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## CHAPTER 8

### POLLUTION PREVENTION PROGRAMS TO REDUCE CONTAMINANTS IN CSOS

The seventh minimum control, pollution prevention, is intended to keep contaminants from entering the CSS and thus receiving waters via CSOs. Congress enacted the Pollution Prevention Act of 1990 to establish a national strategy for pollution prevention. Section 6602(b) of the Act establishes the following hierarchy for pollution management efforts:

- Pollution should be prevented or reduced at the source whenever feasible.
- Pollution that cannot be prevented should be recycled in an environmentally safe manner whenever feasible.
- Pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible.
- Disposal or release of pollution into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.

The objective of this minimum control is to reduce to the greatest extent possible the amount of contaminants that enter the CSS. Most of the suggested measures involve behavioral change rather than construction of storage or treatment devices.

#### 8.1 Control Measures

Pollution prevention measures such as street cleaning, public education programs, solid waste collection, and recycling can keep contaminants from entering the CSS.

##### 8.1.1 Street Cleaning

Street litter can be removed by mechanical or manual street cleaning or by street flushing during dry weather periods. Daily street cleaning in critical areas might be necessary to significantly reduce CSO floatables. Street cleaning will not control litter from off-street areas. Parked cars prevent the removal of litter and other materials from curbsides. Enforced parking

regulations (e.g., alternate side of street parking at different days of the week) and public awareness about the necessity of street cleaning are necessary for effective litter removal.

### **8.1.2 Public Education Programs**

Anti-litter campaigns can reduce the amount of street litter and household items that enter CSOs and storm water outfalls. Public education programs can encourage the proper disposal of sanitary and personal hygiene items, which cause the greatest public concerns and can close beaches. Education programs can also advise the public about proper application of fertilizers, pesticides, and herbicides.

Education methods can include public service announcements, advertising, stenciling of street drain inlets, and distribution of information with water or sewer bills. In addition, these programs can also include elements that focus on commercial and industrial establishments.

### **8.1.3 Solid Waste Collection and Recycling**

Trash receptacles along city streets should reduce the amount of litter on streets, if the receptacles are properly placed, maintained, and cleaned. Street litter in some key densely populated areas can be reduced by collecting domestic curbside garbage more frequently. Recycling programs can reduce the amount of street litter.

### **8.1.4 Product Ban/Substitution**

Many materials that foul beaches, including polystyrene, do not degrade in the environment. Some oceanfront communities have banned the sale of certain food products packaged with these materials. In various areas nationwide, cities and environmental groups have worked with businesses to eliminate the production and sale of fast food items packaged with these materials.

### **8.1.5 Control of Product Use**

Public facilities or public agencies can control the use of problem materials (e.g., fertilizer and pesticides in parks, application of de-icing salt in areas where discharges occur to fresh water bodies).

### **8.1.6 Illegal Dumping**

Public education, notices in appropriate places, and enforcement programs can be used to control illegal dumping of tires, used motor oil, and other materials into waterways, storm drain inlets, catch basins, or onto the ground.

### **8.1.7 Bulk Refuse Disposal**

Designated municipal disposal facilities accept materials such as home renovation debris that are not accepted by normal curbside garbage collection. Commercial establishments can be encouraged to accept used or waste materials including used crankcase oil, worn tires, and dead batteries.

### **8.1.8 Hazardous Waste Collection**

Designated areas should be established, either on a permanent or periodic (annual or semi-annual) basis, where any type of household hazardous waste can be brought for collection and environmentally safe disposal. Permanent disposal sites can be established for collection of hazardous wastes.

### **8.1.9 Water Conservation**

Water conservation will reduce dry weather sanitary flow and increase the volume of combined sewage that can be retained in the CSS and treated at the POTW treatment plant. Water conservation at larger industrial facilities might reduce dry weather flow significantly. Unless dry weather flows represent a large portion of the combined sewer flow causing overflows, however, the effect of this activity might be limited.

### 8.1.10 Commercial/Industrial Pollution Prevention

Municipalities should actively promote pollution prevention for commercial and industrial establishments located in their combined sewer areas. Such establishments, particularly those with waste oil or hazardous waste storage, can be required through the local sewer use ordinance or sewer use rules and regulations to develop and implement an appropriate pollution prevention plan and apply best management practices (BMPs) to minimize pollutant discharges into storm drains in the combined sewer areas.

The EPA guidance, *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA, 1992) can be used as a reference. Another EPA document, *Municipal Wastewater Management Fact Sheets – Storm Water Best Management Practices* (EPA, 1993), provides useful guidance on pollution prevention practices.

## 8.2 Performance and Cost

The degree to which pollution prevention can reduce contamination of receiving water bodies through CSOs is not known. In theory, the costs for each unit of pollution reduced through prevention should be less than it would be to collect and physically treat that same unit at the CSO. In some circumstances, however, source control measures sufficient to provide effective pollution control over a diffuse area could be more costly than control measures at CSO outfalls. For example, the effectiveness and overall costs for street cleaning depends on the frequency of cleaning, the number of cars on the street, the degree of enforcement of alternate-side-of-the-street parking regulations, and the volume of litter. In some cases, it would be more cost-effective to screen CSOs at a centralized location than to clean the streets often enough to effectively control pollutants.

## 8.3 Considerations

Frequently, the actions that prevent or reduce the introduction of specific pollutants into a CSS will be cost-effective in reducing the amount of pollution discharged in CSOs.

Even in cases where pollution prevention measures provide limited tangible benefits, they can have two important ancillary benefits. Reductions in the quantity of pollutants entering the conveyance system will reduce the O&M effort on any overflow control that may be implemented as part of a CSO control program. In addition, public participation in pollution prevention programs will serve to heighten awareness of CSO issues and might increase public support for the overall program.

The measures discussed above generally involve the cooperation of the general public. Many measures involve changes in such habits as to how materials are generated and disposed. The municipality can educate and encourage the public but will have limited control over the degree of implementation and, hence, limited control over the actual pollutant reductions.

#### **8.4 Example of Implementation**

Eugene, Oregon, has a comprehensive public outreach effort to raise community awareness of storm water management issues. This effort involves telephone surveys to determine community awareness, quarterly newsletters mailed to all city residents (more than 69,000 copies of each issue), educational events, civic and club presentations, and handouts. Although Eugene's effort focuses on storm water, similar efforts can be implemented to inform the public about CSO problems to improve the effectiveness of pollution prevention programs.

#### **8.5 Documentation**

The following list presents examples of documentation that could be submitted to demonstrate diligent effort in evaluating this minimum control and a clear understanding of the measures being implemented:

- A summary of the alternatives considered
- A list and description of the measures planned for implementation and the name of the individual or department responsible
- A cost estimate and the implementation schedule

- An estimate of the benefits expected from the minimum control actions
- Samples of the public educational materials planned for use
- A list of pollution prevention plans that have been developed, if appropriate.