

Florida *Green Lodging* Program
BEST MANAGEMENT PRACTICES

COMMUNICATION AND EDUCATION

Two of the most important parts of any environmental plan are the Communication and Education components. The communication component clearly relays to guests, employees, vendors, suppliers and contractors the facility's commitment to environmental protection. However, as important as the communication of environmental practices and achievements is, the only way to enact sustainable change is to provide some level of education to these groups.

Any environmental plan that is devoid of either of these components is bound for failure. The following Best Management Practices (BMPs) will assist the facility in successfully transferring information about environmental activities and will assist in promoting sustainable business practices.

Communication BMPs

Clearly communicate environmental initiatives.

The facility's environmental initiatives and achievements should be communicated to as large an audience as possible. Guests and employees are the primary targets of any communication but it is important not to overlook suppliers, vendors and contractors in your communication programs.

The following are examples of possible media to use in communicating initiatives and achievements:

- Place placards in guest rooms detailing towel and linen reuse programs.
- Post guidelines for recycling in guest rooms, vending areas, back of house and near/on any recycling and trash receptacles.
- Broadcast short informational video showing the facility's environmental initiatives on in-room television services.
- Show environmental policies to each supplier and contractor upon their entering the facility.
- Post waste generation, water usage and utility consumption data in employee areas.

- Include information about environmental initiatives in marketing and advertising materials.
- Place posters highlighting individual employee's environmental efforts and achievements.
- Include environmental initiatives and/or a green tip in employee newsletters.

Establish an environmental taskforce or "Green Team" to discuss, plan and execute environmental initiatives.

The "Green Team" should include representatives from all operational areas. It is important to include all levels of employees, including management representatives. To achieve buy-in throughout the facility, consider appointing a team leader that is not on the facility's overall management team. The "Green Team" should meet at least quarterly to review any environmental concerns, plan upcoming outreach events and discuss ideas to improve environmental performance.

Regularly discuss environmental practices at staff events and meetings.

Communicate environmental initiatives at staff meetings and events. At least one environmental topic should be presented at each meeting. Invite outside speakers to address employee groups about smart environmental practices they can do at home and work.

Offer tours highlighting the facility's environmental initiatives and achievements to guests and the public.

Public perception is often a large measure of the success or failure of any environmental initiative. Offer tours of the facility highlighting successful environmental projects. Tours can be offered as part of other local, eco-tourism options that are advertised by the facility.

Advertise and offer information on local eco-tourism options.

In Florida, hotel guests often plan to spend a large amount of time outdoors during their visit. Provide guests with alternatives to the traditional planned excursions. Popular ideas include guided kayaking, fishing and sailing trips, informational nature tours and visits to state and local parks and recreation areas.

Provide a means for guests and employees to evaluate the facility's environmental practices.

Allow guests and employees to evaluate the facility's environmental performance. Possible evaluation tools include on-line evaluations, suggestions boxes or surveys. Review suggestions and evaluations to learn how the facility is perceived and to highlight possible environmental projects.

Publicly communicate environmental initiatives through advertising materials and Web resources.

Consistently update the public on current environmental initiatives and past successes through advertising materials and Web resources. Publicize important environmental policies and expectations through these same approaches.

Constantly review all environmental policies, initiatives and actions for consistency and timeliness.

Environmental policies need to be continually updated to reflect current practices and the most current information available.

Education BMPs

Provide training to all levels of facility staff on environmental policies, procedures and initiatives.

Timely and pertinent training must be considered a vital part of any environmental improvement program. Ensure that **EVERY** employee understands the facility's environmental policies and their role in implementing and following these policies. Webinar-based training will be provided on a regular basis by the Florida *Green Lodging* Program. Further training can be obtained from suppliers, vendors, local utility providers, water management districts and various other environmental specialists.

Ensure that training on environmental policies and procedures is provided in languages according to staff needs.

The workforce in the lodging industry is an ethnically diverse population. Where possible, training should be provided in the audience's language of first choice to facilitate clearer understanding and easier adaptation of environmental policies and initiatives. Printed training materials should be translated to the most common non-English native language of the facility. Spoken training should be given in the listener's native language, where possible.

Serve as a Florida *Green Lodging* Program mentor to another property.

Peer-to-peer training and education is invaluable. New environmental practices and policies are adopted faster if they have an industry champion. By serving as a Florida *Green Lodging* mentor to another facility, you can increase the level of positive environmental impact at a local level.

Host community and/or guest educational programs that highlight the facility's environmental initiatives and success stories.

Provide educational programs to guests and the community on smart environmental practices. Use the facility as tool to show successfully implemented environmental practices. Event ideas include Earth Day celebrations, hosting an environmentally-themed public conference or a Green Fair.

WASTE REDUCTION

Florida's tourism industry serves an estimated 40 million visitors annually. More than 50 percent of these visitors are hotel guests during some portion their stay. The waste generated by these guests constitutes a large portion of the state's commercial waste stream. A hotel waste audit showed that the majority of waste in a hotel is not produced in guest rooms, but in the Food and Beverage Department. If a hotel's waste is not reduced or recycled, it contributes to the state's overall environmental problems.

Reducing materials at their source, coupled with recovery, reuse and recycling prevents pollution and reduces or eliminates treatment and disposal costs. Recycling should be incorporated into daily operations along with staff training. Each hotel/motel recycling program must be specifically designed to accommodate the hotel's procedures of operation, hotel activities and structural design.

Educating guests about recycling through guest books, media boards and in-house television services is a great public relations tool that is received favorably by guests. Many guests are familiar with recycling from home or work and are glad to continue the process when staying a hotel.

The preferred method for reducing waste is to prevent it in the first place through source reduction. This is followed by material reuse and finally recycling. The following information provides Best Management Practices (BMPs) relating to each area of waste reduction. Reducing waste creates a more efficient management program.

General Waste Reduction BMPs

Prepare and follow a written waste reduction plan.

A written waste reduction plan is an integral part of any waste reduction effort. The plan should include the scope of the project or efforts, overall goals and specific waste reduction target measures. Also, the plan should be structured so that the elimination of waste at the source, or source reduction, is the first goal followed by the reuse of material and finally recycling.

Conduct a facility-wide waste audit.

In order to clearly find out which wastes are being generated, it is important to conduct a facility-wide audit of all generated wastes. The audit can be broken down in specific high waste generation areas, such as the Food and Beverage Departments and then compiled with data from other areas to get an accurate description of the waste generation issues.

Track waste generation on a regular basis.

Tracking waste generation is not a difficult process. It can be accomplished by simply tracking the amount of waste that is picked up for disposal. Waste tracking will allow the facility to obtain measurements and data to assist in the waste reduction efforts by highlighting outstanding generation issues.

Properly identify, track, store and dispose of hazardous waste materials according to appropriate environmental regulations.

Proper management of hazardous materials reduces the likelihood of exposure of guest, staff and the environment as a whole. Common examples of possible hazardous materials are large volumes of paints, oils, chemicals, pool supplies and spent fluorescent bulbs. All of these materials must be stored and disposed of according to the correct environmental regulations. In particular, fluorescent bulbs cannot be disposed of in normal trash receptacles. These bulbs must be properly stored and labeled in a padded container and disposed of through a hazardous waste collection service.

Source Waste Reduction BMPs

Institute environmentally-preferable purchasing (EPP) policies.

EPP is a procurement system that leads to direct waste reductions at the source. Common types of EPP are purchasing supplies in bulk, buying products that have minimal packaging and participating in supplier or manufacturer take-back programs for items such as pallets and large containers.

Provide newspapers to guests only by request.

Newspapers are a substantial contributor to the waste generation problem in the lodging industry. One of the ways to combat this problem is by providing guests with newspapers by request only. If this is not an option, all newspapers should be recycled by the hotel staff.

Use refillable containers instead of single-use packets and containers.

Instead of providing single-use toiletries and condiments, use items that are refillable on a continual basis. An example is using refillable shampoo/conditioner containers in the showers of guest rooms.

Set printers and copiers to duplex printing by default.

By printing on both sides, also called duplex printing, paper usage can be reduced by up to 50 percent. Change the default settings on all printers and copiers to print in duplex mode.

Eliminate the use of polystyrene (Styrofoam) and plastic food service containers.

Plastic and polystyrene food service containers take up valuable space in landfills and are not biodegradable. By substituting these products with biodegradable and compostable materials, less waste will be generated.

Reduce the purchasing of excess or inventory materials.

Buy only what is needed in the short term to reduce excess materials and waste.

Remove or eliminate the storage and use of hazardous chemicals.

Although hazardous chemicals may be needed for certain applications, try to move away from them where possible. Examples include switching from traditional cleaning chemicals to green cleaners. Green cleaners often have less stringent storage requirements than traditional cleaners and can lead to reduced exposure to harmful substances.

Reuse Waste Reduction BMPs

Use old or discarded office paper for notepads or packing materials.

Used office paper can easily be cut into squares and reused as office notepads. This is especially true if the paper is only printed on one side. If duplex printing is used, shred paper for reuse as packaging material for shipping and in gifts shops.

Donate any excess items, such as food, toiletry items, furniture, electronics and linens to local charities or other social service organizations.

Donate any items that can still be used to local charities or other social service organizations. This will extend the life cycle of these usable products instead of sending them to the landfill. If items cannot be donated to local charities, arrange for a system to sell the items to employees. Construction and demolition supplies and wastes can also be reused in this manner.

Compost excess food and landscape trimmings.

In areas where excess prepared food items cannot be donated to local charities, compost these materials. As with excess food, landscape trimmings should not be sent to the landfill. These materials can be shredded or chipped and reapplied as soil amendments. Such services can be arranged through local agricultural and landscaping resources.

Supply reusable goods in place of disposable goods.

Common examples of reusable goods include cloth table linens, glass or hard plastic drinking containers, refillable soap, cleaning supplies and toiletry containers, plates and cutlery items. These goods can be supplied not only to guest areas of the facility but to back of house areas as well.

Recycling Waste Reduction BMPs

Develop an onsite recycling program for as many waste materials as possible.

Commonly recycled materials include: aluminum, landscape waste, newspapers, cooking grease, food waste, glass, carpet, building materials, motor oil and liquids, plastic bottles and buckets, steel containers, office paper and supplies, electronics, ink cartridges, cardboards, fluorescent bulbs, magazines and batteries. Recycling services for all the above may not be available in your area. Check with your local Recycling Coordinator on the availability of commercial recycling. You can find local recycling coordinators on the DEP Web site at: www.dep.state.fl.us/waste/categories/recycling Institute recycling programs for as many as possible.

Locate recycling containers and bins next to trash receptacles.

The most successful recycling programs make it easy to participate. Locating recycling containers next to the trash receptacles will lead to an increased success rate for the recycling program. Also, provide easy instructions and directions where these bins are located to both guests and staff.

Clearly communicate what can be recycled.

Materials that are accepted for recycling should be clearly communicated to both the guests and facility staff. One common way is to clearly define acceptable materials on the recycling containers themselves. Often a large print sticker can be used.

Purchase recycled content supplies.

Participate in environmentally-preferable purchasing by procuring materials that are made with recycled content instead of first-generation content. If possible, purchase supplies that contain the at least 30 percent **post-consumer** recycled content. Common examples of items containing at least 30 percent post-consumer content are toilet tissue, paper towels, facial tissue, envelopes, office paper and kitchen napkins.

Print advertising, educational and promotional materials on recycled paper or materials.

Printing on recycled content paper will lead to less pollution and energy consumption during the paper production process compared to that of virgin paper.

Recycle materials used in convention and meeting rooms.

Materials used in conference and meeting proceedings are often left behind after the event and end up being thrown away. Develop a plan or policy for collecting these reusable materials, storing them and using them during the next event. Also, try not to provide these materials at all or provide them by request only.

WATER CONSERVATION

Florida's tourism industry serves an estimated 40 million visitors annually. More than 50 percent of these visitors are hotel guests during some portion their stay. The waste generated by these guests constitutes a large portion of the state's commercial waste stream. A hotel waste audit showed that the majority of waste in a hotel is not produced in guest rooms, but in the Food and Beverage Department. If a hotel's waste is not reduced or recycled, it contributes to the state's overall environmental problems.

Hotels are large-volume users of water, detergents, cleaners and other chemicals that can be detrimental to our environment. Protecting the environment by lessening the impact a lodging facility has on the environment also assists in protecting the very reason its guests come to Florida; the beautiful beaches, rivers, springs and lakes.

Increasing water efficiency is one of the most significant opportunities for realizing cost savings. Many of the water-saving solutions detailed below are easy and affordable to implement. Aside from the obvious decrease in water bills, savings are also realized through decreases in electricity, sewage and chemical costs.

Water conservation can be achieved through behavioral, operational or equipment Best Management Practices (BMPs). Some of these changes cost very little to implement and can have large impacts on water usage.

Behavioral and Operational Water Conservation BMPs

Develop, commit to and publicize the facility's plan to conserve water.

The best plans are often those that have been soundly developed, have management and guest buy-in and are widely publicized to employees, guest and the general public. The water conservation plan should include areas of concern, specific action-based goals and detailed plan to achieve success.

Remind guests and employees to use water only when needed.

It may seem simple to only use water when needed, but large amounts of water are wasted during simple activities such as teeth brushing, hand washing and shampooing.

Regularly track both water and sewage usage.

It is important to track and monitor all types of water usage, including sewage rates. An operational water-use tracking program will allow the facility to monitor for unusual variations. It is imperative that once variations are detected, the issue is resolved as soon as possible. Not only will water be conserved but the impact to the "bottom line" will be reduced.

Conduct a water use assessment.

Water assessments can be arranged from the local utility company or water management district. Contact the facility's water utility provider to arrange for an assessment. Most assessments are offered at no charge to the customer and can be helpful in identifying ways to conserve water. The assessor may be able to offer information on monetary rebates or incentive programs to assist in any equipment or operational changes that may need to be made.

Install soil moisture or rain detectors on landscape irrigation systems.

Installing soil moisture meters or rain detectors will allow the facility grounds to be irrigated only when needed. Soil meters sense the amount of moisture in the soil and will indicate when the moisture level reaches certain threshold. Rain detectors will automatically shut-off the irrigation system if it begins to rain during the irrigation cycle. Both systems will reduce unnecessary watering.

Irrigate during the appropriate times.

Do not irrigate during the heat of the day. The majority of the water used during this time will evaporate before it can reach the soil zone. Set timers on the irrigation system to run either in the early morning or evening. Contact your local State of Florida extension service agent <http://solutionsforyourlife.ufl.edu/> for the best time to water in your location.

Use Florida friendly landscaping.

Florida friendly landscaping uses plants and grasses that are native to Florida or to areas that have a similar climate. To reduce the amount of watering needed, these plants should also have an increased level of drought tolerance.

Implement an optional towel and linen reuse program in guest rooms.

Towel and linen reuse programs allow guests staying longer than one night the option of reusing their sheets and towels for another day. Signs indicating the program's existence and directions for compliance should be posted in each guest room. For example, the towel reuse directions should indicate where to place towels that will be reused and those that need to be replaced. The linen reuse program can explain that bed sheets will only be changed after a certain amount of days or length of stay. These programs will allow the facility to reduce water consumption, allow for more efficient housekeeping service and reduce costs.

Institute a sweep-first policy in all areas, especially outdoors.

Do not use water as a first line option for cleaning floors, patios and walkways. Sweeping can remove the majority of debris, leaving little to no reason to mop. When mopping, use as little water as possible to complete the task.

Use recycled or reclaimed water to irrigate.

Recycled or reclaimed water has been properly treated but not to potable standards. If available and allowed by local regulation, use reclaimed water to water lawns, shrubs and flower beds.

Never allow faucets to run unattended.

Unattended faucets have a higher likelihood to increase water usage. Prepare a policy that outlines that any open faucet must be attended to at all times.

Thaw frozen food in the refrigerator.

Frozen food should be defrosted in the refrigerator; not in the sink under running water.

Equipment Water Conservation BMPs

Use preventative maintenance schedules for water consuming equipment, such as ice machines, hot water heaters, dishwashers, washing machines, boilers and chillers.

Preventative maintenance schedules can increase machine efficiencies, lower costs and can lead to lower utility costs by correcting problems before they become large issues. Continually check for leaks and repair any problems as soon as possible. All equipment should be placed on a preventative maintenance schedule and any necessary records kept accordingly.

Install low-flow fixtures in guest rooms, restrooms and employee shower areas.

The following is a listing of the appropriate use rates for low-flow fixtures in the above areas:

- Low-flow faucets should use no more than 1.5 gallons per minute. Add aerators to all faucets.
- Low-flow showerheads should consume no more than 2.0 gallons per minute.
- Low-flow toilets should not use more than 1.6 gallons per flush.

Replace urinals in male bathrooms with waterless urinals.

Waterless urinals do not contain a normal flush value like traditional urinals. Any wastes and smells are trapped in the drain. These urinals only require some water for cleaning purposes but do not consume any during operation.

Use low-flow, pre-rinse nozzles in kitchen and beverage areas.

Low-flow nozzles should not consume more than 1.25 gallons per minute. Disable the ability to lock the nozzle in the open position. Pre-rinse nozzles are made to conserve water by automatically shutting off when not in use.

Recycle final rinse water as pre-rinse water for subsequent cycles in laundry machines.

Using the final rinse water as the pre-rinse water in a subsequent cycle allows for less water consumption, decreased amount of detergents and chemicals plus an increase in efficiency.

Use high efficiency, low water usage machines in the kitchen, pool area and laundry, where possible.

High efficiency machines will not only lower the water usage but can also lower the amount on energy consumption. Common examples of high efficiency machines include counter-current dishwashers, washing machines that reuse final rinse water and any ENERGY STAR® rated appliance.

ENERGY EFFICIENCY

Energy savings means cost savings. Energy is a controllable cost and many organizations are realizing the cost-benefits of energy reduction. Hotel energy costs can consume from four to seven percent of a property's revenue, which for many properties is more than their profit margin. If hotels improve their energy performance by an average of 30 percent, the annual electricity bill savings would be nearly \$1.5 billion. This represents a savings of approximately \$365 per available room per year for every hotel room in the country. According the Hospitality Research Group of PKF Consulting, a 10 percent reduction in energy costs is equivalent to increasing occupancy points by 1.04 and increasing average daily rate by 1.6 percent for a full-service hotel.

Every \$1 in energy savings is the equivalent of increasing operating margins by \$2 to \$3. ENERGY STAR® Award winner Starwood Hotels & Resorts Worldwide, Inc. was able save to \$3.4 million in energy costs, equivalent to renting 9,370 additional rooms, by implementing an energy management program.

In addition to the above cost savings, implementing an energy efficiency plan can lead to increased environmental performance. The benefits of energy efficiency are not financial alone. 2001 ENERGY STAR® Award Winner Hilton Hotels' energy management plan resulted in a savings of nearly 43 million kWh of electricity per year and the prevention of 65 million pounds of carbon dioxide (CO₂) emissions - the equivalent of removing 6,450 cars from the road in the year 2000.

The following Best Management Practices (BMPs) will assist in increasing energy efficiency.

General Energy Efficiency BMPs

Have your local energy utility provider conduct an energy audit at your location.

Many utility companies provide these audits free of charge. These audits are a great way to learn about how your specific utility usage can be reduced. The auditor may be able to provide information on monetary rebates or incentive programs to assist in any equipment or operational changes that may need to be made.

Track energy usage.

Keep monthly records of energy usage. Analyzing the records on a monthly basis can assist in finding energy consumption issues. If inconsistencies are found, determine the reason and correct the issue as soon as possible.

Install energy efficient doors and windows.

Energy efficient windows, used in either new or retrofit situations, can cut annual HVAC energy costs by up to 15 percent, if properly installed.

Ensure the proper insulation is used for all buildings, equipment, pipes and appliances.

Insulation can be one of the most important factors in achieving energy efficiency in a building. It works primarily to slow the flow of heat through a building envelope. Insulation not only saves money by reducing heating and cooling loads but also is a key factor in achieving comfortable living and working spaces.

Use ceiling fans to circulate air in low ventilation areas. However, fans should be turned off when the room is no longer in use.

Ceiling fans work by the power of evaporative cooling. The wind removes excess moisture from your skin, leading to a nice, cool feeling. This will allow you to increase the thermostat setting to a higher temperature, lowering the utility costs. If the room is vacant, the fans should be turned off as no evaporative cooling can take place.

Keep all windows and doors closed.

If seasonably appropriate, keep all windows and outside doors closed.

Consider installing white or reflective roofing.

White or reflective roofing helps reflect heat, keeps buildings cooler and lowers utility costs.

Add window film or tinting to windows and glass doors to reduce energy loss and solar heat emissions through windows.

For relatively little cost per window, tints and films to doors and windows can have a significant impact on energy consumption.

Utilize light colored walls and ceilings.

Light colored walls and ceilings can increase ambient light levels by 15 percent to 50 percent, reducing the need for artificial lighting.

Use exhaust fans only when needed. Turn off when not in use.

Extensive use of exhaust fans requires the HVAC system to work harder to maintain a consistent temperature in the building.

Consider installing an Energy Management System.

An Energy Management System (EMS) is a program that allows operators to monitor the building's energy load. The most common use is monitoring the HVAC system. An EMS usually includes a computer, energy management software program, sensors and controls, and in larger systems, a communications network. An energy management system can save 10 percent to 40 percent on electric utility costs.

Lighting Energy Efficiency BMPs

Upgrade lighting to energy efficient lamps and fixtures by doing the following:

- Replace standard incandescent bulbs with compact fluorescents or other high efficiency lighting.
- Use energy-saving fluorescent T8 lamps over old-style T12 lamps.
- Use an energy-efficient light-emitting diode (LED) night light to eliminate the need to leave bathroom lights on throughout the night.
- Replace old ballasts with electronic ballasts.
- Replace incandescent lamps in exit signs with LED exit signs.

Install occupancy sensors to detect the presence or absence of people and turn lights on and off accordingly.

Occupancy sensors may reduce lighting related energy consumption by 50 percent or more in some circumstances. They are used most effectively in spaces that are often unoccupied, including offices, warehouses, storerooms, restrooms, loading docks, corridors, stairwells, office lounges and conference rooms.

Use the lowest wattage lamp necessary.

Using no more light than necessary reduces energy consumption.

Eliminate or reduce external lighting not needed for safety or security.

Guest and staff safety and security are the first priority of any facility. However, reducing or eliminating external lighting, where possible, can save energy.

Clean bulbs for maximum efficiency.

Bulbs will produce more light after cleaning. This is especially true with large bulbs such as those used in ballrooms, convention spaces and lobby areas.

Use dimmer controls in meeting rooms, common areas and guest rooms.

By using dimmer switches to control light output to only the amount needed, energy consumption can be reduced.

Turn off lights in unoccupied rooms.

Extinguish all lights when not in use. Create reminder cards for guests and staff to turn off lights when leaving a room.

Consider using natural daylight in areas, where appropriate.

Using natural light can reduce lighting and energy consumption; however, heat loss may occur in winter and heat gain may occur in summer with open draperies and shades.

Use timers or sensors to control outdoor lighting.

Install timers or outdoor light level sensors to control the amount of outdoor lighting.

Equipment Energy Efficiency BMPs

Operate all equipment in an efficient manner and according to the manufacturer's instructions. This includes keeping all equipment clean and free of obstructions.

Follow all manufacturers' instructions. These instructions were designed to provide for the most efficient use of the equipment.

Use preventative maintenance schedules to clean and maximize efficiency in appliances and equipment.

Preventative maintenance schedules can increase machine efficiencies, lower repair costs and can lead to lower utility costs by correcting problems before they become larger issues. All equipment should be placed on a preventative maintenance schedule and any necessary records kept accordingly.

Turn off any equipment not in use.

Leaving a printer or computer on, even if in sleep or hibernate mode still consumes electricity. Turning equipment off is the best way to increase efficiency.

Use ENERGY STAR® Equipment

Incorporate ENERGY STAR® equipment throughout your hotel. ENERGY STAR® is an U.S. Environmental Protection Agency program that identifies equipment that is energy efficient and protects the environment.

Focus on Heating, Ventilation and Air Conditioning (HVAC) units and systems.

According to Florida Power & Light Company, HVAC systems consume 56 percent of the total electric usage in hotels and accounts for 10.8 kWh per square foot. The following conservation measures can help decrease HVAC energy consumption:

- Set thermostats to the correct temperature depending on the season.
- Turn off heating and cooling in unoccupied rooms.
- Plan and perform scheduled maintenance on HVAC equipment.
- Change filters regularly.
- Lock all thermostats that are accessible to the public.

- Use programmable thermostats.
- Clean condenser and evaporator coils at least once every six months. Dust accumulation leads to decreased efficiency.
- Check for leaks around doors, windows and duct work on a regular basis.
- Properly vent any heat generating appliances to the outside.
- When possible, consider purchasing HVAC equipment that is more efficient. This would apply to any new construction, rehabilitation or building upgrades.

Capture and reuse any heat that is generated.

An example would be to capture heat in the laundry operations and recycle it back into the system. Since heat is a form of energy, reducing heat loss is equal to reducing energy loss.

Locate outside icemakers and vending machines under cover and in shaded areas.

Regularly inspect and clean icemaker and vending machine condenser coils.

Follow all manufacturers' instructions.

Operate refrigeration equipment in an efficient manner.

Do not set thermostat below necessary temperature, thaw frozen food in refrigerator (it will reduce the load on refrigerator), let hot food cool on counter before storing in the refrigerator; store food in refrigerator based on frequency of use, do not block circulation within the refrigerator and locate units away from heat sources. Install vinyl air curtains or air blowers over doors of walk-in refrigeration units.

Stagger times to turn on heavy-duty electrical equipment.

Do not turn on all equipment at once. Staggering can lower the peak demand recorded by utility companies and lower costs.

INDOOR AIR QUALITY

Over the past few decades, clean air practices have become increasingly important in progressive hotel management. These changes have not only led to an increase in energy efficiency and reduced exposure to health-related liabilities but have also created positive impacts on the "bottom line" and higher employee and guest satisfaction.

Indoor pollution sources that release gases or particles into the air are the primary causes of indoor air quality problems. According to the U.S. Environmental Protection Agency (EPA), indoor air quality can be up to 10 times worse than the quality of outside air. There are many sources of indoor air pollution. These include the combustion of fuels such as oil, gas, kerosene, coal and wood; building materials and furnishings as diverse as deteriorating insulation, wet or damp carpets, and furnishings made of certain pressed wood products; products for cleaning and maintenance; central heating and cooling systems and humidification devices.

The EPA has recognized and promotes the importance of clean air practices. The following Best Management Practices (BMPs) are recommended for establishing clean air programs at green hotels.

General Indoor Air Quality BMPs

Make indoor air quality a top priority.

Facility management should make indoor air quality a top priority because it can impact many areas of operation. Not only are guests impacted by poor air quality but so are employees, equipment efficiencies, insurance premiums and ultimately the facility's profitability.

Develop a plan for providing for and improving the indoor air quality of the facility.

A written indoor air quality plan should be an integral part of any facility's environmental plan. The indoor air quality plan should outline the overall air quality goals of the facility, highlight air quality issues and concerns and set specific air quality improvement targets based on those concerns.

Communicate indoor air quality policies to guest, employees, vendors, suppliers and contractors.

Demonstrate the facility's commitment to good indoor air quality by clearly communicating any policies to all guests, employees, vendors, suppliers and contractors to increase adoption of the facility's policies and plans.

Eliminate any cause of mold and mildew.

The most common causes of mold and mildew problems are leaks, condensation and poor ventilation. According to the EPA, the key to preventing mold and mildew growth is to control the amount of moisture in a given area. This can be accomplished through:

- Quickly finding and repairing any leaks in the building. In large facilities, the search for leaks should be a continual process.
- Watching for condensation and wet spots.
- Keeping heating, ventilation and air conditioning (HVAC) drip pans clean.
- Properly venting moisture-generating appliances to the outside.
- Maintaining low indoor humidity. Indoor humidity should be between 35 and 55 percent.
- Performing regular inspections and maintaining any necessary logs.
- Drying and cleaning any wet or damp spots as soon as possible.

Maintain a 100 percent smoke-free facility.

Eliminate smoking from all indoor areas of the facility, including guest rooms. Position all outside smoking areas away from doors, windows, intake fans, air return ducts and sitting areas.

Properly vent areas, such as kitchens and laundries that have inherent indoor air quality issues.

Kitchen and laundries are both areas that often contain high levels of moisture and are at an increased risk to development mold and mildew problem. Laundries often have high levels of dust and particulate matter in the air which can lead to respiratory problems. The air found in kitchens can contain known respiratory irritants such as food seasonings and smoke.

Indoor Air Quality BMPs Related to Chemicals

Use environmentally preferable cleaners, whenever feasible.

Switch from using traditional cleaners to cleaning products that do not contain nitrilotriacetic acid (NTA), chlorine bleach, phosphates, artificial dyes and imitation fragrances. Environmentally preferable cleaners have been shown to reduce liability costs associated with insurance, increase both employee satisfaction and retention and lower the rate of lost-time accidents.

Properly label, store, track and dispose of all chemicals.

Proper management of all chemical materials reduces the likelihood of hazardous exposure to guests, staff and the environment. In most cases, this is required by regulation. Read and publicly post each chemical's Material Safety Data Sheet (MSDS) or have them available in a common area for review when needed.

Integrated pest management is used to control pests.

According to the U.S. Centers for Disease Control, integrated pest management is a coordinated system of managing pests that combines inspection, monitoring, treatment and evaluation, with special emphasis placed on the decreased use of toxic agents for control and treatment. The use of integrated pest management will reduce the reliance on generally applied toxic agents for pest control and substitute it with pest-specific controls.

Regularly test for hazardous substances such as radon, carbon monoxide, lead and asbestos.

Develop a testing schedule for hazardous substances. Track results and immediately correct any issues that are found.

Use low or no volatile organic compound (VOC) paints and finishes.

The use of paints and finishes with high levels of VOCs has been shown to cause temporary health problems including headaches, nausea and dizziness. However, long term exposure, such as that experienced by professional painters, can include major respiratory problems and damage to the liver and kidney. The benefits of low or no-VOC content paints and finishes are wide and varied. These benefits include lower disposal and cleanup costs, reduced amounts of hazardous wastes and toxic fumes, less personal exposure and decreased environmental air pollution.

Eliminate or reduce the use of deodorizers, chlorofluorocarbon (CFC) products and aerosols in guest rooms, common areas and office spaces.

Using deodorizers and aerosols with fragrances can lead to respiratory distress in part of the general population. Instead of using these products to mask distasteful odors such as cigarette smoke, mold or mildew, it is better to remedy the causes of the odors so that there is not a risk of reoccurrence. Products containing CFCs have been directly linked to depleting the ozone layer. Any CFC containing products should be recovered, recycled and properly disposed.

Indoor Air Quality BMPs Related to Equipment

Properly maintain heating, ventilation and air conditioning (HVAC) systems by doing the following:

- Prepare and follow a preventative maintenance plan.
- Maintain HVAC system maintenance logs.

- Ensure that HVAC systems are regularly checked for mold, mildew, obstructions to air flow (blocked vents) and clean drip pans.
- Clean all drip and condensation pans regularly.

Use HVAC air filters with a Minimum Efficiency Reporting Value (MERV) of 8 or better.

The use of MERV8 or better filters will improve the indoor air quality of your facility. So as to not generate unneeded waste, do not replace old filters with MERV8 filters all at once. The facility should prepare a written schedule for gradually replacing the traditional filters with those that have a rating of MERV8 or better.

Clean air handling units and coils at least once per year.

Dust, mold and mildew all thrive in the dark, moist environments found in HVAC systems. Regular cleaning of these units will lead to improved air quality.

Verify that HVAC units are properly drained.

Liquid and condensation drainage from HVAC units should be directed into the sanitary sewer not to stormwater drains. Drainage pipes should be checked for blockages, leaks and mildew/algae growth regularly.

Use dehumidifiers to remove excess moisture in wet areas.

Dehumidifiers remove excess moisture from the air and can assist in reducing the likelihood of mold and mildew growth. Drip pans and drainage systems should be emptied, cleaned and inspected regularly.

Properly vent exhaust fans.

If possible, all exhaust fans should vent to the outside. Improperly vented fans can lead to increased moisture related issues, higher levels of indoor air pollutants and an increase in energy consumption.

Regularly clean all fans, vents and indoor grates throughout the facility.

Regular cleaning will eliminate the build-up of respiratory irritants. It is important to remember that while cleaning, proper Personal Protection Equipment, such as masks, gloves and safety glasses should be used.

TRANSPORTATION

At first glance, transportation issues may not appear to be pertinent to the day-to-day operations of a lodging facility. However, this could not be further from the truth. Guests, staff, suppliers, vendors and contractors all use some type of transportation to arrive at their destination and during their stay. During these travels, not only are vital natural resources consumed, but numerous air pollutants are released into the air during each mile that is traveled. Many visitors to Florida arrive by automobile or use some form of automobile transportation during their trip, whether it is a day trip to the beach or to drive from one location to another in our beautiful state. On an average day, more than 44,000 automobiles enter Florida just through the I-95 and I-75 corridors.

Air toxics, greenhouse gas emissions (GHG) and carbon dioxide (CO₂) are all areas of concern when discussing transportation-related issues. According to the U.S. Environmental Protection Agency (EPA), transportation sources accounted for roughly 29 percent of the total greenhouse gas emissions in 2006. Further, transportation sources are the fastest growing segment of GHG emissions in the U.S., accounting for 47 percent of the net increase since 1990. CO₂ emissions from transportation are the largest component of GHG emissions. Examples of the general type of air toxics that are directly related to transportation include carbon monoxide, various hydrocarbons, nitrogen oxides and particulate matter. These emissions are the byproducts of fuel combustion and evaporation.

Transportation emissions not only hurt the environment but also impact human health. The health effects from transportation emissions can include problems such as increased lung damage, aggravation of existing conditions like asthma and can possibly contribute to a higher risk of developing cancers.

It is important to find ways to reduce the impact of transportation emissions in both our personal and professional lives. The following Best Management Practices (BMPs) highlight some ways to reduce these impacts.

Transportation BMPs

Develop policies outlining the facility's commitment to reduce transportation-based emissions.

The transportation policy or policies should include current areas of concern, specific action-based goals and a detailed plan of achieving success. Also, the policy should include topics championing ways employees can make a difference at home.

Purchase company vehicles and equipment that are hybrid-electric, run on biodiesel, ethanol (E85) or other non-petroleum based products.

Moving toward a more sustainable transportation fleet will not only reduce the total emissions and related effects, it can also decrease costs.

Encourage guests and staff to walk, bus, car pool and bicycle to and from the hotel.

Promote ways guests and staff can assist in reducing the facility's transportation footprint by posting bus schedules, providing reduced-rate transit passes and distributing maps of pedestrian and bicycle friendly routes. Carpooling ideas should be discussed and encouraged in staff meetings. Rewards can be given to employees that actively participate in carpooling, i.e. special parking places for carpool vehicles only, public recognition, etc.

Promote use of shuttle services instead of individual taxis cabs for airport travel.

Using shuttle services can lead to reduced pollution, increased guest satisfaction and a lower vehicle count on your property.

Provide bicycles for guest use/rental.

Bicycles can be offered as an extra amenity or can be rented to generate income. Promote the use of bicycles for short trips through town or to nearby locations. The benefits include decreased emissions, increased guest satisfaction and possibly extra revenue generation.

Provide incentives for fuel-efficient transportation options.

Provide preferred parking spaces or free valet services to guests and employees that use hybrid-electric, biodiesel, E85, electric or other energy efficient vehicles. Providing preferred parking services rewards guests and employees for driving fuel-efficient transportation. It also publicizes to others that these individuals and the facility have made a commitment to environmental protection.

Offer guests and employees information about reducing or offsetting their transportation and carbon-based emissions.

Provide guests and employees information on ways to reduce the carbon footprint. Publicize creative ways that other guests and employees have reduced their footprint. Include ideas such as participating in National Arbor Day, carpooling, purchasing green tags or carbon sequestration techniques.

Find innovative ways for the facility to offset any carbon emissions. Work toward becoming climate and carbon neutral.

Demonstrating carbon and climate neutrality is one of the leading ways to show environmental commitment. Neutrality can lead to increased publicity, exposure and marketing opportunities while reducing environmental degradation. To become carbon and climate neutral, a facility must either reduce emissions which have been linked to global climate change or purchase carbon credits and green tags. Carbon credits and

green tags can be purchased through a variety of not-for-profit organizations dealing with reforestation and renewable energy issues.

Enact a no-idling policy on facility property. Convey policy to guests, employees, suppliers, vendors and contractors.

Idling transportation equipment not only wastes fuel, contributes to increased air emissions but also raises the ambient temperature around the facility and inside covered areas. Many states have enacted maximum time limits that commercial vehicles are allowed to remain at idle. Post copies of the no-idling policy in heavy traffic areas and loading zones. Provide vendors, suppliers and package delivery operators with written copies.