESCRIPTION OF BUILDING

NUMBER OF EMPLOYEES _____ NUMBER OF FLOORS _____

NUMBER OF COMPUTER PRINTERS _____ NO. OF PHOTOCOPIERS _____

ARE ELEVATORS AVAILABLE YES NO

DOES THE BUILDING HAVE A LOADED DOCK FOR FREIGHT DELIVERIES YES NO

SPECIAL NEEDS THAT MAY AFFECT RECYCLING: (SHREDDING FOR CONFIDENTIALITY, SPACE LIMITATIONS) _____

CURRENT WASTE MANAGEMENT SERVICES

NAME OF JANITORIAL SERVICE _____

JANITORIAL SERVICE PARTICIPATION IN RECYCLING PROGRAM? YES NO

WASTE COLLECTION SERVICE _____ PHONE _____

QUANTITY AND EQUIPMENT USED FOR WASTE COLLECTION AND DISPOSAL

TYPE/NO. OF CONTAINERS	% FULL	FREQUENCY OF PICK UP
DUMPSTERS _____	_____	<input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> _____
CANS _____	_____	<input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> _____
COMPACTOR _____	_____	<input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> _____
SHREDDER _____	_____	<input type="checkbox"/> DAILY <input type="checkbox"/> WEEKLY <input type="checkbox"/> _____

CURRENT RECYCLING ACTIVITY

CURRENTLY RECYCLING? YES NO MATERIALS _____

VENDOR(S) _____

HAS PRORAM BEEN SUCCESSFUL YES NO WHY? _____

APPENDIX D

WORKSHEET 2 - SOLID WASTE QUANTITY & COMPOSITION SORT SHEET

SITE INFORMATION:
LOCATION
TIME

SAMPLE INFORMATION:

SORT DATA:		
WASTE COMPONENTS	NET WEIGHTS	COMMENTS
1 PAPER		
NEWSPAPER		
MAGAZINES		
CORRUGATED CARDBOARD		
CRAFT PAPER		
COATED CONTAINERS		
PAPERBOARD		
BOOKS		
OFFICE PAPER		
OTHER PAPER		
2 PLASTICS		
PET (#1)		
HDPE (#2)		
LHDPE (#2)		
PVC (#3)		
LDPE (#4)		
LLDPE(34)		
POLYPROPYLENE (#5)		
POLYSTYRENE (#6)		
OTHER CONTAINERS (#7)		
MISC. PLASTIC		
3 ORGANICS		
FOOD WASTE		
TEXTILES/LEATHER		
RUBBER		
DIAPERS		
FINES		
OTHER ORGANICS		
4 FERROUS METALS		
FOOD CONTAINERS/BIMETALS		
AEROSOLS		
WHITE/ENAMELLED		
AUTO PARTS		
OTHER FERROUS		
5 NON-FERROUS METAL		
ALUMINUM CANS		
ALUMINUM FOIL		
OTHER ALUMINUM		
OTHER NON-FERROUS		
6 GLASS		
CLEAR CONTAINERS		
GREEN CONTAINERS		
BROWN CONTAINERS		
PLATE GLASS		
OTHER GLASS		

APPENDIX D

WORKSHEET 2 (cont.d) - SOLID WASTE QUANTITY & COMPOSITION SORT SHEET

SAMPLE INFORMATION:

SORT DATA		
WASTE COMPONENTS	NET WEIGHTS	COMMENTS
7 WOOD		
PALLETS		
LUMBER		
STUMPS/HEAVY SECTIONS		
OTHER WOOD		
8 INERT		
ASPHALT		
CONCRETE/BRICK/ROCK		
DIRT		
OTHER INERT		
9 YARD WASTE		
LEAVES		
GRASS		
OTHER YARD WASTE		
10 HAZARDOUS		
LEAD ACID BATTERIES		
DRY CELL BATTERIES		
OTHER HAZARDOUS		
COMMENTS/OBSERVATIONS:		

APPENDIX E

VOLUME TO WEIGHT CONVERSION TABLE

MATERIAL	VOLUME	WEIGHT IN LBS.	WEIGHT IN TONS	
NEWSPRINT	loose	12 inch stack	35	0.0175
		60 gallon	170	0.085
		90 gallon	300	0.15
	compacted	1 cubic yard	360 to 800	0.18 to 0.4
		1 cubic yard	720 to 1,000	0.36 to 0.5
CORRUGATED	loose	1 cubic yard	300	0.15
	baled	1 cubic yard	1,000 to 1,200	0.5 to 0.6
GLASS	uncrushed	1 grocery bag	16	0.008
		60 gallon	100	0.05
		90 gallon	275	0.1375
	semicrushed	1 cubic yard	600 to 1,000	0.3 to 0.5
		1 cubic yard	1,000 to 1,800	0.5 to 0.9
		1 cubic yard	800 to 2,700	0.4 to 1.35
ALUMINUM	unflattened	1 grocery bag	1.5	0.00075
		60 gallon	20	0.01
		90 gallon	30	0.015
		1 cubic yard	50 to 74	1.025 to 0.037
	flattened	1 cubic yard	250	0.125
	FERROUS	unflattened	1 cubic yard	150
flattened		1 cubic yard	850	0.425
PLASTIC	unflattened	60 gallon	10	0.005
		90 gallon	15	0.0075
		1 cubic yard	24 TO 40	0.012 to 0.02
	flattened	1 cubic yard	850	0.425
YARD WASTE	Uncompacted	1 cubic yard	250 to 450	0.125 to 0.225
	Compacted	1 cubic yard	320 to 500	0.16 to 0.25
	Wood chips	1 cubic yard	500	0.25
	grass	1 cubic yard	400 to 1,500	0.2 to 0.75
FOOD WASTE	55 gallon	412	0.206	

Source: *Business guide to Waste Prevention Recycling and Buying Recycled-Content Products*. City and County of Honolulu Department of Environmental Services Refuse Division, November 1998.

APPENDIX F

WORKSHEET 3 - SOLID WASTE COMPOSITION AND MANAGEMENT

MATERIAL	AMOUNT DISPOSED	AMOUNT RECYCLED	RECYCLER Name & Location	DISPOSAL Facility Name
Paper:				
Cardboard				
Office				
Newsprint				
Other				
Metals:				
Ferrous				
Aluminum				
Other Non-Ferrous				
Metal Dust				
Glass:				
Containers				
Plate				
Other				
Plastic				
Rubber				
Textiles/Fabric				
Wood:				
Pallets				
Sawdust				
Bark				
Other				
Stone/Clay/Sand				
Yard Waste				
Concrete				
Ash				
Oils				
Sludges				
Batteries				
Drums				
Dust Collector Fines				
Ink				
Litho/Film				
Lubricants				
Plaster				
Refractories				
Silica/Alumina				
Slag				
Mixed Waste				
Other (specify)				
TOTALS				

APPENDIX G

WORKSHEET 4 – WASTE REDUCTION ASSESSMENT WORKSHEET

WASTE REDUCTION ASSESSMENT WORKSHEET						
	Waste Composition		Current Recycling Activity		Waste Reduction Preliminary Planning	
	Present in Waste	Quantity Wt. Vol. %	Material Recycled	Quantity Wt. Vol. %	Material Targeted For	
					Recycling	Waste Prevention
PAPER:						
White Ledger	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Colored Ledger	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Computer	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Newspaper	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Cardboard	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Magazine	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Telephone Books	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Other Paper: (i.e. fax, paper towels)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
PLASTIC:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
GLASS:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Containers	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Other Glass	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
ALUMINUM:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
OTHER METAL:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Steel	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Copper	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
WOOD	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
GREEN WASTE	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
FOOD WASTE	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
TIRES	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
USED OIL	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
HAZARDOUS WASTE:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Paint	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Batteries	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Solvents	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
CLOTHING/ TEXTILES	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
FURNITURE	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
OTHER:	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>