Florida *Green Lodging* Program
Best Management Practice
Communication and Education

Two of the most important parts of any environmental plan are the communication and education components. The communication component relays to guest, 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 changes is to provide some level of education to these groups.

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

Communication Best Management Practices

Clearly communicate environmental initiatives: The facility's environmental initiatives and achievements should be communicated to as large an audience as possible. Guest 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 good possible media to use in communicating initiatives and achievements:

- Place placards in guest room detailing towel and linen reuse programs.
- Post guidelines for recycling in guest rooms, vending areas, back of the house, and near or on any recycling and trash receptacles.
- Broadcast a short informational video showing the facility's environmental initiatives on in-room television services.
- Share environmental policies and expectations with suppliers and contractors.
- Post energy, water, and waste performance statistics in employee areas.
- Include information about environmental initiatives in marketing and advertising materials.
- Place posters highlighting individual employees' environmental efforts and achievements.
- Include environmental initiatives and/or green tips in employee newsletters.

Establish an environmental task force 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: 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.

Florida *Green Lodging* Program
Best Management Practice
Communication and Education

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 traditionally planned excursions. Popular ideas include guided kayaking, fishing and sailing trips, informational nature tours, and visits to state and local parks and recreation areas. For more information, click VISIT FLORIDA: Eco-Friendly Travel in Florida.

Provide a means for guests and employees to evaluate the facility's environmental practices: Possible evaluation tools include online evaluations, suggestion 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 the same approaches.

Regularly 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 Best Management Practices

Provide training to all levels of facility staff on environmental policies, procedures, and initiatives: Ensure that EVERY employee understands the facility's environmental policies and their role in implementing and following these policies. Training can be obtained from suppliers, vendors, local utility providers, water management districts, and various environmental agencies.

Ensure that training on environmental policies and procedures is provided in language according to staff need: 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 are 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.

Florida *Green Lodging* Program
Best Management Practice
Waste Reduction, Reuse and Recycling

Florida's tourism industry serves an estimated 98.9 million visitors annually. More than 50 percent of these visitors are hotel guests during some portion of 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 most of the 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.

Many guests are familiar with recycling from home or work and are glad to continue the process when staying at a hotel.

The following information provides Best Management Practices (BMPs) relating to each area of waste reduction. Reducing waste creates a more efficient management process.

General Waste Reduction Best Management Practices

Conduct a facility-wide waste audit with your waste service provider: Your garbage hauler can determine what percentage of your waste stream is recyclable and right-size your garbage and recycling dumpsters accordingly. By moving much of your garbage stream to a recycling stream, you can downsize the garbage service. The savings from downsizing your garbage service could more than pay for your recycling service fees.

Track waste generation on a regular basis: The U.S. Environmental Protection Agency's (EPA) WasteWise Program offers a free web-based program to track your waste, recycling, and recycle content purchasing. Waste tracking will allow the facility to obtain measurements and data to assist in the waste reduction efforts by highlighting outstanding generation issues. Visit ReTrac.

Properly identify, track, store and dispose of hazardous materials according to appropriate environmental regulations: Proper management of hazardous materials reduces the likelihood of exposure to guests, staff, and the environment. Common examples of possible hazardous materials are large volumes of paints, oils, chemicals, batteries, pool supplies, and spent fluorescent bulbs. These materials must be stored and disposed of according to the correct environmental regulations. Fluorescent and HID 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.

Prepare and follow a written waste reduction plan: Describe which staff will be responsible for each aspect of appropriate waste management. Pursue waste reduction at the source by working with suppliers to reduce packaging.

Institute environmentally preferable purchasing (EPP) policies: EPP or Green Purchasing is a set of policies that lead to direct waste reductions at the sources. Common types of EPP are buying products that have minimal packaging and participating in supplier or manufacturer take-back

programs for items such as pallets and large containers.

Use refillable containers instead of single-use packets and containers: Instead of providing single-use toiletries and condiments, use refillable items. 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 appliances, 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 green products. Visit Green Seal, EPA Safer Choice Labeling, or EcoLogo to learn more.

Reuse Waste Reduction Best Management Practices

Use old or discarded office paper for notepads or packaging 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 gift 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 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 a 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 linens, glass or hard plastic drinking containers, refillable soap, cleaning supplies, toiletry containers, and plates and cutlery items. These good can be supplied not only to guest areas of the facility but to back of house areas as well.

Recycling Waste Reduction Best Management Practices

Develop an onsite recycling programs from as many waste materials as possible: Commonly recycled materials include aluminum, landscape waste, newspapers, cooking grease, food waste, glass, carpet, building materials, motor oils and liquids, plastic bottles and buckets, magazines, and batteries. Recycling services for all the above may not be available in your area. Check your local Recycling Coordinator on the availability of commercial recycling. You can find your local recycling coordinators on the DEP website at Recycling Program. 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 trash receptacles will lead to an increased success rate for the recycling program. Also, provide easy instructions and directions on 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 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 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 paper not yet used.

Florida *Green Lodging* Program
Best Management Practice
Water Conservation

Water conservation is a significant environmental challenge faced by Floridians. It is a precious commodity that Florida's tourism and industry depend on for economic viability. In Florida, the majority of drinking water comes from groundwater aquifers that are replenished by rainfall.

Many of the following water-saving solutions 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. Some of these changes cost very little to implement and can have large impacts on water usage.

Behavioral and Operational Water Conservation Best Management Practices

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, guests 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 use: 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.

Establishing a water efficiency plan from collected data is one method to prevent water waste. Knowing how water is used, how much is used, and its costs offers an understanding of which areas of water waste are causes for the most concern. The data collected can be used to create plots to track water usage on a daily basis and measure significant use each season to determine how outside temperatures affect water usage.

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 help identify 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 sensor on landscape irrigation systems: Installing soil moisture

meters or rain sensors 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 a certain threshold. Rain sensors will automatically shut off the irrigation system if it begins to rain during the irrigation cycle.

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, IFAS Solutions for Your Life, 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 a 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 announcing the program and directions for participation 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 number 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 or no reason to mop.

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

Research graywater strategies (wastewater generated by laundry, dishwashing, bathing, etc.): If treated properly, gray water can be repurposed for irrigation and toilet flushing reducing the usage of potable fresh water. Graywater systems can enable up to 50 percent of wastewater to be returned to the hotel after treatment. Consider adjustable flow restrictors on taps, enabling them to deliver a lower instantons flow rate rather than screw-operated taps. This can reduce tap water use by over 50 percent.

Thaw frozen food in the refrigerator: If kitchen staff plan ahead, frozen food can be defrosted in the refrigerator instead of in the sink under running water.

Florida *Green Lodging* Program
Best Management Practice
Water Conservation

Equipment Water Conservation Best Management Practices

Use preventative maintenance schedule for water consuming equipment, such as ice machines, 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 larger issues. Regularly 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. Ensure all faucets have low-flow aerators.
- 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 valve 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.

Install Dual-Flush Toilet (High-Efficiency Toilets): High volume flush (solid waste) uses 1.6 gallons of water while the low volume flush (liquid waste) uses 0.8 to 1 gallon of water per flush. A traditional toilet uses 8 gallons of water when flushing. Not only will you reduce water waste, but you will also decrease water costs.

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 amounts 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 of 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.

Florida *Green Lodging* Program
Best Management Practice
Energy Efficiency

Energy Savings means cost savings. Energy is a controllable cost and may organizations are realizing the cost-benefits of energy reduction.

ENERGY STAR® Award Starwood Hotels & Resorts Worldwide, Inc. was able to save $3.4 million in energy costs, equivalent to renting 9,370 additional rooms, by implementing an energy management system.

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 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.

General Energy Efficiency Best Management Practices

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 equipment or operational changes that may need to be made.

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

Florida *Green Lodging* Program
Best Management Practice
Energy Efficiency

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 for 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 EMS can save 10 percent to 40 percent on electric utility costs.

Lighting Energy Efficiency Best Management Practices

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

- Replace compact fluorescents with LED lights.
- Use energy-saving fluorescent T8 or T5 lamps instead of T12 lamps.
- Use energy-efficient LED night lights 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 consumption by 50 percent or more in some circumstances. They are used most effectively in spaces that are often unoccupied, including offices, warehouses, storerooms, loading docks, corridors, stairwells, office lounges, and conference rooms.

Use the lowest wattage lamp necessary: Using no more light than necessary reduces energy consumption.

Florida *Green Lodging* Program
Best Management Practice
Energy Efficiency

Eliminate or reduce external lighting not needed for safety or security: Guests and staff safety and security are the priority of any facility. However, reducing or eliminating external lighting, where possible, can save energy.

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 Best Management Practices

Operate all equipment in an efficient manner and according to manufacturer's instructions, including keeping all equipment clean and free of obstructions: Follow all manufacturer's 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 necessary records kept accordingly.

Use Power Management settings and turn off any equipment not in use: Set automatic sleep and hibernate modes on electronics to save electricity when equipment is not in use. Turn off equipment that will be idle for extended periods of time.

Use ENERGY STAR® Equipment: Incorporate ENERGY STAR® equipment throughout your hotel. ENERGY STAR® is a U.S. Environmental Protection Agency (EPA) program that identifies equipment that is energy efficient and protects the environment.

Focus on Heating, Ventilation and Air Conditioning (HVAC) units and systems. The following conservation measures can help decrease HVAC energy consumption:

- Set thermostats to correct temperature depending on the season.

Florida *Green Lodging* Program
Best Management Practice
Energy Efficiency

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

Locate outside icemakers and vending machines under cover and in shaded areas. Regularly inspect and clean icemaker and vending machine condenser coils: Follow the manufacturer's instructions.

Operate refrigeration equipment in an efficient manner: Do not set thermostat below necessary temperature, thaw frozen food in refrigerator (it will help keep the refrigerator cool thereby reducing energy use). Store food in refrigerator based on frequency of use, do not block circulation within the refrigerator and locate units from heat sources. Install vinyl air curtains or air blowers over doors or 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.

Florida *Green Lodging* Program
Best Management Practice
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 in 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 ten (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, damp carpets, and furnishing made of certain pressed wood products; products for cleaning and maintenance; central heating and cooling systems and humidification devices.

The EPA has recognized and continues to promote 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 Best Management Practices

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 guest 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 guests, employees, vendors, suppliers and contractors: Demonstrate the facility's commitment to good indoor air quality by clearing communicating any policies to all guest, 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. Per 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 HVAC drip pans clean.
- Properly venting moisture-generating appliances to the outside.

- Maintaining a 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 kitchen 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 of development of mold and mildew problems. 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 Best Management Practices Related to Chemicals

Use environmentally preferable cleaners, whenever possible: 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, both employee satisfaction and retention and lower the rate of lost-time activities.

Properly label, store, track and dispose of all chemicals: Proper management of all chemical 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 chemicals SDS (Safety Data Sheet) or have them available in a common area for review when needed.

Integrated Pest Management is used to control pests: Per the U.S. Centers for Disease Control (CDC), 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 hat experienced by professional painters, can include major respiratory problems and damage to their 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 Best Management Practices 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 MERV 8 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 MERV 8 filters all at once.

Clean air handling units and coils at least once per year: Dust, mold and mildew all thrive in 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.

Florida *Green Lodging* Program
Best Management Practice
Indoor Air Quality

Properly vent all 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 Persona Protective Equipment (PPE), such as masks, gloves, and safety glasses, should be used.

Florida *Green Lodging* Program
Best Management Practice
Transportation

At first glance, transportation issues may not appear to be pertinent to the day-to-day operations of a lodging facility, however, 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 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 a drive from one location to another in our beautiful state. On average, more than 44,000 automobiles enter Florida just through the I-95 and I-75 corridors.

The following Best Management Practices (BMPs) are recommended for transportation at green hotels.

Best Management Practices

Develop policies outlining the facility's commitment to reduce transportation-based emissions: Transportation policies should include current areas of concern, specific action-based goals and a detailed plan of achieving success. Also, policies 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, if can also decrease costs.

Encourage guests and staff to walk, bus, carpool and bicycle to and from the hotel: Promote ways guests and staff can assist in reducing the facility's transportation footprint by posting bus scheduled, 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, public recognition, etc. Ask your local transit authority for discounts for employer supported efforts.

Vehicles produce a lot of toxic pollutants and chemicals that result in greenhouse emissions, acid rain, climate change, and significant water and air pollution. As the number of cars on the roads keep increasing, so does the amount of pollutant emissions. Ridesharing reduces the use of cars, buses, and trains, all allow for the transportation of large groups of people in one vehicle. This significantly reduces the number of vehicles releasing toxic emissions into the atmosphere.

Promote the use of shuttle services instead of individual taxi cabs for airport travel: Using shuttle service can lead to a reduction in pollution, increased guest satisfaction, and a lower vehicle count on your property.

Florida *Green Lodging* Program
Best Management Practice
Transportation

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 possible 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, 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 committed to environmental protection.

Enact a no-idling policy on facility property. Convey policy to guests, employees, suppliers, vendors, and contractors: Idling transportation equipment not only wastes fuels, 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 can remain 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.

Florida *Green Lodging* Program
Best Management Practice
Stormwater Pollution Prevention

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is eventually discharged into the groundwater or waterbodies we use for swimming, fishing, and providing drinking water.

For additional information, including publications, visit DEP Nonpoint Source Management.

See Rule 62-624.200(2), Florida Administrative Code for the complete details.

Stormwater Pollution Prevention Best Management Practices

Polluted stormwater runoff can have many adverse side effects on plants, fish, animals, and people:

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closure necessary.
- Plastic bags, six-pack rings, bottles, and cigarette butts washed into waterbodies can choke, suffocate or disable aquatic life like otters, fish, turtles, and birds.
- Household hazardous waste like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

Keep debris out of stormwater drains

Landscaping debris, leaves, grass clippings, and sediment must be composted or disposed of properly. They should not be hosed, swept, or blown into the street, or stormwater drain for disposal.

Educate your guests with effective signage

Mark stormwater drains that discharge directly to stormwater facilities or water bodies such as lakes, streams, or estuaries.

Properly manage wastewaters

Storm drains are only for stormwater. Cleaning wastewaters generated from mopping, carpet cleaning, or cleaning HVAC coils, air handlers or PTAC must be disposed of properly via sanitary sewer, if allowed. Consider using steam cleaning and a wet vacuum to remove material.

Questions on proper disposal can be directed to the local DEP District Office. Click here for contact information.

Water landscape wisely

Keep irrigation water on the lawn or garden and off the parking areas where runoff from the watering can pick up pollutants such as oil, gasoline, and sediments to prevent them from being discharged into the stormwater system. Use "Florida-Friendly" plants in landscaping to reduce the need for watering.

Florida Yards and Neighborhoods Handbook: A Guide to Environmentally Friendly Landscaping from the University of Florida (UF) Institute of Food and Agricultural Science (IFAS), describes how to minimize nonpoint source pollution from landscapes, especially residential ones.

Practice proper management of chemicals, fertilizers, pesticides, and paints

Label and store substances in a designated chemical storage cabinet to avoid leaks and spills. Clean up spills immediately and dispose of them properly. Properly dispose of excess or expired products through established waste collection programs or donate unused portions, such as paints, to local organizations.

Questions on proper disposal can be directed to the local DEP District Office. Click here for contact information.

Swimming Pool Discharges

Background

Swimming pool discharges can be a source of illicit discharges in municipal separate storm sewer systems (MS4). Chlorine and other chemicals used in maintaining pools and spas which often include acidic or alkaline cleaning compounds can harm the plant and aquatic life in surface waters. Even at low levels, chlorine can be toxic to aquatic life. Subsection 62-302.530(19), Florida Administrative Code (F.A.C.) limits the discharge of chlorine to surface water bodies to $\leq$0.01 milligram per liter (mg/L). In addition, turbidity associated with backwashing and cleaning can also violate surface water quality standards.

Existing Regulations

The Florida Department of Health regulates public swimming pools and bathing places. Subsection 64E-9.007(15) "Pool wastewater disposal" states in part: "Pool waste water shall be discharged through an air gap; disposal shall be to sanitary sewers, storm sewers, drain fields, or by other means, in accordance with local municipal and building official requirements including obtaining

all necessary permits."

Other states including Michigan, Pennsylvania, Maryland, and New Jersey, require public swimming pools to obtain a general national Pollution Discharge Elimination System (NPDES) permit to discharge wastewater from public swimming pools. There is no such requirement in Florida, Dechlorinated swimming pool discharges are authorized in Florida under 62-624.200(2)(q), F.A.C.; provided that they do not cause a violation of water quality standards.

Guidance

To help protect Florida's environment, the following best management practices should be followed when draining swimming pools or discharging filter backwash into the environment.

- Only drain your pool when necessary. Avoid draining/backwashing your pool during periods of drought and during significant rainfall evens. Do not drain your pool when watering restrictions are in place.
- Before draining your pool, allow the water to stand for at least 48 hours after the last addition of chlorine or until the free chlorine residual is ≤0.01mg/L. (If you need to drain your pool quickly, you can purchase chlorine-neutralizing chemicals such as sodium thiosulfate at your local pool supply company.)
- Test the free chlorine residual before discharging. A free chlorine residual should not be detected. The chlorine residual can be tested using a standard pool test kit. (Refer to 64E-9.004(11), F.A.C. for additional information).
- The water should be clear and free of solids.
- The pH must be between 6.5 and 8.5 before it is discharged.
- Algaecides containing copper or silver can interrupt algal and plant growth in surface water bodies and should be used with caution. Follow the manufacturer's instructions before discharging water that has had an algaecide added recently.
- Control the rate of discharge across your property to avoid erosion and nuisance conditions for neighboring properties. Nuisance conditions such as the creation of odors, mosquito breeding conditions or flooding can occur when water is ponded for a prolonged period.
- Direct the discharge over a vegetated surface so that some level of filtration can occur.
- Do not discharge on areas recently treated with herbicides or pesticides.

Disposal to Sanitary Sewer Systems

- Pool and spa wastewater should not be discharged into the sanitary sewer system without the permission of the wastewater treatment facility.
- Avoid discharging to the sanitary sewer system during or immediately after a significant rainfall event.

Florida *Green Lodging* Program
Best Management Practice
Stormwater Pollution Prevention

This document was developed in part using information obtained from the following sources. It should not be considered comprehensive as other local permitting requirements may apply.

Environmental Times. *"From the Pool to the Lagoon. Pool Owners Can Protect the Lake Worth Lagoon,"* Reprinted from the *"Lake Worth Lagoon Update."* Spring 2004.

Maryland Department of Environmental Protection. *"Fact Sheet for General No. 01SI Discharges from Swimming Pools and Spas"*

Maryland Department of Environmental Protection. *"Just the Facts About…..Swimming Pool & Spa Guidelines."*