

Putting Pipes on a Fat-Free Diet

Introduction

The challenges presented in addressing fats, oils, and grease (FOG) are complex. First, you have restaurant owners, deli owners, and grocery store managers who don't see what the big deal is with allowing FOG to go down the drain. As far as they are concerned, they are paying for sewage treatment and don't understand why they must also pay to have FOG removed.

Second, mayors and other city officials are sometimes reluctant to enforce sewer ordinances regarding FOG. Business owners often contribute the most toward city expenses, and they are also most likely to be on the city council and serve on the planning commission.



Finally, city officials often look to wastewater engineers for a way to solve the FOG problem at the treatment plant. The engineers also often view the problem as a challenge to design a system that will take care of FOG at the treatment plant, ignoring the damage being done in the collection system. So, officials and engineers focus on the treatment plant, without asking business owners to install expensive equipment and pay to have the FOG removed at their establishments.

This project was initiated to educate city staff and business owners about the effects of FOG in collection systems and wastewater treatment plants, but has grown to include outreach to the public as well. The project is still in the early stages of demonstrating the problem and suggesting ways to address it. However, the project has been enthusiastically received by many cities.

Problem

When FOG is poured down a drain, it can clog pipes and cause sewer system overflows. Most people don't realize the problems they are causing for themselves and their city when they pour fats, oils, and grease down the drain. Often people think that by running hot water down the drain with the grease, it will stay liquid and flow easily through the pipes. What these people don't realize is that once FOG reaches the pipes, it cools down rapidly and gels. The FOG then catches on roots and imperfections in pipes, blocking the flow of sewage. Once the sewer lines are blocked, raw sewage can back up into homes and businesses or flow out of manhole covers onto city streets.

FOG that doesn't deposit in the collection system makes its way to the wastewater treatment plant. There, the FOG causes a specific type of fat-loving bacteria to grow uncontrollably, forming mats that look like foam rubber, which can only be removed manually. Also, some of the FOG can roll along through the pipes and form a ball (consisting of grease, fecal matter, tissue, and other debris) that travels to the treatment plant. Because fats, oils, and grease are lighter than water, these balls can float through the treatment plant and out to the receiving waters without being disinfected, unless treatment plant staff remove them manually.

Fecal matter can contain disease-causing organisms such as bacteria, viruses, fungi, protozoans, and parasitic worms. These pathogens can cause hepatitis, typhoid fever, cholera, dysentery, polio, and more.

Some bacteria, such as *Salmonella typhi* (typhoid fever) and cholera are extremely invasive on contact with the body, regardless of a person's age or state of health. Wastewater treatment usually helps to control these diseases. However, when the fecal matter gets inside a ball of FOG, the ultraviolet light or chlorine can't penetrate it, so it moves through the system without treatment.



When a wastewater treatment plant accidentally releases untreated waste, people swimming, rafting, or fishing downstream from the wastewater treatment plant could be exposed to these disease-causing organisms.

To prevent these problems restaurants, grocery stores, and delis must regularly clean out their grease traps or have their grease interceptors pumped. Most small cities don't understand the magnitude of the potential problem when this doesn't happen.

Project goal

The primary goal of the project is to increase awareness – in the municipal staff and the public – that FOG is a serious problem that affects individuals and their communities. People can do some simple things to reduce the problem and make our towns and rivers safer and healthier for everyone.



Milestones and outcomes

A press release about this program received wide distribution and has been translated into Spanish. Graphics were added and formatted to fit three per page. To continue the outreach to individuals, the press release is being reproduced on card stock and will be used as an insert with sewer bills or as handouts. Also, a PowerPoint presentation was created to provide information to city staff and business owners about the issues.

Project highlights

Almost immediately after publication on Ecology's website our Public Information Officer, Joye Redfield-Wilder, began getting calls about the article, asking for permission to reprint it. It was printed in Friday Harbor and Fresno, California and was added to the Environmental Resource Center's web page. There was even a call from Sarasota, Florida for permission to use the article. In central Washington State, a reporter for the Cashmere Valley Record printed an extended story on the FOG problem. According to the story, city of Cashmere employees will begin inspecting restaurants' use of grease traps and begin fining businesses \$250 a day for not using them.

Partners

Lynda Jamison wrote the article, developed the PowerPoint presentation, and sought permission to use photographs and posters. Joye Redfield-Wilder edited the article and arranged for publication. Joye was also a great help with information on whom to contact to develop the sewer bill inserts. Greg Bohn translated the article into Spanish and Dave Leonard formatted the insert and added graphics to get it ready to go to the printer. None of this would have been possible without the encouragement and help of Rick Frye, Water Quality Unit Supervisor for the Technical Unit and Denise Mills, Water Quality Section Manager at Ecology's Central Regional Office. A great deal of credit also goes to Otis Hampton, who generously shared his expertise on FOG.

Funding

Total cost for the project was \$100 for printing costs for the sewer bill inserts paid for by the Water Quality Program.

For more information

Contact:

Lynda Jamison
Water Quality Specialist
WA Dept. of Ecology - CRO
Phone: (509) 575-2434
Email: ljam461@ecy.wa.gov

If you need this publication in an alternate format, please call the Water Quality Program at 360-407-6404. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.