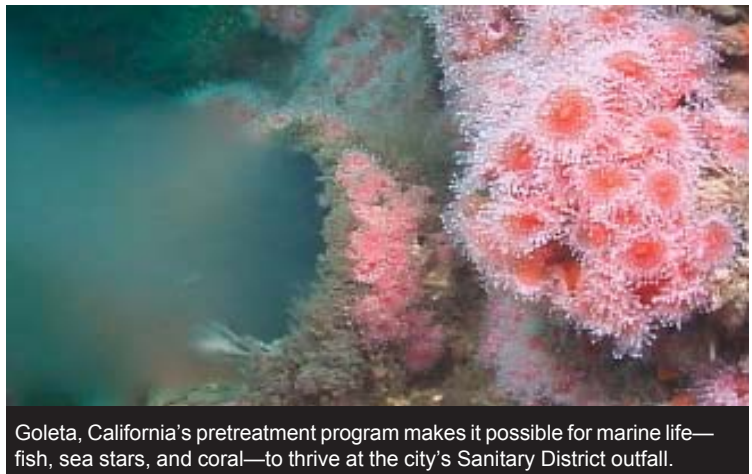


*EPA's National Pretreatment Program has led the way to dramatically reduce or eliminate discharges of pollutants to sanitary sewer systems and to the nation's water bodies. The Program controls a complex array of industrial wastestreams in order to prevent interference or pass-through of municipal treatment system processes. Without these controls, a number of harmful pollutants could make their way into the nation's waters. Federal, state, and local partnerships are central to the successful implementation of the Program. Renewed commitment and support to the Pretreatment Program will conserve the environmental gains of the last 30 years, strengthen strategic partnerships, and prepare communities to meet the pollution challenges of the 21st Century.*

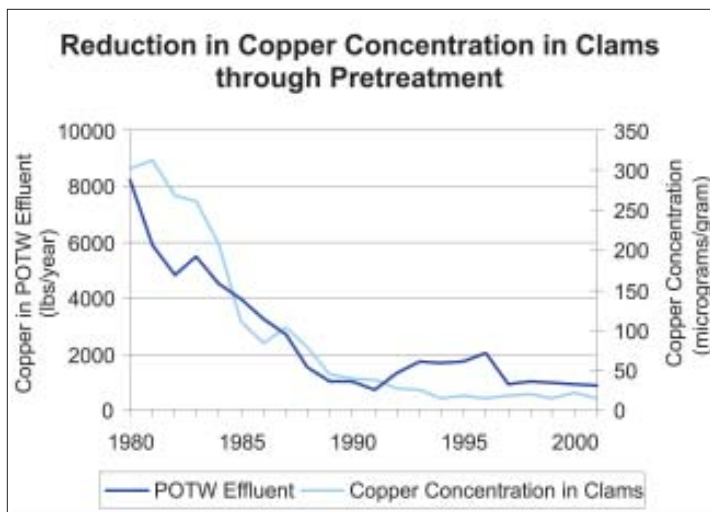
## The Pretreatment Program

Pollutants in industrial wastewater may compromise municipal treatment plants' processes or contaminate the nation's waters. To protect municipal treatment plants and the environment, the Pretreatment Program requires industrial dischargers to use treatment techniques and management practices to reduce or eliminate the discharge of harmful pollutants to sanitary sewers. The Pretreatment Program is a core part of the Clean Water Act's National Pollutant Discharge Elimination System (NPDES), and it has helped communities:

- Maintain and restore watershed quality, at a much lower cost than upgrading treatment;
- Encourage pollution prevention;
- Increase beneficial uses of sewage sludge;
- Prevent formation of poisonous gases in the sanitary sewer system;
- Meet wastewater discharge standards; and
- Institute emergency-prevention measures.



**The Pretreatment Program's strategic partnerships go beyond ensuring the success of Publicly Owned Treatment Works (POTWs).** The partnerships—involving approximately 1,500 communities and 27,000 industrial facilities nationwide—promote:



Through its pretreatment program, Palo Alto, California has reduced pollutants discharged to San Francisco Bay. As the quantity of copper in the POTW's effluent has improved, copper levels in clams near the city's outfall have decreased.

- Protection of drinking water supplies, by reducing contaminants released into source waters by POTWs;
- Prevention of overflows that include raw sewage from sewers, through controls on oil and grease;
- Extension of the life of the nation's wastewater infrastructure, which has an estimated funding gap of over \$6 billion per year, through controls on corrosion;
- Worker safety, by protecting workers from harmful fumes through limits on the discharge of dangerous gases and gas-forming substances; and
- Homeland security, by ensuring proper disposal of wastes from decontamination showers.

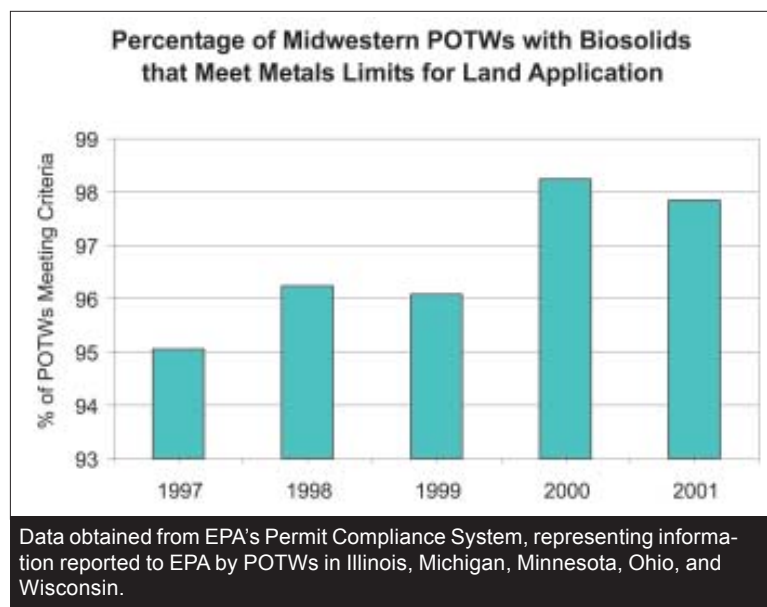
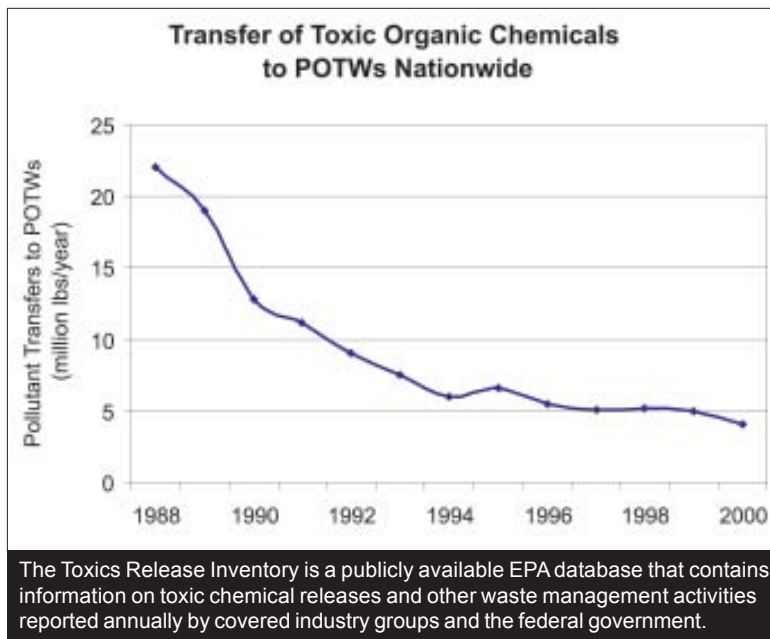
## Partnerships that Work

Through the Pretreatment Program, POTWs have worked intensively in a federal, state, and local partnership that is a model of intergovernmental cooperation.

### National data affirm the Pretreatment Program's success:

- Industries release fewer toxic contaminants to POTWs. Data from EPA's Toxics Release Inventory show that industries have reduced the amount of pollutants they discharge to sewage treatment plants during the past 10 years.
- POTWs now generate sewage sludge that poses fewer threats to public health and the environment. An Association of Metropolitan Sewerage agencies (AMSA)

survey of biosolids concluded that the Pretreatment Program was directly responsible for reductions in metals found in sewage sludge. Surveyed POTWs experienced a modest 13 percent decline in metals not regulated by the Pretreatment Program. However, concentrations of metals regulated under the Pretreatment Program decreased considerably, dropping 59 percent from 1986 to 1997.



- Because of the successful implementation of industrial discharge limitations, more POTWs are able to apply sewage sludge to land. For example, six Midwestern states saw a significant increase in the percentage of POTWs whose sludges qualified for the term 'biosolids.' More than 90 percent met metals limitations that allow POTWs to land apply their biosolids. As a result of this national progress, many POTWs, like the Unified Sewerage Agency of Washington County, Hillsboro, Oregon, have been able to use 100 percent of the biosolids they produce. Hillsboro applies 11,000 dry metric tons annually to amend soils and improve crop production.

## Supporting Key Environmental and Public Health Programs

**Drinking Water Protection**—EPA's Pretreatment Program has been helping communities protect their sources of drinking water for the last 30 years by:

- Protecting POTWs' treatment processes from upsets, which could compromise the treatment facility's ability to treat harmful substances, such as pathogens. Elevated pathogen levels could have substantial impacts on public health if the pathogens exit POTWs and enter surface waters. Downstream drinking water treatment facilities may be challenged by significantly higher-than-normal pathogen levels.
- Controlling industrial releases of carcinogenic contaminants that might otherwise be discharged to municipal sewage treatment plants. Without controls on industrial dischargers, carcinogens might pass through the sewage treatment plant and enter reservoirs tapped for drinking water supplies. Therefore, the Pretreatment Program eliminates the need to install additional, expensive water treatment equipment to protect the long-term health of consumers.

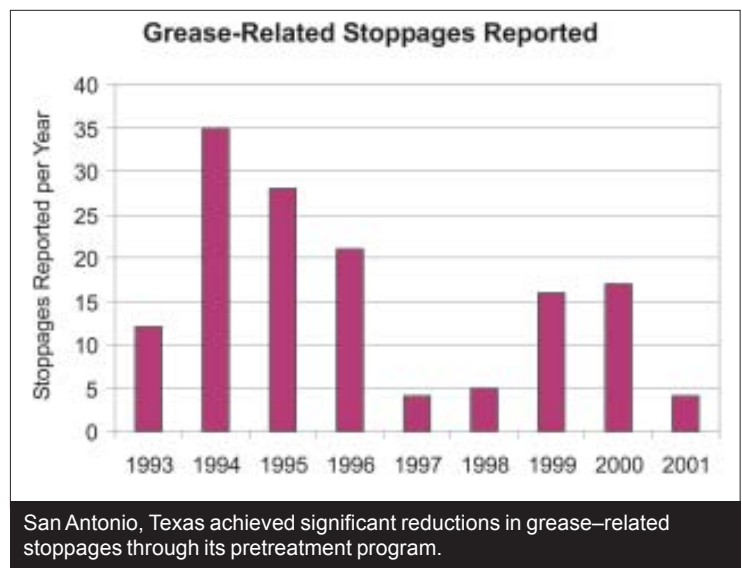
**CSO, SSO, and storm water management**—Combined and Sanitary Sewer Overflows (CSOs and SSOs) contain raw sewage, and may also carry industrial waste and debris. EPA's wet-weather programs recognize the importance of the Pretreatment Program in helping communities:

- Mitigate overflows. For example, many cities halt discharges of waste flows from industrial facilities to the combined sewer system during wet weather events. In addition, industries may retain storm water from their properties and release it to the sewer system after the storm has ended and sewer system capacity is adequate.
- Control grease buildup in sewers—a major cause of SSOs. As part of their pretreatment programs, many communities require food service establishments to recycle all fats, oils, and greases or to use oil and grease removal equipment. Annapolis, Maryland's pretreatment program practically eliminated SSOs associated with the restaurant community.
- Inventory and control non-domestic sources of pollutants, the types of pollutants discharged, and the volume of industrial flow. These inventory efforts not only protect wastewater treatment plants, but also help identify industrial contributions to municipal separate storm sewer systems.

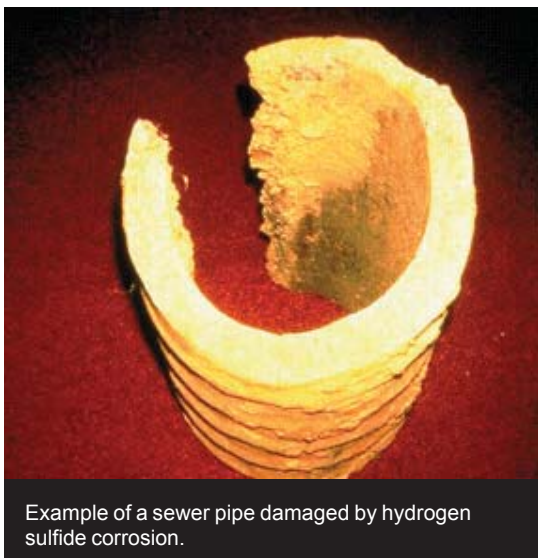


Overflowing sewer due to a sewer blockage.

**Infrastructure Protection**—Pretreatment programs help to protect underground infrastructure from costly damage and the need for premature replacement. The gap between the average annual funding needed and the funding available for wastewater treatment and collection systems is estimated to be \$6.1 billion per year from 2000 to 2019. EPA's Pretreatment Program helps to extend the life of infrastructure and postpones costly replacement. For example, limits on pH prevent corrosion of collection systems and treatment plants from acidic discharges. Discharge limits on sulfides and sulfate-bearing wastewaters also protect infrastructure from corrosion caused by bacteria.



San Antonio, Texas achieved significant reductions in grease-related stoppages through its pretreatment program.



Example of a sewer pipe damaged by hydrogen sulfide corrosion.

**Worker and Public Safety**—Ensuring safety is an important goal of EPA's Pretreatment Program. The Program accomplishes this goal by:

- Protecting the physical integrity of the sewer system. Volatile organic compounds discharged to sewers may accumulate in the head space of sewer lines, increasing the potential for explosions that may cause significant damage. Discharge limitations and management practices required by the Pretreatment Program reduce the likelihood of such catastrophes.
- Preventing the buildup of poisonous gases. Discharges of toxic organics can generate poisonous gases, through various kinds of mixing and chemical reactions. Appropriate pretreatment discharge limits prevent this gas build up.

**Homeland Security Initiatives**—As they increase their preparedness for possible terrorist attacks, communities across the country will rely on their local pretreatment programs. The Pretreatment Program helps communities build contingency plans for the control and disposal of decontaminated wastes, such as wastes from decontamination showers. Recently, pretreatment authorities in Boca Raton, Florida managed the disposal of anthrax wastes as part of clean-up activities in that city.

## Future Challenges

The Pretreatment Program must evolve to face tough new challenges in protecting public health and the environment. Future challenges include:

- **Addressing emerging industries and pollutants.** Every year, new industries and new pollutants of concern challenge POTWs. For example:
  - The Pretreatment Program must keep pace with the constant shifts in industrial processes and the development of new industries and chemicals. For example, in the 1980s and 1990s, the rapid growth of the semi-conductor industry required new pretreatment program strategies. Mounting evidence now suggests that persistent, bioaccumulative, and toxic (PBT) chemicals, surfactants, and hormone-disrupting substances can pass through wastewater treatment plants and endanger human health. Through their pretreatment programs, communities continue to address changes in industrial operations.
  - New effluent guidelines for transportation equipment cleaning and centralized waste treatment facilities address highly complex industries with a history of disrupting POTW treatment. Communities will rely on the Pretreatment Program as the vehicle to implement these guidelines and control these highly variable and highly toxic wastestreams.
- **Water conservation and reuse.** Industries and municipalities have a growing understanding of the economic benefits of using water more efficiently. Effluent waters from POTWs are increasingly used for irrigation and for cooling in power generation and industrial processes. The high quality waters needed for these uses emphasizes how important pretreatment is to the growing area of water reuse and conservation.
- **Improving watershed quality through Total Maximum Daily Loads (TMDLs).** TMDLs are established to ensure that rivers and streams meet their intended uses, such as recreational areas and drinking water supplies. State and local pretreatment personnel are increasingly called upon to provide expertise in developing appropriate TMDLs and community-based strategies. These individuals are aware of the contributions from industrial pollutants within the local watershed and sewer-shed, and can share their knowledge of how to implement pollutant limits while pursuing complex watershed-based solutions.

Communities will rely on the leadership of the Pretreatment Program to meet these and other unanticipated challenges. While the Program has had many successes in the last 30 years, a firm commitment to the federal, state, and local partnerships established under the Program is critical to protecting public health and the environment in the future.



A safety issue: Discharges of hexane from an industry into Louisville, Kentucky's sewer system collapsed sewer lines and destroyed streets throughout the city in 1981.

