

Hotel
Waste Reduction Recommendation Report

Prepared by Solana Recyclers, Inc.
Sponsored by Region IX of the US EPA
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Waste Characterization (Estimated by Volume)

Methodology

The trash bin was analyzed in the late afternoon after guest rooms had been serviced. The waste and recycling containment area, kitchen, guest rooms, storage area and restaurant were assessed. Waste material was sorted through and volumes were estimated based on a representative survey.

Paper	35%	cardboard newspaper mixed paper	20% 10% 5%
Plastics	22%	PET bottles HDPE containers Polystyrene & other	3% 5% 14%
Glass	1%	CA Redemption glass other glass	1%
Metals	4%	steel cans aluminum cans other metals	4%
Organics	17%	Food Waste	18%
Textiles	6%	linens, towels, etc	7%
Other Waste	15%	All types	16%
Total			100%

Recommended Waste Reduction Initiatives

Improve Cardboard Recycling

The Hotel currently has a 3 cubic yard recycling bin in place for cardboard and mixed paper recycling. At the time of assessment, the cardboard bin was overflowing due to the fact that most of the cardboard boxes had not been flattened. Accordingly, a fair amount of cardboard, flattened and unflattened, was found in the waste stream destined for the compactor. With an efficient cardboard recycling program, this material can be recovered for recycling and reduce disposal costs associated with the high volume that corrugated cardboard represents. Listed below are suggestions for improvement.

- **Increase the volume of the recycling containers through the use of two four cubic yard bins. EDCO will provide the bin at no extra charge.**
- **Increase pick up days to six times per week. This extra service day can be provided at no extra charge.**
- **Implement an employee education and awareness program. Employee compliance with company policy requires diligence. Conduct brief employee training meetings and demonstrate proper procedures for flattening and storing cardboard.**
- **Get Visible! Post a flier on the employee bulletin board.**
- **Spot check the compactor to verify whether cardboard recycling policies are being implemented appropriately.**

Potential Cost Savings

Over the course of a year, the 35 yard trash compactor is serviced four times per month or 48 times per year. Based on volume estimations at the time of assessment, cardboard represented 20% of the waste stream. Listed below is a cost analysis for recycling all cardboard and reducing it to 0% of the solid waste stream:

Existing Waste Management Service Costs (35 cu. yd. compactor)	Costs
48 trash pulls/year @ \$109.00	\$5,232
Costs With Improved Cardboard Recycling (35 cu. yd. compactor)	
39 trash pulls/year @ \$109.00	\$4,251
Annual Savings (service fees + diverted tons)	\$1,309.00
Amount Diverted	8 tons

Recycle Newspaper and Mixed Paper Throughout Hotel

Paper and paper products make up a significant portion of the waste stream at the Hotel. The current cardboard recycling bins are also suitable for mixed paper. This means that mixed paper can be put in this bin at no extra charge. To allow for increased volume capacity, four cubic yard bins can be provided to replace the existing 3 cubic yard bins. The challenge lies in creating a material recovery system which will work effectively for janitorial/housekeeping staff and hotel patrons. Listed below is one option:

Acceptable Paper Types

- | | | | |
|------------------------|-----------------------------|-------------------|-----------------|
| - Glossy Printed Paper | - White and Colored Paper | - Newspaper | - Magazines |
| - Envelopes | - Junk Mail | - Computer Paper | - Phone Books |
| - File Folders | - Unused toilet paper rolls | - Cardboard Boxes | - Packing Paper |

Recovering Paper From Rooms

The most efficient way to recover paper is to extend the recycling program to all rooms and administrative areas. This process will require an initial investment in materials to create an infrastructure for recycling. However, these costs are offset by the resulting savings in the waste disposal bill and by improved public image and customer appreciation. Setting up a hotel-wide collection program would require the following elements:

Description	Quantity	Costs
1. Collection Containers for Each Room/Deskside area	420	\$2,100
2. Labels (afixed to recycling containers)	420	provided by city
3. Centralized Carts (for storing materials- one per floor for future transport to basement)	18	use existing
4. Recycling Collection Bags (to hang from janitorial cart)	18	\$360
5. Recycling service - Waste Management will accept mixed paper along with cardboard in current bin.		No Added Charge
6. Employee education training		
7. Recycling reminder fliers for rooms/administrative areas		

Possible Cost Savings

At the time of the assessment, mixed paper and newspaper represented approximately 15% of the waste stream. An effective paper recycling program could result in the following cost savings:

15% Reduction in trash pulls equals ~ 7 pulls per year. At \$109 per pull, this is equivalent to:

Annual Savings (service fees + diverted tons)	\$1,767.50
Amount Diverted	24.5 tons

Price Quotes Obtained From:

Containers:	Recy-CAL Supply	1 (800) 927-3873	George Slagle
Cart Bags:	Green Hotels Association	(713) 789-8889	
Labels:	City of San Diego	(619) 492-5074	Elyse Olson
Contact:	EDCO	619/287-7555 x 4207	Maggie Edgars

Reduce Water, Chemical, Utility, and Staff Costs Associated With Unnecessary Linen/Towel Laundry Services

Programs which encourage guests to use towels and sheets more than once to conserve water, energy, and laundering costs have met with a positive response from the majority of guests. This is according to a survey conducted by Stephen Barth, assistant professor at the Conrad N. Hilton College of Hotel and Restaurant Management at the University of Houston. The results of the survey are as follows:

- 87.2 percent appreciate the option (only 5.2 percent did not)
- 87.2 percent would like to see other hotels offer this option (Only 7.7 would not)
- Zero percent thought the conservation option was inconvenient (84.2 percent thought the option was convenient; 15.8 percent were neutral.)
- 69.4 percent would like a similar program for bed sheets
- Number of days guests would feel comfortable
 - With the same towels: 2.58 days
 - With the same bed sheets: 3.20 days

Data obtained from Lodging Magazine, April 1994

Cost Analysis

The Green Hotels Association conservatively estimates that for every night a guest choose not to have sheets and towels washed, a \$1.50 cost savings accrues. This includes savings in: energy, staff time, water, and chemicals. Listed below are the cost savings:

106,000 occupied room nights annually - (75% of guests stay 2-3 nights). Totaling an average of 79,500 multiple nights per year.

Cost Savings

79,500 multiple nights x \$1.50 savings/night	\$119,250 savings per year
Material Printing Costs (For guest outreach) 500 sheet cards, 500 towel-rack hangers	(-\$320)
Total Savings	\$118,930 savings per year

Laminated Printed Cards and Towel Hangers Available From:

The Green Hotels Association	(713)789-8889 www.greenhotels.com
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Miscellaneous Waste Reduction Recommendations

(Cost Savings Not Included Due to Lack of Purchasing Information)

Donate/Recycle Old or Reusable Materials

Hotel maintenance and upkeep requires that items like carpet, phones, mattresses, etc. be upgraded and replaced periodically. Oftentimes, reusable or recyclable materials are often discarded in the process. It is suggested that the Hotel contact the following local resources before disposing of potentially reusable materials:

Local Resources

- Donate Leftover TP rolls, partially used soap, shampoo, conditioner, mattresses, furniture, old phones, supplies, old linens & towels to: (pick-up service available)

San Diego Rescue Mission	(619) 687-3720
AIDS Foundation San Diego	(619) 686-5080
Episcopal Community Services (Friend to Friend Clubhouse)	(619) 238-2711
Crossroads Foundation	(619) 296-1151
Vietnam Veterans of San Diego	(619) 497-0142
Stepping Stone of San Diego, Inc.	(619) 584-4010
- Turn old linens and towels into aprons or rags
- Donate used doors, carpeting, paint, appliances, furniture, electrical fittings and fixtures, plumbing fittings and fixtures, lumber, cabinets and more, to: (pick-up service)

Building Materials Recycling	(619) 661-8155
Habitat For Humanity ReStore	(619) 696-1313
Miramar Landfill Recycling	(619) 268-8971
- Recycle Old Carpet for Reuse

Ecology Recycling	(619) 443-5510
Carpet Pad Recyclers	(619) 696-8819
- Donate Prepared Food / Food Supplies

Mamas Kitchen	(619) 233-6262
San Diego Food Bank	(619) 523-8811
San Diego Rescue Mission	(619) 687-3720

Purchasing Savings

- Replace Individual Bar Soap with Bulk Soap-Shampoo Dispensers
(Results in an average \$10,000/yr purchasing cost savings) Green Hotels: (713) 789-8889
- Replace Disposable Guest Room Cups with Reusable Glass or China Cups
- Purchase Recycled Copy Paper Through the Recycled Products Purchasing Cooperative
(760) 436-7986 -or- www.recycledproducts.org

General Recommendations Continued

- Purchase reusable cups/mugs for employees
- Post double-sided copying reminders above all copiers and train employees how to copy on both sides of the paper
- Put company bulletins on voice or electronic mail or post on a central bulletin board
- Reuse large envelopes and packing material like bubble wrap
- Donate foam packing peanuts to local postal franchises or the post office
- Install energy efficient appliances. Install low-flow shower heads
- Use Sloan valves with toilets
- Recycle at all conferences and events (convention areas and banquet halls)
- Work with vendors to provide supplies that are low-waste and recyclable
- Use recycled content building materials whenever possible (see attachment)
- Collect used coat hangers and return them to your laundry service for recycling
- Replace plastic laundry and shoe bags with reusable cloth bags
- Recycle used toner cartridges and purchase recharged toner cartridges
TCR Services (619) 279-0322 -or- (800) 783-0322
- Advertise old/reusable materials in CALMAX (a materials exchange publication where advertising is free.) (916) 255-2369 www.ciwmb.ca.gov/calmax
- Use bio-degradable and non-toxic cleaning supplies. The following suppliers carry industrial grade products:
The Clean Environment (800) 266-2353
Biochem Systems (800) 442-4686
Kilgore Chemical (800) 499-4674

Keeping Reusable Materials Out of the Waste Stream

After interviewing Obed and assessing the storage area, it is clear that the Hotel generates a substantial amount of materials that can be re-used by other organizations. Some of the following reusable materials are sometimes disposed of by the Hanalei:

- mattresses
- televisions
- carpet
- furniture
- doors
- lamps
- phones
- light fixtures

See resources section on page 7 for lists of organizations that will pick up these materials and refer to attached Recycled Products and Reuse Directory for more information. For items that are difficult to find a home for, advertise in CALMAX; a free materials exchange publication that helps to link up materials with those in need.

CALMAX: (916) 255-2369 www.ciwmb.ca.gov/calmax

Summary of Waste Reduction Cost Savings

Description	Year 1 Savings	Successive Yr. Savings	Waste Diversion
Improve Cardboard Recycling	\$1,309.00	\$1,309.00	8 tons
Expand Mixed Paper Recycling to Guest Rooms	-\$692.50	\$1,767.50	24.5
Reduce Laundering Towels and Sheets	\$118,930.00	\$119,250.00	N/A
Total	\$119,546.50	\$122,326.50	32.5

Please feel free to call Tyson Miller at Solana Recyclers with any questions concerning this report at 760/ 436-7986. Solana Recyclers, Inc. was able to perform this waste assessment service for the Hotel under the Sustainable Futures Project. This project is funded by region IX of the US EPA. The statements and conclusions of this report are those of the contractor and not necessarily those of the US EPA, its employees, or the federal government. The contractors make no warranty, express or implied, and assume no liability for the information contained in the preceding text. All information obtain in this assessment is confidential unless granted permission for public issuance.

Attachments

- Added Business Case Studies
- Environmentally Preferable Building Materials Providers
- Case Studies from the Integrated Waste Management Board
- Green Hotels Association Information
- Sample Printed Cards
- In keeping Magazine Article
- Recy-CAL Supply (container information)
- Non-Toxic Cleaning Product Suppliers
- Recycled Paper Cooperative Information
- Recycled Product Promotional Item Suppliers