

The **P2R2** Section's mission is to minimize the amount of liquid, solid and gaseous pollution as well as energy & water consumption within Pinellas County.



For any additional information, please contact the Pinellas County Department of Environmental Management Pollution Prevention and Resource Recovery Program at **(727) 464-4761**.

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REDUCING RISKS

USING POLLUTION PREVENTION MEASURES FOR COUNTY GOVERNMENT



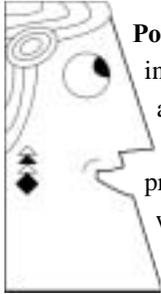
Provided by:

*Pinellas County Department of Environmental Management
Pollution Prevention and Resource Recovery Program
512 S. Fort Harrison Avenue
Clearwater, FL 33756
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Introduction

Local government, much like private industry, must maintain its competitive edge in business operations. Through improved practices, local government employees can minimize waste generation, conserve nonrenewable resources, strengthen the local economy, and improve the public's image of government. Local government employees concerned about the environment and community can use pollution prevention strategies to evaluate their own consumption of resources and generation of wastes to increase efficiency in operations. All government employees can use the following opportunities to reduce health and safety risks to staff and the community at large, promote environmental protection, and generate substantial savings by increasing efficiency, reducing material costs, and minimizing waste-related disposal costs.



Pollution prevention (P2) applies to all sectors of a community including industry, government, agriculture, energy, transportation, and consumers. Pollution prevention is the reduction or elimination of pollutants or wastes at the source. The idea behind pollution prevention is to avoid producing the waste in the first place. If the waste is not produced, then you avoid storage or disposal problems. Having less waste means a better environment for all of us. As government employees, you can consider what could be done

differently on the job to reduce the creation of waste. As government employees, you do not have to be waste experts, but you need to understand your efforts in promoting community involvement in pollution prevention. We should be a model and lead by example. Local governments operate like any business or household. The organization has cash inflow and outflow, savings accounts, investments, and debt.

Local governments can integrate pollution prevention practices into their purchasing procedures, processing activities, and regulatory policies. Local governments can seek to reduce the amount of chemicals used, substitute hazardous chemicals for non-hazardous chemicals. Activities such as fleet and office maintenance can become more efficient. Efficiency can lead to high productivity and reduced costs. By taking steps to reduce pollution and wastes, local governments can protect valuable natural resources and create sustainable solutions to waste management challenges.

Remember, you are not only a government representative, you are a citizen. In both roles you are a consumer. Whether you are at home or on-the-job, you should always reduce, reuse, and recycle.

Your role as a government employee is to primarily act as a catalyst – to start a reaction within an organization and create an awareness of waste reduction opportunities. Increasing your awareness of the wastes your job activities create can increase your effectiveness on the job and the quality of the services you provide to the public. Also remember, YOU ARE THE PUBLIC.

All operations of government may not be addressed in the following sections. The Environmental Protection Agency's (EPA's) Sector Notebook, Profile of Local Government Operations, covers each of the areas in extensive detail. For a copy of the entire EPA document contact:

***Superintendent of Documents
U.S. Government Printing Office
(202) 512-1800 voice
(202) 512-2250 fax***

If additional waste-related resources or assistance are needed for your area of operation, contact Pinellas County Department of Environmental Management's Pollution Prevention and Resource Recovery Program at (727) 464-4761.

Pollution Prevention for All Employees

Top Pollution Prevention Opportunities

- * Conserve water.
- * Turn off lights, computers and electronic equipment when not in use.
- * Combine errands to reduce vehicle miles traveled.
- * Evaluate your wastes by performing an assessment of your activities and the wastes generated.
- * Attend training for materials handling and equipment operation to minimize energy and material wastes.
- * Encourage co-workers to practice waste minimization in all job-related activities.
- * Use less-toxic chemicals and cleaners.



- ✱ Separate hazardous and non-hazardous wastes to improve recycling opportunities and minimize hazardous waste disposal.
- ✱ Recycle one-sided copies as scrap paper.
- ✱ Print documents double-sided.
- ✱ Recycle cardboard and packing materials.
- ✱ Identify new ideas for waste reduction in your job activities.
- ✱ Change the “old way of doing things” if an opportunity is available to improve efficiency and minimize wastes.

Remember, there is always room for improvement and,
“An ounce of [Pollution] prevention is worth a pound of cure.”



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*The following excerpts provided by EPA Document 310-R-99-001
Profile of Local Government Operations, January 1999
with the exception of Vehicle/Equipment Maintenance*



Pollution Prevention in Purchasing Practices

Top Pollution Prevention Opportunities

- ✧ Pass a purchasing policy that promotes the integration of environmental and health criteria in all product specifications.
- ✧ Form an interdepartmental committee to investigate environmental purchasing opportunities.
- ✧ Educate the entire staff about health effects associated with chemicals commonly contained in the products they use, or are exposed to, and provide information on alternatives. Prompt users to choose environmentally preferable products.
- ✧ Involve product end-users throughout the decision-making process, request that vendors perform product demonstrations for staff, and compare products.
- ✧ Choose one department/operation at a time to incorporate environmentally preferable products. Review final product specifications with product user or operation supervisor to ensure that their needs are satisfied.
- ✧ Review all purchases and product Material Safety Data Sheets for potential environmental and health impacts associated with products being purchased.
- ✧ Avoid purchasing products that are potentially harmful to the user, public, or environment (e.g., contain known or suspected carcinogens and other toxic ingredients).
- ✧ Prevent the generation of hazardous wastes in operations by eliminating products that contain hazardous ingredients.

- ✧ Participate in cooperative purchasing ventures with other jurisdictions, your state, and vendors to increase availability of environmentally preferable products and reduce internal costs associated with the formal bid process.
- ✧ When researching environmental purchasing, utilize resources and expertise available from vendors, manufacturers, government agencies, non-profit and other organizations.
- ✧ Consider environmental and health impacts associated with a product's life cycle prior to drafting bid specifications ("product life cycle" includes raw material extraction or development, product manufacturing, transportation to market, product use, and disposal).
- ✧ Implement waste reduction activities (e.g., implement lease agreements that require vendors to take responsibility for products as they become obsolete; require prospective bidders to avoid excess paper and packaging in their bid and proposal submittals such as avoiding plastic covers and dividers, using both sides of paper, and using post-consumer recycled content paper; specify copiers and printers with double-sided printing capabilities, etc.).
- ✧ Begin an energy conservation program and invest in energy-efficient equipment and building design (specify EPA "Energy Star" certified equipment and require equipment installers to activate efficiency features upon product installation).

Pollution Prevention in Construction and Maintenance

Top Pollution Prevention Opportunities

- ✧ Adopt a resolution or policy to direct future building toward green practices.
- ✧ Use "first-in, first-out" materials management.
- ✧ Segregate waste streams.
- ✧ Reduce risks of spills by controlling access to storage areas and routinely inspecting containers.



- ✿ Recycle used cleaning, lubricating or cooling fluid.
- ✿ Use water-based paints and coatings to minimize the use of petroleum-based solvents and the hazardous air emissions associated with such solvents.
- ✿ Avoid unnecessary grading and removal of vegetative cover to minimize road run-off into surface water.
- ✿ Use waterborne or thermoplastic traffic paint.
- ✿ Consider deconstruction and reuse of existing buildings rather than demolition.
- ✿ Use high efficiency lighting and electronic ballasts to illuminate roadways and tunnels, and install occupancy sensors to control lighting fixtures.



- ✿ Store minimum amounts of solvents, cleaners, and other shop materials.
- ✿ Evaluate shop operations and waste handling practices on a regular basis.
- ✿ Put one person in charge of ordering, checking, labeling (purchase date, contents) and issuing hazardous materials.
- ✿ When replacing old equipment, look for equipment that minimizes the toxic materials used and the wastes produced.
- ✿ Separate hazardous and non-hazardous waste streams to reduce hazardous waste disposal costs.
- ✿ Use non-hazardous or non-toxic products whenever possible.
- ✿ Use a gravity spigot or pump to reduce spills when dispensing bulk liquids, and always use a spout and funnel when transferring liquids.

- ✿ Replace leaking dispensing pumps when needed.
- ✿ Use drip catchers.
- ✿ Clean up spills quickly to minimize the amount of cleaning and materials needed.
- ✿ Use dry spill absorbents rather than water to clean up spills.
- ✿ Tightly seal all bungs and lids.
- ✿ Utilize non-chlorinated solvents with flash-points greater than 140° Fahrenheit.
- ✿ Try to use a multi-purpose solvent for several operations rather than a different solvent for each operation.
- ✿ Minimize the use of spray cleaners.
- ✿ Use paints with higher solids content or water-based whenever possible.
- ✿ Recover spent solvent by decanting, filtration, or distillation.
- ✿ Recycle solvent that cannot be reused.
- ✿ Properly handle and recycle your used fluids, oils, freon, and antifreeze.
- ✿ Use longer lasting synthetic fluids for automotive fluids.
- ✿ Recycle scrap metal, tires, batteries and used automobile parts.
- ✿ Drain all filters before disposing or recycling them.
- ✿ Lease rags from a laundry service instead of rinsing or throwing rags away; disposable rags must be disposed as hazardous if they test hazardous.
- ✿ Keep storage areas organized.
- ✿ Inspect storage area regularly for leaks, spills, and aged materials.
- ✿ Lock the waste storage area.
- ✿ Cover containers and storage areas to protect from weather. Include a spill containment berm around the area.

Pollution Prevention in Pesticide Management

Top Pollution Prevention Opportunities



✱ Triple rinse or “jet rinse” empty pesticide containers prior to disposal. Triple rinsed containers should be crushed or punctured to prevent reuse. Containers can be reduced in quantity by buying in bulk; however, never buy more than the amount needed. When possible, purchase in recyclable containers that can be returned to dealers.

- ✱ Avoid disposal of excess mixture (i.e., the diluted pesticide left over in the spray tank). Use up excess mixture on another site when possible.
- ✱ Locate another County user for excess product (i.e., the unused pesticide no longer needed due to a change in procedures or because the pest problems are solved) rather than disposing excess product.
- ✱ Add rinse water from containers and application equipment to the next same product mixtures.
- ✱ Contact vendors to inquire if the manufacturer will take back expired pesticide; improve inventory management and storage procedures to avoid expired product concerns.
- ✱ Design for water conservation. Group plants with similar water needs together so they can be irrigated together and water will not be wasted on plants that do not need it. Proper watering will reduce stress on plants and allow their natural resistance to withstand pest attacks without the need for pesticides.
- ✱ Employ Environmental Landscape Management (ELM). ELM is a common-sense approach that starts with healthy growing space. Select pest resistant plants, use sound planting techniques, and correctly manage the established landscape. Place the right plants in the right place; choose plants according to soil characteristics (pH level, moisture retention), rainfall, and sunlight conditions. Use more native plant species and reduce the use of exotics.

- ✱ Avoid monocultures. Monocultures (single-species planting, such as large areas of grass) are very susceptible to infestation since most pests are host-specific. Growing different species together prevents pests from readily spreading.
- ✱ Reduce water runoff by building retaining walls, which direct water to a dry well or other areas to collect and percolate through soil. If pesticides are used, this will reduce the likelihood of nearby water body contamination.
- ✱ Use proper mowing practices. Mow grass with sharp blades. A dull blade rips grass making larger wounds and increasing susceptibility to disease pathogens. Sharp blades also increase equipment efficiency and reduce wear on equipment. Never cut more than one-third the height of the grass at any time.
- ✱ Scout the landscape regularly to learn which plants have problems. Most plants (except grass) seldom have more than one major pest problem. By scouting, you will find problems early and be able to solve them with Integrated Pest Management (IPM) without resorting to pesticides.
- ✱ Use pesticides only when needed, not on a prescribed schedule. Use spot treatment instead of treating the entire area.
- ✱ Correctly identify insects prior to treatment. Less than 1 percent of all insects are harmful to plants. Take care not to harm beneficial insects.
- ✱ Buy pesticides only in small quantities and store carefully in labeled, airtight containers. Plan your purchases so pesticides do not expire.
- ✱ Understand that pest eradication is generally an unrealistic management objective. An attempt to totally eliminate a pest is likely to result in excessive pesticide application.
- ✱ Outsource pest control services and write IPM requirements into the specifications.
- ✱ Keep clutter, excess water sources (e.g., drips or standing water in plants), and food waste minimized to discourage pests from entering buildings.

Use least toxic pest control methods:

- ◆ Horticultural oils
- ◆ Insecticidal soaps
- ◆ Natural enemies such as: Pathogens, such as *Bacillus thuringiensis*, which infects & controls caterpillars
- ◆ Predators, such as purple martins, praying mantis, lady beetles, beneficial nematodes, and spiders
- ◆ Parasites, such as parasitic wasps
- ◆ Diatomaceous earth
- ◆ Boric acid
- ◆ Pyrethrins
- ◆ Insect growth regulators, which halt or interfere with the development of an insect before it matures
- ◆ Pheromones, which disrupt normal mating behavior by stimulating breeding pests and luring them into traps
- ◆ Insect traps
- ◆ Mechanical treatments, such as cultivating to control weeds; hand picking of pests off plants, and sticky traps



Pollution Prevention in Public Safety

Public safety operations, especially emergency planning and response activities, can involve a variety of different local government agencies, local industry and other community representatives. Within the public safety arena, local governments have responsibilities as a regulated entity, an enforcement agent, a generator of various waste streams, and a provider of quality services to the constituents they serve. Pollution prevention strategies can help local governments efficiently and effectively meet the regulatory requirements associated with public safety operations, provide value

added services, and implement a proactive approach to protecting their community from chemical emergencies. The three primary functions associated with public safety are emergency planning, fire protection and emergency response, and police protection. The opportunities for pollution prevention within these three primary functions can best be realized by examining both a list of the wastes generated and the specific services provided through each of these functions.

Emergency Planning Services:

- ◆ Understand and manage risks associated with specific chemicals and facilities in their community
- ◆ Prepare for and respond to emergencies involving hazardous substances
- ◆ Provide chemical information to the public

Top Pollution Prevention Opportunities

- ✱ Encourage facilities which are required to develop risk management plans to consider pollution prevention strategies to meet or avoid this regulation.
- ✱ Establish a pollution prevention task force or subcommittee through the Local Emergency Planning Committee (LEPC) to investigate ways to access state and regional pollution prevention resources to address chemical concerns and priorities.
- ✱ Incorporate pollution prevention requirements into Right-to-Know and other local enforcement actions.
- ✱ Sponsor and/or co-sponsor pollution prevention workshops and other educational events for industrial facilities.

Fire Protection and Emergency Response Services:

- ◆ Fire response and suppression
- ◆ Hazardous materials response
- ◆ Fire code inspections
- ◆ Employee training
- ◆ Vehicle and equipment maintenance

Top Pollution Prevention Opportunities

- ✱ Safeguarding lives and property, the primary objective of this service can not be jeopardized. There are pollution prevention strategies which can be incorporated through training and response protocols that will minimize the waste generated and long-term environmental impacts associated with the response incident without compromising human health and property.

- ✱ Incorporate strategies within emergency and fire response protocols and responder training courses to maximize the containment of spilled materials and contaminated fire suppression run-off and to prevent migration to waterways, sewers, and permeable surfaces.
- ✱ Incorporate the use of reusable absorbent booms and pads for materials containment to replace clay and other absorbent materials that can only be used once. Reusable booms and pads can provide the opportunity to recover a percentage of the material released and significantly reduce the amount of waste generated.
- ✱ Consider the use of halon-free suppression materials where appropriate and develop a specific protocol for using halon suppressants only for situations where a suitable alternative is not available.
- ✱ Review training exercises and other drill activities for opportunities to substitute less hazardous and non-hazardous materials, and incorporate water reuse and conservation measures where and when the effectiveness of the training is not compromised.
- ✱ Promote site specific pollution prevention strategies through fire code inspections and enforcement activities.

Police Protection Services:

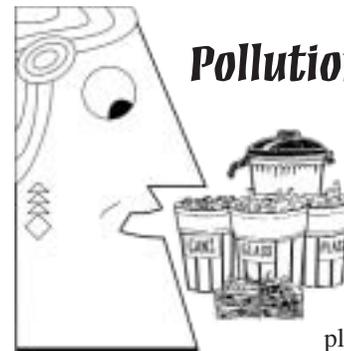
- ◆ Patrol/surveillance to maintain peace and order
- ◆ Investigation of crimes, and detection and apprehension of criminals
- ◆ Traffic regulation enforcement and traffic control
- ◆ Crime prevention, safety outreach, and education

Top Pollution Prevention Opportunities

- ✱ Consider the use of digital cameras to eliminate and/or reduce the need for photoprocessing.

- ✱ Consider the use of contracted photoprocessing services through a vendor that recycles photo wastes to eliminate the generation of photo wastes in-house. Most liquid photoprocessing wastes can be recycled through a large commercial photoprocessing company or metals reclaimer.

- ✱ Consider the use of ceramic or other non-lead bullets for training where the effectiveness of the training is not compromised. Where alternatives to lead bullets are not suitable, the use of traps and other devices should be employed at both indoor and outdoor shooting ranges to capture bullets and bullet fragments for recycling.
- ✱ Consult Section 3.10 of EPA Document # 30-R-99-001, Sector Notebook, Profile of Local Government Operations, January 1999 for pollution prevention opportunities associated with vehicle and fleet maintenance and review page 7 for additional measures.
- ✱ Implement a recycling program for office paper, cardboard and other significant solid waste streams.



Pollution Prevention in Solid Waste Management

Numerous opportunities exist for pollution prevention in solid waste management operations. As the lead municipal department with responsibility of “putting waste in its place,” solid waste operators have a responsibility to demonstrate their commitment to waste reduction by

ensuring that their operations prevent pollution and are in compliance with existing environmental regulations. With a diverse range of activities, solid waste managers provide a range of services with polluting possibilities. These can generally be categorized as follows:

- ◆ Collection and storage
- ◆ Processing—recycling and composting
- ◆ Disposal
- ◆ Household hazardous waste (HHW).

Top Pollution Prevention Opportunities Overall:

- ✱ Perform a waste audit - understand your waste stream in order to identify high priority items for source reduction and reuse (e.g., textiles, yard waste, construction and demolition material).

Collection:

- ✿ Establish “take back” program with motor oil suppliers to provide re-refined oil.
- ✿ Use in-line oil filters to reduce frequency of oil filter disposal.
- ✿ Capture and recycle on-site spent antifreeze.
- ✿ Convert parts washer to aqueous-based systems.
- ✿ Convert fleet to natural gas as feasible.
- ✿ Maximize collection efficiency (minimize trips) by using route management software and multi-purpose vehicles.
- ✿ Recycle tires and utilize retread tires where appropriate.
- ✿ Specify tires for maximum durability.

Processing:

- ✿ Establish a preventative maintenance program for all major pieces of equipment to minimize potential fluid discharges.
- ✿ Capture and recycle spilled hydraulic oil using oil absorbent material.
- ✿ Minimize recycling residues through on-going education of customers, limits on compaction equipment, and employee training.
- ✿ Maximize acceptability of compost products by minimizing heavy metal content of source materials, including pretreatment requirements for industrial contributors and increased frequency of street sweepings.

Disposal:

- ✿ Minimize landfill site runoff by capturing and recirculating leachate and development of effective stormwater management plans.
- ✿ Capture and reuse methane gas generated at landfill sites.
- ✿ Minimize hazardous nature of incinerator ash by implementing battery recycling and household hazardous waste collection programs.

Household Hazardous Waste (HHW):

- ✿ Educate HHW participants to “use it up.”
- ✿ Provide a waste exchange for unopened materials, combine smaller quantities of latex paint for reuse or resale.

Other:

- ✿ Establish preventative maintenance program for electrical equipment and require equipment vendors to take back all devices with mercury switches or PCB transformers.
- ✿ Replace underground storage tanks with above ground tanks with proper containment systems.
- ✿ Minimize pesticide usage through litter prevention and site management programs.

Pollution Prevention in Water Resource Management

The best way to protect water quality is to avoid polluting the water in the first place. When pollution reaches surface or underground waterways, it can have many adverse effects, including impacts on drinking water sources. Water resource management approaches vary from community to community depending on various factors such as the source of water, size and population of the community, needs of the population, and the water supply system integrity. For example, water conservation may be a very high priority in some locales, while other areas may enjoy an abundance of source water. But in all cases, there is a need to protect and manage water resources wisely. Some water resource management entities have an opportunity to act as pollution prevention role models for others.



As with other local government activities, by incorporating pollution prevention criteria into the decision making processes, public policy makers and water resource managers can:

- ◆ Help prevent and reduce waste and pollution
- ◆ Prevent and reduce potentially harmful chemical exposures to employees and citizens
- ◆ Reduce risks of accidents and releases
- ◆ Prevent or reduce potential liabilities and regulatory compliance burdens while providing service delivery and cost savings to their organizations, customers and communities

Community Pollution Prevention Outreach and Promotion

Top Pollution Prevention Opportunities

- ✧ Develop local stormwater management National Pollutant Discharge Elimination System (NPDES) and pollution prevention programs.
- ✧ Develop local groundwater (wellhead) protection programs.
- ✧ Develop household hazardous waste collection initiatives.
- ✧ Require pollution prevention Best Management Practices (BMPs) as a permit condition under the Clean Water Act (CWA). Agencies could design BMPs on a case-by-case basis or develop generic BMPs that would be applied to all facilities in a given industrial category.
- ✧ Set protective limits for reduction of discharges to wastewater treatment plants.
- ✧ Set protective limits for discharges of hazardous substances and petroleum storage.
- ✧ Adopt landscaping codes (e.g., institute irrigation restrictions, implement increasing block pricing or time of day pricing).
- ✧ Investigate reduced water use projects (i.e., ultra-low flush "toilet voucher programs", low-flow shower heads, sprinkler systems that are sensitive to rainfall, etc.).
- ✧ Establish low-income resident programs to conduct in-home water audits, leak repairs, and subsidized retrofits with water conserving fixtures.

For Both Surface and Ground Water

Specific to Surface Water

- ✧ Develop local surface water protection programs.
- ✧ Develop erosion and sediment control programs.
- ✧ Set protective discharge limits for storm water controls.

Specific to Ground Water

- ✧ Develop ground water monitoring programs.
- ✧ Limit or exclude industrial discharges to septic systems through design review.

Local Government Pollution Prevention

Top Pollution Prevention Opportunities

- ✧ Conduct leak detection programs.
- ✧ Perform plumbing fixture retrofits.
- ✧ Upgrade water meters to ensure accurate readings (use water inventory meter and retrofit programs).
- ✧ Develop BMPs for local government internal operations, in order to lead by example.
- ✧ Integrate water conservation into new facility design.
- ✧ Set protective limits for reduction of internal discharges to wastewater treatment plants.
- ✧ Set protective limits for internal discharges of hazardous substances and petroleum storage.
- ✧ Limit or exclude internal discharges to septic systems.
- ✧ Investigate a new source water potential: water recycling for golf courses, parks, roadway landscaping, schools, firefighting, fountains, street sweeping, vehicle washing, and irrigation projects.
- ✧ Investigate U.S. EPA's Water Alliances for Voluntary Efficiency (WAVE) program which will soon be expanded to schools, hospitals, and other public facilities. EPA also encourages municipalities, local, and regional water resource boards, water districts, and water utilities to join the WAVE program as supporters.

For Both Surface and Ground Water

Specific to Surface Water

- ✧ Reconstruct or upgrade wastewater treatment plants.
- ✧ Investigate wetland mitigation banking opportunities.
- ✧ Set protective internal discharge limits for stormwater controls.

Specific to Ground Water

- ✧ Plug free-flowing artesian wells.

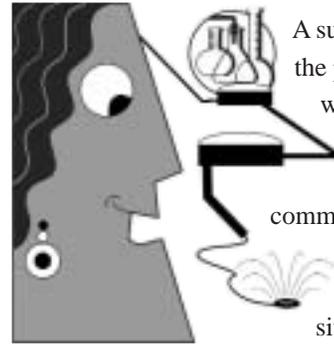
Pollution Prevention in Water Supply Management



Top Pollution Prevention Opportunities

- ✧ Investigate alternatives or reductions (e.g., ozone treatment, ultraviolet, etc.) to chlorine water disinfection.
- ✧ Investigate reduced risk storage and handling of chlorine and other chemicals.
- ✧ Install plant dehumidification systems to reduce rusting/corrosion of plant equipment.
- ✧ Use lead-free solder, retrofitting the service lines with PVC instead of metal.
- ✧ Know your waste stream in order to identify high priority (or “low hanging fruit”) for source reduction, reuse or recycling opportunities.
- ✧ Strategically plan for Safe Drinking Water Act (SDWA) compliance through source protection and source selection strategies, operational strategies, collaborative arrangements, purchased-water transactions, or institutional restructuring.
- ✧ Perform self-evaluations regularly.
- ✧ Install water conservation devices (e.g., low-flow showerheads, low-flush toilets, motion sensing faucets).
- ✧ Implement water conservation strategies (e.g., use grey water for irrigation), consider xeriscape (i.e., native, low water requirement) landscaping, consider pervious material for walkways and driveways.
- ✧ Look for energy efficiency improvements in designing or re-designing water pumping and treatment systems.
- ✧ Use national and local events to promote the pollution prevention ethic to employees and the public.
- ✧ Connect with local, state, national or international organizations to share information, techniques and approaches to continuous improvement through pollution prevention.
- ✧ Perform consistent and proper monitoring.

Pollution Prevention in Wastewater Management

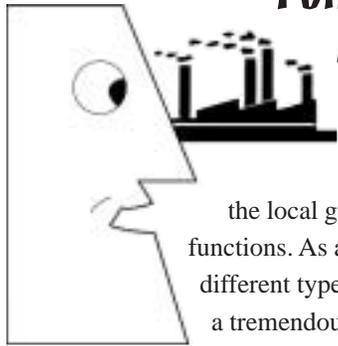


A substantial amount of the pollution generated by the practices and processes used to collect and treat wastewater can be prevented. In preventing pollution, wastewater treatment plants can serve as role models for their residential, commercial, and industrial customers and to help or require discharges to reduce their own toxic discharges to sewers through education, on-site assistance, and regulatory programs.

Top Pollution Prevention Opportunities

- ✧ Keep harmful chemicals out of the sewer lines and protect line workers, the plant, and the public’s investment. Work closely with assistance programs at the local and state level, such as pollution prevention programs, economic development commissions and pretreatment programs.
- ✧ Institutionalize a preventative maintenance program to predict problems before they occur instead of reacting to them after their occurrence.
- ✧ Design, implement, and evaluate sewage acceptance procedures including provisions for spill prevention, discharge limitations, hauler performance guarantee, and enforcement or permit revocation.
- ✧ Explore, evaluate and implement alternatives to existing wastewater treatment processes, such as ultraviolet radiation or osmosis, to avoid toxic chemicals such as chlorine and hypochlorite.
- ✧ Reuse or recycle solids (e.g., primary scum) and secondary screenings in areas such as landscaping. Check local and state regulations for any special requirements.
- ✧ Post and track statistical control tools to inform all employees of the plant’s target operating level and the actual operating level.
- ✧ Establish a screening mechanism for procuring chemicals that evaluates non-toxic alternatives, and reduces chemical dependence thereby lowering hazardous waste and the hazardous waste generator status.

- ✱ Be innovative in use and reuse of energy, such as fuel cells operating from methane, participating in Department of Energy's (DOE's) Green Lights Program, using variable speed pumps, and using heating/air conditioning controls and room sensors in buildings.
- ✱ Create a gain share program whereby employees benefit from reduced pollution and for sharing ideas.



Pollution Prevention in Air Pollution Programs and Pretreatment Programs

Both of these regulatory programs often exist at the local government level and provide many important functions. As a result, these programs interact with many different types of businesses and industries and, therefore, have a tremendous opportunity to encourage pollution prevention and waste reduction at these sources. It will be at the

discretion of each individual program where it wants to focus its efforts however, there are common aspects of these regulatory programs that offer the opportunity for integration of pollution prevention. In addition to working with prevalent industries in the region, programs can also target sources of emissions discharges, which lead to problems specific to that region, such as ozone or specific treatment plant upsets. Although the priorities of these programs are often in the areas of permits, inspections, compliance and enforcement, it is important to remember that these programs also have a responsibility to educate the regulated community. By educating pollution sources on the benefits of, and opportunities for, waste reduction and pollution prevention, a program can more effectively and efficiently accomplish its mission of environmental protection. The following section lists some examples of opportunities to incorporate pollution prevention into existing regulatory programs.

Top Pollution Prevention Opportunities

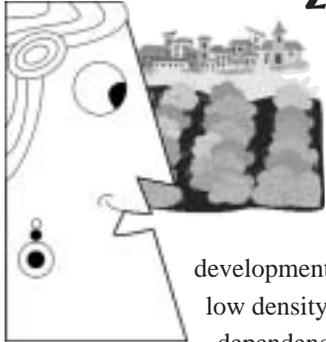
- ✱ Incorporate pollution prevention into the permitting process. Examples of opportunities include:
 - ▼ Providing recommendations for pollution prevention and waste minimization during permit applications for new facilities

- ▼ Including pollution prevention work standards, practices, or conditions in permits
- ▼ Requiring formal pollution prevention/waste minimization plans from facilities as part of their operating permits
- ▼ Providing a definition of pollution prevention and information on available services, assistance, and benefits in permit renewal letters

- ✱ Train engineers and inspectors on pollution prevention technologies and opportunities and have them include information and technical assistance during inspections, as well as in the permit and plan review and approval stages.
- ✱ Provide compliance assistance and pollution prevention information through descriptive brochures, Best Management Practices (BMPs), and implementation documents associated with regulatory standards. These can be provided with permits, distributed by inspectors, or handed out at workshops or training events.
- ✱ Provide various incentives such as relaxing inspection periods or reducing permit fees for sources that implement pollution prevention practices.
- ✱ Utilize surcharge and impact fees to encourage water re-use, conservation, and pollutant reduction. These fees can be scaled and should be based on the quantities and the concentrations of pollutants discharged to avoid dilution.
- ✱ Utilize national events, such as Clean Air Month, Earth Day, and National Pollution Prevention Week, to publicize pollution prevention initiatives and target local issues, such as high ozone levels and acid rain. This is a good opportunity to educate local sources on EPA initiatives, including Climate Wise and Energy Star.
- ✱ Incorporate implementation of pollution prevention projects into enforcement and settlement agreements. If a program is willing to offset a portion of the fines for facilities that agree to implement pollution prevention projects, they provide a much greater incentive for facilities to utilize this option.

- ✱ Get involved with other national and international organizations, such as the State and Territorial Air Pollution Program Administrators and Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), Association of Metropolitan Sewerage Agencies, and the National Pollution Prevention Roundtable.

Pollution Prevention in Land Use Planning & Zoning and Brownfield Redevelopment



Although the connections may not be immediately evident, poor planning and zoning decisions can lead to environmental impacts, particularly through environmentally irresponsible development patterns. The country's development patterns of low density single family housing, separation of uses, dependence on the automobile, loss of habitat and greenfields,

and urban sprawl have greatly contributed to overall environmental degradation. This can be counteracted by promoting construction to optimize energy efficiency, infill development, Brownfield redevelopment, mixed land use, and pedestrian and transit-oriented development (TOD). These smart growth initiatives can benefit a community economically, financially, and socially through improved environmental quality and improved quality of life. If planning, zoning, and development are done carefully and with foresight, energy, water and other resources can be conserved, aquifers and watersheds can be protected, neighborhoods can become more self-sufficient, vehicle miles traveled (VMTs) can be reduced (as well as the pollution associated vehicles), money and other resources can be conserved through avoidance of the need for additional infrastructure, declining areas can be revitalized, and overall environmental quality can be improved both locally and regionally. Therefore, it is important to consider many factors at the planning and zoning stage, including current and potential future uses of the land, existing infrastructure in the area, potential impacts to nearby watersheds and aquifers and the accessibility to, and feasibility of, residents and employees using alternative means of transportation, such as mass transit, biking, or walking. There are several areas associated with planning and zoning operations which offer excellent opportunities to implement innovative ideas and projects to help prevent pollution and support smart growth.

Top Pollution Prevention Opportunities

- ✱ Establish steering committees with representatives from various departments involved in the planning and zoning process to research the feasibility and encourage the implementation of smart growth initiatives. For example, an Infill Task Force can be established to research and address the existing barriers to smart growth and to develop an infill strategy for the community.
- ✱ Establish policies identifying areas for environmental resource preservation or conservation and establish rules to protect such areas from incompatible land uses and management practices. Examples may include:
 - ▼ Incorporate watershed management plans into Comprehensive Development Master Plans
 - ▼ Establish protective zones around aquifers and other drinking water sources to limit certain land uses and operations
 - ▼ Restrict certain land uses and operations in those areas served only by septic tanks
 - ▼ Minimize impervious surfaces in a development through compact design and reduction of road width and parking lot size (to reduce stormwater run-off)
 - ▼ Locate watershed development with an eye for preserving the natural land near lakes, rivers, and streams
- ✱ Create an urban design manual for developers to educate them on smart growth concepts and opportunities for incorporation into their plans and projects.
- ✱ Establish incentives for developers who incorporate smart growth initiatives into their plans and projects. These incentives could include expedited approval processes, decreased permit fees, decreased impact fees, and priority in the provision of services, facilities, and allocation of financial resources.
- ✱ Modify economic incentive packages for Brownfield developers based on how closely they follow recommendations for pollution prevention implementation. For example, increase the economic package if they are willing to implement more pollution prevention initiatives.

- ✱ Establish policies requiring Best Management Practices (BMPs) for particular land uses and activities to achieve pollution reduction goals.
- ✱ Incorporate pollution prevention language into local Brownfield codes and ordinances.
- ✱ Provide education opportunities (workshops, booklets, pamphlets, etc.) to encourage smart growth initiatives and implementation of pollution prevention and BMPs.
 - ▼ Education of financial institutions on the benefits to them of providing loans for pollution prevention projects and equipment
 - ▼ Education of target Brownfield communities on the benefits of the developer and future business utilizing pollution prevention - (since it is added insurance that the property will not become contaminated again this may help win the community's approval for location of a new facility in a Brownfield area)
 - ▼ Education of residents and businesses located in areas served by septic tanks on the operation and proper maintenance of these systems to prevent ground and groundwater contamination
- ✱ Review and amend zoning subdivision regulations and other regulations to encourage TOD principles. This may include maximizing the use of existing urbanized areas accessible to transit through infill and redevelopment, reinforcing transit through land use planning, or reducing VMTs by creating opportunities to walk, bike, and use mass transit.

Resources for Pollution Prevention Measures for County Government

Purchasing Practices Resources

National Association of Counties (NACo) Environmental Purchasing Project, 440 First Street, NW, Washington, DC 20001; phone: (202) 393-6226, website www.naco.org/programs/environ/purchase.cfm.

Environmentally Preferable Purchasing Listserve (EPPNET). Established and maintained by the Northeast Recycling Council (802) 254-3636. To subscribe to EPPNET, send an e-mail message to (lyris@aladdin.webrover.com) with SUBSCRIBE EPPNET <FIRST NAME> <LAST NAME> on the subject line or in the body of the message.

U.S. EPA Environmentally Preferable Purchasing Program, U.S. EPA (7409), 401 M Street, SW, Washington, DC 20460 (www.epa.gov/opptintr/epp).

U.S. EPA and DOE Energy Star Program, U.S. EPA (6202J), 401 M Street, SW, Washington, DC 20460 (888) 782-7937, (www.energystar.gov).

Office Green Buying Guide and Choose Green Reports: Green Seal, 1400 16th Street, NW, Suite 300, Washington, DC 20036-2215; phone: (202) 588-8400, (www.greenseal.org).

Scientific Certification Systems, 1939 Harrison Street, Suite 400, Oakland, CA, 94612; phone: (510) 832-1415, (www.scs1.com).

Toxic Turnaround - A Guide to Reducing Pollution for Local Governments, Environmental Health Coalition, 1717 Kettner Blvd., Suite 100, San Diego, CA; phone: (619) 235-0281, (www.environmentalhealth.org).

Sustainable Building Technical Manual - Green Building Design, Construction, and Operations, Public Technology, Inc. (PTI), the U.S. Green Building Council (USGBC), U.S. DOE, and U.S. EPA; printed copies available for purchase from PTI at (301) 490-2188, and from USGBC at USGBC-SF, 90 New Montgomery Street, Suite 1001, San Francisco, CA 94105.

Environmental Purchasing Model Resolutions from Local Governments, National Association of Counties, 440 First Street, NW, Washington, DC, 20001; phone: (202) 393-6226, (www.naco.org/programs/environ/purchase.cfm).

“Pollution Prevention Questionnaire for Municipal Departments” and “Procurement Recommendations Applicable to Multiple City Departments and Agencies,” Environmental Defense Fund, 1875 Connecticut Ave., NW, Suite 1016, Washington, DC 20009; phone (202) 387-3500; contact Lois Epstein (E-mail: Lois_Epstein@edf.org).

Construction and Maintenance Resources

“Hazardous Waste Minimization Checklist and Assessment Manual for the Building Construction Industry,” CA EPA, Dept. of Toxic Substances Control, Office of Pollution Prevention and Technology Development, May 1993, Sacramento, CA.

“Hazardous Waste Minimization for the Building Construction Industry,” Fact Sheet, op. cit.

“Building Construction Industry,” Waste Audit Study, op. cit.

“Cooling Water Systems, Management Guidelines for Water Quality Protection,” Palo Alto Regional Quality Control Plant, Palo Alto, CA.

“Blueprint for a Clean Bay, Construction-related Industries,” Santa Clara Valley Non-point Source Pollution Control Program, 1992, San Jose, CA.

“Residential Construction Waste: From Disposal to Management,” interim document, NAHB Research Center, Inc., Upper Marlboro, MD.

“Environmental Handbook For Oregon Construction Contractors: Best Pollution Prevention Practices,” River City Resources Group, Inc., May 1994. (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

“Environmental Handbook For Oregon General Construction Contractors: Regulatory Guidance,” Oregon Waste Reduction Assistance Program, Palermini And Associates, April 1994 (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

“Construction And Demolition Waste Recycling Guide: Recycling Construction and Demolition Waste In The Los Angeles Area,” LA Network, August 1992 (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

“Blueprint For A Clean Bay: Best Management Practices To Prevent Stormwater Pollution From Construction-Related Activities,” Bay Area Stormwater Management Agencies Association (BASMAA), 1995 (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

“Pollution Prevention Training Instructors’ Guide,” Science Applications International Corporation (SAIC), March 1996 (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

“Start at the Source: Residential Site Planning & Design Guidance Manual For Stormwater Quality Protection,” Tim Richman & Associates, January 1997 (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

Barron, Thomas S., “Pollution Prevention In The Construction Industry: A Workbook Covering The Chemicals Used And Wastes Generated By Construction Trades,” Construction industry workshop, 1997 (located in California EPA, Office of Pollution Prevention and Technology Development Reference Library, (800) 700-5854).

Gruder, Sherrie, “Construction Resources: A Waste Reduction And Recycling Guide for Wisconsin Builders and Contractors,” University of Wisconsin-Extension, Solid and Hazardous Waste Education Center, 528 Lowell Hall, Madison, WI, Nov. 1997. For more information, contact Isao Kobashi, Santa Clara County Pollution Prevention Program, Phone: (408) 441-1195, Fax: (408) 441-0365, (E-mail: isao_kobashi@qmgate.pln.co.scl.ca.us).

Vehicle Maintenance/Equipment Resources

EPA Sector Notebook, “Profile of Local Government Operations,” EPA Document Number 310-R-99-001, January 1999

Pesticide Management Resources

Common Sense Pest Control, by William Olkowski, Sheila Daar, and Helga Olkowski, The Tauton Press, 1991, Newtown, CT, pp. 715.

“Biological Control of Insect and Mite Pests of Woody Landscape Plants: concepts, agents and methods” by Michael J. Raupp, Roy G. Van Driesche, and John A. Davidson. Maryland Cooperative Extension Service, 1993, pp. 39.

“Suppliers of Beneficial Organisms in North America” by Charles D. Hunter, California Environmental Protection Agency, Department of Pesticide Regulation, Environmental Monitoring and Pest Management Branch.

Cornell University World Wide Web site
(www.nysaes.cornell.edu/ent/biocontrol/).

Handbook of Integrated Pest Management for Turf and Ornamentals, edited by Anne R. Leslie, Lewis Publishers, 1989, Boca Raton, Florida, pp. 660.

National Farm*A*Syst, B142 Steenbock Library, 550 Babcock Drive, Madison, WI 52706-1293, Phone: (608) 262-0024, (E-mail: farmasyst@macc.wisc.edu).

Integrated Pest Management/Cooperative State Research Service. Contact Dr. Robert C. Riley, Dr. James R. Cate, or Dr. John M. Barnes. USDA Cooperative State Research Service, Plant and Animal Sciences, Aerospace Building, Washington, D.C. 20250-2220. Telephone: (202) 401-4781, Fax: (202) 401-4888.

Integrated Pest Management/Cooperative Extension Service. Contact Michael S. Fitzner, USDA Extension Service, Ag Box 0909, Washington, D.C. 20250-0909. Telephone: (202) 720-2471, Fax: (202) 720-4395. (E-mail: mfitzner@esuda.gov).

Integrated Pest Management Information, National IPM Network - Colorado State University, (www.colostate.edu/Depts/IPM/csuiipm.html).

National IPM Network. (www.ipmwww.ncsu.edu/main.html).

Public Safety Resources

“Preventing Industrial Toxic Hazards: A Guide for Communities,” M. Wise and L. Kenworthy, INFORM.

“Risk Management Planning: Will It Lead to Inherently Safer Operations?” by Carol J. Forrest; Pollution Prevention Review, Summer 1997.

“Accidents Do Happen: Toxic Chemical Accidents in the United States,” December 1996, National Environmental Law Center. “Too Close to Home,” National Environmental Law Center.

For more information, contact Tom Hersey, Coordinator - Pollution Prevention Programs, Erie County Department of Environment and Planning, Phone: (716) 858-7674, Fax: (716) 858-7713, (Email: hersey@cdbg.co.erie.ny.us).

Solid Waste Management Resources

EPA Office of Solid Waste Management - (www.epa.gov/osw).

Azimi and Saphire, Rethinking Resources: New Ideas for Community Waste Reduction - (www.informinc.org/waw12.pdf).

Comprehensive Municipal Pollution Prevention Project: Inventory Phase, Regional Municipality of Hamilton-Wentworth, April, 1995.

For more information, contact Steve Brachman, Waste Reduction and Management Specialist, UW-Extension, Phone: (414) 227-3165, Fax: (414) 227-3165, (E-mail: brachman@uwm.edu).

Water Resource Management Resources

“Smart Investments for City and County Managers: Energy, Environment and Community Development,” U.S. Environmental Protection Agency, Office of Policy, Planning and Evaluation, EPA 231-R-98-004, April 1998.

“Preventing Pollution in Our Cities and Counties: A Compendium of Case Studies,” NPPR, NACo, NACCCHO and U.S. Conference of Mayors, 1995.

“Database and Geographic Information System (GIS) for Management of a Multi-Jurisdictional Wellhead Protection Area,” Cincinnati Water Works, 1998, Proceedings, NWRI Source Water Assessment and Protection 98 Conference, Dallas, TX.

“When it Rains, It Drains-What Everyone Should Know About Stormwater,” Michigan Department of Environmental Quality, Surface Water Quality Division.

“Innovative City/County Partnerships - Report from the Joint Center for Sustainable Communities,” The United States Conference of Mayors and National Association of Counties, 1998.

U.S. EPA Pollution Prevention Information Clearinghouse, 401 M Street, SW, Washington, D.C. 20460 (www.epa.gov/opptintr/p2home).

International City/County Management Association, Smart Growth Network (SGN): (www.smartgrowth.org); (202) 962-3591; (E-mail Noah A. Simon nsimon@icma.org).

“Drinking Water - The Safe Drinking Water Act vs. the Small Systems ‘How Safe is Safe,’” EMGT 850, 1996.

“Building State and Local Pollution Prevention Programs,” U.S. Environmental Protection Agency, Office of the Administrator, EPA-130-R-93-001, December 1992.

Local Government Environmental Assistance Network (LGEAN), contact: David George at International City and County Management Association (ICMA) at (202) 962-3531; (E-mail: dgeorge@icma.org).

Water Efficiency Program; San Jose/Santa Clara Valley Water District and Water Pollution Control Plant, 3025 Tuers Road, San Jose, CA 95121.

South Bay Water Recycling, 2540 North First Street, Suite 316, San Jose, CA 95131; (408) 232-0832.

The U.S. EPA's WAVE Program: EPA Office of Water, Contact: John Flowers, WAVE Program Director, Phone: (202) 260-7288; EPA's WAVE Technical Support Hotline: (800) 993-WAVE.

The Hamilton to New Baltimore Groundwater Consortium's web site: (www.gwconsortium.org).

"Beyond Delineation and Assessment: Community Action to Protect Source Water Using Farm*A*Syst\Home*A*Syst": (www.ctic.purdue.edu/kyw/Abstracts/Castelnuovo.html).

"Cryptosporidium and Water" by the CDC Working Group on Waterborne Crypto, provides guidance on setting-up a local task force to deal with the threat to drinking water: (www.cdc.gov/ncidod/diseases/crypto/crypto.htm).

The Lincoln-Lancaster Health Department (NE) developed a guide and checklist for septic and wells that was implemented through citizen volunteers. For information, contact the Lincoln Lancaster Health Department at (402) 441-8000.

"Tools for Drinking Water Protection" Video Workshop - The League of Women Voters developed this excellent video on local government and citizen action on water quality issues. Their resources are listed on the web at (www.lwv.org/elibrary/pub/issue6.html).

For more information, contact: J. Bruce Suits, City of Cincinnati, Office of Environmental Management. Phone: (513) 352-6270; Fax: (513) 352-4970; (E-mail: bruce.suits@cinems.rcc.org).

Water Supply Management Resources

"For Your Information - Message from the Cincinnati Water Works," Issue 1, 1996.

"Preventing Pollution in Our Cities and Counties: A Compendium of Case Studies," NPPR, NACo, NACCHO and U.S. Conference of Mayors, 1995.

U.S. EPA Pollution Prevention Information Clearinghouse, 401 M Street, SW, Washington, D.C. 20460 (www.epa.gov/opptintr/p2home).

Smart Growth Network: (202) 260-2750; (www.smartgrowth.org).

U.S. EPA Design for the Environment (DfE): (202) 260-1678; (www.epa.gov/dfe).

"Safe Water from Every Tap - Improving Water Service to Small Communities" National Academy Press, 1998.

DRAFT "Pollution Prevention in Enforcement - Village of South Charleston, Ohio," Office of Pollution Prevention, Ohio Environmental Protection Agency, 1998.

"Conservation Improvement Projects through Soil and Water Conservation Districts," Cooperative Extension Service, The Ohio State University.

Local Government Environmental Assistance Network (LGEAN) through the International County and City Managers Association; Contact: David George at (202) 962-3531; (E-mail: dgeorge@icma.org).

"Setting Standards: Risk Assessment Issues," edited by Frederick W. Pontius, Denver CO., AWWA Journal, July 1995, pp10-16, 114.

"Safe Drinking Water From Small System: Treatment Options," edited by James A. Goodrich, Cincinnati, OH., AWWA Journal, May 1992, pp49-55.

"Tools for Drinking Water Protection" Video Workshop - The League of Women Voters developed this excellent video on local government and citizen action on water quality issues. Their resources are listed on the web at (www.lwv.org/elibrary/pub/issue6.html).

"Chemicals Versus Microbial in Drinking Water: A Decision Sciences Perspective," edited by Susan W. Putman, Boston MA, AWWA Journal, March 1993 pp 57-61.

"Drinking water, Pollution Prevention and Public Health" (8pp) - EPA Document 742-F-97-004.

"Incentives and Disincentives for Adoption of P2 Measures Under EPA's Water Program" (94pp) - EPA Document 742-R-94-006

American Water Works Association Small System Hotline U.S. EPA Drinking Water Hotline/National Drinking Water Clearinghouse

National Rural Water Association

Rural Community Assistance Corporation

State Drinking Water Primacy Agency

For more information, contact J. Bruce Suits, City of Cincinnati, Office of Environmental Management Phone: (513) 352-6270; Fax: (513) 352-4970; (E-mail: bruce.suits@cinems.rcc.org).

Wastewater Management Resources

“Promoting Pollution Prevention Among Discharges to POTWs,” Lois N. Epstein and Steven A. Skavronek, WEF conference, Miami, FL, October 25, 1995. Available from the Environmental Defense Fund, 1875 Connecticut Avenue NW, #1016, Washington, D.C. 20009.

For more information, contact Margaret Nover, Pollution Prevention Program, City of Portland, Oregon, Phone: (503) 823-7623 Fax: (503) 823-5565, (E-mail: margaret@bes.ci.portland.or.us).

Air Pollution Programs and Pretreatment Programs Resources

AMSA: (202) 833-2672; (www.amsa-cleanwater.org).

Clean Air Technology Center (CATC): (919) 541-0800; (www.epa.gov/ttnecatc1).

Center for Technology Transfer and Pollution Prevention (CT2P2): (www.pasture.ecn.purdue.edu/~cttp/index.htm).

Energy Star Buildings/Green Lights: (202) 233-9178; (www.energystar.gov) and (www.epa.gov/greenlights.html).

Florida Sustainable Communities Center: (www.sustainable.state.fl.us).

International Council for Local Environmental Initiatives (ICLEI), U.S. Office, Cities for Climate Protection Campaign: (510) 540-8843; (www.iclei.org).

National Pollution Prevention Roundtable: (202) 466-7272; (www.p2.org).

Smart Growth Network: (202) 260-2750; (www.smartgrowth.org).

STAPPA/ALAPCO: (202) 624-7863; (www.cleanairworld.org/scripts/us_temp.asp?id=307).

U.S. EPA Design for the Environment (DfE): (202) 260-1678; (www.epa.gov/dfe).

For more information, contact Nichole Hefty, Dade County DERM, Florida; Phone: (305) 372-6825; Fax: (305) 372-6760; (E-mail: heftyn@co.miami-dade.fl.us).

Land Use Planning & Zoning and Brownfield Redevelopment Resources

AMSA: (202) 833-2672; (www.amsa-cleanwater.org).

Clean Air Technology Center (CATC): (919) 541-0800; (www.epa.gov/ttnecatc1).

Center for Technology Transfer and Pollution Prevention (CT2P2): (www.pasture.ecn.purdue.edu/~cttp).

Energy Star Buildings/Green Lights: (202) 233-9178; (www.energystar.gov) and (www.epa.gov/greenlights.html).

Florida Sustainable Communities Center: (www.sustainable.state.fl.us).

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Resource Notes

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