

WASTE REDUCTION IN HOTELS AND MOTELS

A Guide for the Lodging Industry in Florida

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INTRODUCTION

All businesses look for ways to cut costs. Management seeks opportunities to streamline processes, improve systems, and maximize profit. They may call it efficiency, quality, or the search for excellence, but they are all looking for new ways to improve product or services while maintaining or lowering costs. In analyzing operations and procedures, many innovative companies have turned toward reducing their waste as an additional cost cutting method.

Waste prevention is a reduction in the amount and/or toxicity of materials entering the waste stream prior to recycling, treatment, or disposal. It is a strategy, which calls for business consumers to think first before purchasing any material or service. Evaluating practices and products not only on price and quality but also on durability, reusability, recyclability, and content. It may mean changing the way things are done or how a product is packaged. Waste prevention is a resource management technique that can save industry money while helping the environment. Waste management is a growing trend throughout the world. In Florida, despite aggressive waste management programs and a statewide recycling rate of 30%, over 14 million tons of garbage is still landfilled annually.

The Florida Department of Environmental Protection has encouraged the Florida Hotel/Motel Industry to become more knowledgeable and involved in waste reduction programs. Florida's tourism industry serves an estimated 40 million visitors annually. Over 50% of these visitors are hotel guests during some or all of their vacation. The waste generated by these guests constitutes a large portion of the State's commercial waste stream.

There are many benefits to reducing waste in the work place. Economics, in the form of avoided costs, are probably one of the most important justifications, but there are other valid reasons. Streamlining operations to reduce waste often can enhance overall efficiency and productivity as well. In addition, implementing a proactive waste reduction program demonstrates concern for the environment, which creates a positive public image and increases customer and employee loyalty.

This workbook was designed to help hotel management and staff implement and maintain an effective waste reduction program. It will take you step by step while you make decisions about the how, what, where, and when of reducing waste. The author recognizes that there is no one approach that will work for all locations. This book does not hold all the answers for every property. Readers are encouraged to contact their local City, County, and State solid waste departments for assistance as well as networking with other hotel properties that have effective waste reduction programs.

Developing a Waste Reduction Program

Probably the most frustrating part of any program is the beginning. If questions are swirling in your brain, faster than you can write them down, don't feel alone. We have all been there at one time or another. We are fortunate in Florida to have a very knowledgeable and open network of industry professionals that are willing to help.

A wide variety of resources are available to assist you with planning and implementing a waste reduction program for your business. The organizations listed in the appendix section labeled RESOURCES are free of charge. If the staff at these phone numbers do not have the information you desire, they should be able to direct you to the correct person or organization. There is also space in the appendix for you to write in information that is relevant to your area and facility.

The process of waste reduction includes all actions taken to reduce the amount and/or toxicity of waste. It includes waste prevention (also known as precycling), the purchase of products that have recycled content or produce less waste (also known as eco-purchasing), recycling, and composting. The most effective way to reduce your company's waste is to generate less in the first place. Why pay for throwing away cardboard that can probably be sold to a recycling company? This looks like a pretty simple decision - but there is more to this equation than meets the eye. The process of analyzing the inputs, outputs, and individual processes can often enhance overall efficiency and productivity.

Hotels can adopt one or more of following strategies to reduce waste:

⇒ **Eco-Purchasing**

⇒ **Recycling**

⇒ **Composting**

There will always be some waste that will have to be disposed of. The **Calculating Costs of Waste Disposal worksheet** in the appendix of this workbook will help you analyze the costs associated with waste disposal.

Planning is the first step in implementing a successful hotel waste reduction plan. The ultimate goal is to have waste reduction activities absorbed into every facet of the facilities operation. Waste reduction should become an integral part of the corporate culture of your business. Through careful strategic planning, waste reduction procedures can become an accepted part of the work environment. Management support of the waste reduction process is vital to ensure guidelines are understood, followed through upon, and that staff is supported in their efforts.

There is no reason to reinvent the wheel. We suggest that you do your homework first. The following checklist should be helpful in getting started.

- ◆ Inform the hotel's owners and corporate management. Let them know what you are trying to achieve and ask for their support.
- ◆ Appoint a waste reduction coordinator to provide a central point for leadership of this initiative.
- ◆ Establish an accounting system that reflects monthly waste management costs. Formulate a monthly report for tracking waste disposal and reduction information.
- ◆ Learn about your waste. Research your waste disposal costs, options, and alternatives. Contact your local municipality and find out what is available in your area. Ask your hauler if there are any questions about how charges are billed.
- ◆ Set up a waste reduction committee made up of staff members from each operational area. Ensure that they understand their responsibilities and hold them accountable for follow through.
- ◆ Perform a waste evaluation, examining purchasing and disposal cost records. Take the committee on a site visit, ask questions, gather information, and formulate recommendations.
- ◆ Working with the committee, set goals and objectives, based on a realistic time line. Map out action plans to reach these goals and objectives and assign responsible parties.
- ◆ Establish a budget for supplies, educational/promotional materials, and project labor.
- ◆ Find a hotel of similar age and size to partner with. Florida has several environmentally award winning hotels, many of which are listed in the resource section of this workbook, that are willing to mentor other properties.
- ◆ Monitor, measure and report progress. Celebrate successes!

Conducting routine waste evaluations are a critical part of planning your program. These evaluations generally consist of four phases. During the first phase, an audit team gathers information and then sits down with the manager for each functional area, going over the operation and asking questions. Next, the team actually visits the site, making observations, reviewing purchasing and disposal records while asking more questions. In the third phase the team analyzes the information they have collected and forms a series of recommendations. The final stage consists of implementation of the recommendations, monitoring, and reporting.

Documentation is also important. Utilize the NOTES pages at the end of this workbook to write up information specific to your program. When you are promoted, your replacement will need this information to carry on where you left off.

Eco-Purchasing

The purchasing function is the starting point. In reviewing the inputs to each operational area of the hotel we have found that the purchasing department or function is one of the most vital but often overlooked areas. Just think about the following questions for a minute. Are you purchasing food in packaging that is not recyclable? Is your landscaper using mulch or compost made from someone else's yard waste? Are you buying only new laser printer cartridges when rebuilt cartridges are available at about half the price? How about those wooden picnic benches that must be replaced every couple of years? Is the copy paper or toilet tissue you purchase made from recycled paper? Are you buying rags for your housekeeping or maintenance areas from an outside firm? Does your hotel maintain a warehouse or inventory of varied supplies? Once you get started looking, it is easy to see how critical the purchasing function is to the success of your program.

Request vendors minimize packaging

In recent years packaging has become more and more convenient. Plastic wrap and bags, aluminum and steel foils, and many products come in boxes inside designer boxes. We should begin to look at packaging from the standpoint of what do we really need to get the job done. Request that all vendors supply you with the simplest and most recyclable packaging.

One hotel manager tells the story of his beer purchases. In the process of setting up a recycling program, this manager looked at the items that were recyclable. He found that his hotel generated a great deal of beer bottles. The local recycling program did not offer collection for brown or green bottles, but did take aluminum cans. So this manager met with his food and beverage staff and they worked together to install the capability to handle draft beer in the high volume bars. For the remaining areas and the room service bars, the manager talked to the beer supplier about switching to aluminum cans. The cans arrived in twelve pack boxes that were laid inside cardboard flats. The manager asked the vendor to deliver the beer loose in flats, the vendor could not comply but he could offer beer in plastic six pack rings, in cardboard flats. On a monthly basis, with this one product, the manager was able to reduce his waste by over 8000 pounds!

In another area of the hotel, housekeeping was shorthanded and the head housekeeper spent a week helping in Laundry and stocking the maid's carts. She realized that each week they went through several plastic barrels of detergent and buckets of other cleaning chemicals, which the maids used to clean the rooms. These buckets were being triple rinsed and thrown away because the local recycling program only accepted plastic beverage bottles. So the head of housekeeping sat down with the vendor to discuss alternative packaging and to ensure that they were maximizing their use of concentrates. The vendor was able to arrange to have the empty containers returned to the factory to be refilled when new product was delivered to the hotel. In addition, the same vendor was able to introduce the hotel to a new more concentrated laundry detergent, which actually saved the hotel money on each wash load. Not only was the head housekeeper reducing plastic waste by over 150 pounds per week by utilizing refillable detergent containers, but also she was able to reduce costs for the laundry operation!

Most vendors are only too willing to brainstorm and help out. Many salespeople have new products they would love to show, but are concerned about taking up too much time during a sales call. Partnering with vendors helps them serve your business better. Remember that they want your business. It is time to start looking around for an alternative source, if a vendor can't or won't help you reduce your waste stream.

The following checklist offers additional considerations:

- ◆ Look for quality, a local supplier, simplicity, energy efficiency and minimal packaging.
- ◆ Select vendors carefully, choose vendors that have demonstrated a commitment to the environment.
- ◆ Purchase and maintain durable equipment and supplies.
- ◆ Consider the life cycle cost of products, replace disposables with reusables (serving ware, napkins, buckets, rags, etc.)
- ◆ Buy in bulk or in concentrated form whenever feasible (condiments, single serving containers, beverages, etc.)
- ◆ Substitute nontoxic cleaning products and try alternative methods for pest control.
- ◆ Manage and minimize inventory levels (Just in Time, First in - First Out). Purchase only items that you need in quantities that you can use.
- ◆ Consider if packaging is recyclable in your area/program? If not, talk to your vendor about changing to a different type of packaging.
- ◆ Minimize nonrecyclable packaging - chicken, fish, and vegetables are often packaged in waxed cardboard, ask your vendor to pack in reusable or recyclable containers or crates.
- ◆ Avoid fresh produce that is packaged or has stickers on it. Let vendors know that stickers are wasteful and time consuming to remove.
- ◆ Monitor operations and talk with your staff, ensure supplies and materials are used efficiently.
- ◆ Buy recycled products manufactured with postconsumer materials whenever possible (toilet paper, paper towels, writing and computer paper, office supplies, playground equipment, picnic/park benches).
- ◆ Buy and use re-refined oil.
- ◆ Purchase and promote organically grown foods.

Minimize the use of hazardous materials and reduce liability

"Environmentally friendly" substitutes for standard cleaning solvents and other materials used by maintenance departments are available, which are free of the hazardous ingredients. The benefits of reducing toxicity are two-fold. Often, natural nontoxic cleaners are less expensive to use and there is reduced liability because your staff is not using products, which if improperly handled can cause severe injury and even death. However, this is an area where you may need more guidance than can be offered in this brief summary. Ask suppliers to direct you toward reformulated products. In addition, many municipal programs offer standardized information on alternatives to common hazardous materials.

In the appendix there is a reference page called the "F-List" which pollution prevention managers utilize to compare the ingredients in common products. This process is fairly easy but can be time consuming. Utilizing the Material Safety Data Sheet or MSDS for a specific product, compare the ingredients to the chemical names on the F-list. If there is a match, look for a substitute product. It is also best to contact a pollution prevention specialist to determine the safest way of disposing of these products.

Inventory control is another important way to minimize hazardous waste. Just-in-Time inventory methods can reduce the need to store chemicals and other products. Find vendors which are willing to ship product when you need it. Also make sure that all stored materials are date stamped when they arrive and that the older product is always used first.

The concept of "Life Cycle Costing" is new to many of us, but it is really very simple. The idea is to look at the total costs associated with a product. Remember you pay for products twice, once when you purchase them and again when you dispose of them. There are many products that you should consider life cycle costing when making purchasing decisions. For example: disposable napkins, cups, and servingware; paper towels, individually packaged condiment or amenity items, batteries, and laser toner cartridges.

Recycling

Recycling is the process by which materials, otherwise destined for disposal, are collected and used as raw materials for new products. Recycling prevents potentially useful materials from being landfilled or combusted, thus saving energy and natural resources.



The common symbol for recycling is three chasing arrows, as seen above. The arrows represent recovery, remanufacture, and reuse. There are the three stages in recycling which make the process complete. To be recycled, a material must go through all three of these steps. This symbol is used to indicate either that a product is recyclable, or that it has been manufactured with recovered materials

Again, the three steps in recycling are:

1. Collecting or recovering the recyclable components of the waste stream
2. Processing and manufacturing them into reusable forms or products
3. Purchasing and using the goods made with reprocessed materials

The concept of a complete cycle is important and is known as "completing the loop."

In order to decide what materials to target for recycling, it is best to contact your local municipality and find out what recyclables are collected and/or processed in your area. Local recycling coordinators often have lists of recyclers in the area. Or you may contact the FDEP in Tallahassee listed in the RESOURCE section and get a copy of the Certified Recyclers listing for your area.

Next, contact local recyclers and find out if they have collection services and what types of materials they will accept. If they do not offer collection service, then call local waste hauling companies and find out if they offer recycling collection services. Since most haulers base charges on operational costs, they often require a minimum quantity of materials. This may or may not create storage issues, especially for properties with small service areas. Consider these challenges in making decisions on how and what materials to collect.

Below are sample questions that may help you in deciding on a hauler:

- ◇ What materials do you collect?
- ◇ Do you supply containers? If so, which containers and is there a charge? Who is responsible for cleaning and maintaining bins? How are the bins marked?
- ◇ Is there a minimum volume or weight required for collection?

- ◇ Where do you process recovered materials? Can we visit your facility?
- ◇ What do you charge for collection? Are there surcharges or penalties for contaminated materials? Can we get a rebate for clean materials?
- ◇ Do you provide employee training, educational, or promotional materials? What does this include?
- ◇ How do you collect materials, source separated or commingled?
- ◇ Can you provide us with feedback on the weight, volume, and quality of the materials?
- ◇ May we have a list and contact your other recycling customers?

Your local city or county recycling coordinator may already have some of this information which can save a great deal of time and telephone calls. Some communities even have handouts or pre-printed booklets that cover starting up a business or commercial recycling program. The US EPA, listed in the appendix, also offers several free publications on waste reduction.

Once you get some idea of what materials can be recycled and determine what the costs (time, labor, service charges, etc.) associated with collection will be, then you can start to look at how you will recycle. Haulers typically collect from one central point, such as a service area or loading dock. It is important to design an effective system to get the materials from the point of generation to the location in which they will be collected by the hauler. There are a wide variety of systems and containers that have been designed for this purpose.

Many programs have successfully centralized garbage cans into one large common container for an area and have turned the small deskside trash cans into recycling receptacles simply by placing stickers on them. This is a big step for some folks and if you decide to do this, then monitor the process closely to ensure that garbage is kept out of the recyclables. Other hotels use specially marked desktop recycling boxes or deskside bins for collection of office paper. These are usually emptied by the employee into an intermediate container. The intermediate container is then collected by housekeeping or stewarding and emptied into the final collection container in the service area. For materials other than office paper, the process usually consists of only the intermediate and final containers.

Signage and stickers are very important and must be easy to read and understand. Many hotels are using pictograms either with or without words to get their message out. In today's workplace more than one language is commonly spoken. Take this into consideration when designing signage. There is also a division about where the experts think signage should be placed. One group says that the location of the container should be marked, at eye level on the wall above the bin. Others feel it is important to mark the container. We suggest asking employees what would work best for them. Color coding containers to differentiate them from trash cans is another good idea. Some programs even have a different color bin for each type of recyclable: blue for aluminum, gray for newspaper, yellow of bottles, etc. If you are on a shoestring budget, then you may want to use clean excess trash cans that are marked

properly. However, using extra trash cans will require even more stringent monitoring and extra employee education to ensure that they are not used for trash.

In considering what to recycle in your hotel program, consider the following list of commonly recycled materials:

- ◆ Cardboard
- ◆ Building materials
- ◆ Office
- ◆ Magazines
- ◆ Florescent bulbs
- ◆ Batteries
- ◆ Aluminum cans
- ◆ Scrap metal
- ◆ Food waste
- ◆ Glass jars
- ◆ Office supplies
- ◆ Landscape waste
- ◆ Steel containers
- ◆ Appliances
- ◆ Wood
- ◆ Plastic Bottles
- ◆ Cooking Grease
- ◆ Carpet
- ◆ Magazines
- ◆ Furniture
- ◆ Paint
- ◆ Motor Oil
- ◆ Antifreeze
- ◆ Freon
- ◆ Plastic buckets
- ◆ Telephone books

Composting

Some hotels have begun composting the organic portion of their waste stream. Some use the compost in their landscaped areas. Other properties give the excess compost away free to their employees. One hotel utilizes the compost they produce in their Chef's herb garden where they raise many of the herbs used in the kitchen. If properly planned and maintained, a compost project can benefit a hotel in many ways.

There are many good guides for composting available, but one of the best places to start is your local Cooperative Extension Service. These knowledgeable folks can assist in setting up a program and help troubleshoot if problems arise. The number for the closest office is in the blue pages in the front of your local telephone book.

Composting is a process, which begins whenever you place moist organic materials together. The organics naturally begin to decompose into smaller materials and eventually you have compost. Keeping the materials covered and routinely turning while adding additional moisture can accelerate this ongoing process.

The optimal size for a small compost pile is about three feet by four feet. You may choose to utilize one of the many commercial composting bins but a simple enclosure can be constructed by securing the ends of a twelve foot length of 2"x4"x36" chicken wire fencing and covering with a tarp or board. You can also use old trash cans with lids if you cut one-inch air holes spaced about four inches apart all around the can.

Place the container in a location that is well ventilated and then simply add landscape waste (some may have to be cut to fit), kitchen scraps (excluding meat products), discarded paper napkins or paper towels and mix. The kitchen scraps and paper should be buried in the pile to reduce the possibility of pest problems. The bin will need to be monitored moisture added, and turned about once a week. If there is a problem with odor, the material should be turned more often and dry material should be added to increase the airflow.

Your compost is ready when the materials have been transformed into a crumbly looking humus material. An indication that the process is complete is when the compost is cool to the touch. You may choose to refine the material by sifting it through a screen, but this is not required for use.

If you lack the space or decide composting is not for you, then you should still ensure that your landscape materials are disposed of in a responsible manner. Find out what your landscaper does with their cuttings and if they are using compost products where they come from. If these materials are being taken to a local landfill, find out if they are processed or just buried. If these valuable materials are buried then ask the Cooperative Extension and look around for other organic disposal opportunities in your community. In addition, request that your landscaper utilize compost and mulch that is produced by programs here in Florida.

Other Waste Reduction Strategies

Even after you've prevented, recycled, and composted there is more that you can do. The following is a checklist of items that should be considered.

- ◆ Use double sided copies whenever possible. Ensure that all new copiers purchased or leased have this important duplexing capability.
- ◆ Reduce fax and report coversheets to a minimal size.
- ◆ Print draft correspondence and reports on paper that has already been printed on one side.
- ◆ Cut up scrap paper and staple together for notepads.
- ◆ Donate excess furniture, building and office supplies to charity.
- ◆ Procure battery chargers and use rechargeable batteries.
- ◆ Repair rather than buy and rent rather than purchase, items that are rarely used.
- ◆ Purchase and use solar powered items (calculators, flashlights, outdoor lighting, etc.)
- ◆ Participate in a materials exchange program with other businesses to trade, sell, and donate goods that are no longer needed.
- ◆ Close the loop with laser printer cartridges; have spent cartridges remanufactured, and purchase only remanufactured cartridges for replacement.
- ◆ Make rags out of damaged towels and linens.
- ◆ Contact a local pallet vendor about repairing, reusing, or recycling excess wooden shipping pallets.
- ◆ Set up a program to collect and recycle scrap metal.
- ◆ Ask your local dry cleaner to take excess hangers.
- ◆ Ask your vendor to take back empty two and a half, five, and thirty-gallon plastic containers. If they are unable, clean them out and use them or give them to employees.
- ◆ Collect partial toilet paper rolls and use in staff restrooms or donate to homeless shelters.
- ◆ Collect partially used soap bars and check with local charities for programs which melt them down for reuse by the homeless.

- ◆ Reduce the amount of junk mail you receive, by writing to:

Mail Preference Service - Direct Marketing Association
P.O. Box 3861
New York NY 10163-3861

- ◆ Rotate, circulate, or post memos, reports, and magazines rather than distributing individual copies.
- ◆ Utilize e-mail whenever possible for correspondence.
- ◆ Donate unwanted books and magazines to doctors' offices, libraries, and schools
- ◆ Reformat reports, especially draft copies, so that more words will fit on a page by reducing fonts and margins.
- ◆ Encourage employees to bring their own coffee cups to work, eliminate disposables for employees.
- ◆ Donate unused (raw or prepared) food to a local food bank for distribution to charity.
- ◆ If consistent with your image, replace individual shampoo and conditioner bottles with refillable dispensing units.
- ◆ Save unused portions of shampoos, conditioners, lotions, etc. and donated them to a local mission or shelter.
- ◆ Survey the use of amenities and remove items that are rarely used like shower caps and sewing kits. Offer these items upon request only.
- ◆ Save and reuse packing materials or donate them to local Mailbox or Pack & Save businesses.
- ◆ Reuse manila and interoffice envelopes.
- ◆ Offer newspapers, shower caps, and shoeshine/sewing kits to guests only upon request.
- ◆ Return laundered clothes to guests in reusable garment bags or baskets.
- ◆ Offer guests the opportunity to decline delivery of daily newspapers or better yet make them available only on request.
- ◆ Offer unneeded bibles and other books to local missions or prisons.
- ◆ Change lighting from incandescent to fluorescent. Fluorescent bulbs last much longer, meaning that you have fewer bulbs to dispose of and spend less time changing them. The initial outlay will quickly pay for itself in reduce energy costs.

Involving, Educating, and Motivating Employees

For a waste reduction program to be successful, it is imperative for the upper management in your hotel to offer continuous support. The general manager and the executive team must demonstrate this support with their own participation. Token efforts and words will not be enough. Employees watch their leaders to see if they buy into the program with actions as well as words. If you are having problems getting this support, then you will need to do your homework carefully and be able to accurately project the benefits. Most general managers will support programs, which can demonstrate positive economic benefits and guest support.

Once you have the management team behind you, then we suggest a team approach with the employees. It is important that everyone is involved and individuals feel that they can make a difference. Communication is key and regular feedback will be necessary to keep a program going. Several hotels have formed an employee group, known as "The Green Team" with representatives from each department or operating area. This group meets regularly to exchange ideas while working on projects to plan, maintain, or improve programs. The members of the team are then responsible to take this information back to their co-workers and implement the agreed upon objectives.

Amelia Island Plantation, located in northeast Florida, has had such a group for over two years. This team meets monthly and oversees most of the environmental programs at the resort. They report to the property's Executive Committee and have been very successful in their efforts. Each month they supply articles on their projects, one of which is waste reduction and recycling, to be printed in the employee newsletter, *The Seabreeze*. This newsletter gets information out to more than one thousand employees of the resort and lets them know how much of what materials are being recovered as well as informing them of any new efforts to reduce waste further. The team has coordinated two employee education events, an Employee Awareness Fair, which was held in the spring, and a Hazardous Waste Workshop during the summer. In addition, the AIP Green Team is working to implement InRoom Recycling for guests throughout the resort.

Educating employees is an ongoing task that should begin in orientation and continue with on the job training and feedback at regularly scheduled staff meetings. Information relevant to your program should be available through your collection company or the local government. There are also several good inexpensive videos available through the Cooperative Extension Service. Words of caution do not offer confusing information to your staff. For example, if your program only recycles specific containers (i.e. aluminum and steel cans) - do not shower employees with information on other items (i.e. glass and plastic bottles). It is important to review all handouts and promotional materials to ensure that program communication remains clear.

Quality education and clear communication will result in higher participation. Substandard training effort will lead to contaminated materials and low involvement. Enthusiastic participation will only happen when people know what and how they can support the project. For example, if you are setting up a recovery program for white office paper only, make sure employees know that newspaper, magazines, and colored paper will be rejected. Follow-up is very important. If an area does not follow instructions and is contaminating a collection

program, take the time to locate the problem and educate all the staff in the affected area. Contaminated material in a container will just encourage more trash and other undesirables. If a container is contaminated, have it emptied and cleaned out before putting it back in service.

Employee bulletin boards are a great place to post results. Everyone likes to see their name in print and reports in staff newsletters can energize those that are lagging behind. Contests, rewards and celebrations can also be part of your education campaign. Trivia contests can determine which staff members are listening. A scavenger hunt is a good way to get areas to clean out unneeded junk. Many recycling companies, trade groups, or municipalities will supply you with promotional items like tee shirts, ball caps, Frisbees, or coffee mugs to encourage waste reduction/recycling.

Many of the hotels at the Walt Disney World Resort Complex have also formed teams, known as Environmental Circles. These Circles meet regularly and are tasked with monitoring and improving waste reduction efforts. The Circles help to spread the word to employees on program changes and this keeps everyone informed about their ongoing effort. Several of the properties have created contests for the employee or work area with the best efforts. The Circle performs spot inspections of an area or weighs the recyclables or trash coming from a specific area. They make the competition fun and celebrate their successes.

These efforts help to keep employees on track without punishing them. Peer approval as well as prizes reward those that want to make the extra effort. The team or circle approach allows for continuous communication and feedback. The team can also be held accountable, but must have the authority to make changes. The link to the Executive Committee at Amelia Island Plantation enables the team to project plans, and to report areas that are lagging behind in their efforts.

Involving and informing the Guests

Getting guests involved can be very rewarding. If properly informed of procedures, most hotel guests are pleased to see your facility practicing waste reduction and they are eager to participate. Just as with employees, communications must be clear and simple. Complex instructions can lead to frustration and an unhappy experience for your guest.

Convenience is also a key area of concern with guests. While most employees travel all over a hotel in the course of their jobs, guests tend to stay in specific areas for long periods of time. To encourage guest participation in a recycling program, it is best to have clearly signed containers within easy reach. Many hotels have implemented recycling programs, which include collection in the guestroom well as containers in the pool area, lobby, meeting rooms, and other common areas.

To increase guest awareness and participation, some hotels have front desk clerks or bell staff explain program procedures to guests at check in. The Bahama House in Daytona Beach Shores includes an informational flyer in the guest's "goody bag." Program information cards should also be placed in the guestroom. These cards should include basic instructions about how the guest can participate in the program and directions on where containers are located.

Many hotels have implemented conservation programs and utilize the standardized educational cards that are available through the American Hotel & Motel Association. One of these cards outline the savings associated with reducing the number of times sheets are changed or towels are laundered during a guests stay and offer the option of reducing these services.

Environmental awards and honors can be important to interested guests. Just as you would post a plaque or picture of the employee of the month, consider honoring staff that demonstrate outstanding support of the hotels waste reduction efforts. The Walt Disney World Resort Complex awards an "E-pin" to employees that demonstrate environmental excellence. These special staff members display the E-pin on their nametags. When guests ask about the pin there is an opportunity for guest education, while the employee explains what they did to receive it and how their programs work.

Protecting the environment and conserving resources continue to be an important goal for individuals and organizations alike. Many meeting planners are looking for hotels that have environmental programs. Some organizations are even writing recycling and waste reduction into their meeting specifications. In response, several hotels have written up brief summaries of their programs and worked with staff to ensure that additional guest area containers are available when these groups arrive.

Effective Monitoring, Measuring, and Reporting

Monitoring and evaluation is vital to the ongoing success of a waste reduction program. Reporting to both management and employees about how a program is operating helps to maintain interest. Regular monitoring provides continuous information. Monitoring also allows you to make adjustments to the program as they are needed. If monitoring is done correctly then there will be no unexpected surprises as success is measured and period reports are written. Monitoring should be done on a regular basis and can include periodic audits and spot inspections as well as daily observations. Challenges should be tackled as they are discovered but it is also important to log all problems for future reference.

Measuring can be accomplished simply by observing how full a garbage or recycling container is or through analyzing purchasing records. Garbage and recyclables can also be weighed using an inexpensive bathroom scale. Remember that a higher level of accuracy will lend additional credence to this information when the owner or general manager is making decisions. You may also wish to work with your hauler, asking them to provide a survey of how full each container was at pick-up and/or the weight of material they collected. Some collection companies do have on-board scales and are willing to provide this data. However, the hauler information should only be used for comparison and to double-check the data you and the staff are collecting. Measuring should be done periodically to document changes and to plot trends.

Reports should be done on a routine basis, once a quarter or semi-annually, but no less than once a year. The report should include a bulleted list of all initiatives attempted or implemented with an indication of its success. There should also be a summary of what materials were reduced, how this was measured, and include any cost savings. The report can also be used to relate savings in natural resources (i.e. water, energy, trees, etc.) Reports should be viewed by owners and managers as well as being posted for interested employees to see. Your write up should invite review, discussion, and input on how to improve the program.

Appendices

Resource Information Specific to Your Hotel Property

For handy reference we have included the space below for you to write in information specific to your business location. If you do not have this information, now is a good time to locate it. This data will be necessary for you to begin planning for a waste reduction program.

Fill in the following information for the local Government in your area:

_____ COUNTY

Solid Waste Department _____ fax: _____

Contact Person: _____ at: _____

Recycling Hotline: _____ fax: _____

Pollution Prevention Office: _____ fax: _____

Contact Person: _____ at: _____

This information should be available in the blue pages in the front of your local telephone directory.

Please fill-in the information for your facility:

Waste Hauler: _____ fax: _____

Contact Person: _____ at: _____

SERVICE _____ cubic yard container(s) _____ times each week COST: \$ _____

Landscape Company _____ fax: _____

Contact Person: _____ at: _____

How is material collected and disposed of? _____

Recycling Vendor: _____ fax: _____

Contact Person: _____ at: _____

SERVICE _____ cubic yard container(s) _____ times each week COST:\$ _____

Note: There may be more than one Recycling Vendor for your property. If this situation arises, please write the information in the blank space below or attach an additional sheet, as necessary.

Calculating Costs of Waste Disposal

Before beginning to look at the potential for recycling, it is helpful to know how much waste is presently being sent for disposal. It is important to know what it is costing the hotel to dispose of this waste.

I. Estimating weight and calculating waste charges (if data is limited)

The weights should be indicated on the monthly waste removal bill. If you do not have these records, contact your waste hauler.

1. Total cost of waste collection for last twelve months _____ tons/year
2. Monthly waste collection charges (line 1 divided by 12) _____ tons/month
3. How many of what type and size of containers are used for collection

of bin(s) X size of container(s) = volume

NOTE: If there are more than one size of bin being used, perform a separate calculation for each one and add the volumes together for a total volume.

4. Cost per ton (Total volume divided by line 2) \$_____/ton

For educational purposes, pounds are easier for Most employees to relate to, divide this figure by 2000 pounds.

5. Number of times container(s) are collected weekly _____#/week
6. Number of times containers are collected monthly
(line 4 X 4.2) _____#/month

This method should be used for an estimate, if information is not readily available.

II. Waste Disposal Cost (utilize if data is available)

1. Hauling fee per pick-up/pull _____ cost/pick-up
2. Number of pick-ups/pulls per month _____#/month
3. Total hauling fees per month (liner X line 2) _____cost/month
4. Landfill tipping fee per ton _____cost/ton
5. Solid waste generated per month (from I.2) _____tons/month
6. Total tipping fee per month (line 4 X 5) _____cost/month
7. Monthly container lease/use fee _____cost/month
8. Total monthly solid waste disposal cost (line 3 + 6 + 7) _____cost/month
- 9 Solid waste disposal cost per ton (line 8/line 5) _____cost/ton

This method of calculation is more accurate and is preferred if the data is available. If this information is not readily available, talk to your hauler about correcting the data collection system.

III. Estimating the weight of cardboard using waste stream percentages

Cardboard weights are difficult to estimate since boxes come in different sizes and thickness. The amount of cardboard also varies daily according to activities and shipments. Studies have found cardboard composes as much as 20% of a hotel waste stream. The following will give you a rough estimate for planning purposes.

1. Tons of solid waste per month (from #2 above) _____ tons/month
2. Percent of solid waste which is cardboard 15%
3. Total weight of cardboard per month (line 1 X line 2) _____ tons/month

Cardboard can also be weighed using a scale or if baling, the average bale weight (as provided by your recycler) can be used to gauge how much cardboard is produced in a specific time period.

IV. Estimating the weight of newspaper using purchasing information

1. Number of newspapers delivered to guest rooms per month _____#/month
2. Number of paper in vending machines per month _____#/month
3. Total number of papers each month _____#/month
4. Average weight of single newspaper in pounds _____lb/month
5. Total monthly weight of newspapers (line 3 X line 4) _____lb/month
6. Total monthly weight of newspapers (line 5 / 2000) _____ tons/month

The weight of other recyclable materials can be estimated using the percentage method described in III for cardboard or the purchasing method described in IV for newspaper. The information on the following pages may be handy in calculating these numbers.

V. Estimate the potential of other recyclable materials

1. Estimate the tons per month _____ of _____ (material 1) = _____
2. Estimate the tons per month _____ of _____ (material 2) = _____
3. Estimate the tons per month _____ of _____ (material 3) = _____
4. Estimate the tons per month _____ of _____ (material 4) = _____
5. Estimate the tons per month _____ of _____ (material 5) = _____

Total tons of recoverable materials available for recycling = _____

Estimated Waste Stream Components

<u>Material Type</u>	<u>Estimated Percent of Waste Stream</u>
Food Wastes	14%
Textiles	2%
Cardboard	15%
Office Paper	3%
Glass bottles	2%
Plastic bottles	1%
Other Plastics	4%
Steel Cans	1%
Aluminum Cans	0.1%
Other Metals	8%
Landscape Waste	14%
Construction Debris	15%
Non-Recyclable Waste	20%

NOTE: These figures are meant to be used for estimation only. They have been adapted from actual and field data numbers but no comprehensive waste composition study on hotel waste has been performed.

Recyclable Material Weights

The following data should be helpful in estimating the weights of recyclable materials.

Aluminum Beverage Cans

Approximately 27 cans = one pound

There are 24 cans in one case

Number of cans per month _____ / 27 = pounds per month

1080 uncrushed cans = one cubic yard

one cubic yard of cans = 40 pounds

Newspaper

One cubic yard of neatly stacked newspaper = 600 pounds

One 12 inch stack of newspapers = 35 pounds

Steel Cans

Four #10 cans = one case

One #10 can weighs .75 pounds

185 uncrushed cans = one cubic yard

One cubic yard of # 10 cans = 138.75 pounds

Glass

12 ounce Beer bottles weighs seven ounces empty
average empty case weight = 10.5 pounds

A one-liter liquor bottle weighs 18 ounces empty
average empty case weight = 13.5 pounds

A four-liter wine bottle weighs 41 ounces empty
average empty case weight = 10.25 pounds

A 1.5 liter champagne bottle weighs 40 ounces empty
average empty case weight = 15 pounds

An 11-ounce mineral water bottle weighs nine ounce empty
average empty case weight = 13 5 pounds

Food Waste

Preparation waste, discarded food, plate scrapings

One fifty-five gallon drum = 120 pounds

Solid fats and liquid oils

One fifty-five gallon drum = 412.5 pounds

4.8 drums = one ton

Used Motor Oil

Seven pounds = one gallon

285.7 gallons = one ton

Associations and Government Agencies

Florida Department of Environmental Protection (FDEP)

Waste Reduction Section

Maintains a listing of all county solid waste directors, recycling coordinators, and pollution prevention managers as well as a listing of certified recycling businesses. This office also produces an annual report on solid waste management in the State of Florida that can be accessed through the FDEP website at <http://www.dep.state.fl.us/>

FDEP/Bureau of Solid & Hazardous Waste
Waste Reduction Section
2600 Blairstone Road
Tallahassee, Florida
32399-2400.....850/488-0300

Florida Department of Environmental Protection (FDEP)

Pollution Prevention (P2) Section

Maintains a reference library of resources on a variety of waste prevention topics. Offers assistance to communities and businesses in implementing pollution prevention programs. For additional information on pollution prevention, see the web site at:
<http://WWW.DEP.STATE.FL.US/WASTE/PROGRAMS/P2/INDEX.HTM>

Florida Department of Environmental Protection (FDEP)
Bureau of Solid & Hazardous Waste
Pollution Prevention Section.....850/488-0300

Florida Business & Industry Recycling Program (FLA BIRP)

BIRP is a non-profit organization funded by businesses to provide them with assistance in setting up recycling programs.....
.....800/487-3231

Florida Energy Extension Service

Affiliated with the University of Florida, the Extension Service has local offices statewide and supports resource conservation.....352/392-5684

Florida Hotel & Motel Association (FM&HA)

A non-profit organization of individual hotels, motels, and resorts dedicated to representing, protecting, promoting, and advancing the interests of the lodging industry.
.....800/476-3462 or
850/224-2888

American Hotel & Motel Association (AH&MA)

.....202/289-3100

Florida Recycling Business Assistance Center (RBAC)

RBAC provides start-up and expanding recycling businesses with traditional business development tools, such as technology transfer, financing, and marketing....850/488-0300

Recycle Florida Today (RFT)

A non-profit association dedicated to promoting successful in the State of Florida.

RFT is a state chapter of the National Recycling Coalition Email: RecycleFL@aol.com

.....813/441-6425
National Recycling Coalition NRC).....703/683-9025

Solid Waste Association of North America (SWANA)

A non-profit professional organization whose vision is to advance the practice of environmentally and economically sound municipal solid waste management. The Florida Chapter hosts training seminars and trade shows several times each year.

SWANA - Florida Sunshine Chapter.....800/626-4723
SWANA National Headquarters.....301/585-2898

Southern Waste Information Exchange (SWIX)

A non-profit clearinghouse and repository for information on the availability of and demand for waste materials and recyclables. SWIX provides technical assistance to Florida

Businesses on waste reduction and recycling.....800/441-SWIX

United States Environmental Protection Agency

The US EPA encourages business to share their waste reduction experiences so that other companies can learn from these examples. If you have information you would like to share, please contact:

RCRA Information Center/Source Reduction Successes
U.S. Environmental Protection Agency, Office of Solid Waste (OS-305)
401 M Street, S.W.
Washington, DC 20460.....800/424-9346

US EPA Waste Wi\$e Program
Website: [www.epa.gov/waste wise](http://www.epa.gov/waste_wise)
Email: ww@cais.net800/372-9473

Aluminum Recycling Association.....202/785-0951

American Plastics Council.....404/801-9004

Council for Textile Recycling.....301/656-1077

Keep Florida Beautiful.....800/828-9338

National Food Rescue Network/Prepared Food Recovery Program.....800/845-3008

Southeast Glass Recycling Program.....727/799-4917

Steel Recycling Institute.....850/479-7208

Glossary of Terms and Definitions

Avoided Cost - any costs that are avoided through waste prevention, reduction, minimization, or stream-lining systems. These costs can include savings in waste disposal fees, inventory carrying cost, reduction of raw materials or transportation expense, etc.

Bulk Products - products packaged in large quantities, requiring less packaging and producing less waste.

Compost - the stable, decomposed organic material resulting from the composting process. Also referred to as humus and used in soil mixes.

Composting - the controlled biological decomposition of organic materials in the presence of oxygen into a stable product that may be used as a soil amendment or mulch.

Concentrates - products packaged in higher strength requiring dilution before use, concentrates require less packaging and produce less waste.

Consumption - the amount of any resource (material or energy) used in a given time.

Contaminant - Foreign material that makes a recyclable or compostable materials impure.

Disposable - products, items and/or packaging designed to be used once or a few times and then discarded.

Disposal Cost Savings - economic savings from reduced waste hauling operational expenses (e.g. labor, storage, containers, balers, transportation, and hauling fees) and avoided tipping fees.

Eco-Purchasing - a source reduction strategy empowering purchasing managers to select durable and nondurable goods that create the least amount of waste and toxicity. Eco-Purchasing also promotes the reuse of products and materials and supports recycling and resource conservation.

Eco-Tourism - responsible travel that helps the environment by conserving natural resources and sustaining the well being of the local people.

Hazardous Waste - waste that requires special precaution in its storage, collection, transportation, use, treatment or disposal to prevent damage to human health or the environment. Hazardous wastes include corrosive, explosive, flammable, ignitable, radioactive, reactive, toxic, volatile, and pathological materials.

Landfill - a land waste disposal site that is located and monitored to minimize water pollution from runoff and leaching. Waste is spread in layers, compacted, and covered with a fresh layer of soil each day to minimize pest, aesthetic, disease, air and water pollution concerns.

Life Cycle Costing - an accounting method which analyzes the costs of manufacturing, marketing, distributing, useful life, and disposal of a product.

Markets - generally, a recycling business? buyer, or municipal recycling facility that accepts recyclable materials for processing and final sale to the end user, either for their own use or for resale.

Materials Exchange - a mutually beneficial relationship whereby two or more organizations exchange materials that otherwise would be thrown away. In some areas, computer and catalog networks are available to match up companies that wish to participate in exchanging materials.

Municipal Solid Waste - includes all materials typically disposed of in dumpsters by businesses and removed for offsite disposal by private or municipal haulers. Includes wastes such as durable and nondurable goods, containers, packaging, food scraps, yard trimmings, and miscellaneous inorganic wastes from residential, commercial? institutional, and industrial sources. Municipal solid waste does not include waste from other sources, such as municipal sludge, combustion ash, and industrial nonhazardous process wastes that might also be disposed of in municipal waste landfills or incinerators.

Nonrecyclable - not capable of being recycled or used again.

Packaging - the materials used to wrap, contain, and protect products.

Pallets - a wooden platform used with a forklift for moving bales or other large items. Also called a "skid."

Processing - the operations performed on recycled materials to render them reusable or marketable. Processing can include grinding glass, crushing cans, or baling products. Processing generally results in adding value to a particular material.

Rebuilding - modifying a component of municipal solid waste by repairing or replacing certain parts and reusing it again for its original purpose (e.g. refillable or rebuildable laser toner cartridges, wooden cable reels). A middleperson most often does rebuilding of solid waste components.

Recyclables - materials that still have useful physical or chemical properties after serving their primary purpose and that can be reused or remanufactured into additional products.

Recycled Content - that part of a product that has been produced using preconsumer or postconsumer recycled material; measured by percentage.

Recycling - the process, by which materials otherwise destined for disposal are collected, reprocessed or remanufactured and reused. Recycling prevents potentially useful materials from being landfilled or combusted, thus saving energy and natural resources.

Reuse - the use of a product more than once in its same form for the same or similar purpose.

Solid Waste Management - the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

Source Separation - Separating waste materials such as paper, metal, and glass by type at the point of discard so that they can be recycled.

Tipping Fee - a fee, usually defined in dollars per ton, for the unloading or dumping of waste at a landfill, transfer station, recycling center, waste to energy facility, or yardwaste processing site. Also called disposal fee or service fee.

Useful Life - the period of time beginning when a product arrives in the hands of the user and ends when that product is discarded.

Waste - anything that is discarded, useless, or unwanted; opposite of conserve, as in "to waste."

Waste Reduction - decreasing the amount or type of waste generated; sometimes used synonymously with source reduction, waste prevention, or waste minimization.

Waste Stream - the total flow of solid waste from homes, businesses institutions, and manufacturing plants that must be recycled, burned, or disposed of in landfills or any segment thereof such as the commercial waste stream.

THE "F" LIST

TETRACHLOROETHYLENE [tetrachloroethene]
TRICHLOROETHYLENE [trichloroethene]
METHYLENE CHLORIDE [chloromethane]
1,1,1 -TRICHLOROETHANE [methyl chloroform]
CARBON TETRACHLORIDE [tetrachloromethane]
CHLORINATED FLUOROCARBONS [CFC's, Freons, i.e. CFC-12, Freon-12, R-12] (not all R's are of
this class of compounds)
1,1,2-TRICHLORO - 1,2,2-TRIFLUOROETHANE [CFC-113, Freon-113, R113]
TRICHLOROFLUOROMETHANE [trichloromonofluoromethane, CFC-11, Freon-11, R
1, 1,2-TRICHLOROETHANE
CHLOROBENZENE
ORTHO-DICHLOROBENZENE
XYLENE
ETHYL ACETATE
ETHYL BENZENE
ETHYL ETHER [diethyl ether, ether]
METHYL ISOBUTYL KETONE
N-BUTYL ALCOHOL [butanol]
CYCLOHEXANONE
METHANOL [methyl alcohol]
CRESOLS
CRESYLIC ACID [methyl phenol]
NITROBENZENE, TOLUENE [methyl benzene]
METHYL ETHYL KETONE [MEK, 2-butanone]
CARBON DISULFIDE
ISOBUTANOL [isobutyl alcohol]
PYRIDINE
BENZENE
2-ETHOXYETHANOL
2-NITROPROPANE

[] other names for the same compound

Best management practice is to obtain all MSDS's and look at Section III (Hazardous Materials). This will give the names of the components that are classified as hazardous by the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200). The majority of the above listed chemicals are covered by this regulation.

If the container says "volatile," it is probable that it contains at least one of the above mentioned compounds.

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Watch your Waste - A Waste Reduction Guide for San Diego Hotels, 1997, California Integrated Waste Management Board, 8800 Cal Center Drive, Sacramento, CA 95672 916/255-INFO, Homepage <http://www.ciwmb.ca.gov/mrt/wpw/wpmain.htm>

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