

DEVELOPING THE FOG ABATEMENT PROGRAM

Developing the FOG Abatement Program will involve selecting a regulatory approach (e.g., educational or enforcement-based), establishing FOG handling and disposal practices, developing FSE and hauler databases, and estimating program costs.

Select a Program Approach

There are several options available for regulating FSEs including education, program administration through an ordinance, permitting, providing incentives, and enforcement. The specific regulatory requirements must be reviewed as a method to determine the best approach for working within established guidelines. The five broadly classified approaches are described below and should be considered when developing a FOG Abatement Program.

Educational Approach

In an educational approach, the impetus is to educate the facility operators on the need to prevent FOG discharges to the sanitary sewer. The educational approach should always be employed during the first contact with FSEs. Distributing educational tools (posters, brochures, fact sheets, grease cans, grease scrapers, etc.), holding workshops, and conducting periodic facility assessments are all good starting points for a FOG Abatement Program.

Ordinance Approach

A local sewer use ordinance may give an agency the authority it needs to develop and implement a FOG Abatement Program. If legal authority does not exist for FOG control, adaptation of an existing ordinance or creation of a new ordinance may become necessary. **Understanding the Regulatory Requirements** section includes a discussion of the applicable FOG control provisions.

Permitting Approach

In a permit-based system, FOG handling permits may be issued to all or some FSEs. The permittees may or may not be assessed a fee for obtaining the permit, depending on available sources of funding for the municipality. Permit requirements may include installation of specific FOG removal equipment, required maintenance frequency, or the implementation of FOG handling BMPs. Permits may also be issued to grease haulers and/or grease recyclers.

Permits are a common regulatory control method because they offer a clear channel of communication to the FSE about their requirements for compliance, as well as a concise, uniform, and legal framework for operation of the FOG Abatement Program. However, permits do have drawbacks and may not be the best choice for every FOG Abatement Program or every FSE within that program. Some control programs have thousands of FSEs within their jurisdiction. If a large amount of paperwork is associated with issuing a permit, keeping current permits on numerous FSEs could overwhelm a program, especially considering the number of restaurants that may change ownership or go out of business each year. For this reason, a

FOG Abatement Program may opt to reserve permits for its largest FSEs or use the permit as a compliance tool for those FSEs that continue to cause blockages or have repeated violations.

Incentive-Based Approach

In an incentive-based program, certifications and/or business awards would be provided to the FSEs that implement proper FOG control measures and follow all program requirements. The program awards and recognition can be a marketing tool for some facilities and thus provide an incentive for compliance. Incentives can easily be tied into one of the approaches listed above, such as education and permitting.

Enforcement Approach

In an enforcement approach, FSEs are fined for FOG discharges or assessed clean-up fees (based on SSO evidence or CCTV records). This approach is typically used in conjunction with education, ordinance, permitting, or an incentive-based program. Enforcement actions are implemented when an FSE has refused or failed to participate in the educational programs or has violated compliance requirements. It is best to develop an enforcement response plan defining an escalating response strategy to violations.

Establish Acceptable FOG Handling and Disposal Practices

Acceptable FOG handling and disposal practices must be developed and written as part of a FOG Abatement Program. The practices may be part of a sewer use ordinance, permit, BMPs, or informational aspect of the program. Part of this development process should include input by different stakeholders, as discussed in **STEP 5**. General categories of FOG control practices are described below.

Required Types and Sizing of Grease Removal Equipment.

This category of FOG handling and disposal practices is more technical in nature and includes acceptable types/brands of FOG control equipment, allowable types of connections, suitable uses of the equipment, appropriate sizing criteria, and installation of sampling boxes. Equipment sizing is based on either the estimated flowrate through the equipment or the amount of grease to be collected or both. Many municipal ordinances require use of Appendix H of the Uniform Plumbing Code to size grease interceptors. However, these specifications are under review because they tend to result in oversized interceptors. An oversized interceptor is difficult to clean and yields a long detention time. A long detention time can result in the production of hydrogen sulfide gas and sulfuric acid, which combined are odor causing, corrosive, and damaging to grease removal equipment as well as downstream sewer piping. Requiring manhole access to interceptors and installation of a sampling box can be very useful for interceptor inspection and sampling.

Operation and Maintenance of Grease Removal Equipment.

This category of FOG handling and disposal practices includes how to properly operate and maintain grease interceptors. In the past, operational requirements may have included a prohibition on dishwasher or garbage disposal connections to grease control devices. Many of the newer devices have been designed to handle the temperature and loading of these fixtures. Maintenance requirements may include specific cleaning frequencies, effective cleaning methods, and retaining pump-out records for a specified amount of time.

Best Management Practices.

This category of FOG handling and control practices includes activities to keep FOG from being discharged to the sanitary sewer. The specified activities may include dry clean-up methods for FOG spills, scraping plates prior to washing, using baskets in sink drains, prohibiting addition of chemical or biological grease control agents, posting of instructional signs, and general equipment recommendations. BMPs may be an optional or mandatory part of a FOG Abatement Program.

Grease Storage for Recycling.

This category of FOG handling and disposal practices relates to storing yellow grease for pickup by a recycling (or rendering) company. Proper storage practices include use of a specific type of container, tight-fitting lids, and establishment of secondary containment in case of spills. Contact information for licensed, reputable grease recycling companies in the area should be prepared for distribution to the FSEs.

Allowable FOG Disposal Methods and Locations.

This category of FOG handling and disposal practices includes providing the FSEs with a list of acceptable methods for FOG disposal and identification of the local disposal sites for FOG waste. A list of licensed grease haulers should be established and distributed to FSEs. Instructions for the FSE employees on how to deal with grease haulers and how to verify that the hauler is using appropriate disposal methods may also be included. It may be beneficial to conduct workshops with local haulers to educate and train them on the types of pumping and disposal methods that are acceptable in the municipality.

Each municipality has a different approach for FOG disposal. While all POTWs receive some grease through their collection system, many POTWs do not accept waste grease from waste hauling services. Of the POTWs that take grease from waste haulers, some may only accept FOG waste from facilities located in their service area. Some POTWs accept grease from any location. Others have purchased their own pumping equipment and perform some interceptor cleaning for FSEs in their service area (such as the City of Oxnard, CA). The municipal FOG Abatement Program must be aware of the methods and locations for FOG disposal in its locale in order to optimize control over the waste stream.

Decanting of water from grease hauler's trucks is another issue that most FOG Abatement Programs will have to address. Decanting is the practice of allowing the water portion of what has been removed from the interceptor to be returned back into the pretreatment device. This water portion contains solids, may have a low pH, and may have been contaminated from the hauler's previous load. For this reason, decanting by waste haulers should not be allowed unless adequate pretreatment is provided for the returned water and approval from the local control authority has been granted.

Construct Databases

Maintaining accurate records of all activities related to controlling FOG discharges from FSEs is essential to conducting a successful program. In order to facilitate the recordkeeping process and to provide easy access to the compiled information, databases must be created. The three essential types of databases needed are for FSEs, grease handlers, and collection system operation and maintenance (O&M). Each are detailed in the following sections.

Construct an FSE Database.

During development of a FOG Abatement Program, FSEs in the municipality should be identified and compiled into a database. A list of possible FOG dischargers will be necessary to focus outreach efforts, issue permits, and conduct inspections.

A number of existing records may be utilized to identify the local FSEs. A list of these records is presented in Table 5. However, each agency keeps different types of records and there may be additional databases available. The type of data to be collected and stored for each FSE is listed in Table 6. When reviewing the existing records, keep in mind that any information provided about the FSEs (especially regarding their operational attributes) may become valuable and should be documented for later use.

Organization to Contact	Available Records
Municipal Business License Department	List of local business licenses
City/County Storm Water Program	List of NOIs, inspection reports
Local Health Department	Business list/inspection reports
Yellow Pages	Advertisements for local restaurants, listings for cooking schools
Chamber of Commerce	Existing and new business lists
Pretreatment Program	List of permittees
Local Sanitation District or Collection System Agency	Field inspection reports
Building, Utility, and Fire Departments	Field inspection reports

Table 5. Useful Records for Identifying FSEs

Data to be Stored	Data to be Stored (continued)
Name of FSE, address, phone number	Interceptor Cleaning Frequency
Property owner, address, phone number	Health Department License Number
Manager's name	Number and type of violations
Contact person's name	Monthly average water use
Number of employees	Monthly wastewater discharge volume (if available)
Type of food served	Link to downstream sewer blockage or SSO

Hours of operation	History of FOG discharges (if reported)
Number of meals served per day	Current FOG disposal method
Peak hours of operation	Name of contracted grease hauler
Seating capacity	Have Vapor hoods? Yes/No
Major equipment checklist: garbage disposal, ice machine, dishwasher	Vapor hood cleaning service (name, contact information)
Grease Removal Equipment: Yes/No, type, capacity (gallons/pounds)	On-site or off-site vapor hood cleaning?
Waste hauling records or invoices	Education materials provided to the FSE (training, posters, brochures)

The database format should be selected using the expected size, value, and use of the database. If the FOG program database is tracking activities that may be of interest to other municipal agencies, the database format should be compatible with the other operating systems.

To ensure that the database is always up-to-date with new food service establishments or changes in operations at existing facilities, the FOG Abatement Program should be in frequent contact with other pertinent agencies. This may best be accomplished by putting the FOG program on circulation lists or possibly an automatic email notification system to inform the program personnel when new business licenses are issued, building permits/expansion plans are approved, and health department or storm water program violations noted. All of this information should be added continually to the FSE database in order to anticipate any potential FOG discharge problems.

Construct a Grease Handler Database.

There may be two types of grease handlers encountered in a FOG Abatement Program. “Grease haulers” clean out grease interceptors at food service establishments and dispose of the collected wastes. They may also be referred to as “brown” grease haulers. The brown grease may be disposed of at a local POTW who accepts grease wastes or at a grease recycling company. Identifying these companies may be accomplished by looking in the Yellow Pages under “grease,” compiling a list from contacts with FSEs, and checking disposal records at the local POTW if it accepts grease waste.

“Grease recyclers (or renderers)” typically collect FOG waste from an FSE’s tallow or yellow grease bin and recycle the waste into some usable products; such as animal feed supplements, soaps, oils, cosmetics, and biodiesel fuels. Yellow grease is not normally found in the sanitary sewer system as it has a relatively high value and is stored on-site in special containers for collection by the recyclers. Grease recyclers may be found in the Yellow Pages under “rendering companies” or through contact with FSEs.

Information obtained about grease haulers and recyclers doing business in the local area should be compiled into a database. The database format can be the same as used for the FSEs; however, the type of information stored will be different. For example, it may be useful to record information on the vehicles used by grease haulers (VIN, type of equipment, and condition of vehicles), driver names, pumping and delivery schedules, contracted FSEs, and any ongoing disputes or legal actions.

Some type of grease handler identification and tracking should be undertaken by the Fog Abatement Program.

Develop Collection System O&M Database.

The local Public Works Department (or whichever municipal department operates the collection system) should be contacted to obtain historical data related to FOG blockages and SSOs. (The information acquired during Characterizing FOG Sources process can be used as a starting point for this database). The locations of the sewer “hot spots” can be overlaid with restaurant locations for GIS mapping and aid in identifying problem food service establishments. Posting a large wall map with a plastic overlay can be an easy method to locate and target these hot spots. Having this map readily available is also an excellent way to communicate with agency directors and politicians. These are the people that provide essential support to a FOG Abatement Program. An ongoing notification system between the collection system staff and the administrators of the FOG program should be implemented to coordinate investigations of grease-related SSOs and blockages.

Estimate a Program Budget

Based on the selected regulatory approach and the associated program activities, an overall budget for the program can be estimated. The budget estimate should include staff time, materials and equipment costs, inspection costs, analytical costs, and other services that will be provided.

Outreach Program Costs

To estimate a budget for the outreach program, first determine the materials that will be produced and then determine to whom and how the materials will be distributed. (Providing outreach includes information on selecting an outreach approach and developing related materials.) The initial cost for outreach materials will include design and preparation, but in subsequent years, the outreach costs may only involve production and updating. Once these selections are made, the total costs of the outreach program can be determined by adding up the estimated staff time to conduct workshops and distribute the materials, design/production costs of the materials themselves, and any other costs associated with distributing the materials. It may be helpful to contact other FOG Abatement Programs and discuss their costs per food service facility per year in order to verify the predicted budget.

Inspection Program Costs

The costs of implementing an inspection program to control FOG discharges will involve significant staff time. The required time may include training, facility inspections, sample collection, review of grease control equipment specifications, FOG discharge investigations, and BMP implementation review. The

items to be quantified in order to predict program costs are listed below. However, additional staff costs may be incurred for investigating sewer blockages and reviewing equipment installation plans.

Items of Interest
Inspection Frequency (# of visits per year)
Average time spent at each FSE (hrs/visit)
Number of FSEs per inspector
Activities to be conducted at the FSEs (equipment inspection, education of employees, sewer cleaning, waste sampling, spill cleanup)
Analytical costs (approx. \$75/sample for analysis of total grease concentration)
Equipment costs (e.g., vehicle expenses, sewer cleaning equipment, portable pH meter, ice chest for sample transport)

Database Maintenance Costs

Staff time to maintain all databases must be estimated to determine an overall program budget. Initial database setup will be much more time-consuming than updating facility information during subsequent years. Updating facility information will include posting inspection results, logging correspondence between program staff and the FSEs, and tracking enforcement actions and responses.