

**GUIDANCE DOCUMENT
FOR THE DISCHARGE OF
WASTEWATER ASSOCIATED WITH
FOOD PREPARATION ESTABLISHMENTS**

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USER'S GUIDE FOR THE GREASE PRETREATMENT PROGRAM DOCUMENTS

The Connecticut Department of Environmental Protection is providing the Guidance Document and Resource Documents as reference material to support the *General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments*. These documents are intended to assist FOG Pretreatment Program Administrators in developing local grease pretreatment programs. The information is provided in hardcopy, for easy access and review but is also provided in electronic format, to allow them to be modified and used as a starting point for developing documents for local programs. The Guidance Document provides basic information on the components of a local program. The Resource Manual contains forms, example ordinances, and information for specific parties involved in the program. Many of these documents were developed specifically for the City of Torrington/Torrington Area Health District.

INFORMATION FOR PROGRAM DEVELOPERS

Activity	Information Location	Description
1) Understanding this Document	<i>General Guidance</i> : Section 1, Executive Summary; Resource Document 2-Explanation of Who is Regulated by the General Permit	This section provides a summary of the manual and background on the various documents supplied.
2) Gaining Support for Your Local Program	<i>General Guidance</i> : Section 2, Background; Section 3- Problem Scope and Options for Solutions; Section 4, Element 1-General Permit; Resource Document 1-General Permit	Understanding of the problem and support for the program within the municipal government is critical for a successful program.
3) Identify the Agency Responsible for Implementing the Grease Program	<i>General Guidance</i> : Section 4, Element 2-Permitting and Approval Programs; Section 5-Implementation	There are many possible departments of municipal government that could be responsible for overseeing the program. This information considers the roles these divisions may play.
	<i>Example</i> : Figure 4-1	
4) Increasing Public Awareness	<i>General Guidance</i> : Section 4, Element 3-Awareness-Building and Training; Section 7-Public Education and Outreach	This information presents options for increasing public awareness of the grease pretreatment program.
	<i>Example</i> : Resource Document 6-Examples of Public Information and Education Brochures; Document 7-FPE's Guide to the Discharge of Fat and Oil to Public Sewer Systems; Document 15-Information for Grease Trap/Interceptor Cleaners on the FOG Program	

Activity	Information Location	Description
5) Program Registration, Equipment and Maintenance Requirements	<p><i>General Guidance:</i> Section 4, Element 2-Permitting and Approval Programs; Element 4-Installation and Operation of Equipment; Element 5-Grease Minimization Procedures; Element 6-Monitoring and Record Keeping</p> <p><i>Example:</i> Resource Document 7-FPE's Guide to the Discharge of Fat and Oil to Public Sewer Systems; Document 8-Grease Pretreatment Regulations; Document 9-Example Applications; Document 10-Passive and Active FOG Pretreatment Systems; Document 11-FOG Pretreatment Equipment Sizing Criteria</p>	Details of the program must be considered including registration requirements, approved equipment, alternate equipment, and maintenance requirements. Information is presented to familiarize program developers with available options.
6) Performing an Inventory Analysis	<p><i>General Guidance:</i> Section 4, Element 7-Inventory and Analysis</p> <p><i>Example:</i> Resource Document 3-Wastewater Discharge Registration Application for Restaurants & Food Preparation Establishments; Document 8-Fats, Oils, and Grease Pretreatment Program Registration Form</p>	Determining the existing conditions will assist program developers in assessing progress and tracking individual wastewater discharges.
7) Maintaining Program Records	<p><i>General Guidance:</i> Section 6-Information Management</p>	Methods of tracking information are presented including commercially available software programs specifically for grease management.
8) Conduction Inspections	<p><i>General Guidance:</i> Section 4, Element 8-Inspection Programs; Element 5-Grease Minimization Procedures</p> <p><i>Example:</i> Resource Document 13-Inspection Checklist and Inspection Guidance; Document 12-FOG Minimization Plan Guidance</p>	Specific information on conducting inspections is provided to assist inspectors in conducting thorough and consistent inspections.
9) Enforcement	<p><i>General Guidance:</i> Section 4, Element 9-Enforcement Programs</p> <p><i>Example:</i> Resource Document 16-Notice of Violation Letter; Also see examples listed below under <i>Step 12) Legal Framework</i></p>	Enforcement action must be clearly defined with methods of informing the facility found to be in violation of the offence and requirements for correction.
10) Collection and Disposal of Grease	<p><i>General Guidance:</i> Section 4, Element 10-Collection and Disposal; Resource Document 14-Collection of Renderable and Non-Renderable FOG</p>	Grease generators must be advised on appropriate disposal options. Sufficient collection and disposal capacity is needed prior to implementation of the program.
11) Providing Financing Assistance	<p><i>General Guidance:</i> Section 4, Element 11-Financing</p> <p><i>Forms:</i> Resource Document 17-PS99 (3) & CERT-124</p>	Options for financing are presented. Sales tax forms are provided for grease generators use.

Activity	Information Location	Description
12) Setting up the Legal Framework	<i>General Guidance:</i> Section 6, Element 12-Legal Framework	A FOG Pretreatment Program will need to be based on legal requirements at the State and local level. A discussion of regulatory issues is provided. A copy of the State General Permit along with examples of municipal and Health District regulations are provided.
	<i>Example:</i> Resource Document 1-General Permit; Document 4-Model FOG Ordinance; Document 5-City of Torrington Sewer Use Ordinance, Document 8-TAHD Grease Pretreatment Regulations	

INFORMATION FOR FOOD PREPARATION AREAS

Activity	Information Location	Description
1) Requirements of the Program	<i>General Guidance:</i> Resource Document 7-FPE's Guide to the Discharge of Fat and Oil to Public Sewer Systems; Document 8-TAHD Grease Pretreatment Regulations	Provides the local requirements of the program in easy to understand language with examples including all required documentation.
	<i>Examples:</i> Resource Document 8-Outdoor Example Application; AGRU Example Application	
2) Sizing Grease Pretreatment Equipment	<i>General Guidance:</i> Resource Document 11-FOG Pretreatment Equipment Sizing Criteria	Guidance on the sizing requirements for both types of standard grease pretreatment units is provided.
	<i>Example:</i> Resource Document 9-Outdoor Example Application; AGRU Example Application	
3) Maintenance and Grease Minimization Procedures	<i>General Guidance:</i> Resource Document 7-FPE's Guide to the Discharge of Fat and Oil to Public Sewer Systems; Document 8-TAHD Grease Pretreatment Regulations; Document 12-FOG Minimization Plan Guidance	The section presents information on how to maintain grease pretreatment equipment.

INFORMATION FOR GREASE TRAP/INTERCEPTOR CLEANERS

(Examples from the City of Torrington/Torrington Area Health District)

Activity	Information Location	Description
What are the Program Requirements?	<i>General Guidance:</i> Resource Document 14- Information for Grease Trap/Interceptor Cleaners	Details of changes in disposal procedures that will affect Grease Trap/Interceptor Cleaners are provided.

INFORMATION FOR EQUIPMENT SUPPLIERS

Activity	Information Location	Description
What are the Equipment Requirements?	<i>General Guidance:</i> Resource Document 1- General Permit Section 5; Document 11-FOG Pretreatment Equipment Sizing Criteria	Details on equipment installation and sizing requirements are provided.

INFORMATION FOR THE GENERAL PUBLIC

While the *General Permit* is not intended for grease pretreatment or minimization at the residential level, this manual contains information on educational materials that could be provided to residents on FOG handling and minimization.

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LIST OF ABBREVIATIONS

AGRU	Automatic Grease Recovery Unit
BMP	Best Management Practice
CCM	Connecticut Conference of Municipalities
DEP	Connecticut Department of Environmental Protection
DPH	Connecticut Department of Public Health
DPW	Department of Public Works
FOG	Fat, Oil, and Grease
FPE	Food Preparation Establishment
NOV	Notice of Violation
SSO	Sanitary Sewer Overflows
TAHD	Torrington Area Health District
WPCA	Water Pollution Control Authority
WPCF	Water Pollution Control Facility

SECTION 1

EXECUTIVE SUMMARY

The discharge of Fat, Oil, and Grease (FOG) from Food Preparation Establishments (FPEs) creates significant environmental and public health problems in wastewater collection and treatment systems throughout Connecticut, and elsewhere in the United States. In order to help address these problems, the Connecticut Department of Environmental Protection (DEP) has developed a *General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments* (hereinafter referred to as the *General Permit*). The *General Permit* establishes a regulatory framework for the control of FOG discharges from FPEs throughout the State, including restaurants, hotel kitchens, school and hospital cafeterias, and similar types of facilities. The *General Permit* requires pretreatment equipment at FPEs for separation of FOG from the wastewater. Industrial facilities are not regulated by this general permit as they fall under the industrial pretreatment program. As with other general permits issued by the State of Connecticut, one permit is issued statewide for all regulated facilities, rather than each FPE receiving a facility specific permit.

Food Service Establishments in Connecticut are classified in accordance with the Public Health Code which is issued and updated periodically by the Connecticut Department of Public Health (DPH). The designation of Classes I, II, III, and IV Food Service Establishments arise from this Code. Rather than require all food handling establishments to install and maintain grease traps or automatic grease recovery units (AGRU), the *General Permit* makes use of the distinction in activities conducted at these facilities outlined by the DPH's classification system. The *General Permit* is applicable only to facilities designated as Classes III and IV because the food preparation techniques used at these facilities increases the potential to discharge FOG in their wastewater. Oil and grease that is discarded by FPEs can be defined in two broad categories: **renderable** (also called recyclable or yellow grease) and **non-renderable** (also called brown grease). Renderable grease can be defined as uncontaminated fat, oil, and grease taken directly from the food preparation process that can be used or recycled into products such as animal feed and cosmetics. Non-renderable grease is fat, oil, and grease generated from food preparation processes that has become contaminated thereby making it unacceptable for rendering.

The focus of the *General Permit* and this Guidance Document is on the management of non-renderable grease, although comments on renderable grease are also included as appropriate throughout the document. Proper management of renderable grease will decrease the quantity of FOG discarded to the public wastewater collection systems.

Although statewide data are not readily available, estimates suggest that there may be more than 14,500 FPEs in the State. Many municipalities and pollution control agencies have Sewer Use Ordinances setting FOG concentration limits in wastewater; however, few have implemented ordinances specifically requiring FOG pretreatment equipment. Those municipalities with ordinances requiring FOG pretreatment equipment may not include details on sizing requirements, monitoring, maintenance, or violations.

Prior to the promulgation of the General Permit, only three jurisdictions in the State had implemented aggressive FOG Pretreatment Programs. The City of New Haven initiated a

program in 1994 to control FOG discharges to the sanitary sewer system. Grease collected in traps or by AGRUs is delivered to a disposal facility at the East Shore Sewage Treatment Facility, where it is thickened and incinerated. Adjacent to the City of New Haven, the City of Hamden initiated a program in early 2001. Partly based on a sewer surcharge formula, the program reportedly achieved 80 to 85% compliance in the first 18 months of operation. The third example is the Torrington Area Health District (TAHD) which has participated in development of a Model Program for the 18 communities it serves. This Health District has a population of approximately 120,000 in both urban and rural communities. Within the TAHD, non-renderable grease collected from FPEs is delivered to the Torrington Water Pollution Control Facility (WPCF), where it is concentrated and then trucked to an incinerator in Waterbury for use as an alternative fuel in an incinerator.

The estimates developed through the Model Program in Torrington indicate the total FPE-generated non-renderable FOG pumpings average approximately 38,000 gallons per month (460,000 gallons/yr). The on-going FOG pretreatment program in New Haven generates FOG pumpings of approximately 1.3 million gallons/yr. Based on these limited data, if all regulated FPEs in the state participated in a FOG Pretreatment Program, the total potential quantity of material pumped from grease interceptors could generate as much as 20 million gallons/yr of non-renderable FOG. The currently available incineration capacity in Connecticut is anticipated to be sufficient for disposal of the projected non-renderable FOG volume.

Development of the *General Permit* and this Guidance Document is generally consistent with FOG pretreatment programs elsewhere in the United States, as well as with the on-going programs in New Haven, Hamden, and the Torrington area. The Model Program developed for the Torrington area identified 12 core elements necessary for a successful FOG Pretreatment Program for a mixed urban/rural region, as follows.

- A **legal framework** supporting the management of FOG from FPEs identifies the roles of various involved parties (FPEs, municipalities, WPCAs, the DEP, and potentially other agencies). Depending on the established responsibilities, a local Sewer Use Ordinance may need to be issued or modified.
- The ***General Permit*** establishes a minimum statewide set of requirements that the FPEs must address.
- The **Awareness of FOG disposal issues** is critical to the success of a FOG Pretreatment Program. Education requires effective communication. Examples include public workshops and meetings, mailings, advertising, and contact through trade associations.
- **Training** is required for those responsible for the implementation of the FOG Pretreatment Program.
- **Permitting and approval programs** are required to establish the means of approving FOG pretreatment equipment at both existing and new FPEs. Such programs may require coordinating documentation of FOG pretreatment equipment with food service licensing agencies, or using stand-alone databases maintained by WPCF or DPW staff. The means of organizing and maintaining a FOG management database will depend on decisions taken at a local level.
- **Installation of proper equipment** is fundamental for removal of FOG generated from regulated FPEs. Equipment can include combinations of mechanical AGRUs and outdoor

- passive traps. The installation of equipment will be the responsibility of the FPE owner and/or operator.
- **Operation, maintenance, monitoring, and inspection** are core components of a successful on-going FOG Pretreatment Program. These activities can be conducted by various parties, including the facility owner, facility operator, private contractor, and/or municipal agency. The role of each party can be determined locally.
 - **Collection and disposal** of FOG generated by FPEs is essential. Grease collection and hauling will be contracted by FPEs. The grease trap/interceptor cleaner will in turn make use of the available capacity at local and regional disposal locations. At the present time, non-renderable FOG collected in Connecticut is ultimately routed to existing sludge incinerators for final disposal.
 - **Monitoring and record-keeping** should begin with the registration process and continuing through all elements of a FOG Pretreatment Program, including documentation of equipment installation, operation and maintenance records, monitoring, and inspection records. Tools for data management are available.
 - **Inspections** must be made by the appropriate parties as established through the legal framework and through decisions made at a local level on roles and responsibilities of the involved parties.
 - **Enforcement** is an underlying requirement of any successful regulatory program. Enforcement procedures are necessary for that portion of the regulated community that does not choose to adhere to applicable regulations.
 - Methods to provide on-going **financing** for program implementation are needed.

The implementation of FOG Pretreatment Programs throughout the State will require commitments on the part of both the regulated community and the local regulatory agencies.

For the purpose of the *General Permit*, the regulated community is those facilities that have the potential to discharge wastewater containing fats, oils, and grease above 100 mg/L because they prepare or serve food prepared by hot processes. Some of these FPEs are represented by the Connecticut Restaurant Association which lists 1,000 members statewide. Other FPEs include non-restaurant institutions. A partial listing of facilities by Standard Industrial Classification and North American Industrial Classification System from the 1997 US Economic Census, indicates a potential total of approximately 10,400 such establishments statewide. A survey conducted by the DPH in 2000 showed a potential of as many as 14,500 FPEs throughout the State.

On promulgation of the *General Permit*, FPEs will need to commit to the following activities:

- Awareness of the *General Permit* and its implications;
- Compliance with local regulations and ordinances developed under the requirements of the *General Permit*;
- Inspection of existing equipment and confirmation of the adequacy of existing practices for FOG management at the facility;
- Installation and operation of newly-required equipment for FOG management at the facility; and
- Maintenance of records related to operation, maintenance and monitoring of equipment for FOG management.

Compliance by FPEs may increase food facility operating costs. Installation of new grease collection equipment will require capital investments and commitments to operation and maintenance. Greater awareness of appropriate FOG management practices may increase the generation of renderable FOG requiring more frequent collection by Renderers.

Local regulatory agencies and operational agencies potentially affected by the *General Permit* may include:

- Building and plumbing inspectors;
- Municipal government departments;
- WPCAs; and
- Health districts or departments.

Private companies that are potentially affected by the *General Permit* include:

- FPEs;
- Equipment suppliers;
- Rendering companies (indirectly affected);
- Grease and septage hauling companies; and
- Incineration companies.

Development of the Model Program for FOG management in the Torrington area included establishing a local regulatory framework to suit local conditions and local preferences. In some jurisdictions, a municipal department or agency may be best suited to incorporate a FOG Pretreatment Program into existing programs. In other situations, agencies or organizations outside of municipal government may be better suited to incorporate FOG management into existing programs.

New or modified programs undertaken by local agencies may increase budget and staffing requirements. The specific budget and/or staffing implications will need to be determined at a local level. In developing the Model Program in the Torrington area, it appeared that significant additional staffing may not be required, since the program was fully integrated into the TAHD's existing program for licensing of food service establishments. However, significant one-time budget expenditures were required to integrate the new program with existing programs.

The implementation of the *General Permit* should lead to significant reductions in the discharge of FOG to sewers throughout Connecticut. Sanitary Sewer overflows and bypasses of sewage that result from sewer system blockages should be reduced. Municipal sewer maintenance costs associated with addressing overflows and blockages should also be reduced. Additionally, non-renderable FOG routed to incinerators will serve as a replacement fuel, reducing fossil fuel use and providing an environmental benefit. Overall, implementation of the *General Permit* is expected to improve environmental quality and help protect human health.

ORGANIZATION OF THE GUIDANCE DOCUMENT

The Guidance Document provides municipalities, FPEs, WPCAs and other stakeholders involved in FOG management a useful reference source for information. This document is organized as follows:

- Section 2 provides background, explaining why FOG Management is important in Connecticut and what led to the development of the *General Permit*;
- Section 3 provides a general description of FOG technical issues, discusses the problems FOG creates, identifies affected facilities, estimates generation rates, identifies existing treatment and disposal options, and outlines future treatment and disposal requirements of the *General Permit*;
- Section 4 presents the recommended core elements of a FOG Pretreatment Program including legal aspects, the *General Permit*, permitting procedures, maintenance, reporting, inspection, enforcement, and disposal;
- Section 5 describes how a FOG Pretreatment Program can be put into action and addresses the implications of implementation;
- Section 6 defines the minimum needs for Information Management to support a FOG Pretreatment Program, and identifies options for Information Management Systems; and
- Section 7 elaborates on Public Education and Outreach to support an effective FOG Pretreatment Program.

RESOURCE DOCUMENTS

The documents included in the Resource Manual (provided as hardcopy and disk) contain examples for developing local FOG Pretreatment Programs. These documents, along with a system for recording and tracking various aspects of the program, form the basis of the pretreatment program. Several of these documents are preceded by a brief discussion on how the document can be used to assist municipalities in developing a FOG pretreatment program that meets the needs of the community.

Document 1 - GENERAL PERMIT FOR THE DISCHARGE OF WASTEWATER ASSOCIATED WITH FOOD PREPARATION ESTABLISHMENTS This document establishes the legal requirements for FOG Pretreatment Programs.

Document 2 – EXPLANATION OF WHO IS REGULATED BY THE GENERAL PERMIT The regulated community is generally comprised of facilities classified as Class III and Class IV Food Service Establishments. However, a small number of these facilities may be exempt for practical reasons. Additionally, some facilities regulated by the Department of Consumer Protection must comply with the General Permit. Document 2 provides additional details on the regulated facilities.

Document 3 - WASTEWATER DISCHARGE REGISTRATION APPLICATION FOR RESTAURANTS & FOOD PREPARATIONS ESTABLISHMENTS This "application" was used as a survey in the Torrington Study to gain a better understanding of the current practice of FOG generation, collection, and disposal. The results of this survey are provided in the

Torrington Pretreatment Study Report. The questions from this form were the basis for FPE Wastewater Discharge Registration, and questions were evaluated for their long-term significance to the Torrington FOG Pretreatment Program. The intended use of this document is to provide a starting point for FPE wastewater discharge registration for other municipal programs.

Document 4 - MODEL FOG ORDINANCE The model ordinance was written as an example for municipalities to develop a similar FOG pretreatment program. A more extensive explanation of the uses of this model ordinance is provided as a preface to the document. This document should be compared to Article III of the Torrington Sewer Use Ordinance (See Document 4). The Model Ordinance has more stringent requirements for FOG Pretreatment Equipment than required by the *General Permit*.

Document 5 - SUGGESTED MODIFICATIONS TO THE CITY OF TORRINGTON'S SEWER USE ORDINANCE This document is provided to show how the Model Ordinance works in conjunction with the other parts of a typical Sewer Use Ordinance. The model FOG ordinance appears as Article III of this document. The modifications to Article I and Article II that were needed to tie the articles together are underlined. Interested parties are encouraged to obtain an official copy of the Torrington Sewer Use Ordinance from the Torrington WPCA.

Document 6 - EXAMPLES OF PUBLIC INFORMATION AND EDUCATION BROCHURES This document provides examples of information brochures developed by other programs. The intended audience for these brochures includes Food Preparation Establishments, the general public, and Pretreatment Program Staff.

Document 7 – FOOD PREPARATION ESTABLISHMENT'S GUIDE TO THE DISCHARGE OF ANIMAL FAT AND COOKING OIL TO PUBLIC SEWER SYSTEMS This document is a bill stuffer designed for Food Preparation Establishments throughout Connecticut.

Document 8 - GREASE PRETREATMENT REGULATIONS These regulations were prepared for the Torrington Area Health District. This document is intended to provide detailed program information to Food Preparation Establishment Owners and Managers. It uses less technical language than many of the other documents in an attempt to assist Food Preparation Establishments in meeting the FOG Pretreatment requirements.

Document 9 - OUTDOOR EXAMPLE APPLICATION and AGRU EXAMPLE APPLICATION The intended audience for these example applications is the Owners and Managers of Food Preparation Establishments. *(The Food Preparation Establishment, grease interceptor manufacturer and service providers in these examples are fictitious and are only for example purposes.)*

Document 10 - PASSIVE AND ACTIVE PRETREATMENT SYSTEMS This document is intended to be used by FOG Program Developers in considering the pretreatment options available.

Document 11 - FOG PRETREATMENT EQUIPMENT SIZING CRITERIA This document provides proposed methods for sizing FOG Pretreatment Equipment and was developed from a variety of sources including equipment manufacturer's literature, State Plumbing Codes, State Health Codes, and other sources. Local Programs may adopt more stringent requirements.

Document 12 - FOG MINIMIZATION PLAN GUIDANCE This document provides a list of practices that can be used to minimize FOG generation in Food Preparation Establishments. This list is intended to be a starting point for FOG minimization training of Inspectors. This document can also assist to Food Preparation Establishments in preparing FOG minimization plans for their facilities.

Document 13 - INSPECTION CHECKLIST This document provides a sample inspection checklist as well as guidance to inspectors on each of the inspection points listed.

Document 14 - COLLECTION OF RENDERABLE AND NON-RENDERABLE FOG Definitions and information on collection and uses of renderable and non-renderable FOG are provided.

Document 15 - INFORMATION FOR GREASE TRAP/INTERCEPTOR CLEANERS This document was prepared for the Torrington Regional FOG Receiving Facility. The flyer provides general information on the program and specific requirement for discharge of FOG at the Receiving Facility. This information will allow grease trap/interceptor cleaners to make any changes necessary in their operation and to inform their clients that are Food Preparation Establishments of any changes in service that may affect them.

Document 16 - NOTICE OF VIOLATION LETTER This letter is provided as an example to assist FOG Program Developers in writing notices of violations for their program.

Document 17 - PS 99(3) TAX FORM AND CERT-124 The State of Connecticut does not require sales tax on water pollution control equipment. The forms provide the details of this exemption.

SECTION 2

BACKGROUND

The proper management of waste streams entering sewer systems is important for the protection of public health, property, and the environment. Discharges of FOG into public collection system can cause clogging of the collection systems as well as problems at WPCFs, which can cause damage to property, and risks to human health and the environment.

The DEP maintains in-house records of sanitary sewer overflows (SSOs) and identifies the causes where known. DEP data from 1999 through 2003 indicate that, over the five-year period, over 2,200 reported SSOs occurred in the State. Grease build-up is now recognized by the DEP as a major source of collection system blockages that resulted in between 10% and 40% of these SSOs. The material causing the blockage was not identified in 30% of the reported SSOs.

The additional sewer system maintenance and liability for damage resulting from FOG blockages can add significant expenses to local-government public-utility costs, and ultimately can increase tax and/or user rates.

In an effort to reduce wastewater collection and treatment problems, many municipalities across the United States have implemented local FOG Pretreatment Programs addressing discharges from Food Preparation Establishments (FPEs). Additionally, numerous state agencies have supported FOG programs to assist municipalities in their regulatory and control efforts.

In recognition of the scale of this problem in Connecticut, the DEP has implemented a statewide general permit. This permit supports the efforts of municipalities, WPCAs, Health Districts and Health Departments in planning and implementing FOG Pretreatment Programs that focus on removing the FOG before it enters the wastewater collection system. In 2001, the DEP provided a Clean Water Fund grant to the City of Torrington (working jointly with the TAHD) to develop a Model Program to serve the 18 communities within the TAHD.

The City of Torrington, the TAHD, representatives from several of the TAHD member communities, the DEP, and other stakeholders have all worked cooperatively in an effort to develop this Model Program. The DEP has supported this Program to serve as a guide for potential FOG Pretreatment Programs elsewhere in Connecticut.

This document provides guidance for communities considering implementation of a FOG Pretreatment Program in Connecticut. It summarizes issues related to FOG disposal and presents technical options for pretreatment; describes the legal framework; describes the *General Permit* developed by the DEP; identifies options for FOG disposal; provides instruction for inspection, maintenance, and enforcement; considers staffing, costs, and financing; addresses information management; and describes public education elements of program development.

This report is one of several documents generated from the Model Program. A separate *Pretreatment Study Report* has been prepared for the City of Torrington, the TAHD, and the DEP. Additionally, the Resource Manual includes samples of surveys, inspection reports,

maintenance logs, model ordinances, the TAHD FOG Pretreatment Regulations, the City of Torrington Sewer Use Ordinance, and related materials.

SECTION 3

PROBLEM SCOPE AND OPTIONS FOR SOLUTIONS

The discharge of FOG to municipal sewer systems creates environmental, public health, operational, and financial problems. A wide variety of commercial facilities have the potential to discharge FOG to wastewater in quantities that may exceed desired or regulated concentrations. FOG generation rates in the United States are not generally well documented, but limited information is available from some Connecticut municipalities that have already implemented FOG Pretreatment Programs. Treatment and disposal options in Connecticut are presently limited, but for the disposal options that are available, capacity is not viewed as a limitation to the expansion of FOG Pretreatment Programs across the State.

DEFINITIONS AND TERMINOLOGY

Definitions of terminology used throughout this Guidance Document are provided as followed.

Renderable and Non-Renderable Grease

Facilities using and generating FOG in food preparation may generate both renderable and non-renderable grease. Because these facilities have the potential to discharge FOG to the sewer system, it is important to distinguish between the renderable (or recyclable) and the non-renderable portion of the FOG they generate.

- **Renderable grease:** Renderable grease is "non-contaminated" material that can be recovered and sent to renderers for recycling into various usable products including animal feed, lubricants, and alternative fuels. Renderable grease should be collected at its source of generation such as frying oils, and pan drippings. This material is sometimes referred to as yellow grease or tallow. Rendering is the recommended management method for all non-contaminated grease or tallow.
- **Non-renderable grease:** Non-renderable grease is defined in Connecticut as food grade FOG that has become contaminated with sewage, detergents, or other constituents that make it unacceptable for rendering. Non-renderable grease is typically drained through sinks, washbasins, and floor drains to the sewer system. Once it exits the facility, it can enter the sewer system and causes a variety of operation and maintenance problems. Due to the difficulty in cleaning non-renderable grease and the potential introducing contaminants to products made from this material, there are limited uses for this material. However, when properly collected and thickened, non-renderable grease can be used as a supplemental fuel in sludge disposal incineration facilities. Non-renderable grease is sometimes referred to as brown grease or as trap grease.

In the remainder of this document, the terms FOG and grease are used interchangeably, with the understanding that while they are not strictly equivalent they can be substituted for each other without altering the intent.

Active and Passive FOG Pretreatment Equipment

The purpose of FOG interceptors and grease recovery units (collectively referred to in this document as FOG pretreatment equipment) is to capture the FOG before it enters the sewer collection system. Grease pretreatment equipment may be "active" or "passive" in operation. FOG pretreatment units, whether active or passive, are not disposal devices. The FOG and settled solids collected in a trap must be removed regularly from the unit. Without removal of accumulated FOG, all FOG pretreatment devices lose their effectiveness.

- **Automatic grease recovery units (AGRUs)** are automated devices that mechanically remove grease that is captured in the unit.
- **Passive grease traps/interceptors** may be either small, in-kitchen units, requiring frequent (daily) opening and removal of collected grease and solids, or larger, precast concrete tanks (referred to in this report as **FOG interceptors**), installed outdoors, that are similar to septic tanks in appearance, and require regular pumping out.

FIGURE 3-1
Automatic Grease Recovery Unit



(Courtesy of Highland Tank Manufacturing Co.)

FOG removed by AGRUs and extracted from passive traps has historically been collected and disposed of as a waste material. Since this material has come in contact with wastewater, wash water, and/or detergents, all of which act as contaminants that preclude its use as a recyclable material, it is treated as non-renderable FOG. FOG collected by AGRUs should be placed in dedicated storage containers that are separate from renderable grease storage containers. The recovered non-renderable FOG from AGRUs may be disposed of at regional incinerators permitted to use FOG as a source of fuel. Because FOG recovered in AGRUs contains little water, further separation and thickening is not required.

Additional information on active and passive FOG pretreatment equipment is provided in the Resource Manual, see Document 10.

Classifications of Food Preparation Establishments

The statewide *General Permit* is directed at facilities that may discharge FOG to a sewer collection system (and then to a WPCF). In the *General Permit* these facilities are referred to as Food Preparation Establishments (FPEs). The Public Health Code (Connecticut Department of Public Health, 2000) defines four classes of food service establishments. As relates to FOG generation and disposal, these definitions are as follows:

- **Class I:** establishments serve only prepackaged foods and/or beverages;
- **Class II:** establishments use cold or ready-to-eat processed food;
- **Class III:** establishments have exposed foods prepared by hot processes and consumed within 4 hours of preparation; and
- **Class IV:** establishments have exposed foods prepared by hot processes held for 4 or more hours prior to consumption.

During development of the Model Program for the TAHD, it was concluded that Class I and Class II establishments are not typically significant FOG generators, while both Class III and Class IV establishments have the potential to be significant FOG generators. The *General Permit* refers specifically to Class III and Class IV food service establishments, when it defines “Food Preparation Establishments”

...means Class III and IV food service establishments or any other facility discharging fats, oil, and grease above the effluent limits ... of this general permit such as but not limited to restaurants, hotel kitchens, hospitals kitchens, school kitchens, bars, factory cafeterias, and clubs.

Certain types of FPEs in Connecticut are regulated by the Department of Consumer Protection. These facilities, such as local bakeries that do not fall under industrial pretreatment requirements, may be potential FOG generators. When DCP-regulated facilities include FPEs, those FPEs are also covered by the *General Permit*. The *General Permit* does not apply to industrial facilities that are regulated by the Industrial Pretreatment Program.

PROBLEMS CREATED BY FOG DISCHARGE TO SEWER SYSTEMS

Key problems created by the discharge of FOG to sewer systems include:

- Plugging of collection systems, causing sewer system backups, flooding or SSOs;
- Accumulation of FOG in manholes and pump station wetwells, nuisance odors, plugging of pumps, and reduction in overall collection system capacity;
- Accumulation in unit processes at municipal wastewater treatment plants, causing odors, plugging equipment, and increasing operation and maintenance costs; and
- Increased growth of undesirable organisms causing bulking and foaming in secondary biological treatment processes at the wastewater treatment facility.

FIGURE 3-2
FOG in the Wastewater Collection System



Grease buildup obstructing a sewer manhole



Grease buildup at a wastewater pumping station

FACILITIES DISCHARGING FOG TO SEWER SYSTEMS

Commercial and institutional facilities using FOG in their operations have the potential to discharge these waste constituents to the sewer system. Table 3-1 lists certain types of facilities and operations in Connecticut considered to have potential for FOG discharge. This list was developed using the Standard Industrial Classification (SIC) and the North American Industry Classification System (NAICS). The list provides a preliminary indication of the potential number of such facilities in the state along with information sources.

TABLE 3-1
Types of Facilities Classified as FPEs

Type of Establishment	SIC Code	NAICS Code	Number in CT	Information Source
Food Services & Drinking Place (restaurants, bars, taverns)	5812	722	6529	1997 US Census
Grocery Stores	5411	4451	1133	1997 US Census
Supermarkets & other grocery (except convenience) stores	5411	44511	783	1997 US Census
Convenience stores (connected to gas stations)	5411	44711	601	1997 US Census
Dinner Theaters	7922	7111103	2	1997 US Census
Amusement & Theme Parks	7996	71311	5	1997 US Census
General Medical & Surgical Hospitals	8062	6221	36	1997 US Census
Psychiatric & Substance Abuse Hospitals	8063	6222	2	1997 US Census
Nursing Care Facilities	8053	6231	273	1997 US Census
Elementary and Secondary Schools	82	6111	970	www.kids.state.ct.us
Junior Colleges, Colleges, Universities, and Professional Schools	82	6112 and 6113	52	www.ctdhe.org
TOTAL			10,386	

Table 3-1 provides an estimate of the number of FPEs from US census data. A survey of health departments and districts conducted by the CT Department of Public Health in 2000 reported a total of 10,183 Class III and IV food service establishments. This survey had a response rate of 70%. Based on these results, the DPH extrapolated the total number of Class III and IV food service establishments as 14,500. Therefore, the potential regulated community (the total number of facilities directly affected by the *General Permit*) may be well in excess of 10,000, and perhaps as many as 15,000 facilities.

Other facilities beyond those listed in Table 3-1 also have potential for FOG discharge. For example, non-industrial bakeries, casinos, jails, prisons, church halls, clubs, and other facilities with food services may be classified as FPEs depending on their potential for FOG discharge.

The focus of this Guidance Document is on the non-renderable portion of the grease generated at FPEs. Separation and recycling of suitable grease for rendering is recommended in conjunction with FOG pretreatment to minimize FOG discharges. A list of renderers collecting grease in Connecticut is provided in the Resource Manual in Document 14, along with additional information on renderable grease issues.

ESTIMATED FOG GENERATION IN CONNECTICUT

There are very limited data on the quantity of FOG generated in Connecticut. Information presented in this Guidance Document is based on estimated generation rates from the Torrington area and the City of New Haven as shown in Table 3-2. This data indicates that the average volume of material pumped from a FPE with a grease interceptor is between 2,400 to 3,300 gallons per year. Taking into consideration that the typical passive grease interceptors averages 1,000 gallons in capacity, and that pumpout should typically be occurring four times per year, this is not an unreasonable average flow estimate. The survey conducted in the Torrington area indicates existing passive FOG interceptors typically range in size from 500 to 3,000 gallons.

**TABLE 3-2
FOG Generation Rates in the Torrington Area and New Haven**

Community	Total number of Surveyed FPEs	FPEs with FOG Pretreatment Units	Data Collection Period	Total Pumpout Liquid Volume Received
Torrington Area	About 339	About 192	January 2002 through December 2002	444,000 gallons/year
New Haven	Not Available	Not Available	Annual Estimate	1,300,000 gallons/year

The year 2000 US census-based population of the State of Connecticut is approximately 3.4 million. The Urban Waste Grease Resource Assessment (Wiltsee, 1998) published by the National Renewable Energy Laboratory found that in 30 U.S. cities, the number of restaurants varied from 1 to 2 per 1,000 population, with a weighted average at 1.41 restaurants/1,000 people. Based on the current population of Connecticut, this corresponds to an estimated 4,800 FPEs, far lower than the 14,500 restaurants listed in the DPH survey conducted in 2000.

For the purposes of estimating a range of FOG generation statewide, a total of 14,500 FPEs is assumed. Assuming 35% of FPEs have outdoor FOG interceptors, as indicated by the survey conducted in the Torrington area, and that each facility generates 4,000 gallons of grease interceptor pumpings per year, the total liquid generated would be 20 million gallons per year. During FOG Program startup, prior to July 1, 2011, the generation rate requiring handling and disposal would likely be considerably less.

CURRENT TREATMENT AND DISPOSAL OF FOG COLLECTED THROUGH PRETREATMENT PROGRAMS

Limited options exist for the treatment and disposal of FOG in Connecticut. However, the current options for disposal within the state have substantial additional capacity. Out-of-state disposal options also exist.

Figures 3-3 and 3-4 illustrate the FOG generation, transportation, and disposal process from FPEs in Connecticut. As indicated in Figures 3-3 and 3-4, while the sources are similar, the ultimate destinations of renderable and non-renderable grease are different. Renderable grease is converted to usable products; non-renderable grease is routed to disposal. When FOG is disposed of by incineration, as sludge is currently disposed of in Connecticut, it provides an environmental benefit by reducing use of fossil fuels.

FIGURE 3-3

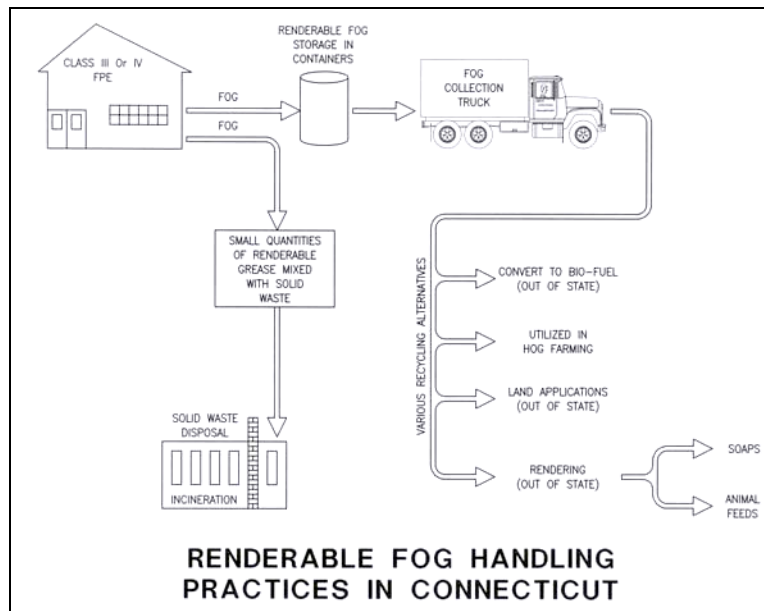


FIGURE 3-4

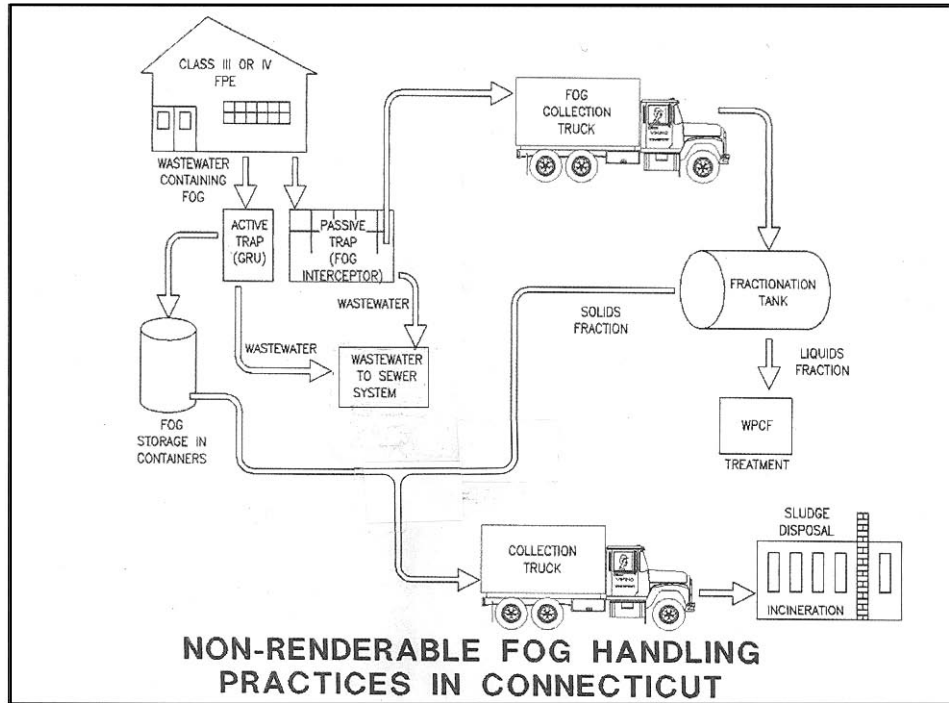


FIGURE 3-5
FOG Disposal in the Torrington Area



*FOG Delivery at Torrington WPCF
(Unloading at the Frac Tank)*



*Synagro Incinerator in Waterbury
(FOG used as a Supplemental Fuel Source)*

An on-going pilot treatment and disposal program was initiated at the Torrington Wastewater Pollution Control Facility (WPCF) in the fall of 1999. Non-renderable FOG collected in the Torrington area is delivered to a fractionation (frac) tank at the WPCF, where it is allowed to separate by gravity, and is thickened by draining excess water to the WPCF. The thickened grease is then pumped out and hauled by truck to the Synagro sludge incinerator located adjacent to the Waterbury WPCF. This thickened FOG is used as a supplemental fuel source for sewage

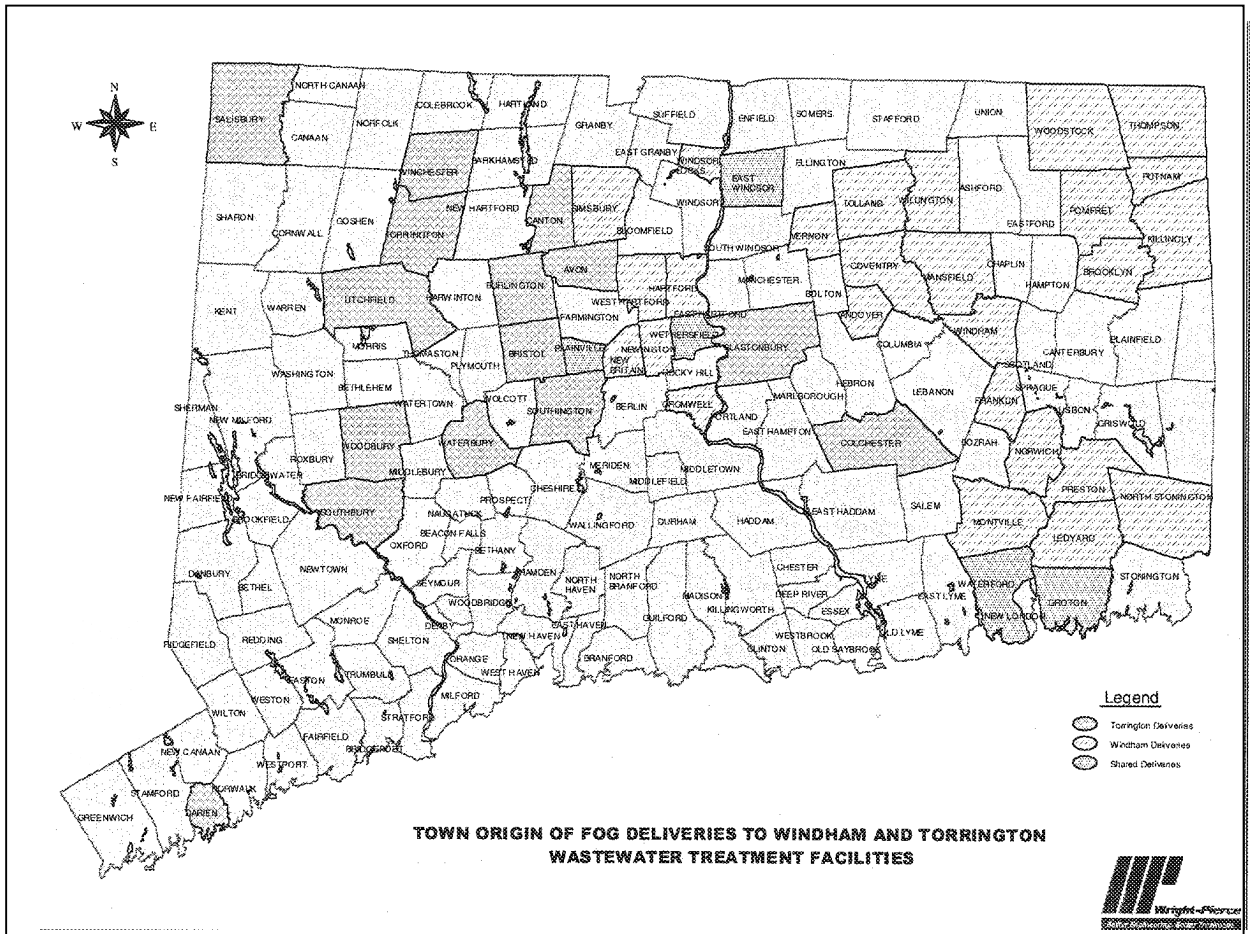
sludge incinerators. The primary activity at the Synagro incinerator is disposal of dewatered sludge. In an effort to minimize the volume and cost of grease transportation, FOG is thickened as much as practical at the Torrington WPCF.

As part of the FOG pretreatment study conducted in the Torrington area, several options for handling and concentrating FOG interceptor pumpings were evaluated. The methods evaluated to improve the current frac tank performance included: increased bottom slope of the frac tank; aeration; heating; and use of biological additives. Mechanical mixing also evaluated. Following the evaluation, the current frac tank concept was generally considered to be the best option based on performance, operation costs, and operator attention. Improvements to the Torrington frac tank identified in the evaluation were increased bottom slope and enclosing to prevent winter freezing problems. It was determined that the water separated from the FOG should be added to the treatment plant in small volumes throughout the day to minimize the impact on the treatment process.

In New Haven, a non-renderable FOG collection and disposal program has been in place since 2000. Reported results of this program are based on discussions with facility operations personnel. Communities near New Haven and along the shoreline reportedly make use of the New Haven FOG thickening facilities and multiple hearth incineration facility. This program is run through a public-private partnership involving the City of New Haven and Operations Management International, Incorporated, the contract operator of the WPCF. Collected FOG is delivered to the pollution control facility where it is thickened by gravity separation, followed by decanting of the excess water to the WPCF. The thickened FOG is then heated and pumped to a sludge incinerator located at the facility where the FOG is incinerated with dewatered sludge.

Current practice in Connecticut, in some cases, involves the transportation of collected grease for significant distances. Recent records of the origin of FOG hauled to the Torrington WPCF and the Windham WPCF are illustrated in Figure 3-6. This figure illustrates the locations of FPEs whose FOG loads are delivered to each of the two facilities. It can be seen that there is some overlap between these facilities, which is reportedly a function of both when deliveries are being accepted at the Windham facility, and the location of the home office for the disposal company (where the septage trucks are parked at night).

FIGURE 3-6



FUTURE TREATMENT AND DISPOSAL OF FOG IN CONNECTICUT

In the future, the development and implementation of FOG Pretreatment Programs based on the *General Permit* will increase the quantity of non-renderable FOG requiring treatment and disposal. It is anticipated that both the Waterbury and New Haven incineration facilities will continue to provide significant disposal capacity for non-renderable FOG. The DEP has indicated that they expect a minimum of three or four regional collection centers to be established statewide. Based on the success of the current frac tank operation, additional regional FOG receiving facilities will most likely handle FOG dewatering in a similar manner. Additional existing incinerators in Connecticut may also be utilized to accommodate increased demand for disposal of collected non-renderable FOG.

The past practice of land disposal and composting of non-renderable grease is no longer allowed in Connecticut and therefore does not add to the FOG disposal capacity within the state. Alternative disposal options may become available in the future. Capacity exists in Massachusetts for receipt of non-renderable FOG. Private sector companies have promoted proprietary systems for the treatment of non-renderable grease in other parts of the country but none are currently located in Connecticut. It is possible that new private ventures will be developed in or near Connecticut in the future.

With the promulgation of the *General Permit*, renderable (recyclable) grease will continue to be collected, managed, and recycled by the private sector. As Figure 3-3 illustrates, several options for recycled renderable grease exist. As more facilities install grease pretreatment equipment, it is likely that the quantity of renderable grease will increase in Connecticut along with the non-renderable component.

SECTION 4

RECOMMENDED ELEMENTS OF FOG PRETREATMENT PROGRAMS

The purpose of a FOG Pretreatment Program is to reduce the undesirable discharges of FOG to the sewer system. This should result in lower sewer maintenance cost, reduction in both occurrence and frequency of sewer back-ups into buildings, decreased liability for property damage and decreased risk of environmental impact, and of the public being exposed to untreated sewage from SSOs. The Model Program elements presented in this section are based on: experience gained in Connecticut and elsewhere in the US; adherence to the principles of integrated waste management; the recognition of the wide range of local conditions in Connecticut; and the foundation of work used to develop the *General Permit*.

Table 4-1 lists the 12 elements recommended for consideration in Connecticut. In any given location, some elements may be highly applicable while others may be inapplicable. In the development of the Model Program for the Torrington area, it was found that all 12 elements were important.

TABLE 4-1
Elements of a FOG Pretreatment Program

Item	Element	Description
1	<i>General Permit</i>	<i>General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments</i> : a statewide permit regulating FPEs with the potential to release non-renderable FOG into the sewer system.
2	Permitting and Approval Programs	Local programs for the permitting and approval of existing and new FPEs that require FOG management equipment.
3	Awareness-Building and Training	Providing information to the regulated facilities and to those responsible for Program implementation.
4	Installation and Operation of Equipment	Design, installation, operation and maintenance of approved grease pretreatment equipment.
5	Grease Minimization Procedures	Program design and training on FOG minimization procedures for FPEs.
6	Monitoring and Record-keeping	Collection and documentation of equipment installation, operation and maintenance.
7	Inventory and Analysis	As required, documentation of the current situation within each municipality, including reference to current and potential options for renderable and non-renderable FOG collection, treatment and disposal.
8	Inspection Programs	Programs for the regular inspection and maintenance of FOG management equipment.
9	Enforcement Programs	Programs for issuing Notices of Violation (NOV) and appropriate follow up.
10	Collection and Disposal	Collection of non-renderable FOG and delivery to approved treatment and disposal facilities.
11	Financing	Provisions for collecting fees to support the Program.
12	Legal Framework	Roles and responsibilities of the various parties involved in the Pretreatment Program.

PROGRAM ELEMENT 1 - GENERAL PERMIT FOR THE DISCHARGE OF WASTEWATER ASSOCIATED WITH FOOD PREPARATION ESTABLISHMENTS

The DEP issued the *General Permit* as a regulatory instrument applicable to all FPEs throughout the state. General permits are an important element of the environmental regulatory framework employed by the State, with the DEP currently maintaining a total of 34 general permits addressing various activities statewide. Under the Wastewater Discharge subcategory, the DEP maintains 16 general permits with additional general permits proposed, addressing wastewater discharges from activities including:

- Domestic sewage;
- Food processing;
- Groundwater remediation;
- Hydrostatic pressure testing;
- Minor boiler blow down;
- Minor non-contact cooling and heat pump water;
- Minor photographic processing;
- Minor printing and publishing;
- Minor tumbling and cleaning of parts;
- Miscellaneous discharges;
- Stormwater and dewatering from construction;
- Stormwater from commercial activities;
- Stormwater from industrial activities;
- Swimming pools;
- Vehicle maintenance; and
- Water treatment.

Therefore, this particular general permit is one of a series of such permits, administered by the Permit Assistance Office of the DEP. The *General Permit* provides a basis for management of FOG discharges from all FPEs, with a particular focus on Class III and Class IV food service establishments.

Authorization aspects of the *General Permit* are summarized in Table 4-2. The conditions of the *General Permit* are listed in Table 4-3. The *General Permit* requires that all existing FPEs meet the wastewater discharge specification as follows.

- All new FPEs must be in compliance with the *General Permit* prior to beginning operation.
- Those facilities undergoing renovations in the food preparation area, food service area, and/or dining area, with a total cost in excess of \$20,000 in any calendar year, or having a combined cost of multiple renovation projects to the above areas in excess of \$40,000 between September 30, 2005 and July 1, 2011, must install the necessary FOG pretreatment equipment as part of the qualifying renovation.
- Changing ownership must be in compliance within 60 days of resuming operation.
- All FPE must be in compliance by July 1, 2011.

- Facilities located within a formally designated problem fat, oil and grease area must comply with the *General Permit* within the time schedule established by the authorized agent.

The first columns in both Tables 4-2 and 4-3 refer to the specific clauses in the *General Permit*. A copy of the *General Permit* is provided in the Resource Manual see Document 1.

TABLE 4-2
Authorizations Under the *General Permit* for the
Discharge of Wastewater Associated with Food Preparation Establishments

Clause	Title	Brief Description
3 (a)	Eligible Activities	Wastewater associated with a facility which discharges to a sanitary sewer line and then to a POTW, a privately owned or State owned sewage treatment works.
3 (b)	Requirements for Authorization	The grease trap/interceptor, AGRU, or other unit is installed in accordance with local ordinances.
3 (c)	Geographic Area	Throughout the State of Connecticut.
3 (d)	Effective Date and Expiration Date of the <i>General Permit</i>	Effective September 30, 2005. Expires 10 years from the effective date.
3 (e)	Effective Date of Authorization	Activities are authorized on the date the <i>General Permit</i> becomes effective or on the date the activity commences.
3 (f)	Revocation of an Individual Permit	Pre-existing individual permits may be revoked if requested by the permittee.
3 (g)	Issuance of an Individual Permit	An individual permit for a discharge supercedes the authorization of wastewater discharge under the <i>General Permit</i> .

TABLE 4-3
Conditions of the *General Permit* for the
Discharge of Wastewater Associated with Food Preparation Establishments

Clause	Title	Brief Description
5 (a)	Compliance Schedule	Requires facilities in operation at the time of issuance of comply by July 1, 2011. Facilities that begin to discharge after the effective date must comply before initiating a discharge.
5 (b)	Treatment Requirements	Requires wastewater from FPEs to be treated in an outdoor Grease Trap\Interceptor, an indoor Automatic Grease Recovery Unit (AGRU), or other unit approved by an Agent of the DEP.

TABLE 4-3
(Continued)

Clause	Title	Description
5 (c)	Effluent Limitations	Requires that the pH be between 5.0 and 10.0 and the FOG concentration be no greater than 100 mg/L in wastewater discharging from the FOG pretreatment equipment.
5 (d)	Pollution Prevention / Best Management Practices	Requires that: food preparation wastewater be directed to the FOG pretreatment equipment; renderable grease be stored in a designated renderable grease container; quarterly inspections and cleaning; the FOG pretreatment equipment be cleaned at specified intervals; and that chemical or biological additives not be used.
5 (e)	Reporting and Record Keeping Requirements	Requires that the permittee retain all monitoring and other required information for five years.
5 (f)	Recording and Reporting Violations	Requires that the permittee keep records of violations of the effluent limits or any other conditions set out by the <i>General Permit</i> , and that steps be taken to identify and correct the conditions causing the violation.
5 (g)	Regulations of CT State Agencies incorporated into the <i>General Permit</i>	Lists other Regulations of Connecticut State Agencies with which the permittee shall comply.
5 (h)	Duty to Correct and Report Violations	States that the permittee shall take action to determine cause, correct and mitigate, prevent further, and report on violations within five days of learning of violations.
5 (i)	Duty to Provide Information	States that the permittee will provide information within 30 days of request by the Commissioner.
5 (j)	Certification of Documents	Provides a certification statement that the permittee or a duly authorized representative must sign.
5 (k)	Date of Filing	States that the date of filing is the day that the document is received by the Commissioner of the DEP.
5 (l)	False Statements	False statements may be punishable as a criminal offense.
5 (m)	Correction of Inaccuracies	States that the permittee shall correct inaccurate information and submit it in writing to the Commissioner of the DEP, within 15 days of detection of the inaccuracy.
5 (n)	Other Applicable Laws	States that the permittee must also comply with all other applicable federal, state, and local laws.
5 (o)	Other Rights	States that the <i>General Permit</i> does not alter any present or future rights or powers of the State of Connecticut.
5 (p)	Change in Ownership or Permittee	Food Preparation Establishment are required to comply on change of ownership..

PROGRAM ELEMENT 2 - PERMITTING AND APPROVAL PROGRAMS

The appropriate permitting and approval components supporting a FOG Pretreatment Program will depend on the local situations and the responsibilities adopted by the local agencies. A range of entities can potentially be involved in the program. Without specifying agency roles, a list of permitting and approval entities is provided in Table 4-4.

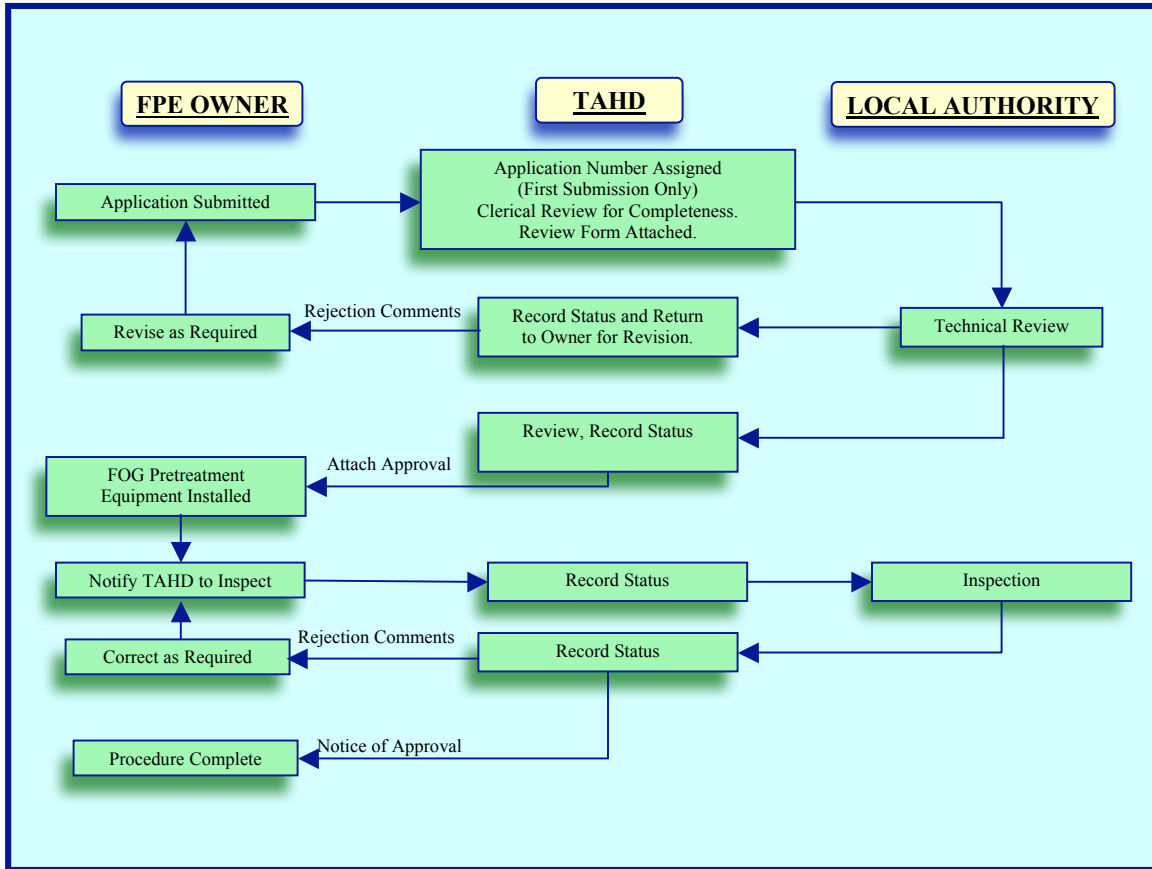
**TABLE 4-4
Public and Private Entities Involved in FOG Pretreatment Program Implementation**

Name	Potential Role in Program Implementation	Scope
Connecticut Department of Environmental Protection (DEP)	Issuance of the <i>General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments</i> . Enforcement action against non-complying FPEs.	Statewide
Connecticut Department of Consumer Protection (DCP)	Licensing of commercial facilities that may be FPEs under the <i>General Permit</i> definition.	Statewide
Municipal Government Departments (Public Works or Engineering)	Updating Sewer Use Ordinances to incorporate FOG management requirements consistent with the <i>General Permit</i> , conducting inspections, and FOG program registration reviews and approvals.	Local
Pollution Control Authorities (if separate from Municipal Government Departments)	Updating applicable regulations and/or ordinances to incorporate FOG management requirements consistent with the <i>General Permit</i> ; review and approve FOG program registration applications. Conduct inspections.	Regional and local
Building Inspectors (report to Connecticut Department of Public Safety)	Provide information concerning requirement of the <i>General Permit</i> . Incorporate FOG management requirements in inspection procedures for newly established and renovated FPEs.	Local
Food Preparation Establishments (FPEs) as defined in the <i>General Permit</i>	Installation, operation, maintenance, inspection and record-keeping for grease pretreatment equipment required by the <i>General Permit</i> and by other applicable ordinances.	Statewide
Grease Trap/Interceptor Cleaning Companies	Servicing of pretreatment equipment, collection of non-renderable FOG, transport, disposal of wastes and recyclable materials.	Statewide
Renderers	Provide collection of renderable grease.	Statewide
Grease Interceptor Installers	Provide sizing and installation of grease interceptors.	Regional and local
Manufacturers of AGRUs	Provide sizing and installation of AGRUs.	Statewide

Figure 4-1 illustrates the Permitting and Approval procedures adopted for the Torrington area. This figure illustrates a solution designed for one particular set of circumstances. The mechanisms involved in the Torrington Model Program involve the TAHD and the City of Torrington DPW and each of the member community's local permitting authority, which varies

by municipality. Figure 4-1 illustrates how these agencies have interrelated activities associated with FPE approvals.

**FIGURE 4-1
Torrington Area Health District FOG Review and Approval Process**



PROGRAM ELEMENT 3 - AWARENESS-BUILDING AND TRAINING

In Program Element 3, information on the benefits of, and Best Management Practices for, a FOG Pretreatment Program should be developed and presented to the FPEs. Training to support the Program should also be developed and delivered to the agencies involved in inspection and enforcement. At a minimum, training is required on inspection of FPEs, proper FOG pretreatment equipment installation, operation, maintenance, and record-keeping associated with FOG management equipment. A sample Inspection Checklist developed for inspectors is provided on the Resource Manual see Document 13.

PROGRAM ELEMENT 4 - INSTALLATION AND OPERATION OF EQUIPMENT

The *General Permit* requires installation of FOG management equipment at all FPEs. Options are: Outdoor, in-ground passive grease interceptor trap using appropriate sizing methods; An automatic grease recovery unit (AGRU); and Other equipment as approved by the Local Agent.

Recommendations on sizing of passive traps and AGRUs are discussed in the Resource Manual see Document 11.

FPEs without approved FOG pretreatment equipment must install and operate approved equipment at their own expense. In some cases, equipment may already be installed but may need to be maintained properly including documentation of maintenance activities. In other cases, new installations, including new plumbing or plumbing modifications will be needed. Proper operation will involve regular pumping out of outdoor passive traps, and removal of grease collected by AGRUs. Disposal of collected grease must be at approved facilities. Additional information on passive and active FOG pretreatment equipment is provided in the Resource Manual see Document 10.

PROGRAM ELEMENT 5 - GREASE MINIMIZATION PROCEDURES

In the context of a FOG Pretreatment Program, grease minimization refers to Best Management Practices (BMPs) that focus on reducing the quantities of FOG entering the facility's sewer system. Common practice in the food service industry is to rinse dinnerware and cooking utensils, so that all food particles are washed into the drain as a method of disposal. BMP guidance suggests that dry cleanup, with all waste directed to solid waste bins, be used as a "first pass" for all levels of cleaning, from plate scraping to floors. Scrapers, squeegees or absorbents should also be used to prevent the bulk of waste food materials from going down the drain. Using this guidance and using rendering whenever possible will minimize the FOG discharged to the sewer.

BMPs are also important with regard to the cleaning procedures for exhaust hoods at FPEs. Manually-cleaned exhaust hoods have filters that are removed and cleaned on a regular basis. The filter cleaning procedures can significantly affect the amount of FOG that is generated and discharged to the sewer system by the FPE. Common cleaning practices observed include washing these filters in the dishwasher, sinks and outside. These filters should be cleaned in a sink or dishwasher that discharges to FOG Pretreatment Equipment. Cleaning of exhaust filters outside may allow FOG to enter storm drains, which is a violation of storm water regulations.

Education materials provide current information on BMPs for grease minimization at FPEs are widely available. A few selected examples are given in Section 7 of this Guidance Document. Additional information is given in the Resource Manual see Document 12.

PROGRAM ELEMENT 6 - MONITORING AND RECORD-KEEPING

Facilities with equipment for grease management must conduct regular monitoring, and are required to maintain records in accordance with the requirements established in the *General Permit*. Sample monitoring reports are provided in the Resource Manual see Document 8.

Monitoring and maintenance of grease pretreatment equipment is critical for successful operation. FOG interceptors should be emptied and cleaned whenever accumulated grease and settled solids exceed 25% of the tank liquid depth. Manual and automatic equipment is available

for continuous monitoring of the grease depth in FOG interceptors. Automatic Grease Removal Units (AGRUs) should be monitored for proper operation and emptied on a frequent basis.

Record-keeping is the responsibility of the individual FPE. Records must be kept on-site indicating the date of installation of the grease pretreatment equipment, dates of monitoring and pump-out, quantities pumped out, and observations. Records must be kept on-site for a minimum duration of five years, as specified in the *General Permit*.

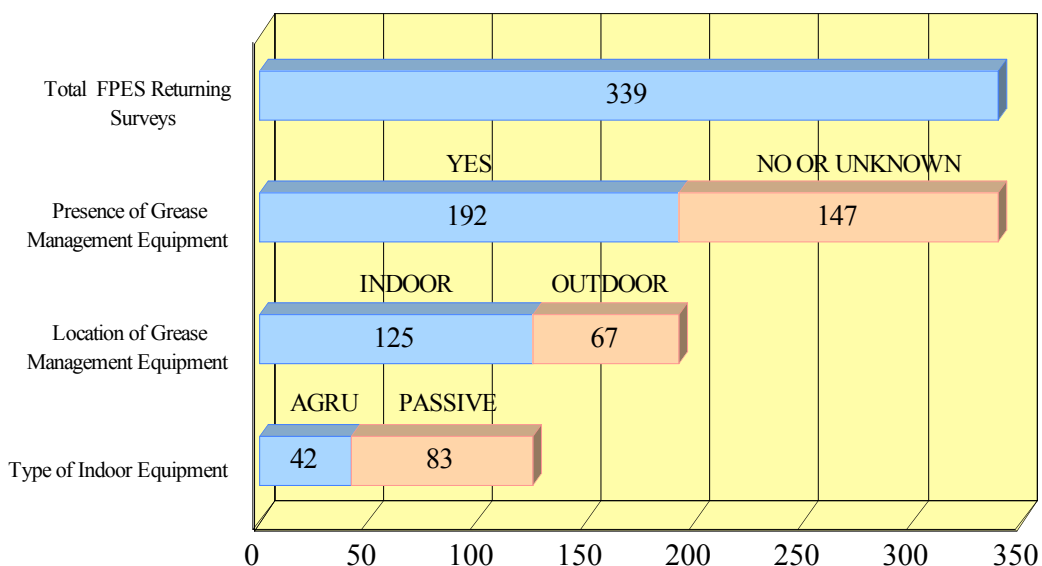
PROGRAM ELEMENT 7 - INVENTORY AND ANALYSIS

An inventory of FOG discharges and effects on sewer systems and treatment systems in the municipality may be justified. The need for an inventory depends on the jurisdiction and the number of FPEs. Experience gained during development of the Torrington area FOG Pretreatment Program indicates that a survey form, mailed to all FPEs, is a useful tool for evaluating awareness and needs.

Within the TAHD, for example, the total number of licensed restaurants is approximately 800 plus facilities regulated by the Department of Consumer Protection (DCP). Starting with this list, a total of 472 FPEs (Class III, Class IV DPH, and DCP regulated facilities) were surveyed by mail with 421 responses received. A more detailed FOG survey was then developed. Some listed facilities were found to be out of business or in other ways not applicable. Consequently, the final number of detailed survey returned was 339 FPEs, with a return rate of over 90%. Figure 4-2 illustrates the numbers of facilities with grease pretreatment equipment and the types of equipment reported. This type of information can be useful to agencies that are developing a targeted Program.

FIGURE 4-2

**GREASE MANAGEMENT EQUIPMENT AT FPES
IN THE TORRINGTON AREA**



It must be noted that the information presented in Figure 4-2 was developed from information reported by FPEs, not from on-site surveys by FOG program staff. Field surveys of some facilities and discussions with equipment manufacturers indicate inaccuracies in this data. For example, the number of indoor AGRUs is likely considerably less than the 42 reported. This points out the need for data verification during inspections (element 8) and public education or training (element 3) during the earlier stages of program development. Greater detail of the results of the inventory for the Torrington area FOG Pretreatment Program is available from the DEP and from the TAHD. A sample survey form, that can be used to obtain an inventory of existing and potential FOG dischargers, is included in the Resource Manual see Document 3.

The survey analysis should include an evaluation of the sewer system, wastewater treatment systems and operation and maintenance issues with those systems to identify areas known to have a history of FOG-related problems. This will help to highlight the importance of management of FOG discharges in the community. The evaluation should also include a review of pertinent existing ordinances (Sewer Use Ordinance), bylaws, and other regulatory instruments that are or can be used to control the quality of wastewater discharge to the sewer system.

PROGRAM ELEMENT 8 - INSPECTION PROGRAMS

Inspection programs for facilities with FOG management equipment depend on the legal framework and the decisions made by the local authorities with regard to Program implementation. In some cases, the inspection of FOG management equipment may be incorporated into other programs. In other cases, a municipality may develop a stand-alone inspection program. The Resource Manual provides an example of an inspection form and associated inspection guidance, see Document 13.

The FOG Pretreatment Program for the Torrington area designated the TAHD as the inspection authority for the Program. Because the TAHD routinely conducts food service inspections of all food service establishments within the member communities, the decision to include FOG inspections during food service inspection streamlined inspection and record-keeping efforts.

PROGRAM ELEMENT 9 - ENFORCEMENT PROGRAMS

The *General Permit* establishes a protocol for reporting violations. In developing a FOG Pretreatment Program for the Torrington area, violation reporting has been segregated into “major” and “minor” violations. Major violations relate to cleaning and installation problems, whereas minor violations are those related to BMPs as illustrated on the Inspection Checklist contained in Resource Document 13. An example Notice of Violation is provided in the Resource Manual see Document 16. For the Torrington area FOG pretreatment program, the TAHD is responsible for performing the inspections, maintaining the inspection database and for generating violation status reports to each community. Each member community is responsible for providing initial enforcement of FOG pretreatment program.

PROGRAM ELEMENT 10 - COLLECTION AND DISPOSAL

FOG Pretreatment Programs require the collection and proper disposal of non-renderable FOG. The typical method employed by FPEs in Connecticut is to establish a contractual relationship with a company that provides cleaning and maintenance of FOG interceptors. These companies are typically listed in the local phone book under Septic Tank Cleaner. It should be noted however, that not all companies that provide septic tank cleaning provide grease trap cleaning.

A pilot project is underway (spring 2004) to collect grease recovered by AGRUs and transfer this material directly to an incinerator for use as an alternative fuel. It may be feasible in the future to reuse this material for other uses such as biodiesel.

PROGRAM ELEMENT 11 - FINANCING

Mechanisms must be put in place for financing of a FOG Pretreatment Program if such a program is to be self-sustaining. Financial requirements for programs already operating in Connecticut (in Hamden and New Haven) are based primarily on waste discharge surcharges imposed on FPEs. The rates applied in those municipalities are based on formulas where a surcharge is imposed when the target pollutant loading is in excess of 100 mg/L FOG. In Torrington, the goal was to implement the program without any need for additional collection of fees. The TAHD, which is currently funded by the member communities, will provide record keeping and inspections with existing staff as part of their ongoing responsibility for licensing and inspecting FPEs. Each member community will provide enforcement using existing resources. As the program is implemented, it will be determined if this approach is viable.

PROGRAM ELEMENT 12 - LEGAL FRAMEWORK

The legal mechanisms for implementing FOG Pretreatment Programs depend on the local situation and on the decisions made by the public and private entities involved. Table 4-5 lists various legal instruments and suggests possible roles for both public and private entities in implementing FOG Pretreatment Programs in Connecticut.

TABLE 4-5
Permitting and Approval Instruments for Use in a FOG Pretreatment Program

Instrument	Jurisdiction	Potential Function
<i>General Permit for the Discharge of Wastewater Associated with Food Preparation Establishments</i>	Department of Environmental Protection	Requires suitable grease pretreatment equipment at FPEs discharging to municipal collection systems statewide.
FPE Licensing and Regulations	Water Pollution Control Authorities, Department of Public Works, Private Contractors, or Other	Application for approval of FPE could include the requirements for FOG management (See Figure 4-1).
Sewer Use Ordinances	Water Pollution Control Authorities	Require grease pretreatment equipment at FPEs within the jurisdiction.
Building Code Provisions	Department of Public Safety	Require installation of grease pretreatment equipment at new FPEs statewide.

SECTION 5

IMPLEMENTATION

Implementation of a FOG Pretreatment Program requires commitment by municipal and state regulatory agencies as well as by the FPEs themselves. The scope of implementation includes staffing at the municipal level, municipal financing, and the cost to FPEs.

STAFFING AT THE MUNICIPAL LEVEL

The commitment to a FOG Pretreatment Program will be made at the municipal level, where the program relationship to other agencies will be established. Options include:

- A local or regional agency implements the program on behalf of the municipality (as in the case of the Torrington Area Health District);
- A WPCF or WPCA implements the program within its service area (as in the case of New Haven);
- A municipal department of public works implements the program within its jurisdiction;
- A privately owned company implements the program for the municipality;
- Some combination of the above; or
- Other options.

Figure 4-1, shown previously, illustrates the implementation framework adopted for the Torrington area.

Similarities exist in the Program staff duties regardless of the group chosen to implement the Program. Implementation will require the following tasks:

- Staff training and education will be required to assist personnel in understanding and implementing the Program;
- Coordination between various agencies to prevent duplication of efforts and to ensure compliance or those facilities requiring compliance in the interim period between September 30, 2005 and July 1, 2011.
- If staff are already involved in pollution prevention, pretreatment, and/or licensing and permitting activities, the incremental aspects of implementing the FOG Pretreatment Program will be reduced;
- If staff are not involved in related activities, the various activities involved in implementing the FOG Pretreatment Program will constitute an additional time burden, the amount of which will depend on the number of FPEs in the jurisdiction; and
- If multiple agencies implement various parts of the Program, the incremental staff time burden can be spread out over more personnel but coordination efforts between agencies will increase. Additionally, a single agency will still need to take the lead in the program.

MUNICIPAL FINANCING OPTIONS

The municipality, WPCA, DPW or combination thereof will require finances to support the FOG Pretreatment Program. Program registration, construction permitting, and disposal fees are the most obvious way to obtain ongoing financing for the program. The amount required to develop and support the program depends on local circumstances. The need for additional financing and staffing to provide a monitoring and enforcement program is, to a large extent, a function of the size of the community and the number of FPEs.

The Torrington Model FOG Pretreatment Program includes 18 communities of varying sizes, but with an existing total population of approximately 120,000 people with approximately 400 FPEs. Many of the communities are relatively small, and it would be difficult to justify establishing a FOG Pretreatment Program for each of them.

For the Torrington area, the initial decision by the Torrington DPW and the TAHD was to not impose registration fees to support the program. The TAHD intends to include routine FOG inspections as a part of its regular food service inspections, using existing staff. The existing TAHD food service establishment database (in FileMaker®) was modified to include FOG pretreatment information and inspection reporting. The database was also modified to produce regular inspection reports and Notices of Violations (NOVs), which are then provided to each of the individual municipalities for enforcement. The goals of utilizing the TAHD as the coordinating agency included: (1) providing program monitoring functions as part of the membership fees paid by each member community; and (2) providing consistency of implementation of a FOG Pretreatment Program between multiple communities, some of which have interconnected sewer collection and treatment programs.

In Torrington's case, if additional staff or other financial resources become necessary to support the FOG Pretreatment Program, these costs will be distributed among the 18 member communities. This approach allows for an “economy of scale” by sharing common costs among the member communities.

New Haven, which has approximately 1,000 FPEs uses an alternate financing approach for their public-private partnership which oversees the FOG Pretreatment Program. The City contracts with Operations Management International (OMI) to operate its East Shore Wastewater Treatment Facility. In conjunction with this operational contract, OMI runs a cost-recovery program addressing industrial pretreatment and FOG management. This program is funded through licensing and permitting fees, which reportedly brings in sufficient revenue to support the program staffing costs and expenses.

IMPLICATION FOR DIFFERENT SIZES OF COMMUNITIES

In Connecticut there are 168 municipalities with populations ranging from less than 700 to over 140,000. However, municipal wastewater treatment facilities are present in only 74 communities. This results in several communities with no municipal sewer system while other communities use common wastewater treatment facilities. The effective implementation of FOG Pretreatment Programs in those communities served by municipal sewer systems will depend on

adopting suitable regulatory mechanisms in each municipality and agreements between municipalities with interconnected systems. Local decision-making is critical to selecting a suitable regulatory framework for each case.

COSTS TO FOOD PREPARATION ESTABLISHMENTS

The *General Permit* requires FPEs throughout Connecticut to install and operate grease pretreatment equipment. Some FPEs already have serviceable equipment in place. On a statewide basis, it is expected that a significant number of facilities will not. It should be understood that the State building codes have required grease traps at these types of facilities since 1971 when statewide building codes were first adopted. However, changes in use of existing buildings and the installation of indoor passive traps that are no longer recommended, as well as lack of maintenance on existing units, will all contribute to the number of units needing to be installed. The resulting costs to FPEs will depend on each individual situation, with capital cost estimates presented in Table 5-1. Equipment is further described in the Resource Manual in Document 10.

TABLE 5-1
Guidance on Capital Costs to FPEs for Grease Pretreatment Equipment

Item	Description	Anticipated Installed Costs (2004 dollars)
Passive pretreatment units (FOG interceptor)	1,000 gallon or larger exterior tank, plumbing and installation.	\$5,000 - \$9,000
Automatic Grease Recovery Unit (AGRU)	Interior unit installation including plumbing, wiring and controls.	\$4,000 - \$8,000

Possible Financing

The cost to install the required grease pretreatment equipment at FPEs may represent a significant one-time financial burden, especially to small businesses. In order to minimize the financial impact, the municipality may wish to establish a financing program to cover installation costs of grease pretreatment equipment at individual facilities. Municipalities may find that funds set aside for sewer overflow cleanup and bypass occurrences can be reallocated to support such a loan program. Loan repayment can be made by the individual establishment as a surcharge to its regular sewer bill, or as a separate payment program.

Tax Exemptions

Capital and installation costs borne by FPEs may be subject to certain tax exemptions as described in the State of Connecticut's Policy on Tax Exemptions for Certain Water Pollution Control Equipment (PS 99(3) and CERT-124). This policy, issued by the Department of Revenue Services in June 1999, is reproduced in the Resource Manual in Document 17. The policy provides for exemptions from sales and use taxes for purchases of water pollution control equipment.

Operation and Maintenance

The costs discussed above do not include estimates of operation and maintenance, which will be an additional burden to FPEs. The operation and maintenance costs will be dependent, to a large degree, on FPE's menu, the food preparation techniques, and the use of best management practices for reduction of non-renderable grease discharge. Typical pumping costs for FOG interceptors are based on a combination of the cost of disposal at Regional FOG disposal facility and transportation costs. Costs for cleaning a 1,000 gallon grease trap are typically in the range of \$350 to \$500 dollars.

Leasing Option

Equipment leasing companies offer the option of leasing AGRUs so that the equipment costs are converted to a monthly payment. This option is already widely used in the restaurant business as a means of financing other kitchen equipment.

SECTION 6

INFORMATION MANAGEMENT

Information management is a key element of a FOG Pretreatment Program. Several options exist for the management of information at an agency level. At one end of the spectrum is the incorporation of FOG management aspects into existing information systems. At the other end is an independent information system that can be implemented to cover all aspects of FOG management.

The Torrington area Model FOG Pretreatment Program utilizes the first option, using software already in place for the permitting and inspection of food service establishments. The existing TAHD database utilizes FileMaker® which was modified to include grease management elements, including the additional information for tracking the installation and maintenance of FOG interceptors and AGRUs.

Reportedly, many Health Districts in Connecticut use FileMaker® for their databases. Therefore, this may provide an approach for other Health Districts.

Another option is stand-alone, proprietary software. Four software packages are currently available from three companies these are:

- 1) **FOGLite™**: Microsoft® Access application available from Linko Data Systems, 9485 West Colfax Ave, #201, Lakewood, Colorado 80215, phone (877) 546-5699, or at www.linkodatasystems.com.

The primary features of this software fall into three categories:

- Facility Information - including tracking of information on business name, contact, addresses, classification type, trap size, equipment on site, permit effective/expiration dates, inspection frequencies, pumping schedules, and service companies used;
 - Scheduling Features - schedule and tracking of events, storage of notes and comments about each event, links to related documents, and event sorting capabilities; and
 - Reports - standard reports and letters that can be modified.
- 2) **FOGPlus™**: Microsoft® Access application available from Linko Data Systems, 9485 West Colfax Ave, #201, Lakewood, Colorado 80215, phone (877) 546-5699, or at www.linkodatasystems.com.

This software expands on the FOGLite™ software. The additional features include:

- Facility Information - as above with additional details available;

- Scheduling Features - as above with additional details available including viewing activities in list or calendar format;
 - Reports - as above with additional details available;
 - Sample Management - tracking of facility limits, violation flagging; and
 - Violation Tracking - generation of violation reports.
- 3) FOGwise™:** Microsoft® Access application, FOGwise™ is available from Compliance Consulting Inc., 28 Paine Road, North Attleboro, MA 02760, phone (508) 643-4011, www.compliance-consulting.com (Compliance Consulting Inc. assisted with the development of the FOG Pretreatment Program for the Torrington area, and has contributed to the preparation of this Guidance Document.)

The primary features of this software are:

- Facility Information: - tracking over 150 fields including the facility's physical address and mailing address, contact information, permit information, sampling/reporting/pumping frequency, trap and other equipment, notes, etc;
- Scheduling Features - built-in scheduling allows viewing of tasks on both monthly and weekly calendars;
- Reports - standard letters and mailing labels that can be modified using Microsoft® Word, integrates with the permit application process – the screen layout matches the sample Permit Application from Compliance Consulting, Inc. or create your own using Microsoft® Access or Seagate® Crystal Reports (Crystal Reports must be purchased separately);
- Sample Management - tracking of sample data is integrated with violation tracking;
- Violation Tracking - Includes automatic surcharge calculations, violation reports and invoice generation;
- Mapping Features - FOGmap™ mapping module integrates with FOGwise™ to:
 - Indicate the location of a facility or a group of facilities on a map;
 - Annotate maps with text and other drawing tools;
 - Provides directions between facilities;
 - Graphically analyze the location of your facilities to help determine the impact of violations and which facilities are causing sewer problems; and
 - Save maps and annotations to disk and publish them to the web.

- “Quick Find” feature lets you jump to a specific facility by selecting it from the dropdown menu or by typing the first few letters of the facility name and jump to the first match;
 - Built-in digital photos and document management; and
 - True client/server architecture optimized for a multi-user network environment. Supports both Microsoft® Access and Microsoft® SQL Server giving practically unlimited scalability in terms of number of users and database size.
- 4) **FOGWin™**: Microsoft Visual Basic application with a Microsoft® Access database, FOGWin™ is available from Sabre Systems, Inc. 65 W. Street Road, Suite A-200, Warminster, PA 18974, phone (877) 722-7379, www.fogwin.com or www.sabresys.com

The primary features of this software are:

- Facility Information - tracks up to four (4) facility addresses (business, physical, mailing and other), contact information, user customizable fields for categorizing facilities, plus tax parcel, sewer district, assigned inspector, etc;
- Very detailed FOG information data including operational characteristics (fixtures, hours of operation, seating capacity, best time to inspect, etc.), water supply/billing information, grease trap/interceptor table (installation data, cleanout history and schedule, additives, contractors (hauler, installer, maintainer), wastewater discharge (sewer/septic), recycling information;
- Scheduling Features - Calendar allows scheduling and printing of tasks, inspections, violations;
- Permit table information, permit limits and sampling requirements if applicable. Ability to store, detect violations and report on sample results;
- Reports – extensive reports including facility fact sheets, grease trap/interceptor detail, inspection forms, violation letters, mailing labels, etc. Reports integrate with other software Word, Excel, etc. Modify or create your own using Microsoft® Office or latest Business Objects® Crystal Reports;
- Mapping Features - FOGWin™ integrates with MS Mappoint™ to locate facilities, plan inspection schedule, and generate directions;
- FOGWin image database. Allows storage of digital photos or other graphic files;
- Surcharging capability allows flexible setup of billing limits and generation of associated charges;

- Sophisticated system for FOG program management can be bundled with PreWin for Industrial Pretreatment program management. Microsoft® Access based but scalable to SQL Server or Oracle; and
- Portable component allows remote use on laptops in the field, synchronizes field updates back to main server database.

Table 6-1 lists the major information management system options with comments on the advantages and disadvantages of each.

**TABLE 6-1
Information Management System Options, Advantages and Disadvantages**

Type	Characteristics	Primary Advantages	Primary Disadvantages
FOGWIN™ by Sabre Systems, Inc.	Proprietary Microsoft Visual Basic software application. Uses Microsoft® Access database. Covers all aspects of FOG Programs.	<ul style="list-style-type: none"> - Extensive database covering all FOG program data - Can be integrated with Sabre PreWin pretreatment application - Customizable system. - Portable component allows for integration and synchronization with field units (laptops, etc.) - Sabre Systems Inc. is well established, large IT and software development firm and a Microsoft partner 	<ul style="list-style-type: none"> - may require an investment in new software - may require staff training in using and applying new software
FOGwise™ by Compliance Consulting, Inc.	Proprietary software application for use with Microsoft® Access covers all aspects of a FOG Pretreatment Program	<ul style="list-style-type: none"> - includes all aspects of a FOG Pretreatment Program - readily integrated with existing Microsoft® programs - based on Microsoft® Access which many facilities use already - relatively easy to use, built-in forms, letters, and permits - suitable for any size program - Company provides assistance with aspects of FOG programs beyond record-keeping 	<ul style="list-style-type: none"> - may require an investment in new software - may require staff training in using and applying new software

TABLE 6-1 (Continued)
Information Management System Options, Advantages and Disadvantages

Type	Characteristics	Primary Advantages	Primary Disadvantages
FOGLite™ and FOGPlus™ by Linko Data Systems	Proprietary software application for use with Microsoft® Access covers all record-keeping aspects of a FOG Pretreatment Program	<ul style="list-style-type: none"> - includes basic aspects of a FOG Pretreatment Program - readily integrated with existing Microsoft® programs - based on Microsoft® Access which many facilities use already - relatively easy to use, built-in forms, letters, and permits - suitable for any size program - complete software training support provided 	<ul style="list-style-type: none"> - may require an investment in new software - may require staff training in using and applying new software
FileMaker®	Customized FOG database developed for use with the TAHD's existing food service database	<ul style="list-style-type: none"> - includes basic aspects of a FOG Pretreatment Program - based on FileMaker® - relatively easy to use, built-in forms, letters, and permits - suitable for any size program - can be customized to include forms for letters and permits 	<ul style="list-style-type: none"> - May require additional custom programming - requires new software if FileMaker® is not in use already
Custom-designed spreadsheets	Design a set of spreadsheets to provide data management	<ul style="list-style-type: none"> - requires no new software - in-house staff can set up spreadsheets 	<ul style="list-style-type: none"> - requires custom programming - likely only suitable for a relatively small programs few FPEs

SECTION 7

PUBLIC EDUCATION AND OUTREACH

Public education and outreach are critical for FOG Pretreatment Program success. A wide array of information is readily available to assist municipalities in implementing public education and outreach programs. Excellent information has been developed in other parts of the United States where FOG Pretreatment Programs have already been implemented by municipal agencies. Figure 7-1 provides some examples of public information brochures. The Resource Manual provides additional references for public information and communication programs in Documents 6 and 7. Information for Grease Trap/Interceptor Cleaners is provided in Document 15. The education component of a FOG Pretreatment Program is critical for success.

Regardless of whether or not existing programs can be utilized, core components of any awareness-building program should:

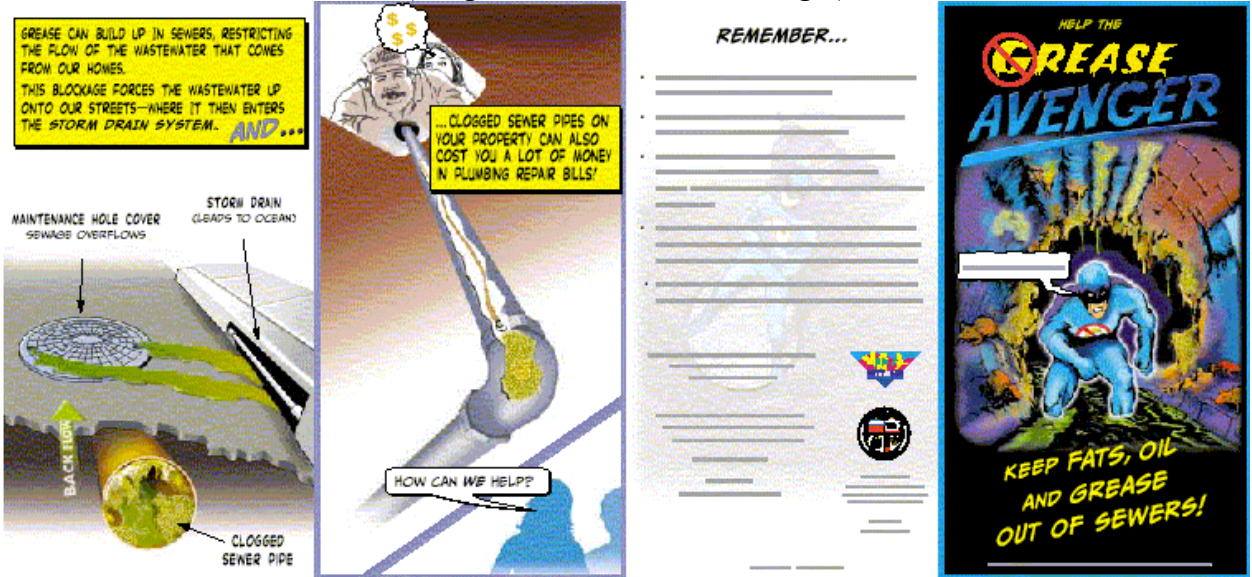
- Provide information relevant to the target audience;
- Be presented in language appropriate for the audience; and
- Provide guidance on where to find further information or a contact.

Examples of tools that can be customized to support an awareness-building and education program include:

- Newspaper advertisements;
- Flyers and brochures distributed to FPEs;
- Restaurant association newsletter inserts;
- Information from Connecticut Council of Municipalities;
- Bill-stuffers;
- Toll-free help line;
- Open houses;
- Public meetings;
- Cable TV interview programs;
- Web sites; and
- Seminars and workshops.

As with all aspects of the FOG Pretreatment Program, the public education and outreach component is best developed on a local basis reflecting the local situation. It is suggested that local agencies refer to the information sources given in the Resource Manual, Documents 6 and 7 as well as those brochures written for the general public as referenced below.

FIGURE 7-1
Example Public Information Brochures
(Target to Residential Discharges)



Source: Los Angeles, California



Source: Water Environment Federation

Source: Georgia Department of Natural Resources
