SEWER PIPE BLOCKAGE CONTROL PROGRAM

Formally

FATS, OILS, AND GREASE (FOG) CONTROLPROGRAM

MANUAL

COSTA MESA

SANITARY DISTRICT

May 1, 2024

Adopted by the
Costa Mesa Sanitary District On
December 6, 2004

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1.0 INTRODUCTION

Costa Mesa Sanitary District's (CMSD) Sewer Pipe Blockage Control Program (SPBCP) has been developed to prevent fats, oils, and grease (FOG)-related sanitary sewer overflows (SSOs) as required by the State Water Resources Control Board (State Water Board). CMSD initially adopted this program as part of the Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems, Water Quality Order No. 2006-0003 (Sanitary Sewer Systems WDR) on May 2, 2006. This order was issued in response to a regional SSO problem and was issued to 32 co-permittees, which included local agencies, such as cities and special districts, in the northern and central portions of Orange County.

This CMSD program has been updated to provide a consistent, statewide regulatory approach to address sanitary sewer spills, the State Water Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2022-0103-DWQ (Sanitary Sewer Systems General Order) on December 6, 2022. The General Order, which supersedes the 2006 WDR, went into effect on June 5, 2023.

SPBCP's goal is to reduce or eliminate all FOG-related SSOs. These SSOs are frequently attributable to cooking grease in wastewater discharged from Food Service Establishments (FSEs)[1], multi-family housing, and single-family homes that create FOG (or grease) blockages in sanitary sewer collection systems. These grease blockages, located in either the property owner's sewer lateral or the sanitary sewerage system, lead to SSOs, which can cause untreated sewage to flow onto streets and travel to storm drains, creeks, and other surface waters. Untreated sewage on private property or in the street poses an obvious human health risk. If this sewage reaches the ocean, it often results in coastal contamination, beach closures, and the associated potential human health risks.

To achieve this goal of eliminating FOG-related SSOs, the SSS WDR has identified key requirements for the Program, which include:

- Provide educational and outreach materials regarding FOG prevention.
- Reduce grease discharges that may cause blockages.
- Control FOG discharges that may cause sewer overflows.
- Adopt and enforce an ordinance.
- Require implementation of kitchen best management practices (BMPs).
- Require installation of grease removal equipment, when necessary.
- Inspect FSEs;
- Implement source control measures for sewer line "hot spots[2]".
- CCTV on a reoccurring basis to determine pipe impacted by fats, oil, and grease;
- Manage pipe segments requiring enhanced cleaning; and
- Install level sensing devices at appropriate locations to detect above normal water levels.

These requirements are the key issues that were addressed in the development of a Program Manual. The FOG Control Program was renamed to Sewer Pipe Blockage Control Program to address the Statewide Sanitary Sewer Systems General Order 2022-0103-DWQ.

[1] Food Service Establishments (FSEs) are those establishments primarily engaged in preparing or serving food to the public such as restaurants, hotels, commercial kitchens, bakeries, caterers, schools, prisons, correctional facilities, and care institutions.
[2] Known problem areas in the sanitary sewer system that require more frequent cleaning and maintenance.

2.0 SEWER PIPE BLOCKAGE CONTROL PROGRAM BACKGROUND AND OVERVIEW

2.1 Service Area

The CMSD provides sewer service to over 118,000 customers. CMSD's service area is the City of Costa Mesa and portions of Newport Beach and unincorporated Orange County. CMSD is bordered by the City of Santa Ana to the north, the City of Newport Beach to the south and to the east, and the Cities of Huntington Beach and Fountain Valley to the west. The CMSD also shares a small border with the Irvine Ranch Water District to the northeast.

CMSD was originally formed in 1944 to address solid waste management, but eventually, CMSD expanded its service under the Sanitary District Act of 1923 to include the design and installation of a sewer collection system. The first sewers were operational in 1954. CMSD is essentially built-out; however, redevelopment and the addition of accessory dwelling units are being monitored.

2.2 Sewer System Management Plan

The CMSD has adopted a Sewer System Management Plan (SSMP), which is a living planning document that tracks ongoing local sewer management program activities, procedures, and decision-making at the scale necessary to address the size and complexity of CMSD's sanitary sewer system.

2.3 Historical FOG Control Activities

CMSD initiated its FOG Control Program in February of 2003, and has updated its program by the adoption of Grease Control Regulations, Ordinance No. 121 (Section 6.07 of the CMSD's Operations Code), in October 2018. In 2003 and 2004 CMSD conducted a FOG Characterization Study (Study) to provide key information and program recommendations for the development of CMSD's FOG Control Program. The Study established the following key program elements:

- Hot Spot Characterization - identifying and mapping the known problem areas in the sanitary sewer system that require more frequent cleaning and maintenance (referred to as "hot spots") due to FOG. Key information was obtained from available staff to identify the factors that cause or may contribute to the areas identified as hot spots (referred now as Enhanced Maintenance Area (EMA)). Since the identification of the hot spot locations, CMSD has worked to eliminate hot spot locations, and ongoing FOG Control Program actions are intended to further reduce these locations.
- FOG Source Characterization - physically inspecting the hot spots through the use of closed circuit television (CCTV) equipment to further assess the critical hot spots identified by CMSD's staff to confirm known or to identify unknown problems in the sanitary sewer system and to identify potential sources of FOG.
- FSE Characterization - physically inspecting and educating the FSEs. FSEs located within the CMSD service area are inspected to identify and classify each FSE's potential to generate and discharge FOG to the sanitary sewer system.

- Data Integration and Program Recommendations - mapping the hot spot and FSE locations, development of databases for the information collected from the FSE Characterization, and for the information collected during hot spot and FOG Source Characterization. Correlations and recommendations for the development of the CMSD's FOG Control Program were then developed utilizing these resources.

2.4 Overview of Sewer Pipe Blockage Control Program

The Sewer Pipe Blockage Control Program is from the Statewide Sanitary Sewer Systems General Order 2022-0103-DWQ.. The key elements of the program are:

• An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;

• A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area;

• The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;

• Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;

• Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;

• An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and

• Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

3.0 SEWER LINE – ENHANCED MAINTENANCE AREA PREVENTATIVE MAINTENANCE

3.1 Overview of Sewage Collection System and Mapping

CMSD's sewage collection system consists of a network of sewer mains, laterals, lift stations, and force mains, which conveys a dry weather flow of a 8.4 million gallons per day (MGD) of sewage generated within CMSD's service area to the Orange County Sanitation District's (OC San) trunk sewers for treatment at OC San's Treatment Plants 1 and 2. The system consists of 219.4 miles of gravity collection system mainline piping ranging in size from 8 inches to 30 inches. The system includes 20 sewage lift stations, 4.8 miles sewer force main, 4,707 manholes and nearly 25,000 individual service connections. The CMSD is not responsible for the maintenance of private sewer laterals.

This sewer collection system was originally mapped and documented by the use of sectional Atlas Maps. These Atlas Maps consist of approximately 75 100-scale pages that include every sewer mainline, lateral, and manhole. These maps were drawn from Record Drawings as the system was developed. In 2012, CMSD completed development of a geographic information system (GIS) and transitioned hand-drawn sewer system atlases to a GIS-based sewer atlas. The GIS-based atlas shows the location of gravity sewer lines and manholes, pumping facilities, and force main pipelines. A separate map showing the location of all storm water conveyance facilities is also available to field staff. In 2015, CMSD deployed field tablets to wastewater staff to allow access to the GIS in the field. The tablets allows field staff to redline changes in the maps, have access to historical notes and sewer system structural issues, and limit the amount of paperwork and field binders needed for staff.

3.2 Routine Sewer Line Cleaning and CCTV

The collection system cleaning goal is to clean on a 12-month cycle. The line cleaning operation is accomplished utilizing Vactor units by three trained CMSD crews. The general process consists of hydro jetting the sewer line and vacuuming the generated debris from the downstream manhole. The program is typically performed in a progressive manner meaning that the system is cleaned from manhole to manhole continuing each successive day at the manhole following that at which work was ceased on the previous day. If significant FOG is identified during the line cleaning operation, the area is then evaluated for potential further analysis utilizing closed circuit television (CCTV) inspection.

Visual inspection utilizing CCTV of the collection system is conducted as needed, and a CMSD-wide CCTV inspection is conducted every ten years. The previously completed system-wide CCTV inspection occurred between 2016-2018. In 2016, CMSD purchased a CCTV trailer that allows CMSD to periodically conduct the CCTV when a concern is identified. Typically, the entire system is televised approximately once every 10 years. Any problems identified during the video inspection are scheduled for correction depending on their severity.

3.3 EMA Identification, Prioritization and Cleaning

Enhanced sewer line cleaning is conducted in FOG-related area or specific reaches of sewer pipe that have a history of FOG-related problems or pose higher than normal risk of an SSO. In addition, inverted siphons are cleaned more frequently. These Enhanced Maintenance Areas (EMA) are identified during normal maintenance of the collection system by maintenance staff when they observe conditions that warrant more frequent cleaning. Additionally, if necessary, locations where an SSO occurs may be designated as a hot spot and cleaned on a more frequent basis. The frequency of cleaning for these hot spots ranges generally from monthly to once every 9 months depending on the severity of the problem, and the cleaning effectiveness for EMA's are evaluated (through the judicious use of CCTV) on an ongoing basis. Additionally, the list of EMA's are periodically reviewed to assess the necessity to maintain high frequency cleaning at each location. Currently, there are approximately 11 EMA's that are FOG related problems.

3.4 Characterization and Source Identification Activities

Many issues in the sanitary sewer system can contribute to an EMA, each with varying degrees of severity. Management of this information for each EMA location is necessary to identify effective solutions and to prioritize resources. Sewer line characterization is the process of classification and prioritization of these EMAs in the CMSD's sanitary sewer system. It is important to note that while there are many reasons and causes for EMAs in the sanitary sewer system, the focus of the Sewer Pipe Blockage Control Program is the FOG-related locations.

The characterization process consists of collecting all known (or perceived) factors associated with each hot spot from the sewer maintenance staff to identify the critical information. Factors related to pipe conditions and potential sources are identified,

documented and mapped. Relationships between the various factors are then developed to define each EMA. For critical EMA, visual inspections utilizing CCTV of the EMA and the sewer pipe upstream of the EMA are conducted to confirm known or to identify unknown problems in the sanitary sewer system and to identify the potential sources of FOG. This information is critical to the Program to enable identification and implementation of the appropriate mitigation solutions.

The potential solutions include the evaluation of structural issues that impact EMAs. The resolution of the structural issue is evaluated to determine if repair may minimize grease accumulation and potentially resolve the EMA. Additionally, the laterals (and associated discharger[s]) identified as potential sources of FOG during these CCTV inspections will be documented and the information is used for appropriate source reduction and enforcement activities (refer to Sections 4.7 and 4.8). Ultimately, this information will help to guide the focus of the Program to those EMA locations that present the greatest potential for SSOs.

3.5 EMA Daily Management

The sewer line EMA cleaning and daily management is the responsibility of the Wastewater Maintenance Manager who is also responsible for the maintenance and operations of CMSD's Wastewater Department. Typical duties of the Wastewater Maintenance Manager include coordinating FSE inspections and FOG control enforcement, CCTV, scheduling routine pipe cleaning and preventive maintenance work orders for lift stations, managing the SSMP, etc. The District Engineer assists with identification of possible EMAs and manages CMSD's asset management system. In relation to CMSD's Sewer Pipe Blockage Control Program, the District Engineer is responsible for performing plan checks, issuing sewer permits and FSE wastewater discharge permits along with conditional waiver permits.

4.0 FSE SEWER PIPE BLOCKAGE CONTROL PROGRAM

4.1 Legal Authority

CMSD has adopted Grease Control Regulations, Ordinance No. 121 (Section 6.07 of the CMSD's Operations Code), to specify appropriate FOG discharge requirements for food service establishments to prevent blockages of sewer lines resulting from discharges of FOG. The discharge requirement states that: "No person shall discharge grease into the sewer system so as to cause an accumulation in CMSD's lines so as to substantially contribute to the possibility of a sewage overflow." Refer to CMSD website www.cmsdca.gov, Section 6.07 for the Grease Control Regulations.

The key elements of these regulations are the requirement of FSEs to:

- Obtain a FOG Wastewater Discharge Permit;
- Implement best management practices (BMPs);
- Install, operate, and maintain an approved type and adequately sized grease interceptor or other grease removal device. Inspection and sampling conditions
- Enforcement
- Abatement; and
- Retrofitting

4.2 Food Services Establishments (FSEs)

"Food Service Establishment (FSE)" shall mean any entity, including its members, operators and employees, located within the boundaries of CMSD, engaged in the business of storing, preparing, serving, manufacturing, packaging, or handling food for sale to other entities, or for consumption by the public , and which has any process or device that uses or produces FOG, or grease vapors, steam, fumes, smoke or odors that are required to be removed by a Type 1 or Type II hood provided in the California Mechanical Code. A limited food preparation facility is not considered a Food Service Establishment when it is engaged only in reheating, hot holding or assembly of ready to eat food products and as a result, there is no wastewater discharge containing a significant amount of FOG. A limited food

preparation establishment does not include any operation that changes the form, flavor, or consistency of food.

The FSEs identified within CMSD are establishments ranging from sandwich shops to full-service restaurants, including major kitchens in retirement homes or hospital facilities.

4.3 FOG Wastewater Discharge Requirements

CMSD has developed FOG Wastewater Discharge Requirements for FSEs and issues each FSE a Permit (Appendix A) that informs the facility of its requirements. The Permit has General Requirements that apply to all FSEs; and it may also have specific requirements that apply uniquely to individual FSEs.

4.3.1 GENERAL REQUIREMENTS

General Requirements have been developed to identify the core requirements of the FOG Regulation, which the FSEs are required to comply with. These conditions are segregated into sections and are summarized as follows:

4.3.1.1 Part I - Effluent Limitations and Discharge Requirements

- Waste discharge of FOG into the sewer system will not accumulate and/or cause or contribute to a blockage.
- General Prohibitions
    - No food grinders (garbage disposal units) for new or existing FSEs
    - No emulsifying additives, no use as a supplement to interceptor maintenance
    - No disposal of waste cooking oil into drains
    - No discharge of wastewater in excess of 140 degrees Fahrenheit into grease removal equipment
    - No discharge of wastewater from dishwashers into a grease control device
    - No toilet discharge into grease interceptor
    - No interceptor waste into the sewer system

4.3.1.2 Part II - Requirements for FOG Control

- Best Management Practices (BMPs)
    - Installation of drain screens
    - Segregation and collection of waste cooking oils
    - Disposal of food waste into trash or garbage, and not into sinks
    - Employee Training
    - Kitchen signage
- FOG Pretreatment
    - Requirement for the installation of a grease interceptor or under sink FOG capture systems required.
    - Requirement for grease interceptor maintenance (FOG and/or solids cannot exceed 25%)
    - Frequency of grease interceptor maintenance (minimum quarterly)

4.3.1.3 Part III - Record-Keeping and Notification and Reporting Requirements

- Record Keeping requirements
  - Logbook of employee training
  - Records of spills and/or cleaning of the lateral or sewer system
  - Logbook of grease control equipment cleaning activities
  - Copies of grease control equipment records or waste hauling manifests
  - Records of sampling data and height monitoring of FOG and solid accumulation in the interceptor
- Notification Requirements
  - Notification of a spill
  - Notification regarding planned changes

4.3.1.4 Part IV - Standard Conditions

- Non-transferability of Permit
- Access requirements
- Civil Penalties
- Criminal Penalties
- Severability
- Termination of service

4.3.2 SPECIFIC REQUIREMENTS

Specific requirements can be required or authorized by the District Engineer or his/her designee, for individual FSEs. These specific permit conditions can be segregated into three categories: 1) grease interceptor installation requirements for FSEs; 2) conditional or 3) exempt from physical system requirements.

4.3.2.1 Grease Interceptor Installation Requirements

The requirement for the installation of a grease interceptor is a key requirement of CMSD's FOG Regulations. However, this requirement has many options for FSEs that that may delay or potentially negate this requirement. The attached flow chart generally describes the evaluation process that will be utilized for the grease interceptor installation requirement.

OPTION A (Permit with Conditional Waiver or Variance)

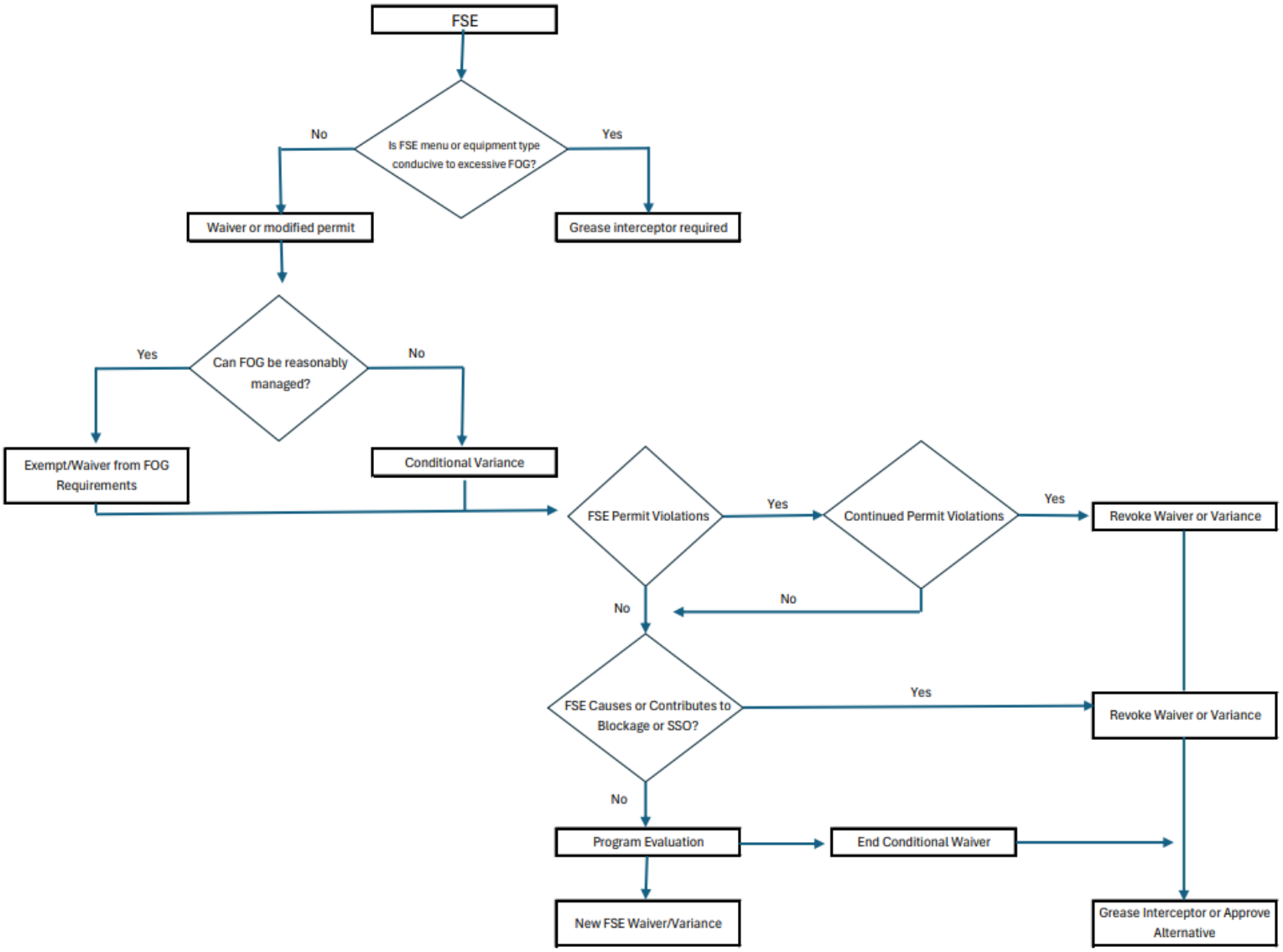
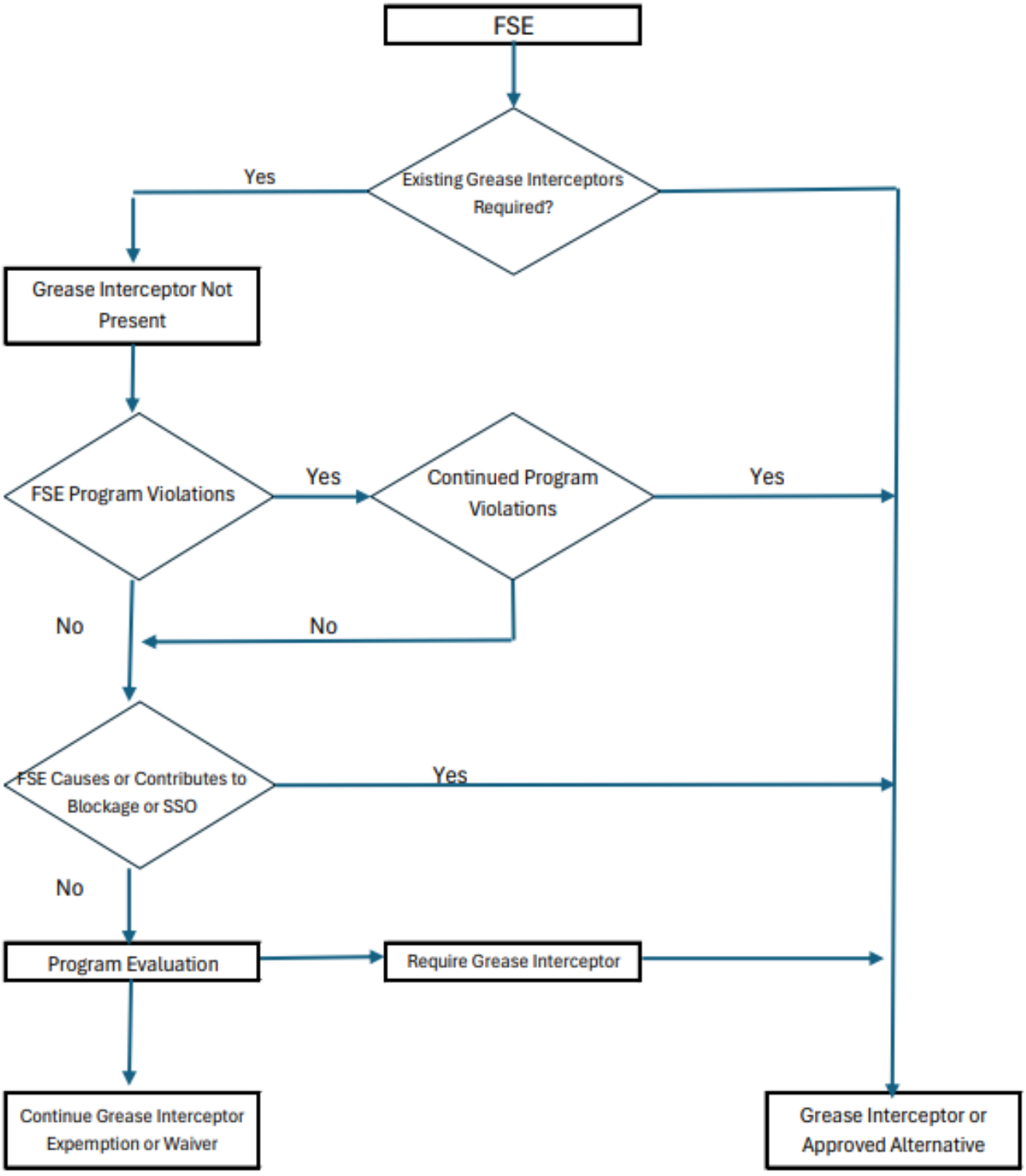


Figure 1: Grease Interceptor Installation Evaluation Process Flow Chart

Based on the process flow chart, the majority of existing FSEs that do not have grease interceptors are exempt from the requirement to install a grease interceptor. However, if the FSE has continued permit violations or if the FSE is identified as a significant contributor of FOG to the sewer system, the exemption will be terminated requiring the installation of a grease interceptor.

OPTION B (Menu and Installed Equipment Requires a GI)



4.3.2.2 Other Requirements or Modifications

There are other situations where specific registration or permit conditions will be required or approved by CMSD. A few of the common "other" specific conditions are as follows:

- Authorization for the utilization of an additive
- Requirement for increased maintenance frequency of the grease interceptor
- Authorization for decreased maintenance frequency of the grease interceptor
- Requirement to submit records (grease interceptor maintenance log and waste hauling manifests and other logs) to CMSD on a pre-determined basis
- Requirements for routine line cleaning or CCTV?

4.4 Gravity Grease Interceptors

Gravity grease interceptors are underground or in-ground grease collection devices that separate FOG (or grease), solids, and water based on the principle of Stoke's Law. Stoke's Law describes the rising or settling of a particle in a fluid (water in this case). Simply put, under non-turbulent conditions in an interceptor given enough time, particles that are lighter then water (grease) will rise to the surface and particles that are heavier than water (solids) will settle to the bottom. A typical conceptual interceptor design is illustrated in Figure 2.

The proper plumbing and placement of baffles will provide the non-turbulent conditions. The proper dimensions and volume of the interceptor will provide sufficient retention time to allow the particles to fully rise or settle before they pass-through to the outlet of the interceptor. Over time, the grease and solids layers thicken and will eventually fill the first chamber if they are not removed. If the grease and solids are not removed regularly, the interceptor no longer functions for its intended purpose, and grease will be carried into the sewer system. Emulsified or partially emulsified particles will rise or settle slower, which is why soaps and other emulsifiers may cause some grease or solids to pass-through an interceptor.

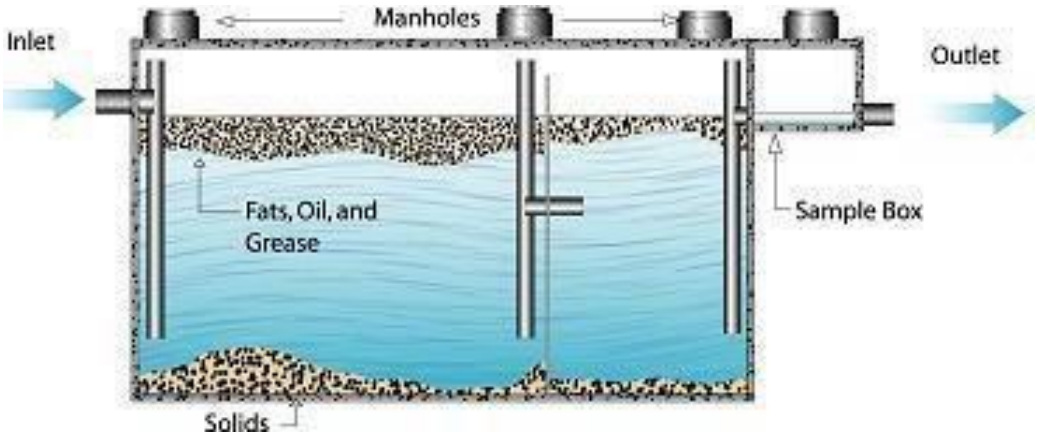


Figure 2: Typical Conceptual Grease Interceptor Design – Side View

Since an interceptor is not self-cleaning or free of maintenance, it is critical that an interceptor be suitably designed with manholes in the right locations to facilitate maintenance and that it be cleaned and pumped at a frequency that maintains its design removal efficiency.

4.4. 1 SIZING

CMSD's District Engineer and/or his/her designee will review and approve the sizing and installation of grease interceptors. This is accomplished by requirement of the permittee, by the appropriate Engineering Department, for CMSD's approval prior to issuance of the sewer permit.

The grease interceptor size will be base the design and sizing of the grease interceptors on the current version of the California Plumbing Code (Code). Chapter 10, "Traps and Interceptors". The District Engineer will also consider the potential for large grease interceptor to become septic (which may create nuisance odors and corrosive conditions) due to excessively long retention times. Thus, the Code will be utilized with the following general considerations:

1) The FOG grease interceptor requirements are based on technical and engineering, codes, best judgment and other factors such as, cooking equipment, menu, and frequency of use of the drainage fixture units.

2) The floor of the interceptor should not be too deep to allow for proper cleaning and/or the interceptor should not be larger than 1, 500 gallons for most installations.

3) An FSE calculation of 375 to 750 gallons should require an interceptor of 750 gallons.

4.4.2 MAINTENANCE REQUIREMENTS

The CMSD requires that grease interceptors be completely cleaned (pumped out) at a frequency that allows the GGIs to maintain efficient operation and prevents excessive accumulation of floating FOG and settled solids. A complete pump-out means that all of the contents of the interceptor are removed, and no liquids are returned to the sewer system. CMSD requires that grease interceptors be cleaned (pumped out) completely at a mandatory minimum frequency of once every 90 days to prevent the over-accumulation of floating FOG and settled solids; however, some GGIs may need to be pumped out more frequently than once every 90 days if the accumulation of floating FOG and settled solids exceeds 25% of the overall depth of the interceptor.

4.5 Hydro-Mechanical Grease Interceptors

A hydro-mechanical grease interceptor (HGI) (also known as a *grease trap*) is a flow- based grease interceptor that is usually installed in ground or above ground, inside or outside of the facility, and has a typical capacity of less than 250 gallons. FSEs generally prefer Grease traps over gravity grease interceptors because Grease traps are less expensive to install, can fit in smaller spaces, and may be easier to maintain depending on the maintenance frequency.

A typical conceptual HGI design is illustrated in Figure 3, *Typical Conceptual Hydro-mechanical Grease Interceptor Design*.

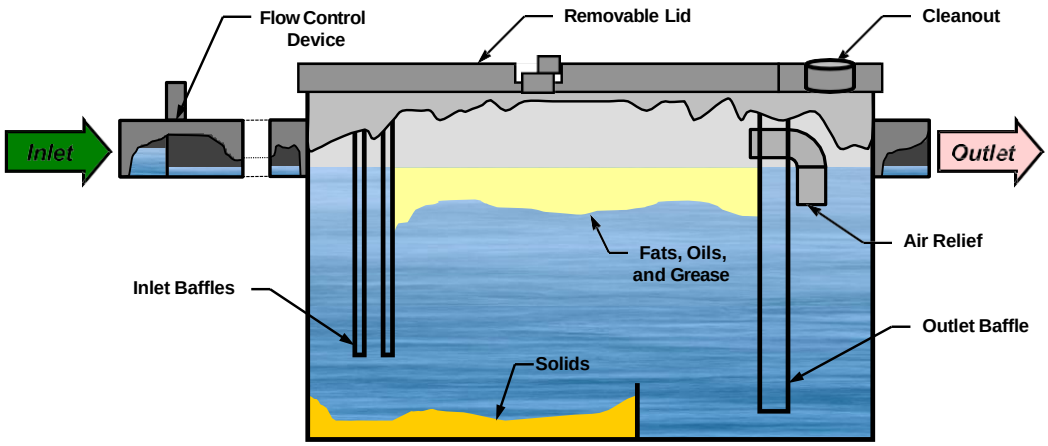


Figure 3. Typical Conceptual Hydro-mechanical Grease Interceptor Design

4.5.1 SIZING

The sizing requirements for grease traps are established in Chapter 10 of the California Plumbing Code. Regardless of the sizing method, Grease traps are sized based on flow rate and the quantity (pounds) of FOG that they can store. Typically, Grease traps have a flow capacity of 20 to 50 gallons per minute (gpm), can store 40 to 100 pounds of FOG, and are 15 to 60 gallons in volume. Flow-control fittings/devices must be installed upstream of Grease traps in order to control the wastewater flow to match the certified flow rate of the HGI. If this flow-control device is not installed, the HGI may not perform properly when the flow exceeds the certified flow rate.

Grease traps are tested and certified to ASME A112.14.3 or PDI-G101 standards at the HGI's specified maximum flow rate. CMSD requires that Grease traps be certified to these standards before Grease traps can be approved for use in CMSD's service area. Plan-check approvals are recommended to ensure that one or more Grease traps are connected to the significant grease-waste drains (e.g., pot sink, pre-rinse sink, workstation).

4.5.2 MAINTENANCE REQUIREMENTS

Grease traps should be cleaned before the accumulation of floating FOG and settled solids exceeds 25% of the HGI's overall capacity (this is known as the 25% rule). In order to prevent excessive accumulation, daily to weekly cleaning of the HGI by kitchen staff or by pumping contractors may be required. At a minimum, Grease traps must be cleaned monthly. If cleaning is performed by kitchen staff, solids and FOG should be placed in an approved container and disposed of by a certified waste hauler. All FSEs with Grease traps must keep logs of the maintenance events. Log sheets are provided to each FSE during the initial or follow-up inspections.

4.6 Grease Removal Devices

Grease removal devices (GRD) are Grease traps which automatically remove the floating FOG contents of the device. GRDs are typically installed indoors and connect to one to four sinks in the kitchen. Floating FOG is separated from the water within the GRD and is discharged into a relatively small tank connected to the side of the GRD. The containers are then emptied into a designated container. If space is available, a 55 gallon drum can replace the small tank in order to eliminate the need to empty the container on a daily basis. A typical conceptual GRD design is illustrated below in Figure 4, *Typical Conceptual Grease Removal Device Design*.

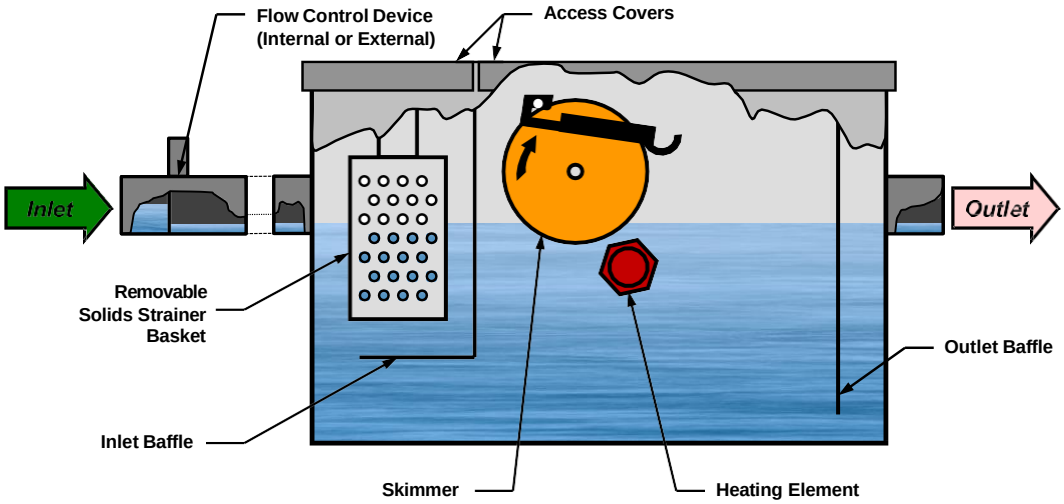


Figure 4. Typical Conceptual Grease Removal Device Design.

The GRD shown in Figure 3 has a skimmer wheel which skims the floating FOG into the small container. Other styles of GRDs are available without the skimmer wheel and use hydrostatic pressure or pumps to remove the floating FOG from the device. Some FSEs prefer GRDs without the skimmer wheel because there are fewer moving parts requiring maintenance. It is important that the FSEs understand how their GRD works and what maintenance is required for their device. Proper GRD maintenance is further discussed in Section 3.6.2.

4.6.1 SIZING

GRDs are sized to the same standards as grease traps which was previously discussed in Section 3.5.1. They are sized according to the established sizing criteria in Chapter 1014.2 of the California Plumbing Code. Flow control devices must be installed inside and outside the GRDs to control the wastewater flow in order to match the certified flow rate of the GRD.

4.6.2 MAINTENANCE REQUIREMENTS

To function properly, GRDs may require quarterly, monthly, weekly and sometimes, even daily maintenance. The solids basket must be emptied daily, and the solids must be disposed of with the trash. The FOG waste container, which collects the skimmed oils, must be emptied into a larger FOG waste container for proper disposal or recycling. Because many GRDs have heaters and skimmers and other critical mechanical equipment, they must be maintained by the FSE and cleaned or replaced, as needed. The entire device should be emptied and cleaned thoroughly at least once every 90 days to remove the silt and sediments which can accumulate within the device.

4.7 Waste Hauling Requirements

Proper disposal of waste grease collected either from grease traps and interceptors or through kitchen practices is essential to a successful Sewer Pipe Blockage Control Program. To ensure that FSEs properly dispose of their waste FOG and that haulers and disposal/recycling sites are properly operated, CMSD requires that all hauler documentation be completed, and that the hauler provide the FSE a copy prior to departing the FSE. The FSE is required to maintain copies of the hauling documentation. The minimum information requirements to be documented on the hauler's record are:

- Name of hauling company
- Name and signature of operator performing the pumpout
- Documentation of full pumpout with volume of water and FOG removed (e.g., 1500 gallons)
- Documentation of the level of floating FOG and Settable Solids (to determine if volume exceeds 25% capacity of the grease removal equipment)
- Documentation if repairs to the grease interceptor are required
- Identification of the facility where the hauler is planning to dispose of the waste

Grease hauling companies serving Orange County are listed in Table 7-1 of CMSD's Sewer System Management Plan.

4.8 Public Education and Outreach Program

CMSD has developed and distributed a FOG notebook to each FSE within CMSD service area. The notebook includes log sheets for interceptor cleaning, employee education, BMPs, guidelines and posters.

Available on CMSD's website are educational materials regarding Fats, Oils and Grease (FOG) and the sewer system. The site contains the following educational materials that can be downloaded by the public:

• Fight the FOG - Keep Fats, Oils, & Grease Out of Your Drain brochure (English & Spanish version)

• Homeowner's Guide to Sewer Lateral Maintenance.

• FOG Control Program Manual

• Kitchen Best Management Practices for FOG

• Permit Conditions

FAQs about FOG

• Grease Interceptor Diagram

CMSD issues a quarterly newsletter with information regarding keeping Fats, Oils and Grease (FOG) out of the sewer system. When significant FOG is detected in pipes serving residential neighborhoods, door hangers about FOG prevention are disseminated in those neighborhoods. Social media (e.g. Facebook, Twitter, Instagram, YouTube) is used for outreach campaigns on how to properly dispose of cooking grease and the locations where FOG can be dropped off for recycling.

4.9 Authority to Inspect FSE's

To ensure compliance with the Sewer Pipe Control Program requirements, CMSD has developed a few types of FSE Inspections. These inspections and their purpose are as follows:

Initial Inspections	These inspections are conducted to identify and classify each FSE's potential to generate FOG and its potential to discharge the FOG to the sanitary sewer system. The inspection identifies the type of food, equipment, and kitchen practices that contribute to FOG discharges and the equipment (e.g., grease interceptors, grease traps) that may reduce the discharge of FOG to the sewer. These initial inspections also provide the opportunity to educate the FSEs on the impact of their grease discharges, what they can do to minimize grease discharges, and how CMSD's Regulation could potentially impact them. Refer to Appendix B for an example of the inspection form.
BMP Inspections	These inspections are conducted to evaluate compliance with the facility's best management practices requirements.
GRE Inspections	These inspections are conducted to evaluate compliance with the facility's grease removal equipment requirements.
Compliance Inspections	These inspections are conducted where it is determined by the Wastewater Maintenance Manager and/or his/her designee that a follow-up inspection is required for a Non-Compliance issue that has been identified in previous BMP, GRE or FOG Source Sewer Line Inspections.

Enforcement Inspections — These inspections are conducted when elevated enforcement of the Permit requirements are required or when the revocation of the FSE's grease interceptor installation Conditional Waiver, Waiver or Variance is required.

The inspection strategy is to focus CMSD's resources on FSEs in the vicinity and upstream of hot spots and on FSEs that have been identified with a greater potential to generate FOG and discharge FOG to the sanitary sewer system. Generally, BMP inspections will be conducted on a bi-annual or annual basis and GRE inspections will be inspected on a Quarterly to annual basis depending on an FSEs proximity to a hot spot.

4.10 FSE Enforcement

CMSD has developed an enforcement response plan to respond to Non-Compliance issues identified during the inspection processes. The enforcement response will be based on the severity of the non-compliance and the history of non-compliance at the FSE. The general approach utilized is displayed below in Figure 3, *Sewer Pipe Blockage Control Program Enforcement Response Flow Chart.*

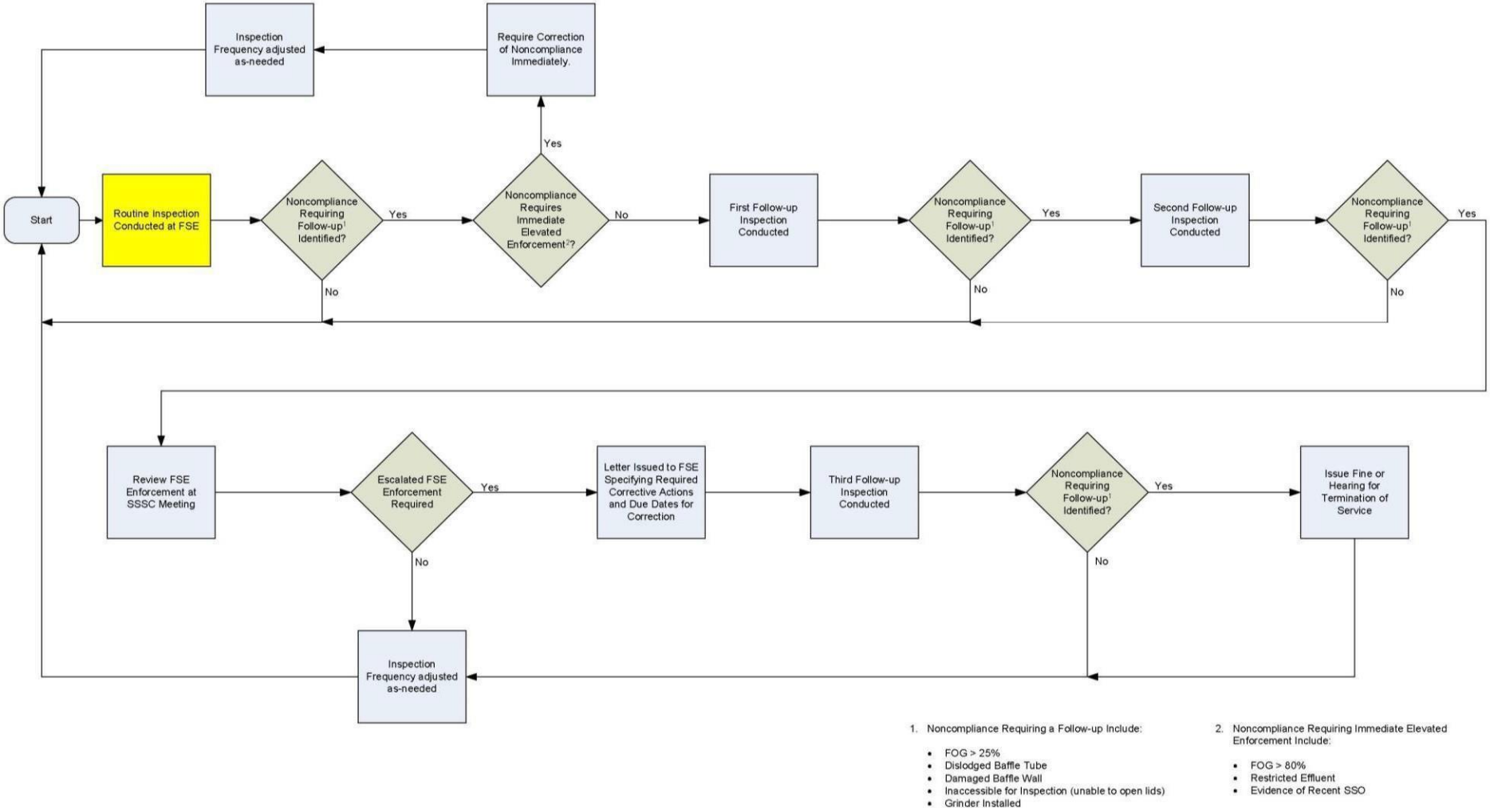


Figure 5: Sewer Pipe Blockage Control Program Enforcement Response Flow Chart

1. 10.1 BMP NON-COMPLIANCE

Issues identified as deficient during the BMP inspection process will be documented and the FSE will be issued a Notice of Non-Compliance. The Notice will identify the area of non-compliance and the required corrective action. Issues identified as deficient during the inspection will compromise the effectiveness of the FOG BMP Program, which will increase the FSEs potential to discharge FOG into the sanitary sewer. Therefore, the overall impact of each of the deficient issues will need to be evaluated individually and in relationship to the other reported deficiencies to determine the projected impact and severity of the combined deficient issues. Generally, for a single deficient issue (not considered as a serious non-compliance individually), no further enforcement action will be taken after correction of the deficiency.

For repeated issues identified as non-compliant, the enforcement process will be elevated by: issuance of a Notice of Violation (enforcement letter); assessment of non-compliance fees; increased assessment of fees; requirement for installation of a grease interceptor (if applicable); and the potential for the loss of the FSE's right to discharge wastewater into CMSD's sewer collection system.

4.10.2 GRE NON-COMPLIANCE

Issues identified as deficient during the GRE inspection process will be documented and the FSE will be issued a Notice of Non-Compliance. The Notice will identify the area of non-compliance and the required action. The majority of the issues on the GRE inspection form, if identified as deficient, will compromise the effectiveness of the GRE and would likely have resulted in a direct discharge of FOG into the sanitary sewer. For repeated issues identified as non-compliant, the enforcement process will be elevated by: assessment of non-compliance fees; increased assessment of fees; and the potential for the loss of the FSE's right to discharge wastewater into CMSD's sewer collection system. If an FSE is identified to be in non-compliance for a grease interceptor related requirement (i.e., 25% rule, structural damage, or pumping frequency), the inspection frequency for that facility will be increased to quarterly if the facility is not already being inspected at that frequency. If the facility maintains compliance for two consecutive inspections, the inspection frequency can be reset to the original inspection frequency.

4.10.3 FOG SOURCE SEWER LINE NON-COMPLIANCE

FSEs identified as sources of FOG to CMSD's sewer piping during FOG Source Sewer Line inspections will be issued Notices of Non-Compliance. This Notice will inform the FSE that FOG discharging from their lateral has impacted CMSD's sewer line. This is considered a serious non-compliance issue and a Notice of Violation may be issued and there may be an assessment of a non-compliance fee.

- If the FSE does not have a grease interceptor, the FSE will be informed that they have been identified as a significant FOG discharger, that their BMP practices do not appear to be effective and that stringent adherence to BMPs is required. Additionally, they will be informed that if their facility is identified as a source of FOG to CMSD's sewer during any future FOG Source Sewer Line

inspections, the FSE's grease interceptor exemption will be terminated requiring the installation of a grease interceptor.

- If the FSE has a grease interceptor, the FSE will be informed that they have been identified as a significant FOG discharger, and that the maintenance of their grease interceptor has not been effective. The FSE may be required to: 1) pump their grease interceptor on a more frequent basis; 2) conduct a functional integrity test of their grease interceptor; and/or 3) have their kitchen drain lines dye tested to ensure that the appropriate drains are connected to the interceptor.

For repeated non-compliance, the enforcement process will be elevated by increased assessment of fees including termination of the FSE's right to discharge wastewater into CMSD's sewer collection system.

4.10.4 COMPLIANCE SCHEDULE AGREEMENTS (CSA) (OPTIONAL)

CMSD may require the permittee to enter into a Compliance Schedule Agreement (CSA) when the permittee is in non-compliance with the terms of the Code or provisions of the Rules and Regulations, and/or is required to install grease control equipment or grease interceptor. The CSA may not be initiated until all amounts owed to CMSD by the FSE are paid in full and, if the compliance schedule is not achieved, District Engineer may initiate the enforcement process. This includes termination of the FSE's right to discharge wastewater into CMSD's sewer collection system.

4.10.5 APPEALS (OPTIONAL)

Any FSE affected by the action or determination of CMSD or Notice of Violation issued by an inspector may file a request for an appeal hearing with CMSD's General Manager or his/her designee. This request is required to be in writing and must be submitted within 15 days of the date of the notice of the decision or action. CMSD's General Manager will review the report and provide his/her decision in writing to the FSE.

Any FSE affected by the action or determination of CMSD's General Manager may file a request for appeal hearing with the Board of Directors. This request is required to be in writing and must be submitted before the date CMSD General Manager and/or his/her designee, order becomes final. The Board of Directors will grant all hearing requests concerning appeals for permit suspension, revocation or denial. The Board of Directors will evaluate all other hearing requests and will determine whether they will grant or deny the request. The Board of Directors, during the hearing, will allow the appellant(s) to present information supporting the FSE's position. The Board of Directors will review the facts, make a determination concerning the appeal, and provide in writing the Board of Directors' findings to the FSE.

4.11 SPBCP Program Management

The Sewer Pipe Blockage Control Program is managed by CMSD, and the inspection and enforcement activities are conducted by CMSD staff and/or by outside contractors under his/her supervision. The program is well integrated with the collection system maintenance program, specifically the EMA sewer cleaning and video inspection activities.

The FSE data management process consists of:

- Access data base that is utilized to identify the FSEs in the Sewer Pipe Blockage Control Program and the specific details and inspection history of each facility; and
- Composite GIS mapping displaying the location of the FSEs.

5.0 MULTI-FAMILY HOUSING AND SINGLE FAMILY HOME SEWER PIPE BLOCKAGE CONTROL PROGRAM

The multi-family housing and single family home Sewer Pipe Blockage Control Program will utilize education as the primary method for controlling the discharge of the FOG to the sewer system. Educational information that promotes proper disposal of pipe-blocking substances is provided in Section 4.8 of this document.

6.0 INDUSTRIAL FOG CONTROL PROGRAM

Orange County Sanitation District's (OC San) source control program is utilized to regulate the wastewater discharged from Industrial users into CMSD's sewer collection system. CMSD will coordinate with OC San for regulation and enforcement for those industrial discharges that are identified as significant FOG discharges.

APPENDIX A

Costa Mesa Sanitary District FOG Waste Discharge Example Permit

COSTA MESA SANITARY CMSD
FOOD SERVICE ESTABLISHMENT WASTEWATER DISCHARGE PERMIT
REGULAR PERMIT

Permit No: <PERMIT_NO>

Effective Date: <PERMIT_DATE>
Expiration Date: <EXPIRE_DATE>

Revision No: <REVISION_NO>

Revision Date: <REVISION_DATE>

This permit authorizes
<Owner>
<FSE NAME)>
<SEWER_STREET>
<SEWER_CITY>, CA <SEWER_ZIP>

hereinafter referred to as "Permittee", to discharge wastewater, via a grease interceptor, into the sewerage system from the above identified location, in accordance with the conditions set forth in this permit and the provisions of Ordinance No. 41 and 51 – An Ordinance of the Board of Directors of the Costa Mesa Sanitary District (CMSD) Enacting Grease Control Regulations.

General permit conditions:

Part I	Effluent Limitations and Discharge Restrictions
Part II	Requirements for FOG Control
Part III	Record-Keeping and Notification Requirements
Part IV	Standard Conditions

Specific Permit Condition(s):

The CMSD may amend this permit at anytime during the term of the permit and failure to comply with the requirements set forth above is a violation of this permit and is subject to escalated enforcement actions. CMSD will issue permits to existing FSEs on a three-year cycle. Discharging without a valid permit is a violation of the FOG Ordinance and may be subject to administrative fines and physical termination of sewer service.

Compliance with this permit does not relieve the Permittee of its obligation to comply with the FOG Ordinance, any applicable pretreatment regulations, standards or requirements under local, State, and Federal laws, including any such regulations, standards, requirements or laws that may become effective during the term of this permit. Non-compliance with any term or condition of this permit constitutes a violation of the FOG Ordinance.

By:

DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT

AUTHORIZED AGENT SIGNATURE Printed Name Date

BUSINESS OWNER SIGNATURE Printed Name Date

PROPERTY OWNER SIGNATURE Printed Name Date

Failure to sign does not relieve Permittee with the responsibility for compliance with this Permit.

COSTA MESA SANITARY CMSD
FOOD SERVICE ESTABLISHMENT WASTEWATER DISCHARGE PERMIT
CONDITIONAL WAIVER PERMIT

Permit No: «PermitNum»

Effective Date: «tblPermit_StartDate»
Expiration Date: «EndDate»

Revision No: «RevNum»

Revision Date: «tblRev_StartDate»

This permit authorizes
«FSEOwnerName»
«FSEName»
«FSEStreet»
«FSECity», CA «FSEZip»

hereinafter referred to as "Permittee", to discharge wastewater, via a grease trap or grease removal device, into the sewerage system from the above identified location, in accordance with the conditions set forth in this permit and the provisions of Ordinance No. 41 and 51 – An Ordinance of the Board of Directors of the Costa Mesa Sanitary District (CMSD) Enacting Grease Control Regulations. The grease interceptor requirement is suspended, providing the FSE complies with CMSD requirements and meets FOG discharge requirements.

General permit conditions:

Part I	Effluent Limitations and Discharge Restrictions
Part II	Requirements for Fats, Oils, and Grease (FOG) Control
Part III	Record-Keeping and Notification Requirements
Part IV	Standard Conditions

Specific Permit Condition(s):

A conditional waiver has been granted to this permit suspending the requirement to install a grease interceptor. However, this conditional waiver can be revoked at any time based on: 1) failure to adhere to kitchen best management practices (BMPs); or 2) identification of your facility as a significant contributor of FOG into the sewer system, which is based on inspection or sampling of the FOG discharged from your facility's sewer lateral to the sewer system. All other requirements of the ordinance and the general permit conditions apply to this permit.

CMSD may amend this permit at anytime during the term of the permit and failure to comply with the requirements set forth above is a violation of this permit and is subject to escalated enforcement actions. CMSD will issue permits to existing FSEs on a three-year cycle. Discharging without a valid permit is a violation of the FOG Ordinance and may be subject to administrative fines and physical termination of sewer service.

Compliance with this permit does not relieve the Permittee of its obligation to comply with the FOG Ordinance, any applicable pretreatment regulations, standards or requirements under local, State, and Federal laws, including any such regulations, standards, requirements or laws that may become effective during the term of this permit. Non-compliance with any term or condition of this permit constitutes a violation of the FOG Ordinance.

By:
DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT

AUTHORIZED AGENT SIGNATURE Printed Name Date

BUSINESS OWNER SIGNATURE Printed Name Date

PROPERTY OWNER SIGNATURE Printed Name Date

Failure to sign does not relieve Permittee with the responsibility for compliance with this Permit.

COSTA MESA SANITARY CMSD
FOOD SERVICE ESTABLISHMENT WASTEWATER DISCHARGE PERMIT
EXEMPT PERMIT

Permit No: <PERMIT_NO>

Effective Date: <PERMIT_DATE>
Expiration Date: <EXPIRE_DATE>

Revision No: <REVISION_NO>

Revision Date: <REVISION_DATE>

This permit authorizes
<Owner>
<FSE NAME)>
<SEWER_STREET>
<SEWER_CITY>, CA <SEWER_ZIP>

hereinafter referred to as "Permittee", to discharge wastewater into the sewerage system, without a grease removal device or interceptor, from the above identified location, in accordance with the conditions set forth in this permit and the provisions of Ordinance No. 41 and 51 – An Ordinance of the Board of Directors of the Costa Mesa Sanitary District (CMSD) Enacting Grease Control Regulations.

General permit conditions:

Part I	Effluent Limitations and Discharge Restrictions
Part II	Requirements for FOG Control
Part III	Record-Keeping and Notification Requirements
Part IV	Standard Conditions

Specific Permit Condition(s):

This permit is an interim permit. All conditions of the ordinance and general permit conditions apply to this permit; however, the requirements to install a grease interceptor or grease removal device (if not previously installed) are waived depending on menu, on-site kitchen equipment, and FOG compliance.

CMSD may amend this permit at anytime during the term of the permit and failure to comply with the requirements set forth above is a violation of this permit and is subject to escalated enforcement actions. Discharging without a valid permit is a violation of the FOG Ordinance and may be subject to administrative fines and physical termination of sewer service.

Compliance with this permit does not relieve the Permittee of its obligation to comply with the FOG Ordinance, any applicable pretreatment regulations, standards or requirements under local, State, and Federal laws, including any such regulations, standards, requirements or laws that may become effective during the term of this permit. Non-compliance with any term or condition of this permit constitutes a violation of the FOG Ordinance.

AUTHORIZED AGENT SIGNATURE Printed Name Date

By:
DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT

BUSINESS OWNER SIGNATURE Printed Name Date

PROPERTY OWNER SIGNATURE Printed Name Date

Failure to sign does not relieve Permittee with the responsibility for compliance with this Permit.

APPENDIX B

Inspection Forms

Costa Mesa Sanitary CMSD
FSE Interceptor/Trap Inspection Report

Permit No: _____ Inspection Date: _____
Name of Facility: _____ Inspection Type: _____
Address: _____ Inspector: _____
_____ Photo #: _____
Name and Title of Facility Contact: _____
Interceptor/Trap Location: _____
Interceptor/Trap Size: _____gallons Interceptor/Trap Liquid Depth: _____inches
Current Pumping Frequency: _____

FACILITY INSPECTION: Grease Removal Equipment (GRE)

1. Floating Fats, Oils, and Grease (FOG) Layer -(FF) Thickness: _____inches
2. Settable Solids (SS) Thickness: _____inches
3. Total FF and SS Thickness: _____inches % Accumulated FOG and SS: _____%
4. H2S: _____ppm (mg/l)
5 Mechanical Condition: See Results for Deficiencies
6. Last cleaning/pump-out date: _____
7. GRE Pumping Record Keeping: See Results for Deficiencies

Comments: _____
_____
_____

INSPECTION RESULTS

☐ Facility is in **COMPLIANCE**. No corrective action is required at this time

☐ **NOTICE OF NONCOMPLIANCE**

Facility is in noncompliance of the items checked below:	**Required corrective action includes any or all of the following:**
☐ Interceptor/Trap is inaccessible for inspection	☐ Promptly remove obstructions that do not allow access to interceptor/trap
☐ Interceptor/Trap FOG and settable solids capacity exceeded	☐ Pump out Interceptor/Trap completely
☐ Excessive FOG in the sample box	☐ Pump out sample box completely when GRE is serviced
☐ Discharge (Effluent Line) restricted	☐ Clean effluent line (Hydro-jet)
☐ Baffle tubes plugged, submerged, damaged or missing	☐ Repair or replace baffle tubes
☐ H2S level is greater than 0.5ppm	☐ Reduce H2S level to below 0.5ppm
☐ Insufficient GRE record keeping	☐ Maintain GRE records (log and/or hauling/pumping records)
☐ Pumping Frequency not within required interval	☐ Pump interceptor/trap within required frequency interval
☐ Other _____	☐ Other _____

The above checked item(s) must be corrected within _____days of receipt of this Notice of Noncompliance.

AKNOWLEDGEMENT OF RECIEPT OF INTERCEPTOR/TRAP INSPECTION REPORT

_____ _____
Signature of Facility Contact Date

_____ _____
Signature of Inspector Date

Costa Mesa Sanitary CMSD
FSE BMP Inspection Report

Permit No: _____ Inspection Date: _____
Name of Facility: _____ Inspection Type: _____
Address: _____ Inspector: _____

Name and Title of Facility Contact: _____

Facility Inspection

1.	Removal of food grinder	Installation/usage prohibited per ordinance
2.	Drain Screens Installed/Maintained	Must be present and in working condition
3.	Kitchen Signage (BMP Poster) posted	BMP Poster visible in food prep/dishwashing areas
4.	Scraping practices	Pots, pans, and plates to be scraped of food debris prior to washing
5.	Food Waste Practices	Food waste to be placed in plastic bags for trash, not in sink(s)
6.	Emergency Spill Response Materials	Grease absorbent materials present and accessible in event of a spill
7.	Utilization of Additives	Additives for emulsifying or biological/chemically treating FOG prohibited – unless approval by FOG Control Program Manager
8.	Waste cooking oil segregated and properly stored	Waste cooking oil not disposed of in drains; and waste grease container present, not leaking, and properly labeled
9.	Grease Collection Log Maintained	Must be kept current and accessible at all times
10.	Employee Training Log Maintained	Must be kept current and accessible at all times
11.	Lateral Cleaning and Spill Log Maintained	Must be kept current and accessible at all times

Comments: _____

INSPECTION RESULTS

☐ Facility is in **COMPLIANCE**. No corrective action is required at this time.

☐ **NOTICE OF NONCOMPLIANCE**

Facility is in noncompliance of the items checked below:	**Required corrective action includes any or all of the following:**
☐ Food grinder (garbage disposal) installed	☐ Remove food grinder (garbage disposal)
☐ Drain screens missing/damaged/clogged	☐ Install/repair/clean drain screen(s)
☐ BMP poster missing/obscured/damaged, etc.	☐ Post/repair/replace BMP poster
☐ Employees observed not following scraping practices	☐ Train employees on scraping practices
☐ Food waste in sink(s) and not in enclosed plastic bag or garbage	☐ Train employees on proper disposal of food waste
☐ Missing/inadequate or inaccessible absorbing materials	☐ Make available/accessible grease adsorbent grease material for spills
☐ Additives utilized without approval of FOG Program Manager	☐ Discontinue Additive use or obtain approval
☐ Grease container leaking, not present, or improperly labeled	☐ Provide, properly label, & maintain waste grease container
☐ Evidence of waste cooking oils in drains	☐ Train employees on proper disposal of FOG
☐ Grease Collection Log missing or not current	☐ Make available/accessible and update Grease Collection Log
☐ Employee Training Log missing or not current	☐ Train employees on all BMPs & update Training Log
☐ Lateral Cleaning and Spill Log missing or not current	☐ Make available/accessible and Lateral Cleaning and Spill Log
☐ Other: _____	☐ Other: _____

The above checked item(s) must be corrected within _____ days of receipt of this Notice of Noncompliance.

AKNOWLEDGEMENT OF RECIEPT OF BMP INSPECTION REPORT

Signature of Facility Contact _____ Date _____

Signature of Inspector _____ Date _____